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**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 Consent representative to discuss this application prior to lodgement? Yes / No

**2. Type of Consent being applied for (more than one circle can be ticked):**

- Land Use                       Fast Track Land Use\*                       Subdivision                       Discharge
- Extension of time (s.125)     Change of conditions (s.127)     Change of Consent Notice (s.221(3))
- Consent under National Environmental Standard (e.g. Assessing and Managing Contaminants in Soil)
- Other (please specify) \_\_\_\_\_

*\*The fast track for simple land use consents is restricted to consents with a controlled activity status and requires you provide an electronic address for service.*

**3. Would you like to opt out of the Fast Track Process?                      Yes / No**

**4. Applicant Details:**

Name/s: Te Aupouri Commercial Developments Ltd / C/o Realm Property Group Ltd

Electronic Address for Service (E-mail): alex@havenliving.co.nz

Phone Numbers: Work: 0211190361 Home: \_\_\_\_\_

Postal Address: (or alternative method of service under section 352 of the Act) PO Box 99397 New Market, Auckland

Post Code: 1149

**5. Address for Correspondence: Name and address for service and correspondence (if using an Agent write their details here).**

Name/s: Barker & Associates

Makarena Dalton

Electronic Address for Service (E-mail): makarenad@barker.co.nz

Phone Numbers: Work: 0272682298 Home: \_\_\_\_\_

Postal Address: (or alternative method of service under section 352 of the Act) Level 1, 62 Kerikeri Road

Post Code: 0200

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

**6. 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: Te Aupouri Commercial Developments Ltd

Property Address/  
Location: 24 Te Ahu Road, RD 4, Kaitaia 0484

**7. Application Site Details:**

Location and/or Property Street Address of the proposed activity:

Site Address/  
Location: 174 Lamb Road, Pukenui

Legal Description: Sections 1 - 9 SO Plan 65943, Val Number: \_\_\_\_\_

Certificate of Title: NA80D/748  
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.**

**8. Description of the Proposal:**

Please enter a brief description of the proposal here. Attach a detailed description of the proposed activity and drawings (to a recognized scale, e.g. 1:100) to illustrate your proposal. Please refer to Chapter 4 of the District Plan, and Guidance Notes, for further details of information requirements.

non-complying activity resource consent is required for infringements to 8.6.5.1.1 Residential Intensity;

15.1.6A.1 Maximum Daily One-Way Traffic Movements; 15.1.6C.1.5 Vehicle Crossing Standards; and 12.3.6.1.1. Excavation and/or Filling.

30 unit papakainga, kohanga reo and community building

If this is an application for an Extension of Time (s.125); Change of Consent Conditions (s.127) or 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) or extension being sought, with reasons for requesting them.

**9. Would you like to request Public Notification**

Yes/No

10. Other Consent required/being applied for under different legislation (more than one circle can be ticked):

- Building Consent (BC ref # if known)       Regional Council Consent (ref # if known)
- National Environmental Standard consent       Other (please specify)

11. 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 (further information in regard to this NES is available on the Council's planning web pages)

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? (If the activity is any of the activities listed below, then you need to tick the 'yes' circle).  yes  no  don't know

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

12. 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.

Please attach your AEE to this application.

13. 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 all names in full) Realm Property Group Limited

Email: alex@havenliving.co.nz

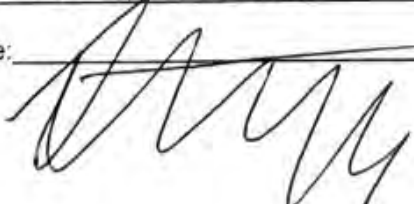
Postal Address: Level 2, 92 Parnell Road, Parnell, Auckland  
Post Code: \_\_\_\_\_

Phone Numbers: Work: 0211190361 Home: \_\_\_\_\_ Fax: \_\_\_\_\_

**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 20<sup>th</sup> of the month following invoice date. You may also be required to make additional payments if your application requires notification.

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

Name: Alex Hitchcock (please print)

Signature:  (signature of bill payer - mandatory) Date: 30/07/2024

## 14. 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](http://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.

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

Name: Makarena Dalton (please print)

Signature:  (signature)

Date: 4/08/24

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

### Checklist (please tick if information is provided)

- Payment (cheques payable to Far North District Council) **Payment will be made via internet banking once rc ref received**
- A current Certificate of Title (Search Copy not more than 6 months old)
- 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.*

**Only one copy of an application is required, but please note for copying and scanning purposes, documentation should be:**

**UNBOUND**

**SINGLE SIDED**

**NO LARGER THAN A3 in SIZE**



# Moekoraha Papakāinga Development

Construction of 24 Papakāinga Housing Units,  
Kohanga Reo and Community Facility at 174 Lamb  
Road, Pukenui

Assessment of Environmental Effects and Statutory Analysis

31 July 2024

**B&A**

Urban & Environmental

Prepared for:  
Te Aupōuri Commercial Developments Ltd

B&A Reference:

20280

Status:

Final Revision

Date:

31 July 2024

Prepared by:



Lilly Lawson

Associate, Barker & Associates Limited

Reviewed by:



Makarena Dalton

Senior Associate, Barker & Associates Limited

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Appendix 3	Correspondence with Council regarding 'site' definition
Appendix 4	Copy of Approved Decisions 2220800
Appendix 5	Architectural Drawings
Appendix 6	Civil Design Site Suitability Report
Appendix 7	Ecological Report
Appendix 8	Landscape Visual Assessment and Landscape Plan
Appendix 9	Geotechnical Assessment
Appendix 10	Geotechnical Memo
Appendix 11	FNDP Rules Assessment
Appendix 12	PDP Rules with legal effect Assessment
Appendix 13	Transportation Assessment

## 1.0 Applicant and Property Details

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To:	Far North District Council (FNDC or Council)
Site Address:	174 Lamb Road, Pukenui
Applicant Name:	Te Aupōuri Commercial Developments Ltd
Address for Service:	Barker & Associates Ltd Level 1 62 Kerikeri Road Kerikeri 0230 Attention: Makarena Dalton
Legal Description:	Section 1 – 9 Survey Office Plan 65943 (refer to Record of Title as <b>Appendix 1</b> )
Site Area:	1,849 ha
Site Owner:	Te Aupōuri Commercial Developments Ltd
District Plan:	Far North Operative District Plan (FNDP) and Proposed Far North District Plan (PDP)
FNDP Zoning:	Rural Production FNDP and PDP
Overlays:	FNDP: N/A PDP: Treaty Settlement Overlay
Additional Limitations:	NRC Natural Hazards Priority Rivers Flood Hazard, 10, 50 and 100 year
Locality Diagram:	Refer to Error! Reference source not found.
Brief Description of Proposal:	Land use consent is sought to construct a 30-unit papakāinga development, 475m <sup>2</sup> child kohanga reo and 231m <sup>2</sup> Community Facility with supporting onsite infrastructure, accessways and landscape planting. Consents from the Northland Regional Council are also required for enabling earthworks and the discharge of wastewater to land.
Summary of Reasons for Consent:	FNDP: non-complying activity resource consent is required for infringements to 8.6.5.1.1 Residential Intensity; 15.1.6A.1 Maximum Daily One-Way Traffic Movements; 15.1.6C.1.5 Vehicle Crossing Standards; and 12.3.6.1.1. Excavation and/or Filling.

## 2.0 Background

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Te Aupōuri Commercial Developments Ltd (**TACDL**) have engaged Barker & Associates (**B&A**) to prepare and lodge resource consent applications with the Far North District (**FNDC**) and Northland Regional Council's (**NRC**). TACDL is the commercial entity and subsidiary that is wholly owned by Te Rūnanga ā Nui o Te Aupōuri (**Te Aupōuri Rūnanga**), charged with managing commercial assets on behalf of Te Aupōuri Iwi.

Te Aupōuri Rūnanga recently undertook a successful papakāinga development at Te Kao which saw the development of 16 new papakāinga houses and the installation of a communal wastewater treatment plant. As part of this process, Te Aupōuri Rūnanga undertook a housing needs assessment with its members which found that there is a high demand for housing in the Te Hiku area. As such, Te Aupōuri Rūnanga have established a 'waiting list' for Te Aupōuri iwi members that has informed the housing typologies and mix of this proposal.

This papakāinga development holds significance for Te Aupōuri in that it enables iwi members an opportunity to return to their ancestral lands within their traditional rohe. The proposal has been designed to address the needs of Te Aupōuri's members to support their wellbeing and reconnection to their ancestral land.

### 2.1 Te Raite Station and Moekoraha Pā

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Te Aupōuri are a post-settlement iwi, having signed their Deed of Settlement in 2012 which is given effect to by the Te Aupōuri Treaty Settlement Act 2015 which saw the return of approximately 4,800ha in commercial redress and 1,370ha in cultural redress (as shown in **Figure 2**).

Part of Te Aupōuri's commercial redress included Te Raite Station, which is a 1,849ha beef and sheep farm which forms the application site (refer to **Figure 1**). The papakāinga development is proposed in the southernmost portion of the site, an area name Moekoraha Pā. Moekoraha Pā was a historic pā, previously occupied by Te Aupōuri Tupuna and was lost to the Crown in the late 1860's. As Moekoraha was previously a place of settlement and 'living' for Te Aupōuri people, this is a central driver for returning housing to this whenua. TACDL have prepared a brief statement outlining the history and their relationship to Te Raite Station and Moekoraha Pā enclosed as **Appendix 2**.

Te Aupōuri considers Te Raite Station and Moekoraha pā (and all other land returned to them within their rohe) to be their ancestral lands. As such, no subdivision is proposed to ensure all land is retained in their ownership for the benefit of all Te Aupōuri members.

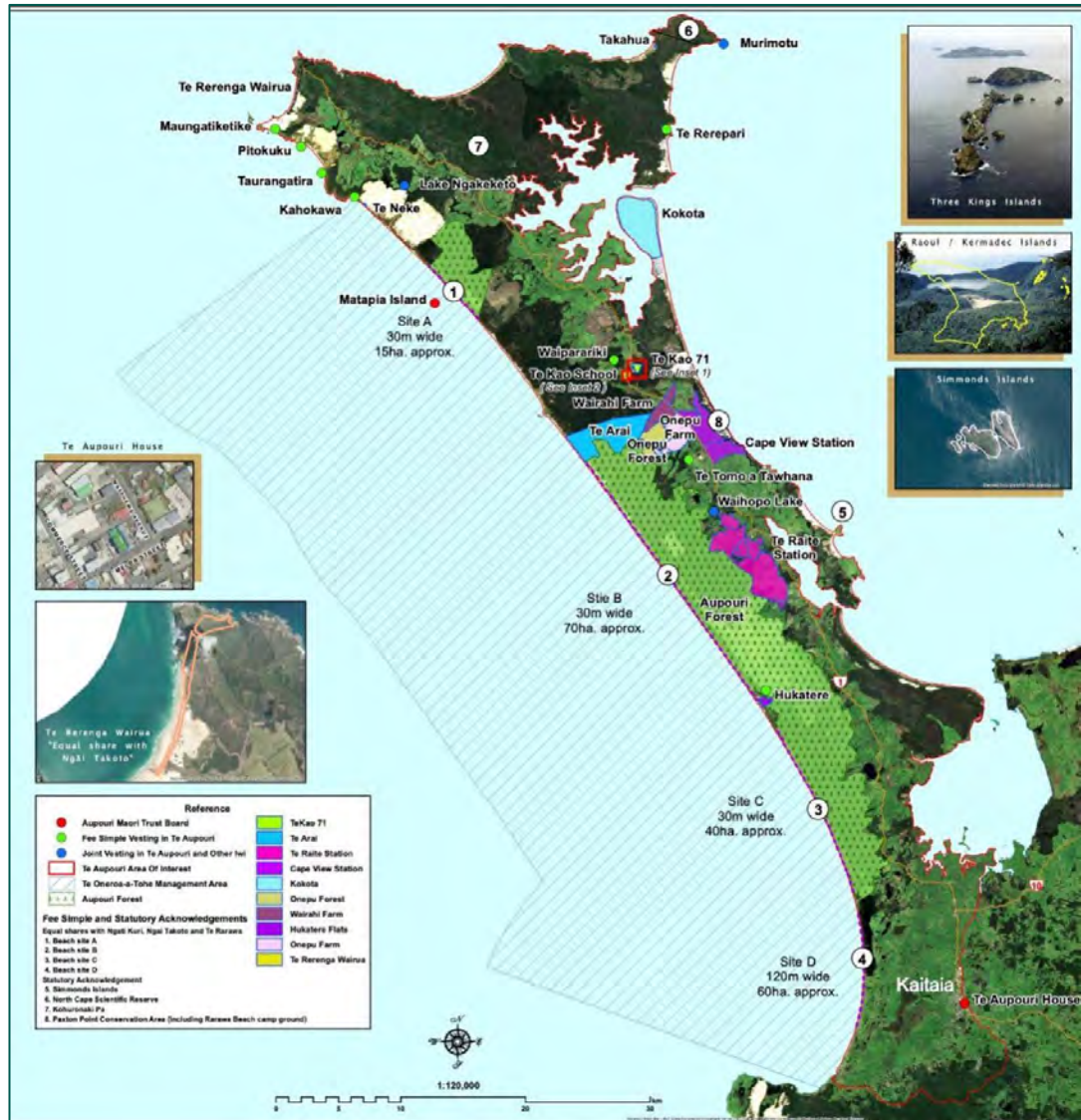


Figure 1: Te Aupōuri Treaty Settlement Lands (Commercial and cultural redress and statutory acknowledgement areas).

## 2.2 FNDP Definitions

### 2.2.1 Site

The FNDP defines a ‘Site’ as follows:

“(a) An area of land which is:

*Composed of one allotment in one certificate of title or two or more contiguous allotments held together in one or more certificates of title in such a way that the allotments cannot be dealt with separately without the prior consent of the Council; or*

*Contained in a single allotment on an approved survey plan of subdivision for which approvals under s223 and/or s224 of the Act have been obtained and for which a separate certificate of title could be issued without further consent of the Council.*

....” (emphasis added)

With respect to the FNDP definition of site; the application is sought at 174 Lamb Road, Pukenui which is legally described as Sections 1-9 SO Plan 65943, is composed of nine separate allotments, is held in a single record of title (reference NA80D/748), and cannot be dealt with separately without the prior approval of Council. However, it was clarification was sought from Council as to whether the allotments were ‘contiguous’ as some parcels are separated by legal or formed road reserve. Correspondence with Council, attached in **Appendix 3**, confirms that ‘contiguous’ would have the same application as ‘adjoining’ in accordance with Section 220 (2)(b) of the RMA which states:

*“For the purposes of subsection (1)(b)—*

*(a) where any condition requires land to be amalgamated, the territorial authority shall, subject to subsection (3), specify (as part of that condition) that such land be held in 1 record of title or be subject to a covenant entered into between the owner of the land and the territorial authority that any specified part or parts of the land shall not, without the consent of the territorial authority, be transferred, leased, or otherwise disposed of except in conjunction with other land; and*

*(b) land shall be regarded as adjoining other land notwithstanding that it is separated from the other land only by a road, railway, drain, water race, river, or stream.”*

On this basis and relying on the advice of Council; for the purposes of this application and assessment against the provisions of the FNDP, the ‘Site’ is considered Sections 1 – 9 SO Plan 65943, being nine separate allotments measuring an area of 1,850ha.

### 2.2.2 Papakāinga Housing

The FNDP defines the term ‘Papakāinga Housing’ as meaning:

*“The use of Maori multiple owned land, Maori ancestral land or land within the meaning of Te Ture Whenua Maori Act 1993 by a (the) shareholder(s) for (a) dwelling place(s).”*

As set out in section 2.1 above, Te Raite Station was returned to Te Aupōuri as commercial redress as part of their Treaty settlement claim as set out in the Te Aupōuri Treaty Settlement Act 2015. As set out in TACDL’s Cultural Statement (refer to **Appendix 2**) Moekoraha Pā and Te Raite Station formed part of Te Aupōuri’s ancestral land and was previously a historic place of settlement for Te Aupōuri tupuna.

The housing component (dwellings) of this proposal are therefore considered to accord with the definition of ‘Papakāinga Housing’. As such, the housing component of this proposal are assessed as Papakāinga Housing.

### 2.2.3 Community Facility

The FNDP defines the term ‘Community Facility’ as:

*“Means any place or premises administered by an organisation or public body for the purposes of public welfare, arts and culture. It includes libraries, art galleries, places for craft displays, museums, preschool facilities, kohanga reo, social and welfare offices, citizens’ advice bureau, police stations, courts and public conveniences but does not include hospitals, medical facilities or places of assembly or entertainment.”*

In addition to the papakāinga housing proposed, the application includes a Kohanga Reo (childcare facility) and community building that will be used as a ‘whare waka’. This will be used for community meetings, hui, wānanga and for the provision of health and wellness services for the

papakāinga residents. The facility is not a marae, but would be utilised for smaller gatherings and for health and social services. As such, for the purpose of this application, the Kohanga Reo and Community Building are considered a Community Facility.

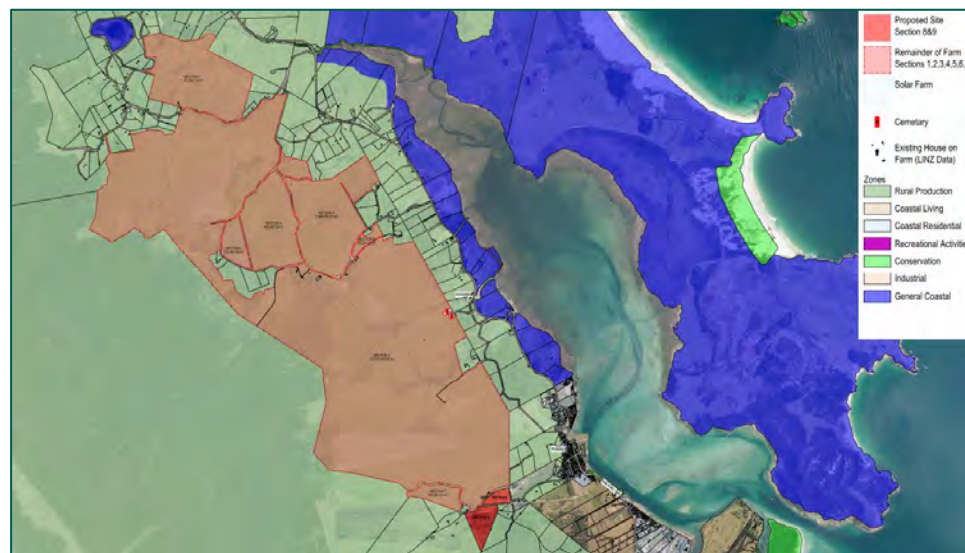
## 3.0 Site Context

### 3.1 Site Description

The site comprises nine allotments held together in a single record of title, is irregular in shape and measures approximately 1,849ha (refer to **Figure 2**). The site forms part of Te Raitē Station, a productive dry stock farming unit with varying topography. The site is predominantly in pasture with some parts of the farm converted to plantation forestry, including a recently planted area of approximately 300ha.

Existing development within the site includes five residential units utilised as farm worker houses, farm tracks and farm buildings.

The site gains access via Lamb Road, which is an unsealed ‘no exit’ local road approximately 1.7km west of Pukenui township.



**Figure 2: The site (shown in red) (source: Architectural Drawings at Appendix 3)**

The proposal will be localized to the southernmost allotments of the Site, being Sections 8 and 9 SO Plan 65943 (see **Figure 3**) which are described in more detail below.



**Figure 3: Development Area for Papakāinga Housing and Community Facilities (source: Wild Ecology Report at Appendix 4)**

### 3.1.1 Section 8

Sections 8 SO Plan 65943 is the southern portion of the site and is free of built form except for existing fencing. Section 8 SO Plan 65943 (**Section 8**) is the southernmost portion of the site, measures approximately 18ha, is triangular in shape (refer to **Figure 4**) with the northern boundary fronting Lamb Road. Te Aupōuri refer to the prominent ridge and land in this portion of the site as ‘Moekoraha Pā’, and has a dominant ridgeline that runs east to west through the site, with the land falling steeply north (towards Lamb Road) and south of the ridge.

South of the ridge is a prominent kanuka dune forest that dominates the majority of the site. Some clearance and preparation works have been undertaken at the site to clear wilding pines, gorse and other weed species. There is also a visible natural inland wetland in the northern portion of the site adjacent to Lamb Road (see **Figure 5**). Section 8 can be accessed from Lamb Road and currently has no formed access.



Figure 4: Section 8 shown in red and section 9 shown in blue (source: emaps)

### 3.1.2 Section 9

Section 9 SO Plan 65943 (**Section 9**) measures approximately 7ha, is irregular in shape, is primarily in pasture and is currently vacant with no formed vehicle crossing to the site. The southern boundary of the allotment fronts Lamb Road. There are several overland flowpaths and artificial watercourses that are currently used to convey stormwater with a small area of the block subject to potential flood hazard (NRC's 1 in 100 year event) as shown in **Figure 5** below.

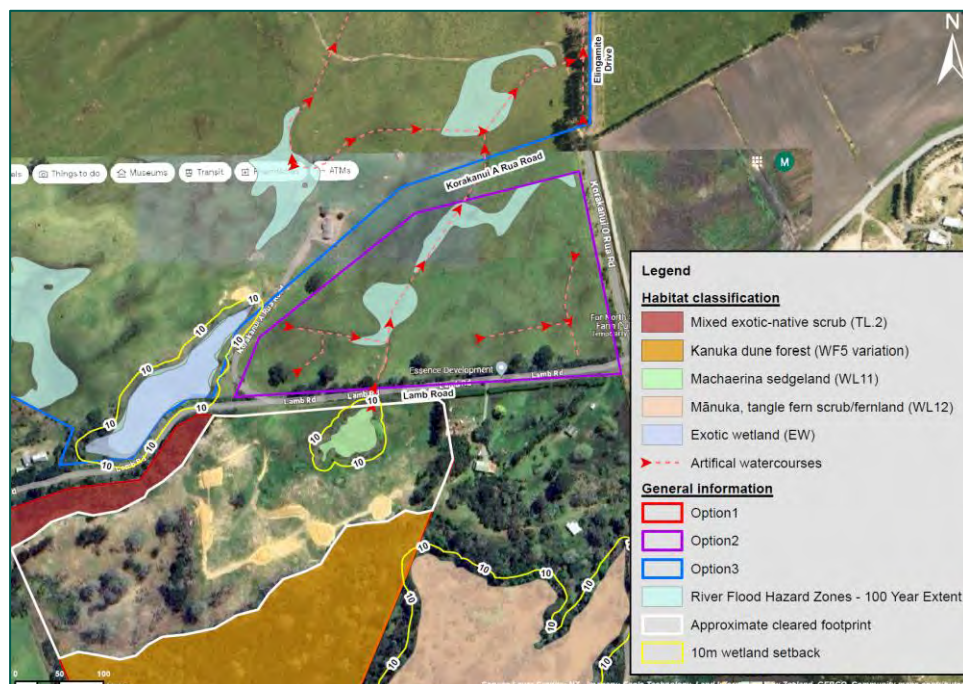


Figure 5: Site Features (refer to Ecological Effects Assessment provided as Appendix 3)



## 3.2 Surrounding Locality

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The surrounding wider locality is characterised by typical rural production uses, including farm land and orcharding. Residential dwellings and buildings ancillary to productive uses are dispersed throughout the surrounding environment. Pukenui township is located approximately 5 minutes east with a local primary school, police station, local shops, boat ramp and other services. Pukenui township is a coastal residential settlement that can be characterised as residential.

A recently consented solar farm is currently under construction on the land adjacent to Section 9 (east of Korakanui o Rua Road) that was approved under RC 2220800 (refer to **Appendix 4** to review a copy of the approval).

## 4.0 Proposal

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A summary of key elements of the proposal is set out below. More detailed descriptions on particular aspects of the proposal are set out in the specialist reports and plans accompanying the application.

### Papakāinga Housing

A total of 30 papakāinga housing units, with 19 residential units proposed on Section 9 and 11 residential units on Section 8. Architectural Plans prepared by BDG Architects are enclosed at **Appendix 5** and show the site layout of the proposal. The housing typologies will comprise a mix of 2-bedroom duplexes, 3-bedroom and 4-bedroom standalone residential units across the two allotments as follows:

- Section 9 (19 papakāinga housing units):
  - Four x 2-bedroom kaumatua / kuia units (duplexes).
  - Six x 3-bedroom standalone whanau dwellings (including two different design types).
  - Nine x 4-bedroom standalone whanau dwellings (including two different design types).
- Section 8 (11 papakāinga housing units):
  - Eight x 2-bedroom kaumatua / kuia units (duplexes).
  - Three x 3-bedroom standalone whanau dwellings (including two different design types).

### Community Facilities

- **Kohanga Reo:** A 467.24m<sup>2</sup> kohanga reo is proposed in the south-eastern corner of the Section 9. The kohanga has been designed to accommodate up to 30 children (20 over 2-year-olds and 10 under 2-year-olds) with five staff.
- **Community Building / Whare Waka:** A 230.5m<sup>2</sup> community building is proposed adjacent to the Kohanga reo and is adjoined by a covered walkway to the Kohanga reo. The community building has been designed for a maximum occupancy of 50 persons and will be used as a communal facility by residents as well as other Te Aupōuri iwi members to hold wananga, hui and other meetings. It is also proposed to use the building for health and social services such as regular doctor / dental clinics for the papakāinga residents and kohanga reo.

- **Outdoor play areas:** It is proposed to construct dedicated outdoor play area associated within the kohanga reo and community building.
- **Hours of Operation:**
  - The Kohanga Reo is proposed to operate Monday – Friday from 7.30am – 5pm.
  - The Community building / whare waka is does not propose to operate under specific times, however this will be less frequently used and will likely operate no more than once per week. No overnight stays are proposed.

### Access and Parking

Parking and access arrangements are detailed in Chester’s civil engineering drawings (refer to **Appendix 6**) and the architectural drawings at **Appendix 5**.

- **Parking:** As set out on the Architectural Plans, each residential unit will have two dedicated car parks. A total of 20 car parking spaces are proposed to support the Community Facilities in Section 9, including two wide spaces and 2 accessible parking spaces.
- **Access:** A total of three vehicle crossings are proposed, with two proposed to provide access to Section 9 and one proposed to Section 8. A dedicated access is proposed to the Community Facilities. All three vehicle crossings are proposed as double width vehicle crossings to enable two-way entry/exit. Vehicle crossings are proposed to be constructed in general accordance with FNDC’s Engineering Standards (Sheet 21 Type - 1B).
- **Private Accessways:** The proposal involves three vehicle crossings and private accessways as shown as shown in Chester’s Engineering Drawings (refer to Drawings 700 – 703 and typical sections at Drawings 720 on 721) and will be constructed generally in accordance with FNDC’s Engineering Standards:
  - Section 8 Private Accessway 1A & 1B: serves 11 papakāinga housing units (8 kaumatua/kui units and 3 x 3-bedroom). The first portion of the access referred to as 1A extends from Lamb Road to the turning area and is proposed as a two-way sealed access with a construction width of 6m. After the turning circle, 1B will narrow in places in one-way 3.5m width carriageway with pullover areas.
  - Section 9 Private Accessway 2A: is the primary accessway from Lamb Road and will serve all 19 papakāinga units. The private accessway will be constructed as a two-way carriageway and formed to 6m wide.
  - Section 9 Private Accessway 2B: is proposed to the five-unit cluster in the south western portion of Section 8. The entry will enable two-way entry/exit, and will narrow to a single lane to circulate to the residential units. The carriage is proposed to have a formed width of between 3.5 – 6m wide.
  - Section 9 Access to Community Facilities: private accessway will be formed to a double-width access.
- **Footpaths:** 1.5m private pedestrian footpaths are proposed throughout alongside the formed carriage way of the private accessways.

## Landscaping and Ecology

- **Ecological Management Plan:** An Ecology Report prepared by Wild Ecology has been prepared in support of this proposal and is enclosed as **Appendix 7**. In summary the following is proposed as part of this proposal:
  - Prepare an Ecological Management Plan (**EMP**) as a condition of consent that will include:
    - Ongoing protection of the natural inland wetland are located within Section 8;
    - Ongoing pest and weed management;
    - Enhancement planting at the edge of the wetland;
    - Ongoing protection of the kanuka dune forest located in the southern portion of Section 8.
- **Landscaping:** A Landscape Plan has been prepared by B&A and is attached as **Appendix 8**. Landscape planting at the site boundaries and through the development site is proposed. It is anticipated that a condition of consent will be applied to require these outcomes.

## Onsite Servicing

- A Site Suitability Report has been prepared by Chester Engineering (refer to **Appendix 6**) that details the proposed infrastructure servicing arrangements for the proposal. These are summarised as follows:
  - **Wastewater:** two communal on-site wastewater treatment systems are proposed to service the papakāinga development and community facilities with the design occupancy outlined in section 9.1.2 of the Chester Report. Secondary wastewater treatment is proposed with design flows of 16200 L/day (Section 8) and 6815L/day (Section 9), with dedicated wastewater fields shown on Drawing 110. All residential units, the kohanga reo and community building will be connected to the respective communal wastewater treatment plant for treatment and disposal to land. Collectively, the proposal involves the discharge of 23m<sup>3</sup>/day. *Note: Discharge consent from NRC is required and will be sought separately.*
  - **Stormwater:** A comprehensive stormwater is proposed for the site with stormwater runoff from the dwelling roofs to be collected into re-use water tanks and used for potable water supply. Overflow from the tanks will be discharged to the surrounding area. The outlet of the overflow will have rip rap to provide suitable erosion protection where required. A private network will be constructed to manage stormwater runoff from the private accessways and paved areas with catchpits proposed as low points to capture sediment prior to discharging to the base of the hillside. The stormwater arrangements have been designed to follow the historic drainage patterns with a network of swales, culverts and catchpits proposed throughout.
  - **Potable Water Supply:** Potable water is proposed by way of rood catchment.
  - **Firefighting Supply:** It is proposed to provide the new development with on-site water storage for firefighting purposes no more than 90m from a given dwelling. The proposed arrangement is designed in accordance with FW2 requirements (refer to Drawing 601 of **Appendix 9**).

## Enabling Works

- **Earthworks:** Bulk enabling earthworks are proposed to prepare the private accessways, parking, manoeuvring and private driveways for the proposal. The earthworks proposed involve 2,700m<sup>3</sup> cut and 5,650m<sup>3</sup> of fill over an area of 20,350m<sup>2</sup>. Erosion and sediment controls are proposed in accordance with Auckland Council's GD05 Design Guidelines. A Cut/Fill Plan has been prepared by Chester's at Drawing 200 of **Appendix 6**). Earthworks design has been informed by geotechnical investigations prepared by Soil & Rock with their findings and recommendations enclosed at **Appendix 11**.
- **Retrospective Earthworks:** It is noted that the proposal includes retrospective earthworks already undertaken as part of the clearance works associated with removal of the wilding pines. These works have been accounted for in the volumes using NRC LiDAR. *Note: Earthworks consent is also sought from NRC.*
- **Vegetation Clearance:** Minor vegetation clearance is proposed to accommodate the proposal, including the removal of a shrub located near the vehicle entrance to the Kohanga Reo and Community Centre and no more than 100m<sup>2</sup> within Section 8 to accommodate the accessway.

## 5.0 Reasons for Consent

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A comprehensive rule has been undertaken assessment against the provisions of the Operative Far North District Plan ('FNDP') and is attached as **Appendix 11**. A summary of the reasons for consent is provide below. The Proposed Far North District Plan ('PDP') contains rules with immediate legal effect, a rules assessment against those rules is enclosed as **Appendix 12**.

### 5.1 Far North Operative District Plan - Reasons for Consent

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#### Chapter 8 Rural Environment - Section 6 Rural Production Zone

- **8.6.5.1.1 Residential Intensity:** while the proposal complies with the permitted ratio of one residential unit per 12ha (1,849ha / 12ha = 154 units), each papakāinga housing unit will not maintain 3,000m<sup>2</sup> or 2,000m<sup>2</sup> of exclusive use. As such, **non-complying activity** consent is required.
- **8.6.5.2.2 Papakainga Housing:** the does not provide 3,000m<sup>2</sup> of exclusive use for each papakāinga unit. As such, **non-complying activity** consent is required.

#### Chapter 15 – Transportation

- **15.1.6A.1 Maximum Daily One-Way Traffic Movements:** Appendix 3B calculated TIFs as follows:
  - Kaumatua / kuia housing = 2 per unit: 12 units are proposed = 24 TIFs
  - Papakāinga Housing = 5 per unit: 18 unit are proposed = 90 TIFs
  - Kohanga Reo = 75 per 100m<sup>2</sup> GBA: 468m<sup>2</sup> = 358 TIFs
  - Community Building = 2 per person the facility is designed for = 173 TIFs

Appendix 3B of the FNDP calculates TIFS generated by the proposal at 575 per day. A traffic intensity threshold of more than 200 is a **Discretionary Activity**.

- **15.1.6C.1.1 Private Accessways**
  - The proposal includes private accessways serving more than 8 dwellings and does not propose to vest them as public roads. **Discretionary activity** consent is required.
  - Accessways which do not comply with the permitted activity standards are a **Discretionary Activity** pursuant to 15.1.6C.2.

## Chapter 12 Natural and Physical Resources – Soil and Minerals

- **12.3.6.1.1 Excavation and/or Filling, excluding Mining and Quarrying in the Rural Production Zones:** The proposal exceeds the 5,000m<sup>3</sup> cut/fill volumes. Average cut /fill heights will be between 0.5m – 1m. As such, **restricted discretionary activity** resource consent is required.

### 5.2 National Environmental Standard for Assessing & Managing Contaminants to Protect Human Health

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The Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (**NES-CS**) were gazetted on 13th October 2011 and took effect on 1st January 2012.

The standards are applicable if the land in question is, or has been, or is more likely than not to have been used for a hazardous activity or industry and the applicant proposes to subdivide or change the use of the land, or disturb the soil, or remove or replace a fuel storage system.

The site is not located on Northland Regional Councils Selected Land Use register and there is no information that suggests that the site has been used for any activities that are on the Hazardous Activities and Industry List (HAIL) or evidence of migration of hazardous substances from adjacent land use. Based on the above, the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (**NES-CS**) does not apply to the proposal.

### 5.3 National Environmental Standard for Freshwater Management Regulation 2020

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The Resource Management (National Environmental Standards for Freshwater) Regulations 2020 (**NES-FW**) came into force on 9 September 2020 with some amendments made in 2021 and 2022 in relation to feedlots and farming.

Wild Ecology undertook an assessment to identify and classify all watercourses within or in close proximity of the development extent of the site. Wild Ecology concludes that the overland flow paths and open drains as artificial watercourse and as such is not subject to the NES-FW. However, two natural inland wetlands are assessed as meeting the definition of a 'natural inland wetland' under the National Policy Statement for Freshwater Management 2020 (**NPS-FM**) and are shown in **Figure 6** below as Area's C1 and C3. As such, the NPS-FW is considered relevant and as assessment is required to determine compliance.

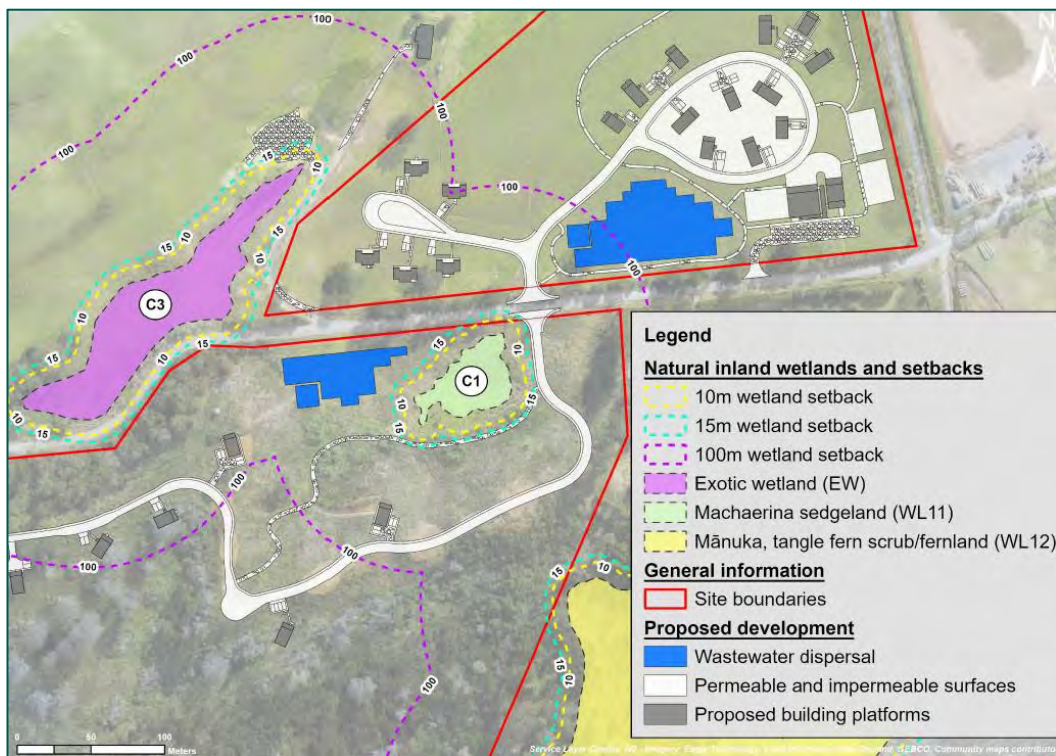
No earthworks, development, vegetation clearance or stormwater diversion is proposed within 10m of the identified wetland areas in accordance with regulation 38(1), (2) and (3) of the NPS-FW. The proposal involves earthworks and development within 100m of a natural inland wetland,

as such an assessment of the works has been undertaken by Wild Ecology to determine compliance with Regulation 52 of the NPS-FW. Wild Ecologies analysis of the proposal against the relevant regulations is outlined in Section 5.4 of that report and concludes the following:

*“Based on the analysis above, it is considered that the proposal as it stands has no additional consenting obligations under NES-FW (2020).”*

Relying on the assessment of Wild Ecology, the proposal is considered to comply with the permitted standards for the following reasons:

- All earthworks within 100m of the identified natural wetlands is not considered to result in the complete or partial draining of the natural inland wetland;
- Stormwater management devices proposed is not considered to impact the hydrology of the identified natural inland wetlands, and will not result in the complete or partial drainage of these features.



**Figure 6: Natural Inland Wetland Areas showing 10m, 15m and 100m Setbacks (source: Appendix 7)**

In addition to the above matters, enhancement planting is proposed at the wetland margin of Area C1 with wetland species selected based on the recommendations of Wild Ecology. The enhancement planting is considered to be a permitted activity in accordance with regulation 55 of the NPS-FW.

Overall, the proposal is assessed as a **permitted activity** in accordance with regulation 38 of the NPS-FW.

## 5.4 Activity Status

Overall, this application is for a **non-complying** activity.

## 6.0 Public Notification Assessment (Sections 95A, 95C and 95D)

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### 6.1 Assessment of Steps 1 to 4 (Sections 95A)

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Section 95A specifies the steps the council is to follow to determine whether an application is to be publicly notified. These are addressed in statutory order below.

#### 6.1.1 Step 1: Mandatory public notification is required in certain circumstances

Step 1 requires public notification where this is requested by the applicant; or the application is made jointly with an application to exchange of recreation reserved land under section 15AA of the Reserves Act 1977.

The above does not apply to the proposal.

#### 6.1.2 Step 2: If not required by step 1, public notification precluded in certain circumstances

Step 2 describes that public notification is precluded where all applicable rules and national environmental standards preclude public notification; or where the application is for a controlled activity; or a restricted discretionary, discretionary or non-complying boundary activity.

In this case, the applicable rules do not preclude public notification, and the proposal is not a controlled activity or boundary activity. Therefore, public notification is not precluded.

#### 6.1.3 Step 3: If not required by step 2, public notification required in certain circumstances

Step 3 describes that where public notification is not precluded by step 2, it is required if the applicable rules or national environmental standards require public notification, or if the activity is likely to have adverse effects on the environment that are more than minor.

As noted under step 2 above, public notification is not precluded, and an assessment in accordance with section 95A is required, which is set out in the sections below. As described below, it is considered that any adverse effects will be less than minor.

#### 6.1.4 Step 4: Public notification in special circumstances

If an application is not required to be publicly notified as a result of any of the previous steps, then the council is required to determine whether special circumstances exist that warrant it being publicly notified.

Special circumstances are those that are:

- Exceptional or unusual, but something less than extraordinary; or
- Outside of the common run of applications of this nature; or
- Circumstances which make notification desirable, notwithstanding the conclusion that the adverse effects will be no more than minor.

It is considered that there is nothing noteworthy about the proposal. The proposal is for a papakāinga housing and ancillary community activities to support the social, cultural and economic wellbeing of Te Aupōuri and its iwi on their ancestral land. An activity that would otherwise be provided for if Te Raite Station and Moekoraha Pā was retained in traditional landownership by the iwi. The FNDP anticipates papakāinga housing and ancillary activities within the Rural Production zone on Māori Freehold Land in accordance with Rule 8.6.5.4.2 Integrated Development. While this proposal does not strictly accord with this rule due to the land tenure, the proposal has been designed to accord with the criteria set out in that rule. It is therefore considered that the application cannot be described as being out of the ordinary or giving rise to special circumstances.

## 6.2 Section 95D Statutory Matters

In determining whether to publicly notify an application, section 95D specifies a council must decide whether an activity will have, or is likely to have, adverse effects on the environment that are more than minor.

In determining whether adverse effects are more than minor:

- Adverse effects on persons who own or occupy the land within which the activity will occur, or any land adjacent to that land, must be disregarded.

The land to be excluded from the assessment is listed in Section 6.3 below.

- Adverse effects permitted by a rule in a plan or national environmental standard (the 'permitted baseline') may be disregarded.

In this case the permitted baseline for the a Papakāinga Housing and Community Facilities within the Rural Production zone as it applies to a 1,849ha site is considered to be:

- Rule 8.6.5.1.1 Residential Intensity is provided for as a permitted activity where it each residential unit has an exclusive use area of 3,000m<sup>2</sup>, and a balance of 11.7ha elsewhere within the site (i.e., one unit per 12 ha). Based on the 1,849ha land area of the site, residential intensity is permitted for up to 154 units subject to the 3,000m<sup>2</sup> exclusive use area and compliance with bulk and location controls.
- Buildings that are less than 12m tall.
- Buildings that are setback a minimum of 10m from all site boundaries.
- Buildings that comply with the 2m + 45° recession plane.
- Building coverage of up to 12.5% gross site area. For a 1,849ha site, building coverage of up to 231ha.
- Impermeable surfaces of up to 15% gross site area. For a 1,849ha site, building coverage of up to 277ha.

The proposal is considered to comply with all bulk and location controls, and it does not meet the permitted residential intensity threshold due to the preferred layout and clustered nature of papakāinga housing it is still considered to be relevant. At a minimum, compliance with the bulk and location controls are considered to form the permitted baseline relevant for the proposal.



- Trade competition must be disregarded.

This is not considered to be a relevant matter in this case.

- The adverse effects on those persons who have provided their written approval must be disregarded.

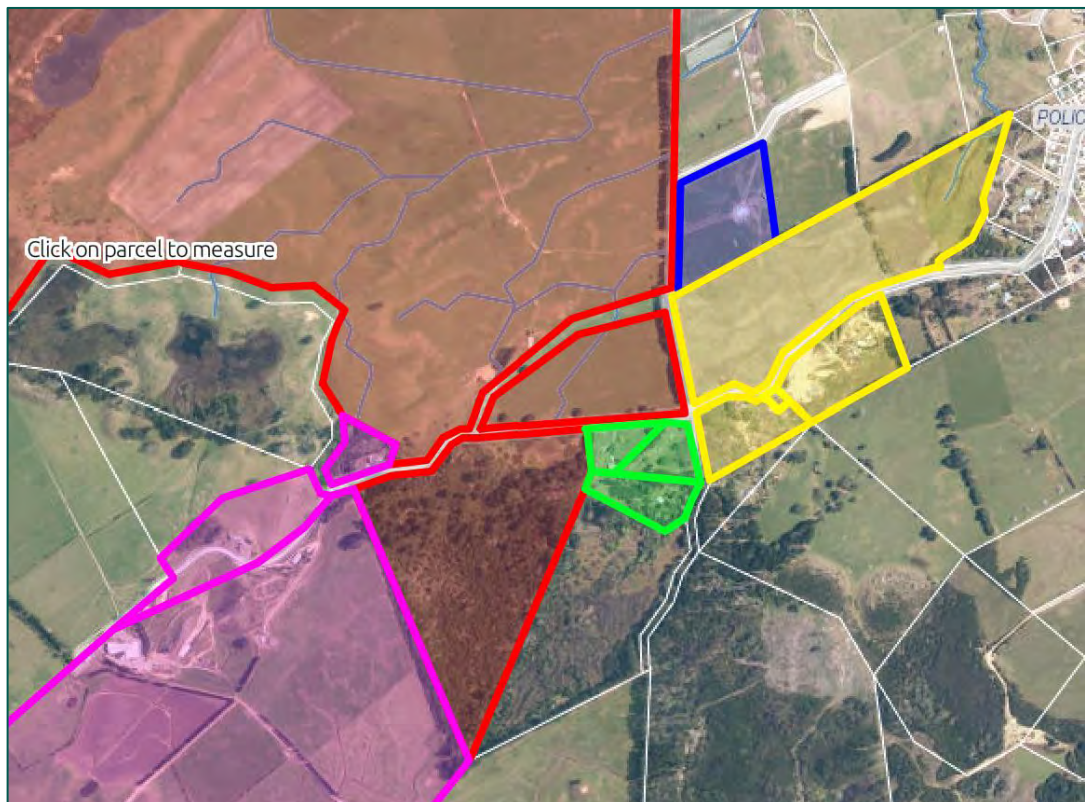
No persons have provided their written approval for this proposal.

The sections below set out an assessment in accordance with section 95D, including identification of adjacent properties and an assessment of adverse effects.

### 6.3 Land Excluded from the Assessment

In terms of the tests for public notification (but not for the purposes of limited notification or service of notice), the adjacent properties to be excluded from the assessment are shown in **Figure 6** below, and include:

- North East – 38 Elingamite Drive (shown in blue);
- East – 93, 121, 121 and 124 Lamb Road (shown in yellow);
- South – South East – 149, 133A, 133A and Lot 1 Deposited Plan 193976 (shown in green); and
- West – 208, 2013 and 216 Lamb Road (shown in pink).



**Figure 7: Adjacent properties in relation to subject site. (Source: emaps).**

## 6.4 Assessment of Effects on the Wider Environment

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The following sections set out an assessment of wider effects of the proposal, and it is considered that effects in relation to the following matters are relevant:

- Rural Character, Amenity and Building Intensity;
- Landscape and Amenity Values;
- Transportation;
- Natura Hazards
- Earthworks and Construction;
- Onsite Servicing;
- Productive Capacity, Fragmentation and Reverse Sensitivity;
- Ecology and Biodiversity;
- Māori Cultural Values; and
- Cumulative Effects.

These matters are set out and discussed below.

### 6.4.1 Rural Character, Amenity and Building Intensity Effects

The proposed areas of development are located within the rural productive zone which is typically characterised by expansive pastoral areas, associated residential dwellings and ancillary farm buildings, varying topography and indigenous and exotic areas of mature planting. The proposal involves the construction of 30 papakāinga housing unit (within 24 buildings), a 467m<sup>2</sup> kohanga reo, 231m<sup>2</sup> community building and ancillary infrastructure that complies with all bulk and locations controls for impervious surfaces, building coverage, building heights, setbacks, and recession planes.

While the proposed residential density complies with the maximum number of dwellings per hectare when factoring the entire 1,850ha site, it is recognised that it is necessary to consider the proposed clustered configuration of dwellings onsite in relation to its effects on the surrounding environment and existing character and amenity.

The proposed layout has been developed with consideration of a number of factors, including ecological impact, preservation of the farm's productive capacity and achieving the landowners' desires in terms of how papakāinga housing can best meet the needs of their people and community. The configuration of dwellings on site achieves the intended purpose in terms of fostering interactions between neighbouring residents and is in keeping with traditional papakāinga principles of multi-generational communities where young and old interact and look after one another. While the exclusive use area is not achieved for each dwelling, there is an abundance of open space surrounding the clustered dwellings which is easily accessible to residents and facilitated by gravel walking tracks and further enhanced by proposed planting. This arrangement can be achieved with the preferred servicing arrangements of a communal wastewater system, well-formed private accessways with pedestrian access and a comprehensive stormwater strategy to support the proposal. In Te Aupōuri's experience, this is the preferred

arrangement as it will remain as the landowner of the development ensuring that services can be comprehensively managed.

With respect to intensity of built form, BDG Architects have prepared an extensive architectural package (refer to **Appendix 5**) with visual illustrations and elevations that incorporate the proposed landscaping as shown in **Figure's 7 and 8** below.

**Figures 7 and 8** demonstrate the proposed papakāinga housing units will be set back within the site, with modest profiles, that will be partially screened by the proposed landscape planting. The modest size of the units will ensure the buildings do not dominate the landscape with areas free of buildings to retain the open feel and character of the rural environment. Additionally, to assist with reducing the proliferation of buildings, the papakāinga housing proposal has incorporated six duplexed units that will have a modest GFA of 98m<sup>2</sup>. These duplex units are proposed as dedicated kaumatua / kuia housing units, and will enable the provision of 12 units within six modest buildings. Further, it is proposed to use a mix of housing typologies and floor layouts to create visual interest and avoid a monotonous building façade when viewed from the wider and surrounding locality. This is considered to assist with providing visual breaks in the built form that will be complimented with a range of planting treatments throughout the site.



**Figure 8: Sections looking Towards Units 7 and 5 from Lam Road (Refer to Appendix 5)**



**Figure 9: Sections Looking North Towards Section 9 From Lamb Road (top image showing dwellings proposed adjacent to Lamb Road).**

With respect to the proposed community facilities; while it is acknowledged that these buildings are considerable larger than the residential units, the buildings have been designed to compliment the landform and can be compared to a traditional Marae. The varied roofline of the kohanga reo, gabled roof line of the community building and layout has been informed by Te Aupōuri and see

these buildings as an expression of their cultural identity and connection to Te Raite Station and Moekoraha Pā.



**Figure 10: Illustration of the Kohanga Reo and Community Building (southern facade)**

A Landscape Values Assessment (LVA) has been prepared by B&A and is enclosed as **Appendix 8**. The LVA has assessed the visual catchment of the proposal and considers that it to be relatively small and localised, largely due to the intervening landform and topography of the site and surrounds, existing vegetation and the small number of neighbouring houses being separated by substantive distances.

Overall, the LVA considers the adverse visual effects would be **low** for the following reasons:

- The majority of existing vegetation will be retained, including boundary planting adjacent to Lamb Road within the northern portion of the site (Section 8);
- The deliberate clustering of the papakāinga units reduces the overall visual impact of the development through preservation of open areas and broad views through the site;
- The proposal complies with the maximum height standards;
- The transient nature of the potential viewing audience, namely people driving past the site along Waitotahi Valley Road
- It is proposed to use low reflectivity and recessive colour palettes.

Notwithstanding that the LVA assess the visual effects of the proposal would be **low**; a comprehensive landscaping strategy has been prepared (refer to **Appendix 8**) which again has been prepared to compliment the needs of the whānau, and when implemented will further reduce the visual impact of the proposal. The landscaping plan has proposed a variety of specimen, low amenity, large shrub, low flammable, wetland, dryland (predominantly indigenous vegetation) and wastewater disposal field planting. The proposed landscaping will further screen the development from view and will visually enhance the road frontages of the sites, while providing enhanced amenity for residents within the site.

Taking into account the conclusions of the LVA, comprehensive landscaping strategy, low profile and varied built form; the bulk, built and building intensity of the papakāinga is considered to have less than minor adverse effects on the amenity and rural character on the surrounding and wider environment.

### 6.4.2 Rural Landscape and Amenity Values

A Landscape Visual Assessment (**LVA**) has been prepared by B&A and is attached as **Appendix 8** and includes catchment analysis from four potential viewpoints from the wider and localised environment. The LVA considers the viewing catchment to be very few given neighbouring residential units and the intervening landform and indigenous vegetation.

The LVA considers the bio-physical, sensory / perceptual values, associative and cultural values to contribute to the landscape values of the site. Rural values dominate the values of the area given the historic rural productive land use of the wider environment. The LVA considers that the magnitude of change will be low, with most of the features and elements retained with very minimal removal of existing vegetation proposed.

It is highlighted that the architectural and civil design layout has been informed by iterative advice. Overall, the LVA considers that landscape and visual effects resulting from the proposal will be very low, and considers the proposal has appropriately account for the necessary mitigation by incorporating the following factors:

- Relatively modest existing vegetation is proposed to be removed particularly within the Lamb Road reserve;
- Proposed house clustering and road alignment;
- Pedestrian path network;
- Proposed dark/recessive coloured house materials;
- Landscape proposals for screening and other amenity planting.

As such, no further mitigation is required subject to the implementation of the landscaping plan.

Taking account of the above, it is considered that the proposal results in less than minor adverse effects on the wider landscape and amenity values.

### 6.4.3 Transportation

A Traffic Impact Assessment (**TIA**) has been prepared by Team Traffic and is included as **Appendix 13**. The TIA includes a full analysis of the proposed design specifications and layout against the FNDC and FNDC's Engineering Standards. Given no subdivision is sought, private accessways are proposed to service the papakāinga housing units, with separate access, parking and manoeuvring proposed to the kohanga reo and community building.

The proposed papakāinga, kohanga reo and community facility will obtain access from Lamb Road, an unsealed local road with a signposted vehicle speed of 100km/hour, however, the TIA assesses the operating speed is estimated as being in the order of 60-65km/hour. Based on the assessed operating speeds, minimum sightlines of at least 98m are required.

Three new rural Type 1B rural vehicle crossings are proposed to service the proposal and will be designed and constructed in accordance with Sheet 21 of FNDC's engineering standards. The crossing points will accommodate two-way entry and exit and the TIA considers that they will be adequate to accommodate peak hour traffic. The sightlines to the papakāinga housing, kohanga reo and community building can all easily achieve the minimum sightlines subject to appropriate trimming / removal of the established vegetation on the northern side of

Lamb Road. Subject to agreement with Council, it is proposed to trim or remove this vegetation to ensure adequate sight lines can be achieved and maintained.

With respect to car parking, two spaces per residential unit is proposed and 20 car parking spaces are proposed to service the kohanga reo and community building, including two wide spaces and two accessible parking spaces. The carparking arrangements proposed exceed the minimum spaces demanded by Appendix 3 of the FNDP.

With respect to the internal private accessways, these are proposed at varying widths based on the number of household unit equivalents, anticipated traffic movements and visibility of the respective access. In relation to Section 8 (southern allotment), the accessway is proposed to accommodate two-way traffic from Lamb Road to the 'turning circle'. From the turning circle to the terminus, the proposed access will narrow to a 3.5m typical width with passing bays. The principle accessway to Section 9 is proposed as a double width, with a formed carriageway width of 6m. The accessway proposed to serve the 5-unit papakāinga cluster located in the south western corner of the Section 9 enables two-way entry / exit and will narrow to a single 3.5m carriageway. The private accessways proposed in Section 9 are designed to allow circulation to each residential, with private driveways and parking areas to each papakāinga dwelling.

The private accessways, private driveways and parking and manoeuvring areas have been assessed as part of the TIA, including tracking curve analysis to demonstrate adequate egress and ingress for private and heavy vehicles. The proposed arrangements have taken into account the minimum design requirements outlined in the FNDP and Engineering Standards, and are assessed by Team Traffic to be safe and appropriate.

In terms of traffic generation, the FNDP calculates the proposal to generate approximately 572 one-way daily traffic movements per day. The effects of the proposal with regard to traffic intensity factor on the roading network are considered below:

- The anticipated traffic intensity factor for the proposed development is 572 vehicle per day. This intensity is significantly higher than that permitted under the Plan but is described in the Transportation Assessment Report as a very low number from a traffic engineer perspective. Peak hour volumes are generally anticipated to be 10% of the daily total and in this case 57 vehicle movements/hour.
- The traffic engineer report considers that the proposed vehicle crossings will accommodate these peak vehicle movements each day without issue.
- There are no crash records or inherent issues with the layout of Lamb Road that compromise the roading network's ability to accommodate the proposed level of traffic intensity.

In addition to the effects of the traffic intensity factor on the safety and function of Lamb Road, it is necessary to consider the effects on local neighbourhoods:

- The papakainga development is proposed to accommodate residents across a range of ages, including elderly and young families. The varying ages of people residing onsite may reduce the number of vehicle movements typically anticipated from a development of this scale.
- The presence of a Kohanga Reo within the development may further reduce the likely vehicle movements to and from the site, with parents and caregivers able to walk to drop the children rather than driving as would be required were the childcare located further afield.

- Visually, the traffic intensity factor is unlikely to be discernible, with the exception of cars entering and exiting the site. This is because there is ample carparking within the site with all manoeuvring being achieved within the site's boundaries.
- Ample sightlines are achieved for the three entrances to the site which ensures that while the proposal will result in additional traffic on the road, the safety and function of Lamb Road is not compromised.

Overall, it is recognised that the proposal will result in effects in relation to traffic intensity factor, but that there are sufficient mitigating factors that mean the effects will be less than minor, and significantly it will not compromise the safety and function of Lamb Road.

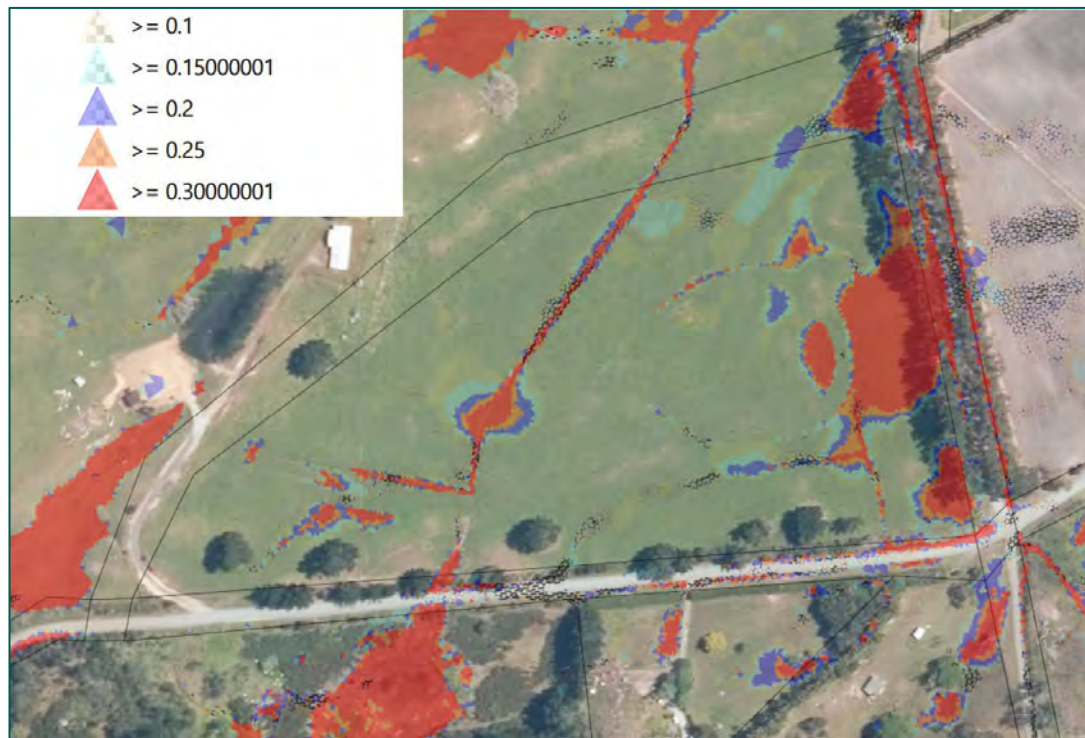
#### 6.4.4 Natural Hazard Effects

Ground conditions and slope stability was assessed by Soil & Rock via a Geotechnical Report provided at **Appendices 10** and **11**. The geotechnical investigations, including field surveys, drilling 20 hand augers and Dynamic Cone (Scala) Penetrometer testing prior to confirming the proposal to confirm the site was suitable for development. The Geotechnical Report confirms that no groundwater was encountered and that both Section 8 and 9 are suitable for development. Soil & Rock considers that Section 8 may be subject to soil creep on the broad 20 - 30° slopes. To address this, the Geotechnical Report recommends ground cover planting and that stormwater be appropriately controlled and dispersed to manage this.

Notwithstanding the above, Soil & Rock concludes the site is suitable for development subject to appropriate foundation design and stormwater management. As set out in the Landscape Plan proposed by this application, landscape planting is proposed over the steep slopes of Section 8 to assist and address this. Further, Soil & Rock's recommendations have informed Chester's civil design strategy which seeks to manage and control stormwater runoff from buildings and other paved surfaces by capturing, piping and dispersing stormwater at the base of the slopes to grassed swales or natural overland flow paths.

Following the completion of the architectural drawings, Soil & Rock reviewed the architectural plans for the proposal and confirms that they have appropriately accounted for the geotechnical considerations outlined in the geotechnical report.

Parts of Section 9 are subject to NRC's 1 in 100-year flood mapping, and as such no buildings are proposed in this location. Chester's Engineering (refer to **Appendix 6**) undertook a specific flood model and assessment for the site at Section 4 of their Site Suitability Report. The flood modelling suggests that there are localised areas of ponding in excess of 300mm in local depressions; and have been identified for earthworks/drainage improvement works during design, to ensure stormwater is drained to the main identified flow channel on site (see **Figure 9**).



**Figure 11: Site Specific Flood Modelling (Refer to Appendix 6)**

In addition to the proposed civil design strategy, the Site Suitability Report recommends that all dwellings should be constructed to maintain a 500mm freeboard above the 1% AEP event climate change flood water level perpendicular to the direction of flow at the upstream boundary of a given dwelling as per Far North District Council Engineering Standard 2023, Section 4.3.10.7 Freeboard Requirements. As such, it is anticipated that a condition of consent requiring appropriate freeboards be applied and determined as part of any building consent.

In relation to fire risk, the proposal ensures that all development will be setback a minimum of 20m from existing established vegetation. All contiguous landscaping proposed within 20m of residential buildings will comprise low-flammability plant species to ensure fire risk is appropriately managed.

Overall, natural hazards including flooding and site stability are considered to be appropriately accounted for with appropriate design solutions proposed to ensure the effects of natural hazards are considered to be less than minor.

#### 6.4.5 Earthworks and Construction Effects

The proposal involves 2,700m<sup>3</sup> cut and 5,650m<sup>3</sup> of fill over an area of 20,350m<sup>2</sup> to primarily form the private accessways, parking and manoeuvring areas for the papakāinga units and community facilities. The majority of earthworks proposed will be at depths and filling of no more than 1m. Some isolated cuts of up to 2m and is required to achieve appropriate gradients for the accessway within Section 8, however, the overall earthworks design for the proposal seeks to follow the natural contour of the landform (refer to Drawing 200 of **Appendix 6**). All excavated material will be retained on site, and is as fill or redistributed over the site.

An erosion and sediment control plan has been prepared by Chester's and it is proposed to install and implement these prior to the commencement of vegetation clearance and earthworks as follows:



- Undertaking earthworks and construction during the drier summer months to minimise likelihood of heavy rainfall and extended period of rainfall.
- Minimise duration and amount of exposed earth.
- Installation of sediment control bunds to divert clean water around the exposed earth site.
- Installation of silt fences/super silt fences in accordance with section F1.3/F1.4 of Auckland Councils Guidance Document 005 (GD05).
- Installation of silt sock sin accordance with section F1.5 of GD05.

In addition to the above, it is anticipated that an appropriate stabilised entrances will be constructed for heavy vehicles and machinery. The sites are considered to be sufficiently sized to ensure construction vehicles will be located within the site to avoid disruption on Lamb Road. Construction noise is anticipated to comply with the relevant standards.

With respect to temporary construction traffic, it is considered that this is unlikely as excavated material will be retained on site.

Further, all earthworks are proposed outside of the minimum 10m setback distance from the identified natural inland wetlands, and have been reviewed as part of the Ecological Report prepared by Wild Ecology provided as **Appendix 7**. The ecological assessment considers that appropriate erosion and sediment control measures are proposed to manage any potential adverse effects on the wetland.

In terms of construction effects generated by the proposal, it is proposed to utilise residential units that are to manufactured offsite and set on pile foundations. The offsite manufactured houses will ensure construction activities on the site will be reduced when compared with traditional construction methods, with the overall construction period considerably reduced. To ensure construction activities are appropriately managed, it is anticipated that a condition requiring a Construction Management Plan (**CMP**) would be imposed to ensure construction effects will be appropriately managed.

Taking into account the temporal nature of the effects, proposed mitigation measures, it is considered that the proposed earthworks will be adequately managed to a level that is less than minor and acceptable.

#### 6.4.6 Onsite Servicing

The site is not connected to public stormwater, potable water or wastewater networks. The civil and onsite servicing arrangements have been assessed by Chester Engineers (refer to **Appendix 6**), which have accounted for the geotechnical assessments enclosed at **Appendices 9** and **10**.

Section 4 above summarises the onsite servicing arrangements proposed as part of this application, and have been assessed and confirmed as suitable by Chester for the following reasons:

##### *Wastewater:*

The proposal can be adequately serviced by onsite wastewater treatment and disposal via a private network that connects each activity to a secondary treatment system that will discharge to a suitably sized disposal field. The systems have been designed for the necessary occupancy rates with secondary wastewater treatment and design flows of 16200 L/day (North) and 6815L/day

(South), and have been designed in accordance with TP58. The wastewater treatment system will be sufficiently setback from waterbodies and outside of flood susceptible areas. The proposed systems are appropriately setback from site boundaries, water courses and modelled flood areas on slopes that are less than 2.5%.

On this basis, onsite wastewater is considered to be adequate to ensure adverse effects will be appropriately managed to a level that is less than minor.

*Stormwater:*

The site measures 1,849ha and permits up to 277ha. The Architectural Plans summarises existing and proposed impermeable surfaces as (refer to Sheet 10-01 of **Appendix 6**) 42,973m<sup>2</sup> or less than 1% of the gross site area. However, given the concentrated nature of the proposal, Chester's have undertaken a specific stormwater assessment for the proposed arrangements. Stormwater runoff from buildings will be captured and piped to two 25,000L tanks for potable water re-use, with overflow discharged to grassy areas with outlets and rip rap proposed as required to minimise potential erosion. Stormwater from the communal and private driveways will be captured and directed to catchpits for treatment prior to discharge to natural overland flow paths.

To address the potential erosion effects from the discharge of uncontrolled stormwater from the accessway in Section 8, it is proposed to implement means to capture sediment prior to discharge to the base of the hillsides, whereby energy dissipation is proposed prior to the runoff flowing across the ground and following historic drainage patters. The topography of Section 9 avoids the need for energy dissipation, but it is proposed to capture the sediment before the stormwater discharges to the natural ground surface. Thus, both the effects of sediment and potential risk of erosion is adequately managed by the proposed stormwater network.

The stormwater strategy has been informed by 2D ROG flood modelling for a 1% AEP flood event and concludes that flood and stormwater flows correspond with NRC's Priority River Flood model.

Stormwater will be largely contained and managed within the site boundaries, with stormwater runoff generated from the proposal designed to follow natural drainage patterns that will continue to discharge to the existing farm drainage network.

Overall, taking account of the specific flood model for the site and overall size of the 1,849ha, stormwater is considered to be appropriately managed and treated to ensure adverse effects on the wider environment will be less than minor.

*Potable and Fire Fighting Water Supply:*

Potable water for the residential and community facilities are proposed via roof catchment and will be appropriately sized at the time of building consent. It is understood that there is an existing ground water bore that serves the existing farm house (adjacent to the proposed development) that is an alternate supply should that be required.

Fire fighting supply is proposed via communal water tanks, with a minimum of 50,000L strategically placed around the site to accord with the Standard New Zealand Publicly Available Specification 4509 (SNZ PAS 4509:2008) FW2 standards. This ensures an adequate supply will be located within 90m of each unit and accessible from the shared accessways as set out in Drawing 600 of Chester's civil drawings.

Overall, it is considered that Chester's have appropriately assessed and design onsite servicing arrangements for wastewater, stormwater, and water supply to ensure the proposal will be

adequately serviced while ensuring any adverse effects on the wider environment are appropriately managed. On this basis, adverse effects of the onsite servicing arrangements are considered to be less than minor on the wider environment.

#### 6.4.7 Productive Capacity, Fragmentation and Reverse Sensitivity Effects

Te Raite Station is predominantly LUC4, with areas of LUC6 (as mapped by the New Zealand Land Resource Inventory, NZLRI at a scale of 1:50,000<sup>1</sup>). While LUC4 has limitations for arable and cropping uses and is not classified as 'highly productive' (applicable to LUC 1 – 3) as defined in the National Policy Statement for Highly Productive Land, LUC4 is suitable for pastoral uses and some cropping and thus has productive capacity.

The proposal condenses development to a confined area of the site which limits adverse impact of productive land and ensures that the productive capacity of the farming unit and activities can be maintained. Further, Section 8 is located on the southern side of Lamb Road and is considered to have limited productive capacity given it is predominantly covered by high value indigenous vegetation, and wetland features. As such, potential fragmentation effects are considered to be adequately accounted for by focussing development within a localised area, in the southern portion of Te Raite Station.

With respect to reverse sensitivity, the papakāinga development is proposed in the southern most portion of the farm adjacent to a solar farm. In relation to Section 8, development is proposed along the ridgeline to take advantage of the rural outlook with the majority of the southern portion of the site covered in vegetation. It is proposed to retain vegetation on along the western road frontage boundary, with extensive enhancement planting proposed around the existing wetland feature, and eastern boundary. For Section 9, extensive boundary planting is proposed and is considered to mitigate reverse sensitivity that could potentially arise from the solar farm on the eastern boundary.

Taking account of the factors outlined above, adverse effects on productive capacity, fragmentation and reverse sensitivity are considered to be no more than minor.

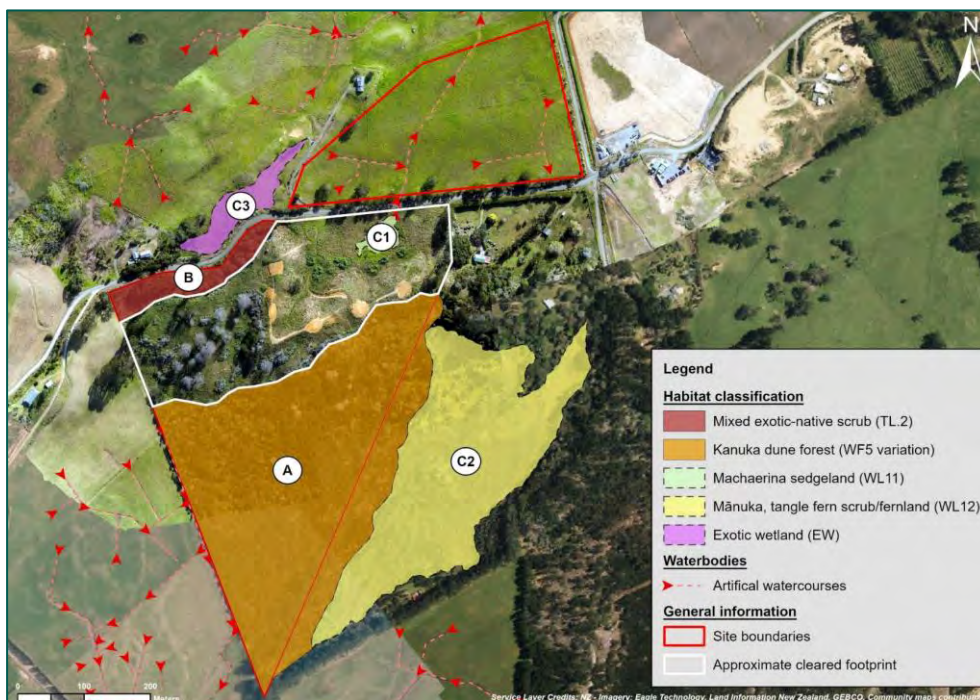
#### 6.4.8 Ecological Effects

An ecological assessment has been undertaken by Wild Ecology is enclosed as **Appendix 7**. Wild Ecology undertook desktop analysis and site investigations to identify and record any watercourses, natural inland wetlands and other ecological features within the site. Watercourses were classified in accordance with the Proposed Regional Plan for Northland with wetlands delineated and assessed in accordance with the National Policy Statement for Freshwater Management 2024 (**NPS-FM**). Indigenous vegetation was assessed in accordance with Appendix 5 of the Regional Policy Statement for Northland 2026 (**RPS**). Figures 11 and 12 below summarise the identified ecological features, with A, C1 and C2 representing the key ecological habitats of any value. C1 is not contained within the site and will not be impacted by the proposal. C3 is identified as an exotic wetland which Wild Ecology considers was likely formed within an artificial that has not been cleared or maintained. C3 lies outside of the development footprint and is not considered to be impacted by the proposal.

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<sup>1</sup> LUC classification sourced from [https://ourenvironment.scinfo.org.nz/maps-and-tools/app/Land%20Capability/lri\\_luc\\_main](https://ourenvironment.scinfo.org.nz/maps-and-tools/app/Land%20Capability/lri_luc_main)

A summary of the ecological values associated with Areas A, C1 and C2 is summarised in Table 3 of the Wild Ecology report. Area A is comprised of regenerating kanuka dune forest (WF5 variation) and forms part of the Arethusa Swamp (NO3039) PNAP Aupōuri Ecological District, and is assessed as having a **moderate – high** ecological value. C1 is a natural inland wetland, comprising critically endangered Machaerina sedgeland and is assessed as having a moderate- high ecological value. Area B is a mixed exotic and regenerating scrub and is assessed as have a low ecological value. As such, Area’s C1 and A are assessed as significant in accordance with Appendix 5 of the RPS.



**Figure 12: Identified Habitats (refer to Appendix 4)**

The proposal involves clearance of the remaining wilding pines and other exotics through the site. The remaining wilding pines have been ‘drill and filled’ in accordance with the recommendations of the report and with either be felled and kept on site to decompose or removed for firewood.

A small amount of indigenous vegetation clearance is proposed at the very northern edge of Area A to accommodate the proposed private accessway. This area has been conservatively calculated to be between 30 -50m<sup>2</sup>, which is well below the PDP’s 100m<sup>2</sup> clearance threshold.

The site layout, civil infrastructure strategy and landscaping plan has been informed in an iterative matter by the ecological advice of Wild Ecology. As shown in the architectural, civil and landscape plans, all buildings and impermeable surfaces are setback from wetland area’s by more than 15m or more. The landscaping strategy (prepared by B&A, attached as **Appendix 8**) has adopted appropriate indigenous species to enhance the ecological features. In particular, enhancement planting is proposed at the wetland margin to establish a transitional area between freshwater wetland and dune slack forest as part of the development proposal.

The proposed development focuses on areas that have been historically cleared and thus will reduce impact on areas of ecological significance. Furthermore, the activity presents an opportunity for the landowners to be more actively engaged in the protection and enhancement of ecological areas on the site with residents residing so nearby. The Ecological Report identifies a

site-specific Ecological Management Plan and the implementation of pest animal control as opportunities to further protect and encourage native species such as lizards and bats. The landowner anticipates that an Ecological Management Plan would form part of condition of consent.

With respect to hydraulic neutrality of the wetland features, Wild Ecology considers the proposed stormwater arrangements will have an overall low effect with mitigation measures in place. The network will convey and discharge flows via wingwall outlets to existing low-lying points (primarily roadside or farm drains) and no earthworks for the construction and management of the network will take place within a 10m setback of the natural inland wetlands on site.

Finally, Wild Ecology recommends that an Ecological Management Plan be prepared a part of the proposal to maintain and enhance the ecological values present at the site. This has been adopted as part of the proposal (refer to Section 4 above), as such a condition of consent requiring this is anticipated prior to commencing physical works within Section 8.

Overall, the proposal is considered to have appropriately accounted for the ecological features present within the site and has been designed to ensure these ecological values present at the site will be maintained and enhanced. Adverse effects on ecological values are considered to be negligible – less than minor.

#### 6.4.9 Māori Cultural Values

Te Aupōuri have prepared a brief summary that outlines their relationship and summarises the history of Te Raite Station and Moekoraha Pā (at **Appendix 2**) and provides the Māori cultural context and value associated with this site. The papakāinga housing and community facility is proposed for the purposes of enabling Te Aupōuri members to return and connect to their ancestral land.

No cultural values are considered to arise from this proposal.

#### 6.4.10 Cumulative Effects

It is considered that the proposed papakāinga development will not tip the balance in terms of the cumulative effects of non-compliances associated with the proposed residential development to a point where the existing amenity and character of the locality will fundamentally change for the following reasons:

- The Rural Production zone provides for a residential intensity at a density of one unit per 12ha where each unit maintains a minimum exclusive use area of 3,000m<sup>2</sup> around each respective uni. In this instance, all units within Section 8 maintain the relevant exclusive use areas, with the 11.7ha balance provided elsewhere within the site. In terms of Section 9, the relevant exclusive use area cannot be achieved due to the clustered nature of the units and circular road layout proposed. Irrespective of this, the 1,849ha site and clustered papakāinga development is considered to be appropriate in the context of a papakāinga development, in line with traditional papakāinga design principles;
- The proposed onsite infrastructure arrangements are considered to adequately service the development to manage potential adverse effects associated with the proposal;
- Each papakāinga unit will be sufficiently serviced by safe and efficient access and provided with ample parking areas;

- The 1,849ha site is sufficiently large to accommodate intensity effects associated within the kohanga reo and community facility;
- The ecological integrity, functionality and values of the site will be maintained and enhanced; and
- Access and private accessways for the proposal are sufficiently designed to accommodate the proposed activity, while traffic generation from the papakāinga development can be adequately accommodated by Lamb Road and the surrounding transport network.

## 6.5 Summary of Effects

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Overall, it is considered that any adverse effects on the environment relating to this proposal will be less than minor.

## 6.6 Public Notification Conclusion

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Having undertaken the section 95A public notification tests, the following conclusions are reached:

- Under step 1, public notification is not mandatory;
- Under step 2, public notification is not precluded;
- Under step 3, public notification is not required as it is considered that the activity will result in minor adverse effects; and
- Under step 4, there are no special circumstances.

Therefore, based on the conclusions reached under steps 3 and 4, it is recommended that this application be processed without public notification.

## 7.0 Limited Notification Assessment (Sections 95B, 95E to 95G)

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### 7.1 Assessment of Steps 1 to 4 (Sections 95B)

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If the application is not publicly notified under section 95A, the council must follow the steps set out in section 95B to determine whether to limited notify the application. These steps are addressed in the statutory order below.

#### 7.1.1 Step 1: Certain affected protected customary rights groups must be notified

Step 1 requires limited notification where there are any affected protected customary rights groups or customary marine title groups; or affected persons under a statutory acknowledgement affecting the land.

The above does not apply to this proposal.

### 7.1.2 Step 2: If not required by step 1, limited notification precluded in certain circumstances

Step 2 describes that limited notification is precluded where all applicable rules and national environmental standards preclude limited notification; or the application is for a controlled activity (other than the subdivision of land).

In this case, the applicable rules do not preclude limited notification and the proposal is not a controlled activity. Therefore, limited notification is not precluded.

### 7.1.3 Step 3: If not precluded by step 2, certain other affected persons must be notified

Step 3 requires that, where limited notification is not precluded under step 2 above, a determination must be made as to whether any of the following persons are affected persons:

- In the case of a boundary activity, an owner of an allotment with an infringed boundary;
- In the case of any other activity, a person affected in accordance with s95E.

The application is not for a boundary activity, and therefore an assessment in accordance with section 95E is required and is set out below.

Overall, it is considered that any adverse effects on persons will be less than minor, and accordingly, that no persons are adversely affected.

### 7.1.4 Step 4: Further notification in special circumstances

In addition to the findings of the previous steps, the council is also required to determine whether special circumstances exist in relation to the application that warrant notification of the application to any other persons not already determined as eligible for limited notification.

In this instance, having regard to the assessment in section 6.1.4 above, it is considered that special circumstances do not apply.

## 7.2 Section 95E Statutory Matters

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If the application is not publicly notified, a council must decide if there are any affected persons and give limited notification to those persons. A person is affected if the effects of the activity on that person are minor or more than minor (but not less than minor).

In deciding who is an affected person under section 95E:

- Adverse effects permitted by a rule in a plan or national environmental standard (the 'permitted baseline') may be disregarded;
- Only those effects that relate to a matter of control or discretion can be considered (in the case of controlled or restricted discretionary activities); and
- The adverse effects on those persons who have provided their written approval must be disregarded.

These matters were addressed in section 6.2 above, and no written approvals have been obtained.

Having regard to the above provisions, an assessment is provided below.

## 7.3 Assessment of Effects on Persons

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Adverse effects in relation to rural character, amenity, building intensity and transportation on persons are considered below.

Wider effects, such as rural character, amenity, building intensity, transportation, natural hazards, earthworks and construction, onsite servicing, productive capacity, fragmentation and reverse sensitivity, ecological and biodiversity, Māori cultural values and cumulative effects were considered in section 6.4 above, and considered to be less than minor.

### 7.3.1 North East – Persons at 38 Elingamite Drive

38 Elingamite is located to the north – east of the subject site and accommodates a residential unit that is located approximately 280m from the development area. The papakāinga would likely be visible to the existing residential unit, however, is considered to be affected by less than minor adverse effects for the following reasons:

- Existing shelterbelt planting within 38 Elingamite Drive assists with obscuring views to and from the proposed papakāinga activities;
- Built form proposed as part of this development are considered modest footprints with low profile building heights to ensure buildings will not dominate the landscape;
- A comprehensive landscape strategy has been prepared, and includes establishing a fast-growing boundary hedgerow to assist with softening and obscuring built form proposed;

Taking account of the orientation and outdoor living areas at 38 Elingamite Drive in conjunction with the existing intervening vegetation and proposed landscape planting, adverse effects are considered less than minor.

### 7.3.2 East – Persons at 93, 119, 121 and 124 Lamb Road

The properties to the east of the application site are currently under construction to establish a solar farm consented by RC 2220800. A copy of the consented solar farm is provided as **Appendix 4**. The proposed residential activities and community facilities have the potential to give rise to reverse sensitivity effects to the adjacent solar farm. To address this, the residential activities are sufficiently setback from the common boundaries and oriented to the north and north west. In addition, it is proposed to establish landscape planting at the common boundaries to create a screen between the two properties. These factors, in conjunction with the separation buffer provided by the Elingamite Road are considered to ensure any potential reverse sensitivity effects will be appropriately managed. Therefore, potential adverse effects are considered to be less than minor.

### West – 208, 213 and 216 Lamb Road

213 Lamb Road is located on the southern side of Lamb Road and shares a boundary with Section 8. There is one existing residential unit and a number of ancillary farm buildings within the property. Views from this property to the proposed papakāinga development will largely be obscured by intervening topography and vegetation and is unlikely to have views into the either Section 8 or 9. The persons occupying this property will experience passing glimpse of the development when travelling past the papakāinga, however, this is not considered to result in adverse effects that are minor or more.



The proposed papakāinga within Section 9 will be visible from 208 and 2016 Lamb Road, however, these views will be from distances of approximately 260 and 650m respectively. Development within Section 8 is unlikely to be visible due to existing vegetation and topography. To assist with breaking up the built form proposed within Section 9, fast growing boundary planting is proposed along the western boundary of proposed Section 9 to establish as hedge row vegetation. As set out in the LVA, this vegetation will assist with screening of the proposed built form. In addition, landscape planting is proposed throughout the rest of the development to soften the appearance of buildings and proposed driveways throughout. In addition, the clustered building layout ensures that the site will retain open grassed areas with broad views through the proposal to ensure rural character would be maintained.

On this basis, and taking into account the considered building layout, comprehensive landscape strategy. Existing topography and vegetation, and the long separation distances between the properties, adverse effects are considered to be less than minor.

### 7.3.3 South – South East – 149, 133A, 133Aand Lot 1 Deposited Plan 193976

The above properties are located south, south east and east of the application site. 149, 133A and 133B are located adjacent to Lamb Road and are located at a slight elevation with outlooks towards Section 9. The building form, natural and recessive building materials and architectural design of the kohanga reo and community buildings are considered to create an attractive building form that will largely obscure the papakāinga housing proposed in the northern portion of Section 9. The landscape strategy proposed for Section 9 seeks to establish a 5m wide landscape buffer along the frontage of Lamb Road, with specimen trees planted throughout to establish variation in vegetation heights. The proposed planting is considered to further assist with softening the appearance of the proposed kohanga reo, community facility and other papakāinga housing units. The landscape planting in conjunction with the considered architectural design of the buildings will ensure adverse effects from the proposal on properties to the south, south east will be less than minor. Further, there is an established shelterbelt along Lamb Roads boundary that assist with screening the proposal.

With respect to development within Section 8, the nearest residential unit (Unit 5) will be setback approximately 80m from the boundary of 149 Lamb Road ensuring a generous separation buffer between the two properties. With respect to the private accessway, the nearest part of the accessway will be approximately 20m from the site boundary. The sealed pavement surface is considered to assist with vehicle noise that could arise from the proposal. To assist with any light spill generated by passing vehicles, landscape planting is proposed between the private accessway and boundary of 149 Lamb Road.

Furthermore, the landscaping in conjunction with the intervening topography means that only Unit's 5 and 6 are likely to be visible both from the public realm and adjacent land to the east.

Taking these factors into account, the proposal is considered to have less than minor adverse effects on adjacent land to the east.

### 7.3.4 Summary of Effects

Taking the above into account, it is considered that any adverse effects on persons at the aforementioned properties will be less than minor in relation to rural character, amenity, building intensity and transportation effects. Wider effects, including rural character, amenity, building intensity, transportation, natural hazards, earthworks and construction, onsite servicing,

productive capacity, fragmentation and reverse sensitivity, ecological and biodiversity, Māori cultural values and cumulative effects were assessed in section 6.4 above and are considered to be no more than minor.

It is considered, therefore, that there are no adversely affected persons in relation to this proposal.

## 7.4 Limited Notification Conclusion

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Having undertaken the section 95B limited notification tests, the following conclusions are reached:

- Under step 1, limited notification is not mandatory;
- Under step 2, limited notification is not precluded;
- Under step 3, limited notification is not required as it is considered that the activity will not result in any adversely affected persons; and
- Under step 4, there are no special circumstances.

Therefore, it is recommended that this application be processed without limited notification.

## 8.0 Consideration of Applications (Section 104)

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### 8.1 Statutory Matters

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As a non-complying activity, section 104D of the Act states that a council may only grant the application if:

- (a) adverse effects will be no more than minor; or
- (b) the activity is not contrary to the objectives and policies of the relevant plans.

### 8.2 Weighting of Proposed Plan Changes: Far North Proposed District Plan

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The Far North Proposed District Plan is currently progressing through the Hearings Process. These are anticipated to extend until September 2025 before moving to a Decision.

It is considered that the proposal can be predominantly assessed against the FNDP provisions. There are some provisions of the Far North Proposed District Plan (**PDP**) which have immediate legal effect, including Earthworks, Indigenous Biodiversity and Historical and Cultural Values, an assessment of these provisions has been included as **Appendix 12**.

Under the PDP, the site is zoned Rural Production and is subject to the Treaty Settlement Overlay (**TSL Overlay**) in recognition of this land being returned to Te Aupōuri as part of the Te Aupōuri Treaty Settlement Act 2015. An assessment of the proposal against the relevant FNDP and PDP objectives and policies is provided below. While the outcomes sought in the Rural Production Zone are somewhat similar, the TSL Overlay introduces a new layer of considerations that are considered to be a step change to the FNDP.

As the PDP is still going through the hearings process and no decisions have been issued, it is generally considered that greater weight should be given to the FNDP provisions.

## 9.0 Effects on the Environment (Section 104(1)(A))

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Having regard to the actual and potential effects on the environment of the activity resulting from the proposal, it was concluded in the assessment above that any wider adverse effects relating to the proposal will be less than minor and that no persons would be adversely affected by the proposal.

Further, it is considered that the proposal will also result in positive effects including:

### 9.1 Positive Effects

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It is considered that the proposal will also result in positive effects including:

- Enables tangata whenua to re-establish connection with their whenua and provide for the social, economic and cultural needs of their community;
- Ecological enhancement of ecological features within the site, including a historically degraded natural inland wetland through implementation of enhancement planting and ongoing management through the implementation of an EMP;
- The provision of much needed housing within Te Hiku, a location experiencing a housing shortfall that is not otherwise being provided by the market;
- The provision of quality housing that is intended to enable Te Aupōuri people to live and work within their rohe;
- Construction of a kohanga reo and community facilities that will enable Te Aupōuri to support the implementation of its te reo Māori and cultural initiatives through the provision of facilities that support the revitalisation of te reo Māori; and
- The construction of a community facility that will enable the delivery of social and health initiatives in the localised community.

### 9.2 Summary

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Overall, it is considered that when taking into account the positive effects, any actual and potential adverse effects on the environment of allowing the activity are less than minor.

## 10.0 District Plan and Statutory Documents (Section 104(1)(B))

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### 10.1 Objectives and Policies of the National Policy Statement for Freshwater Management 2020

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The National Policy Statement for Freshwater Management 2020 (**NPS-FM**) replaced the NPS-FM 2014 and came into effect on 3 August 2020.

#### 10.1.1 2.1 Objective

The NPS-FM includes one objective as follows:

*“(1) The objective of this National Policy Statement is to ensure that natural and physical resources are managed in a way that prioritises:*

- (a) *first, the health and well-being of water bodies and freshwater ecosystems*
- (b) *second, the health needs of people (such as drinking water)*
- (c) *third, the ability of people and communities to provide for their social, economic, and cultural well-being, now and in the future.”*

Objective 2.1 of the NPS-FM seeks to manage natural and physical resources through setting a clear hierarchy for which the resources should be managed. Specifically, it seeks to prioritise the health and wellbeing of water bodies and freshwater ecosystems over all other matters.

The proposal is considered to have appropriately considered these matters through the assessment and classification of all watercourses within the site boundaries. Within the development site, one natural inland wetland has been identified and delineated to ensure the proposal accounts for its long-term protection.

### 10.1.2 2.2 Policies

The NPS-FM includes 15 policies that seek to manage freshwater in a way that gives effect to Te Mana o Te Wai. Of particular relevance to this proposal is Policy 6 which seeks:

*“Policy 6: There is no further loss of extent of natural inland wetlands, their values are protected, and their restoration is promoted.”*

An ecological assessment has been prepared by Wild Ecology and is enclosed as **Appendix 7**. The ecological assessment included the identification and classification of all watercourse within the development site. Wild Ecology concludes that there are two natural inland wetlands identified within development extent. As set out in section 5.3 of this report, no earthworks or development is proposed within 10m setback of the identified wetlands and the works proposed within 100m of the wetland are not considered to result in the partial or complete drainage of the natural inland wetland features. The proposal is assessed as a permitted activity under the NPS-FM.

Overall, the proposal is considered to accord with the relevant policies of the NPS-FM.

## 10.2 Objectives and Policies of the National Policy Statement for Highly Productive Land 2022

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The National Policy Statement for Highly Productive Land 2022 (**NPS-HP**) came into force on 17 October 2022. The NPS-HP seeks to protect highly productive land for use in land-based primary production, for current and future generations.

The NPS-HP defines highly productive land in Part 1.3 as meaning:

*“highly productive land means land that has been mapped in accordance with clause 3.4 and is included in an operative regional policy statement as required by clause 3.5 (but see clause 3.5(7) for what is treated as highly productive land before the maps are included in an operative regional policy statement and clause 3.5(6) for when land is rezoned and therefore ceases to be highly productive land).”*

As highly productive land is not yet mapped by the Northland Regional Council, clause 3.5(7) is relevant and states:

*(7) Until a regional policy statement containing maps of highly productive land in the region is operative, each relevant territorial authority and consent authority must apply this National*

*Policy Statement as if references to highly productive land were references to land that, at the commencement date:*

- a) *Is*
  - i. *zoned general rural or rural production; and*
  - ii. *LUC 1, 2, or 3 land; but*
- b) *is not:*
  - i. *identified for future urban development; or*
  - ii. *subject to a Council initiated, or an adopted, notified plan change to rezone it from general rural or rural production to urban or rural lifestyle.*

**Comment:** With respect to clause 7(a), the land is zoned for rural production activities under the FNDP and PDP, but does not contain soil's classed LUC 1, 2 or 3.

As such, the NPS-HP is not considered relevant. Notwithstanding this, the NPS-HP does provide for the development of Specified Māori Land should it be relevant. The subject land is considered to meet this definition via clause (f) as it is land held by Te Aupōuri and was land transferred from the Crown as part of their Treaty Settlement.

## 10.3 Objectives and Policies of the Regional Policy Statement for Northland

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The Northland Regional Policy Statement (**RPS**) covers the management of natural and physical resources across the Northland Region. The provisions within the RPS give guidance at a higher planning level in terms of the significant regional issues. As such it does not contain specific rules that trigger the requirement for consent but rather give guidance to consent applications and the development of District Plans on a regional level.

The relevant objectives and policies to the proposal are assessed below.

### 10.3.1 Part 3 Objectives

Amongst other things the RPS includes objectives for indigenous ecosystems and biodiversity, regional form and tangata whenua matters as set out below.

#### **3.3 Ecological flows and water levels**

*Maintain flows, flow variability and water levels necessary to safeguard the lifesupporting capacity, ecosystem processes, indigenous species and the associated ecosystems of freshwater.*

#### **3.4 Indigenous ecosystems and biodiversity**

*Safeguard Northland's ecological integrity by:*

- a) *Protecting areas of significant indigenous vegetation and significant habitats of indigenous fauna;*
- a) *Maintaining the extent and diversity of indigenous ecosystems and habitats in the region; and*
- b) *Where practicable, enhancing indigenous ecosystems and habitats, particularly where this contributes to the reduction in the overall threat status of regionally and nationally threatened species.*

**Comment:** An ecological assessment prepared by Wild Ecology is attached and enclosed at **Appendix 7** of this AEE. All ecological features have been identified and their value assessed as part of this proposal. Some minor vegetation clearance is required to enable the construction of a safe private

accessway; however, the extent of these clearance works will be less than 100m and is not considered to adversely impact the overall ecological value of the indigenous vegetation and habitats present at the site. The hydraulic neutrality of wetland environments will be maintained by the proposal. The proposal is considered to accord with the directions of objectives 3.3 and 3.4 of the RPS.

### **3.11 Regional form**

*Northland has sustainable built environments that effectively integrate infrastructure with subdivision, use and development, and have a sense of place, identity and a range of lifestyle, employment and transport choices.*

**Comment:** The proposed papakāinga development will be located approximately 1.7km from the Pukenui township. Onsite servicing for the proposal has taken a comprehensive design approach to ensure the development will be appropriately managed. The proposal is considered to be in keeping with the rural character of the area and is considered to be in keeping with the lifestyle of the area.

### **3.12 Tangata whenua role in decision-making**

*Tangata whenua kaitiaki role is recognised and provided for in decision-making over natural and physical resources.*

**Comment:** Te Aupōuri area are the mana whenua of the area, and this proposal represents their cultural identity and values over this whenua, in a manner that is consistent with their role as kaitiaki.

## 10.3.2 Part 4 Policies

The following policies are considered relevant:

### **4.4.1 Policy – Maintaining and protecting significant ecological areas and habitats**

- (3) *Outside the coastal environment and where clause (1) does not apply, avoid, remedy or mitigate adverse effects of subdivision, use and development so they are not significant on any of the following:*
- a) *Areas of predominantly indigenous vegetation;*
  - b) *Habitats of indigenous species that are important for recreational, commercial, traditional or cultural purposes;*
  - c) *Indigenous ecosystems and habitats that are particularly vulnerable to modification, including wetlands, dunelands, northern wet heathlands, headwater streams, floodplains and margins of freshwater bodies, spawning and nursery areas.*

**Comment:** The application site is outside of the RPS coastal environment, as such policy 4.4.1(3) is considered to be most relevant. An assessment of the indigenous biodiversity and ecological habitats has been undertaken against Appendix 5 of the RPS. Wild Ecology concludes that Areas C1 and A have moderate to high ecological values and are ‘significant’ habitats in accordance with Appendix 5 of the RPS.

A small area of vegetation clearance is proposed to the northern margin of Area A which is a kanuka forest to facilitate the construction of private access within Section 9. The location of the accessway is required to ensure safe and efficient access to the site can be established, while maintaining the stability of the hillside and minimising the overall volumes and extent of

earthworks proposed. The small amount of vegetation clearance proposed will be less than 100m and is not considered to have a discernible impact on the ecological value of Area A.

The proposal does not result in the loss or impact on Area C1 being a threatened machearina sedgeland wetland.

Overall, the proposal is considered to accord with policy 4.4.1 of the RPS.

#### **5.1.1 Policy – Planned and coordinated development**

*Subdivision, use and development should be located, designed and built in a planned and coordinated manner which:*

- a) **Is guided by the ‘Regional Form and Development Guidelines’ in Appendix 2;**
- b) *Is guided by the ‘Regional Urban Design Guidelines’ in Appendix 2 when it is urban in nature;*
- c) **Recognises and addresses potential cumulative effects of subdivision, use, and development, and is based on sufficient information to allow assessment of the potential long-term effects;**
- d) *Is integrated with the development, funding, implementation, and operation of transport, energy, water, waste, and other infrastructure;*
- e) **Should not result in incompatible land uses in close proximity and avoids the potential for reverse sensitivity;**
- f) **Ensures that plan changes and subdivision to / in a primary production zone, do not materially reduce the potential for soil-based primary production on land with highly versatile soils<sup>10</sup>, or if they do, the net public benefit exceeds the reduced potential for soil-based primary production activities; and**
- g) *Maintains or enhances the sense of place and character of the surrounding environment except where changes are anticipated by approved regional or district council growth strategies and / or district or regional plan provisions.*
- h) **Is or will be serviced by necessary infrastructure.**

#### **[our emphasis added]**

Particular consideration has been given to 5.1.1(a), (c), (e), (f) and (h) and it is considered that the proposal accords with the relevant directions of these policies. In particular, the proposed development incorporates quality design principles including context, character, choice, connections, creativity custodianship and collaboration. With specific reference to 5.1.1(h) the proposal can be adequately serviced in terms of transportation, water, wastewater, and stormwater by existing and proposed infrastructure as highlighted within the Site Suitability Report (see Appendix 6).

With respect to (d), (e) and (f), while the papakāinga development is proposed within the rural environment it is not considered to give rise to land use incompatibility and reverse sensitivity effects. This is achieved through the implementation of a comprehensive landscape strategy and taking into account the existing activities established within the localised environment. The development is not proposed on soils that are classified as LUC 1 – 3, and is not considered to hinder any productive land uses that could occur on adjacent land.

In addition, the proposed development is considered to be compatible with adjacent predominantly residential land uses and maintains the underlying sense of place and character of

the surrounding environment in accordance with the level of development that is anticipated on the subject site in accordance with the expectations in the PDP, thereby satisfying 5.1.1(e) and (g).

For these reasons, it is considered that the proposal is consistent with the relevant RPS provisions.

### **8.3.2 Policy – Marae and Papakāinga**

*The regional and district councils shall recognise the historical, cultural, and social importance of marae and papa kāinga, and enable their ongoing use and development in regional and district plans.*

**Comment:** Policy 8.3.2 provides specifically for marae and papakāinga and directs that district and regional councils shall recognise the historical and social importance of papakāinga, and enable their ongoing use and development within their respective plans. The proposal is for papakāinga housing and is considered to be relevant to this policy, and council's are required to recognise and enable such activities.

## 10.4 Objectives and Policies of the Operative Far North District Plan

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The FNDP was made operative in part in 2007 and fully operative in 2009. Below is an assessment of the relevant objectives and policies to the proposal.

### 10.4.1 Part – District-wide Provisions: Chapter 12 – Soils & Minerals

Objectives contained in 12.3.3 seeks to manage adverse effects associated with excavation and filling in an integrated manner with the Northland Regional Council. The objectives seek to maintain the life supporting capacity of soils, while ensuring adverse effects are either avoided, remedied or mitigated.

The proposal involves the excavation and filling to establish safe and efficient access, parking and manoeuvring areas and has minimised earthworks to reduce the visual impacts of earthworks. Temporary earthworks effects will be managed through the use of erosion and sediment controls that have been designed in accordance with best practice. Landscaping ensures that any remaining exposed faces will be replanted.

Overall, the proposal is considered to accord with the FNDP objectives for earthworks.

### 10.4.2 Part – District-wide Provisions: Chapter 15 – Transportation

15.1.3 objectives seek to minimise the adverse effects of traffic through the provision of appropriate parking, access, and promotes the safe and efficient movement / circulation of vehicles and pedestrians. 15.1.4 policies seek to achieve this by ensuring an appropriate evaluation of the activities is undertaken at the time of development that ensures appropriate provisions of parking and associated matters is undertaken as part of any proposal.

As set out above, the proposal exceeds the minimum number of required car parking spaces for the papakāinga and community facility activities. A TIA has been prepared by Team Traffic which concludes that access proposed to the site is safe and efficient and does not compromise the safety and efficiency of Lamb Road and the surrounding transport network.

In summary, the proposal is considered to be consistent with Chapter 15 – Transportation.



### 10.4.3 Chapter 8: Rural Environment – Rural Production Zone

The Objectives of the Rural Production Zone relate to enabling efficient use and development of the Rural Productive Zone, promoting sustainable management of natural and physical resources, avoiding, remedying or mitigating conflicts between land use activities and the adverse effects of incompatible use or development on natural and physical resources and amenity values. Objective 8.6.3.2 seeks 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 wellbeing.

The proposal achieves Objective 8.6.3.2 by maintaining the productive function of the site while providing housing and community development which provides for the social and cultural wellbeing of tangata whenua and re-establishes connection with their land.

Policy 8.6.4.1 seeks to enable farming and rural production activities as well as a wide range of activities while ensuring that the adverse effects on the environment, including reverse sensitivity effects, are avoided, remedied or mitigated and are not to the detriment of rural productivity. Policy 8.6.4.7 refers to avoiding the actual and potential adverse effects of conflicting land use activities, while Policy 8.6.4.8 refers to providing separation from other activities where adverse effects occur.

With regard to the policies seeking to manage the effects of the proposal, the assessment in Section 7 demonstrates that the adverse effects of the proposal will be no less than minor. Reverse sensitivity and land use incompatibility effects are not considered to arise, with appropriate mitigation proposed to manage this.

Further, it is noted that the configuration of the development onsite ensures the effect on the productive capacity of the farm is minimised and the proposal is not considered to compromise the function of rural activities in the surrounding environment. The topography of the site, existing vegetation and proposed landscaping as well as the separation from other neighbouring properties means that adverse on character and amenity are avoided.

Overall, the proposal is considered to be consistent with the anticipated outcomes of the Rural Production Zone.

## 10.5 Objectives and Policies of the Far North Proposed District Plan

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### 10.5.1 Part 2 – District Wide Matters / General District Wide Matters / Treaty Settlement Land Overlay

The objectives of the Treaty Settlement Land Overlay include:

*TSL - O1 The viability of Treaty Settlement Land is ensured for future generations.*

*TSL - O2 Treaty Settlement Land returned as commercial redress supports social, cultural and economic development.*

*TSL - O3 Treaty Settlement Land returned as cultural redress provides for the on-going relationship tangata whenua has with their land.*

*TSL - O4 Use and development on Treaty Settlement Land reflects the sustainable carrying capacity of the land and surrounding environment*

Policies TLS -P1 and P2 seek to achieve the objectives by providing for the use and development of land and enabling a range of activities, including papakāinga. While TSL-P3 and P4 seek to provide and manage development and land use to ensure it is compatible with the surrounding environment effects are addressed.

The proposed development achieves the objectives of the zone for the following reasons:

- The proposal will re-establish the connection with the whenua by providing an inter-generational papakainga development. The ability for Tamariki to be looked after at the Kohanga Reo and a community building for residents further enhances this connection.
- The combination of housing, childcare and community gatherings provides for the social and cultural wellbeing of tangata whenua now and for future generations.

In terms of achieving the policies of the Treaty Settlement Overlay, the assessments included in Section 7 and 8 demonstrates that the effects of the proposal are less than minor with regard to effects on Character, Amenity and Buildings Intensity, Transportation, Earthworks, Vegetation Clearance and Ecological Factors and Productive Capacity. In addition to the assessment in Sections 7 and 8, the following matters are noted:

- The proposal relates to a small area of a large productive farm. The configuration of dwellings onsite ensures that the productive capacity of the underlying zone is retained.
- The proposal has limited visibility from the wider surrounding environment due to inherent site factors, namely topography, and additional landscaping is proposed to further mitigate visual effects of the proposal. The design and character of the proposed buildings is single storey and includes materials and colours which will further conceal the development.

Overall, the proposal is considered to accord with the objectives and policies of the PDP TSL Overlay.

## 10.6 Summary

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It is considered that the proposed development is generally in accordance with the objectives and policies of the NPS-FW, RPS, FNDP and PDP.

## 11.0 Part 2 Matters

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Section 5 of Part 2 identifies the purpose of the RMA as being the sustainable management of natural and physical resources. This means managing the use, development and protection of natural and physical resources in a way that enables people and communities to provide for their social, cultural and economic well-being and health and safety while sustaining those resources for future generations, protecting the life supporting capacity of ecosystems, and avoiding, remedying or mitigating adverse effects on the environment.

Section 6 of the Act sets out a number of matters of national importance including (but not limited to) the protection of outstanding natural features and landscapes and historic heritage from inappropriate subdivision, use and development.

Section 7 identifies a number of “other matters” to be given particular regard by Council and includes (but is not limited to) Kaitiakitanga, the efficient use of natural and physical resources, the

maintenance and enhancement of amenity values, and maintenance and enhancement of the quality of the environment.

Section 8 requires Council to take into account the principles of the Treaty of Waitangi.

Overall, as the effects of the proposal are considered to be less than minor, and the proposal accords with the relevant FNDP objectives and policies, it is considered that the proposal will not offend against the general resource management principles set out in Part 2 of the Act.

## 12.0 Other Matters (Section 104(1)(C))

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### 12.1 Record of Title Interests

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The Record of Title for the site are subject to a number of interests (refer **Appendix 1**), however, these are not considered relevant to the proposal as they do not apply do the development extent within Sections 8 or 9.

## 13.0 Section 104D Non-complying Activities

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To be able to grant consent to a non-complying activity, a council must be satisfied that either the adverse effects of the activity on the environment will be minor (s104D(1)(a)), or the proposed activity will not be contrary to the objectives and policies of a proposed plan or plan (s104D(1)(b)). This consideration is commonly known as the 'threshold test' or the 'gateway test'. If either of the limbs of the test can be passed, then the application is eligible for approval, but the proposed activity must still be considered under section 104. There is no primacy given to either of the two limbs, so if one limb can be passed then the 'test' can be considered to be passed.

As identified in the assessment above, the adverse effects of the activity on the environment will be less than minor and the proposed activity will not be contrary to the objectives and policies of the plan. As such the application can be considered under section 104 and a determination made on the application as provided by section 104B.

## 14.0 Conclusion

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The proposal involves the construction of 30 new papakāinga housing units and community facilities comprising a Kohanga Reo and Community Building at 174 Lamb Road, Pukenui.

Based on the above report it is considered that:

- Public notification is not required as adverse effects in relation to rural character, amenity, building intensity, transportation, natural hazards, earthworks and construction, onsite servicing, productive capacity, fragmentation and reverse sensitivity, ecological and biodiversity, Māori cultural values and cumulative effects are considered to be less than minor. There are also positive effects including:
  - Enables tangata whenua to re-establish connection with their whenua and provide for the social, economic and cultural needs of their community;

- Ecological enhancement of ecological features within the site, including a historically degraded natural inland wetland through implementation of enhancement planting and ongoing management through the implementation of an EMP;
  - The provision of much needed housing within Te Hiku, a location experiencing a housing shortfall that is not otherwise being provided by the market;
  - The provision of quality housing that is intended to enable Te Aupōuri people to live and work within their rohe;
  - Construction of a kohanga reo and community facilities that will enable Te Aupōuri to support the implementation of its te reo Māori and cultural initiatives through the provision of facilities that support the revitalisation of te reo Māori; and
  - The construction of a community facility that will enable the delivery of social and health initiatives in the localised community.
- Limited notification is not required as potential adverse effects arising from the proposal will be have been appropriately managed a level that is less than minor;
  - The proposal accords with the relevant FNDP objectives and policies; and
  - The proposal is considered to be consistent with Part 2 of the Act.

It is therefore concluded that the proposal satisfies all matters the consent authority is required to assess, and that it can be granted on a non-notified basis.



**RECORD OF TITLE  
UNDER LAND TRANSFER ACT 2017  
FREEHOLD  
Search Copy**



  
R. W. Muir  
Registrar-General  
of Land

**Identifier** **NA80D/748**  
**Land Registration District** **North Auckland**  
**Date Issued** 14 May 1991

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**Estate** Fee Simple  
**Area** 1849.3116 hectares more or less  
**Legal Description** Section 1-9 Survey Office Plan 65943

**Registered Owners**

Te Aupouri Commercial Development Limited

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**Interests**

Subject to a water supply right created by Deed of Grant embodied in the Register NA55A/1459 (affects Section 2 SO Plan 65943)

Subject to Section 3 Petroleum Act 1937

Subject to Section 8 Atomic Energy Act 1945

Subject to Section 3 Geothermal Energy Act 1953

Subject to Section 6 and 8 Mining Act 1971

Subject to Section 5 Coal Mines Act 1979

Subject to Section 261 Coal Mines Act 1979

Subject to Part IV A Conservation Act 1987 (but Sections 24(2A), 24A and 24 AA of the Act do not apply)

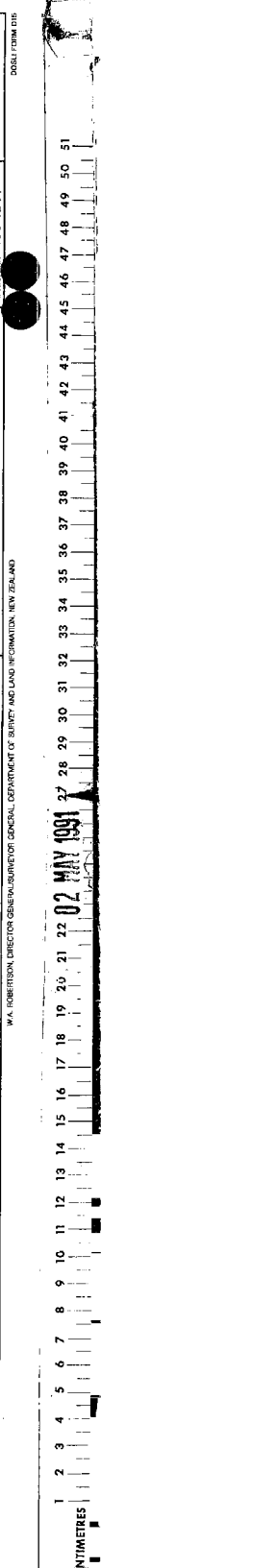
Subject to an electricity transmission right (in gross) over part marked A on Plan 163296 in favour of Top Energy Limited created by Transfer C872362.1 - 1.8.1995 at 2.38 pm

Subject to a right of way over part marked A on Plan 136870 created by Transfer D145215.1 - 19.5.1997 at 10.50 am (affects Section 2 SO Plan 65943)

8473712.1 Open Space Covenant pursuant to Section 22 Queen Elizabeth The Second National Trust Act 1977 - 22.4.2010 at 9:00 am.

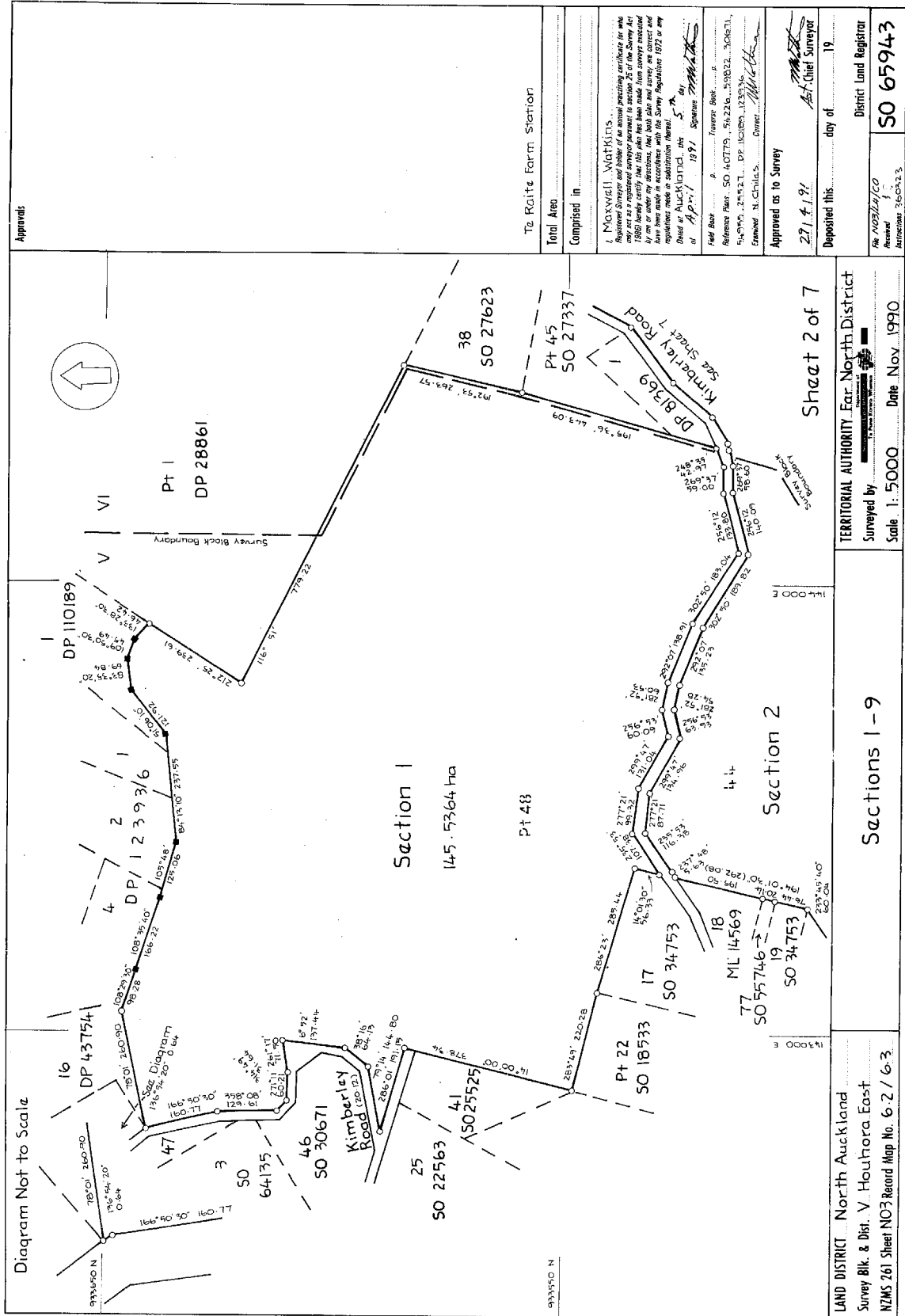
Subject to Section 11 Crown Minerals Act 1991

Section	Formerly	Status	Shown	Formerly	Status	Shown	Formerly	Status	Shown	Formerly	Status
Section 1 S.O. 67943	PH Sec 48, Bk V Houhora S.D.	PH Sec 48, Bk V Houhora S.D.	Section 1 S.O. 67943	PH Sec 48, Bk V Houhora S.D.	PH Sec 48, Bk V Houhora S.D.	Section 1 S.O. 67943	PH Sec 48, Bk V Houhora S.D.	PH Sec 48, Bk V Houhora S.D.	Section 1 S.O. 67943	PH Sec 48, Bk V Houhora S.D.	PH Sec 48, Bk V Houhora S.D.
Section 2 S.O. 67943	PH Sec 1, Bk V Houhora East S.D.	PH Sec 1, Bk V Houhora East S.D.	Section 2 S.O. 67943	PH Sec 1, Bk V Houhora East S.D.	PH Sec 1, Bk V Houhora East S.D.	Section 2 S.O. 67943	PH Sec 1, Bk V Houhora East S.D.	PH Sec 1, Bk V Houhora East S.D.	Section 2 S.O. 67943	PH Sec 1, Bk V Houhora East S.D.	PH Sec 1, Bk V Houhora East S.D.
Section 3 S.O. 67943	PH Sec 2, Bk V Houhora East S.D.	PH Sec 2, Bk V Houhora East S.D.	Section 3 S.O. 67943	PH Sec 2, Bk V Houhora East S.D.	PH Sec 2, Bk V Houhora East S.D.	Section 3 S.O. 67943	PH Sec 2, Bk V Houhora East S.D.	PH Sec 2, Bk V Houhora East S.D.	Section 3 S.O. 67943	PH Sec 2, Bk V Houhora East S.D.	PH Sec 2, Bk V Houhora East S.D.
Section 4 S.O. 67943	PH Sec 3, Bk V Houhora East S.D.	PH Sec 3, Bk V Houhora East S.D.	Section 4 S.O. 67943	PH Sec 3, Bk V Houhora East S.D.	PH Sec 3, Bk V Houhora East S.D.	Section 4 S.O. 67943	PH Sec 3, Bk V Houhora East S.D.	PH Sec 3, Bk V Houhora East S.D.	Section 4 S.O. 67943	PH Sec 3, Bk V Houhora East S.D.	PH Sec 3, Bk V Houhora East S.D.
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Transaction ID 3586651  
Client Reference smarshall003

Search Copy Dated 30/07/24 3:57 pm, Page 2 of 8  
Register Only



Approvals

Tz Raitz Farm Station

Total Area  
Comprised in

I. Maxwell, Watkins  
 Registered Surveyor and holder of an annual practicing certificate for who  
 has been duly qualified and who has been made known to the Survey  
 Department by me or under my directions. That both said and survey are correct and  
 have been made in accordance with the Survey Regulations 1975 or any  
 regulations made in accordance therewith.  
 Done at AUCKLAND, this 27th day of  
 April 1991 Separate

Field Book  
 Reference Plans: SO 40779, 51226, 53822, 30671,  
 51595, 25521, DP 10081, 13393,  
 51595, 25521, Correct

Approved as to Survey  
 27/4/91  
 day of 19  
 District Land Registrar  
 SO 65943

Sheet 2 of 7

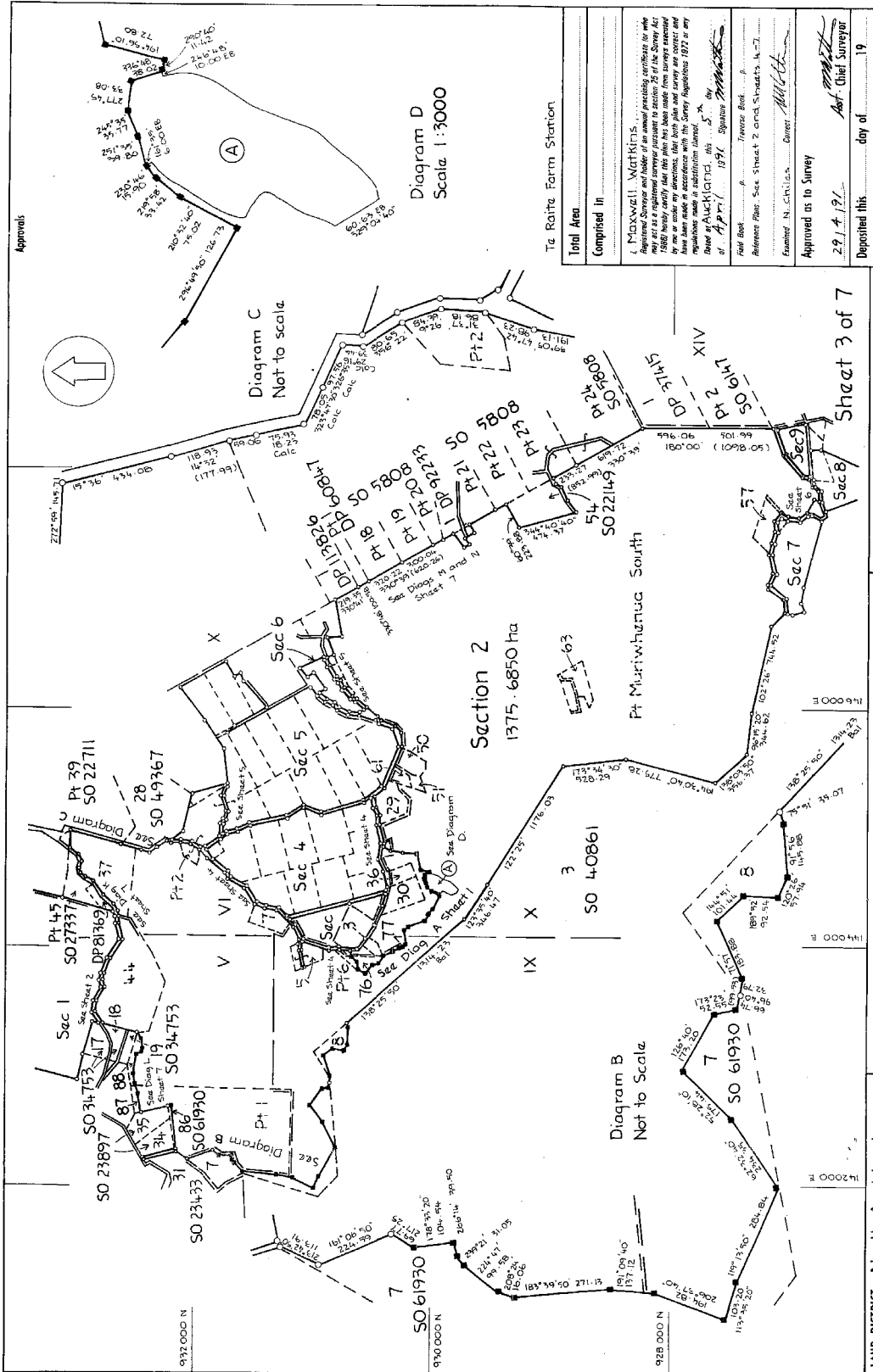
TERRITORIAL AUTHORITY For North District

Surveyed by  
 Scale 1:5000 Date Nov 1990

Sections 1-9

LAND DISTRICT North Auckland  
 Survey Blk. & Dist. V Houthora East  
 NZMS 261 Sheet NO3 Record Map No. 6.2 / 6.3

V. A. ROBERTSON, DIRECTOR GENERAL SURVEYOR GENERAL, DEPARTMENT OF SURVEY AND LAND INFORMATION, NEW ZEALAND



**Approvals**

Ta Raitra Farm Station

Total Area  
Completed In

Maxwell, Watkins  
Registered Surveyor and holder of an annual practicing certificate for who may act as a registered surveyor pursuant to section 76 of the Survey Act 1980. I have examined the plan and the survey data and have been satisfied that the plan and survey data are correct and have been made in accordance with the Survey Regulations 1982 or any regulations made in substitution thereof.

of Maxwell, Watkins  
1991  
Signature  
Said Date

Reference Plan: See Sheets 2 and 3 of the Survey. N. 27

Examined: N. C. H. O. S. (Surveyor) Maxwell, Watkins

Approved as to Survey  
29.1.1991  
Asst. Chief Surveyor

Deposited this 19 day of 1991

District Land Registrar  
SO 65943

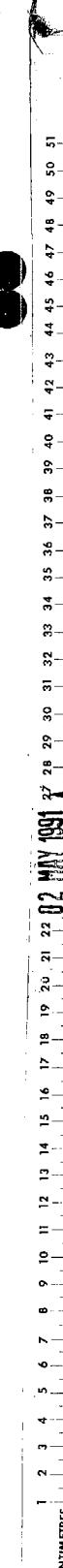
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TERITORIAL AUTHORITY For North District  
Surveyed by  
Scale 1:20 000 Date Nov. 1990

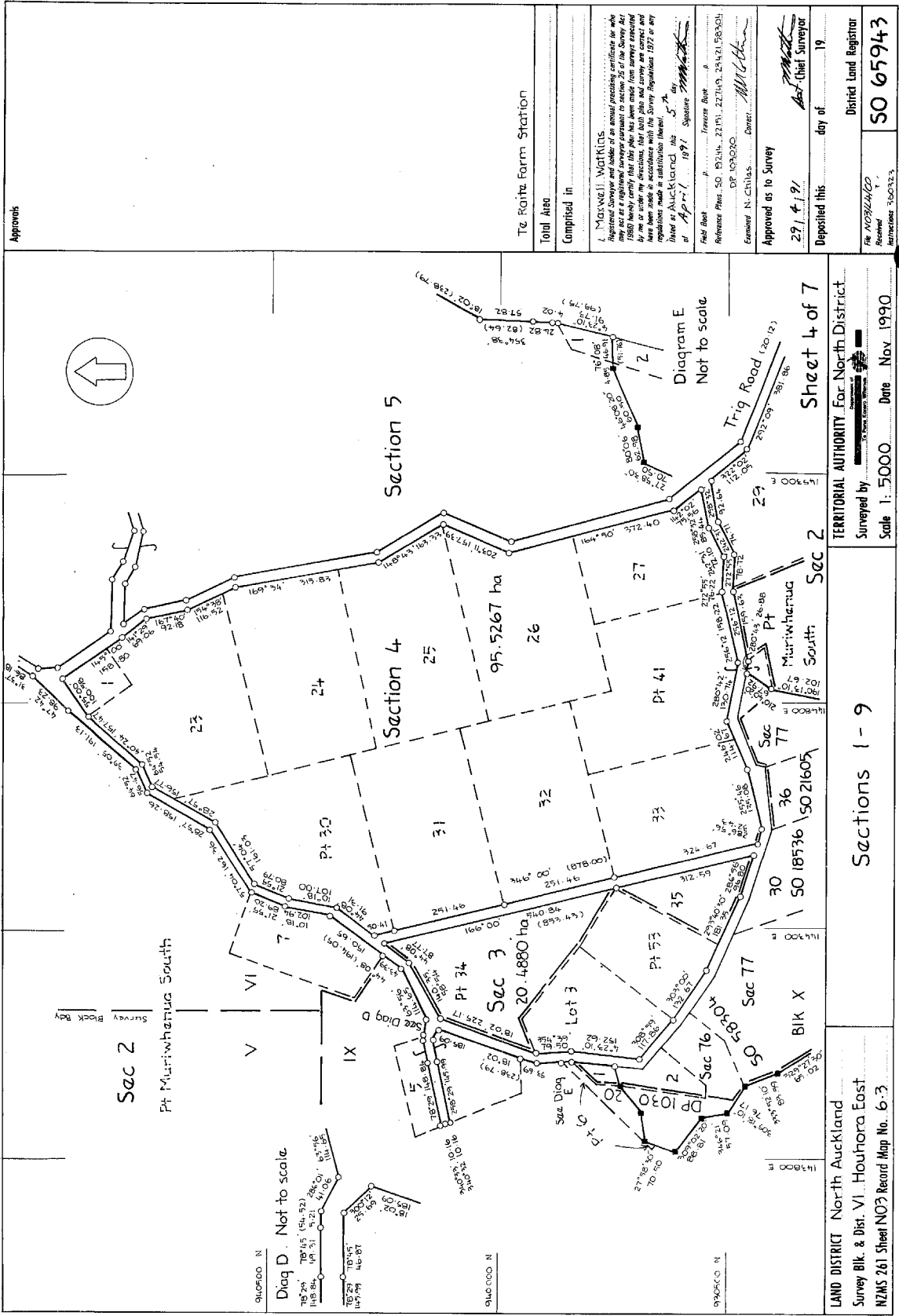
Sections 1-9

LAND DISTRICT North Auckland  
Survey Blk. & Dist. V, VI, IX, X, Houghora East  
NZMS 261 Sheet ND3 Record Map No. 6.3

W.A. ROBERTSON, DIRECTOR GENERAL/SURVEYOR GENERAL, DEPARTMENT OF SURVEY AND LAND INFORMATION, WELLINGTON







Approvals

The Raitez Farm Station

Total Area

Comprised in

1. Maxwell Mathias  
Registered Surveyor and holder of an annual practicing certificate for who  
may act as a registered surveyor pursuant to section 25 of the Survey Act  
1954, who has been duly qualified and is duly sworn to perform his duties  
by me in accordance with the Survey Regulations 1972 and who has  
been made in accordance with the Survey Regulations 1972 in any  
other Auckland, this 5<sup>th</sup> day  
of April, 1991. Signature *Maxwell Mathias*

Field Book of  
Reference Plus: SO 18536, 22113, 22149, 24431, 52850,  
DP 103020  
Garnier N. Chiles, Consent: *M. Chiles*

Approved as to Survey  
29.4.91  
Devised this day of 19

District Land Registrar  
SO 65943

DEPT. FORM 816

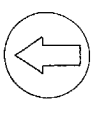
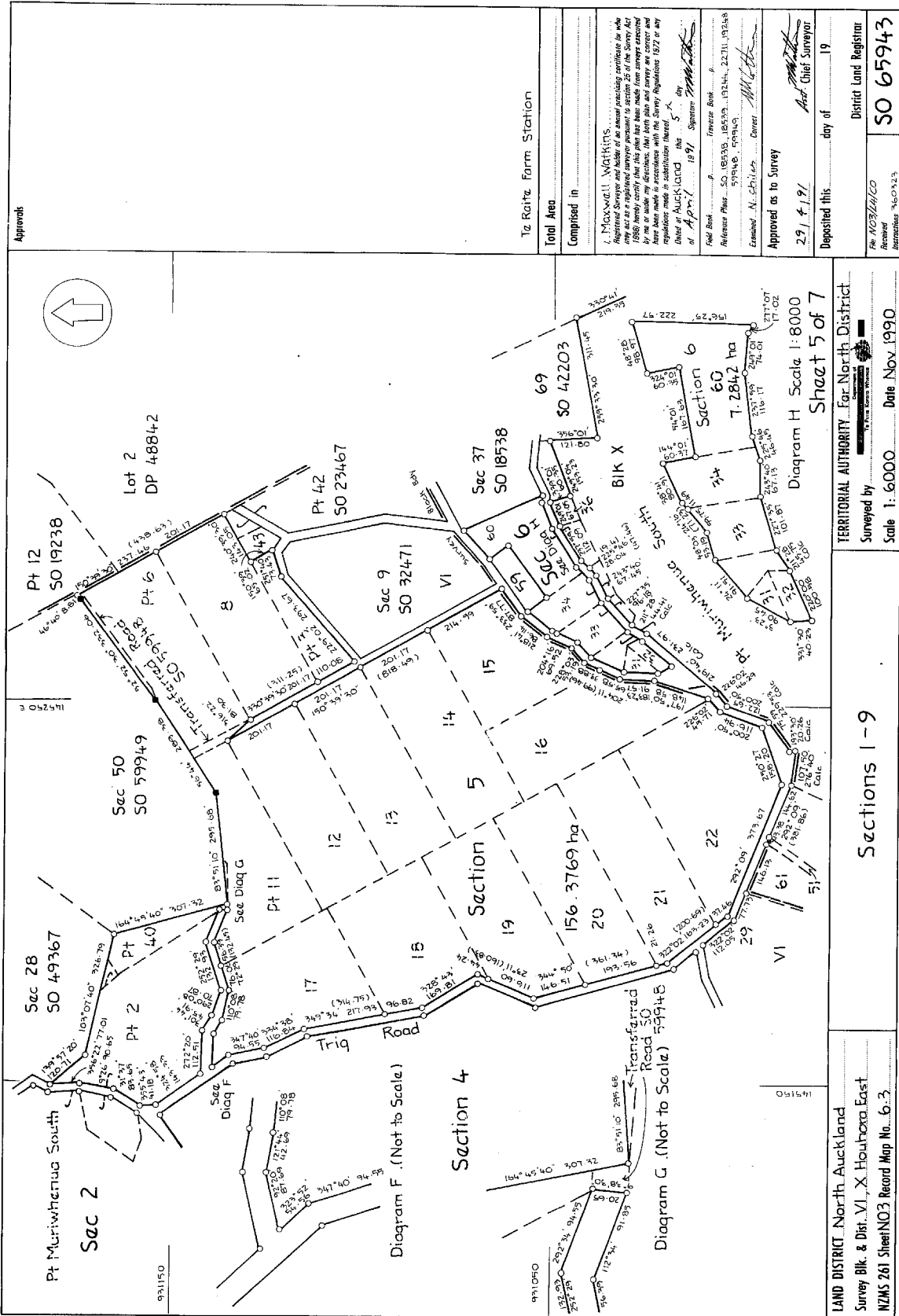


Diagram E  
Not to scale

TERRITORIAL AUTHORITY FOR NORTH DISTRICT  
Surveyed by  
Scale 1:5000 Date Nov 1990

Sections 1-9

N. A. ROBERTSON, DIRECTOR GENERAL, SURVEYOR GENERAL, DEPARTMENT OF SURVEY AND LAND INFORMATION, NEW ZEALAND



Approved \_\_\_\_\_

Tz Raitz Farm Station

Total Area \_\_\_\_\_

Comprised in \_\_\_\_\_

**J. Maxwell Watkins**  
 Registered Surveyor and holder of an annual practicing certificate in which he is authorised to practise in accordance with the Survey Act 1980 and the regulations made in pursuance of that Act, and who is a member of the Institution of Surveyors of New Zealand, hereby certifies that the above survey has been made in accordance with the Survey Regulations 1972 or any regulations made in substitution thereof.

Witness at AUCKLAND this 5<sup>th</sup> day of April 1991 Signature: *J. Maxwell Watkins*

Field Book \_\_\_\_\_ of \_\_\_\_\_

Reference Plans: SO 18538, 18539, 19214, 2211, 19246, 59946, 59949

Examined: *M. Smith* District Registrar

Approved as to Survey: *[Signature]* day of \_\_\_\_\_ 19\_\_\_\_

Deposited this \_\_\_\_\_ day of \_\_\_\_\_ 19\_\_\_\_

District Land Registrar  
 SO 65943

LAND DISTRICT North Auckland  
 Survey Blk. & Dist. VI, X, Houbora East  
 NZMS 261 Sheet NO 3 Record Map No. 6-3

TERRITORIAL AUTHORITY For North District  
 Surveyed by \_\_\_\_\_  
 Scale 1:6000 Date Nov 1990

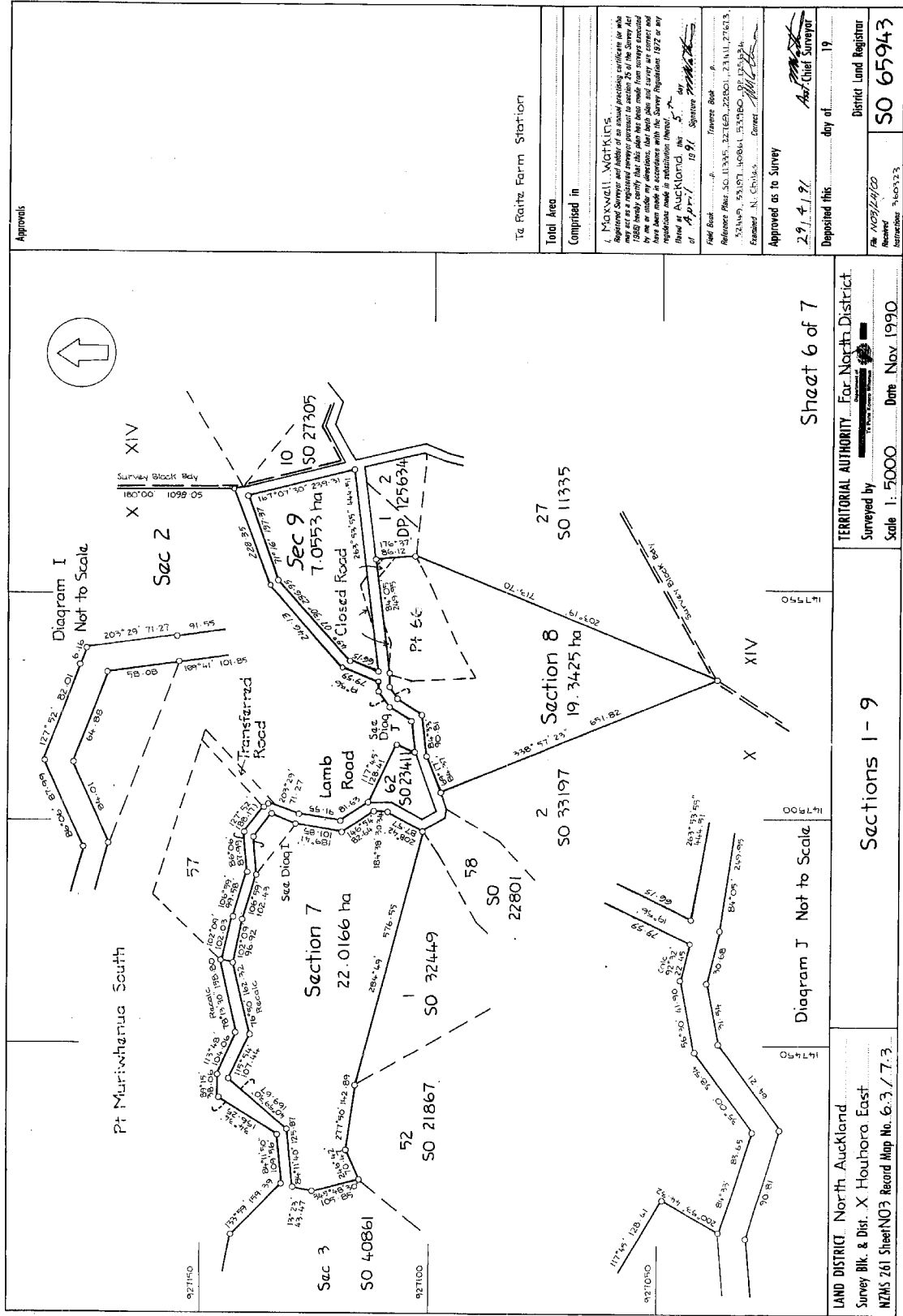
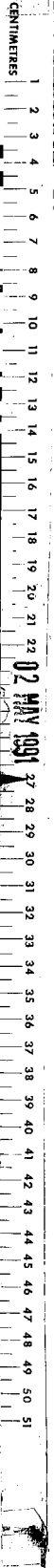
Diagrams H Scale 1:8000 Sheet 5 of 7



W.A. ROBERTSON, DIRECTOR GENERAL/SURVEYOR GENERAL, DEPARTMENT OF SURVEY AND LAND INFORMATION, NEW ZEALAND

Transaction ID 3586651  
 Client Reference smarshall003

Search Copy Dated 30/07/24 3:57 pm, Page 6 of 8  
 Register Only



Approvals	
To: Raitz Farm Station	
Total Area	
Comprised in	
<p><b>G. Maxwell MORTIMORS</b> Registered Surveyor and holder of a general practicing certificate for who may act as a registered surveyor pursuant to section 25 of the Survey Act 1980 hereby certify that this plan has been made from surveys executed by me or under my supervision and that the same have been made in accordance with the provisions of the Survey Act 1980 and the regulations made in substitution thereof, and that the same are true and correct and that the same have been made in accordance with the provisions of the Survey Act 1980 and the regulations made in substitution thereof.</p> <p>Dated at Auckland this 5<sup>th</sup> day of April 1991. Signature: <i>[Signature]</i></p>	
Field Book	Transverse Book
Reference Plan: SO 11335, 32716A, 22801, 21141, 27613, 53149, 53151, 40861, 53150, 57125, 53152	
Examined: J.L. Collins	Correct
Approved as to Survey	
29/4/91	day of April 19
Deposited this	
District Land Registrar	
SO 65943	
Instruction: 160323	

Sheet 6 of 7

TERRITORIAL AUTHORITY For North District

Surveyed by *[Signature]*

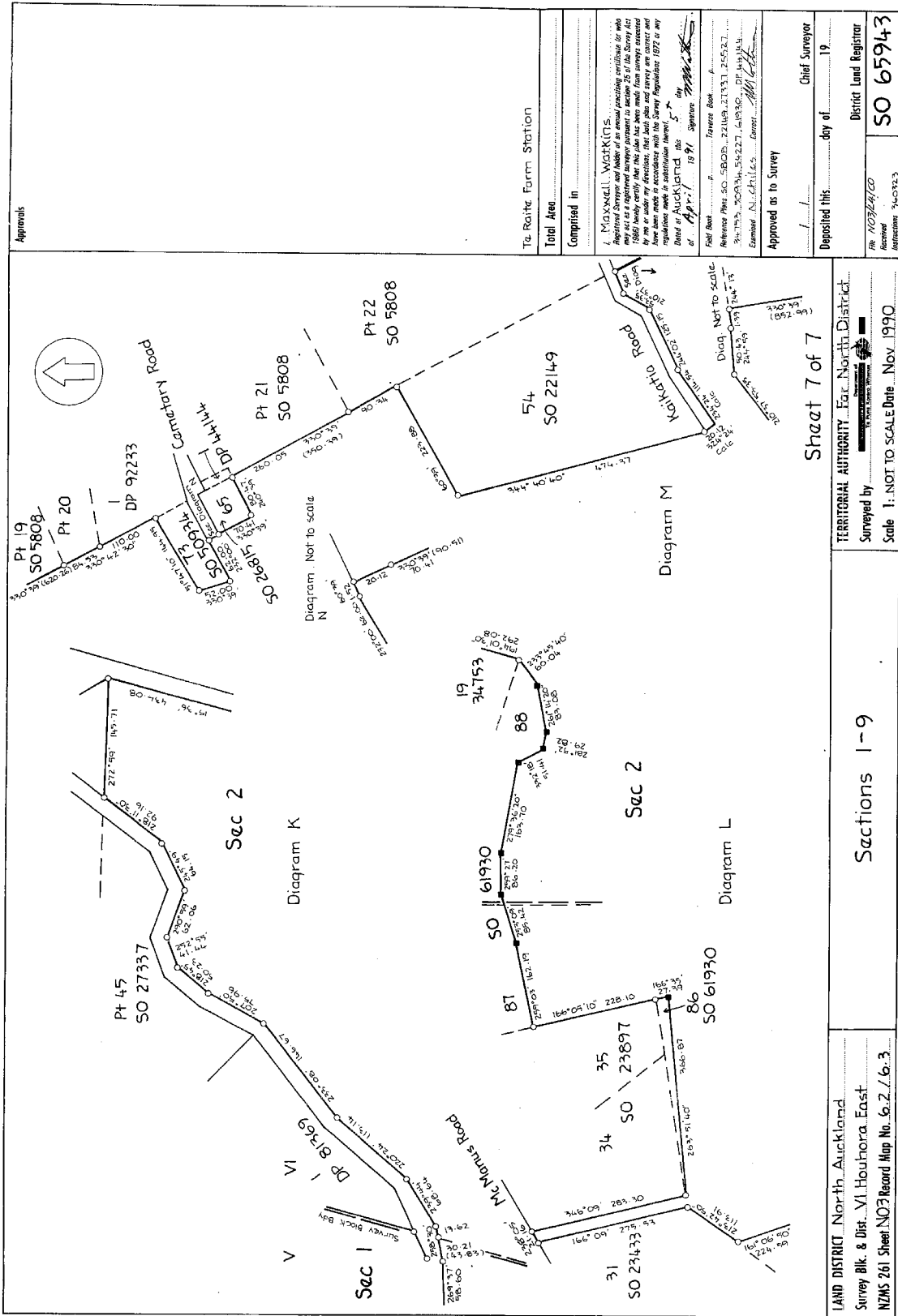
Scale 1:5000 Date Nov 1990

Sections 1 - 9

Diagram J Not to Scale

LAND DISTRICT North Auckland  
Survey Blk. & Dist. X Houhoro East  
NZMS 261 Sheet NO 3 Record Map No. 6.3 / 7.3

W. A. ROBERTSON, DIRECTOR GENERAL, SURVEY GENERAL, DEPARTMENT OF SURVEY AND LAND INFORMATION, NEW ZEALAND



Approvals

Ta. Raitez Farm Station

Total Area

Comprised in

I. Maxwell WATKINS  
 Registered Surveyor and holder of an annual practicing certificate for who may act as a registered surveyor pursuant to section 26 of the Survey Act 1978. I hereby certify that this plan has been made from surveys executed by me or under my direct supervision and that the same are in accordance with the Survey Regulations 1972 in any regulations made in substitution thereof.  
 Date of Auckland 1991  
 Signature  
 Field Book  
 Reference Plans SO 5808, 22149, 21731, 25527, 24175, 20294, 55227, 49536, 21731, 24175  
 District of Auckland  
 Approved as to Survey

Chief Surveyor

Deposited this 19 day of 19

District Land Registrar

SO 65943

FR 10034/00

30-5923

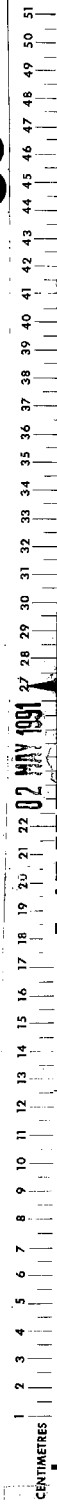
Sheet 7 of 7

TERRITORIAL AUTHORITY - Far North District  
 Surveyed by  
 Scale 1: NOT TO SCALE Date Nov 1990

Sections 1-9

LAND DISTRICT North Auckland  
 Survey Blk. & Dist. XI Houhora, East  
 NZMS 261 Sheet NO3 Record Map No. 6.2 / 6.3

W.A. ROBERTSON, DIRECTOR, GENERAL SURVEYOR GENERAL, DEPARTMENT OF SURVEY AND LAND INFORMATION, NEW ZEALAND



**From:** [Makarena Dalton](#)  
**To:** [Makarena Dalton](#)  
**Subject:** FW: Moekoroha  
**Date:** Saturday, 3 August 2024 2:42:12 pm  
**Attachments:** [ATT00001.png](#)  
[ATT00002.png](#)

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Ngā mihi | Kind regards,

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**From:** Tipene Kapa-Kingi <[tipene@teaupouri.iwi.nz](mailto:tipene@teaupouri.iwi.nz)>  
**Sent:** Thursday, 18 July 2024 8:33 pm  
**To:** Makarena Dalton <[MakarenaD@barker.co.nz](mailto:MakarenaD@barker.co.nz)>  
**Cc:** Penetaui Kleskovich <[penetaui@teaupouri.iwi.nz](mailto:penetaui@teaupouri.iwi.nz)>  
**Subject:** Re: Moekoroha

Kia ora Makarena,

Please see my statement below:

This whenua this papakāinga sits on is Moekoraha, a pā that our tupuna once inhabited. This pā, along with the majority of our ancestral land was included in the Muriwhenua South transaction, in 1858, where the Crown fraudulently 'purchased' over 100,000 acres of land.

Our tupuna, Paraone Ngāruhe who signed Te Tiriti on behalf of Te Aupōuri, strongly disagreed with the transaction going ahead, hence his kōrero: "puritia te whenua, e kore e puritia he whētū kamokamo" – hold onto the land, for one cannot hold on to shining stars.

Ownership of this pā, just like all of the other parcels of whenua taken in the Muriwhenua South transaction, was transferred between Crown and other Pākehā until it eventually became a Crown-owned asset under the Landcorp Farming scheme. In 2012 it was returned under Aupōuri stewardship.

Te Rūnanga Nui o Te Aupōuri received ownership of Te Raite Station (1850Ha) as part of the commercial redress component of their Treaty settlement legislation.

For 154 years, Te Aupōuri has been alienated from this whenua, and continues to be alienated from the other 98% of whenua wrongfully acquired by the Crown.

Since 2012 TRNOTA, has struggled with all levels of govt to gain various consents to develop their whenua. These struggles strangle the cultural, social, economic, and spiritual aspirations of Te Aupōuri. This project in particular is not just about building homes, but it is about rebuilding a pā that our tupuna once called home, for their mokopuna to then rekindle and keep their fires burning.



**Tipene Kapa-Kingi**  
Investment Manager  
Te Aupouri Commercial Development  
Limited  
(+64) 9 4098 006 | 0800 236 376  
021 0818 9903  
[tipene@teaupouri.iwi.nz](mailto:tipene@teaupouri.iwi.nz)  
24 Te Ahu Road, RD 4, Kaitaia 0484  
[www.teaupouri.iwi.nz](http://www.teaupouri.iwi.nz)

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**From:** [Makarena Dalton](#)  
**To:** [Makarena Dalton](#)  
**Subject:** FW: Definition of Site  
**Date:** Wednesday, 31 July 2024 10:51:00 pm  
**Attachments:** [image001.png](#)  
[image003.png](#)  
[image004.png](#)  
[image005.png](#)  
[image006.png](#)  
[image007.png](#)  
[image015.png](#)  
[image016.png](#)  
[image017.png](#)

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**From:** Amit Nandi <[Amit.Nandi@fndc.govt.nz](mailto:Amit.Nandi@fndc.govt.nz)>  
**Sent:** Wednesday, 10 July 2024 12:52 pm  
**To:** Makarena Dalton <[MakarenaD@barker.co.nz](mailto:MakarenaD@barker.co.nz)>  
**Cc:** Lilly Lawson <[LillyL@barker.co.nz](mailto:LillyL@barker.co.nz)>  
**Subject:** FW: Definition of Site

You don't often get email from [amit.nandi@fndc.govt.nz](mailto:amit.nandi@fndc.govt.nz). [Learn why this is important](#)

Kia ora Makarena,

Please see the response from our RC Team Leader below.

*Hi Amit*

*Section 220 of the RMA says land is adjoining if separated by a road:*

*I think we can interpret contiguous and adjoining in the same way, for the purposes of consistency with the RMA.*

- (2) For the purposes of subsection (1)(b)—
- (a) where any condition requires land to be amalgamated, the territorial authority shall, subject to subsection (3), specify (as part of that condition) that such land be held in 1 record of title or be subject to a covenant entered into between the owner of the land and the territorial authority that any specified part or parts of the land shall not, without the consent of the territorial authority, be transferred, leased, or otherwise disposed of except in conjunction with other land; and
  - (b) land shall be regarded as adjoining other land notwithstanding that it is separated from the other land only by a road, railway, drain, water race, river, or stream.

Regards, Amit

 **Amit Nandi**  
Duty Planner - Resource Consents Team 1  
M 272167823 | P 6494015221 | [Amit.Nandi@fndc.govt.nz](mailto:Amit.Nandi@fndc.govt.nz)  
Te Kaunihera o Te Hiku o te Ika | Far North District Council

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Pokapū Kōrero 24-hāora | 24-hour Contact Centre 0800 920 029  
[fndc.govt.nz](http://fndc.govt.nz)




---

**From:** Duty Planner  
**Sent:** Tuesday, July 9, 2024 1:55 PM  
**To:** Makarena Dalton <[MakarenaD@barker.co.nz](mailto:MakarenaD@barker.co.nz)>  
**Cc:** Lilly Lawson <[LillyL@barker.co.nz](mailto:LillyL@barker.co.nz)>  
**Subject:** RE: Definition of Site

Kia ora Makarena,

In our group meeting, I've raised you below query.  
According to our senior planner, our RC team leader, along with our planner, will investigate your query on Thursday, July 11th.  
I will respond to your inquiry by the end of business on Thursday.  
If that helps, applying for PAM might be a good idea.

Regards, Amit Nandi

 **Duty Planner**  
Resource Consents  
P 09 407 0444 | [Duty.Planner@fndc.govt.nz](mailto:Duty.Planner@fndc.govt.nz)  
Te Kaunihera o Te Hiku o te Ika | Far North District Council

---

Pokapū Kōrero 24-hāora | 24-hour Contact Centre 0800 920 029



**From:** Makarena Dalton <[MakarenaD@barker.co.nz](mailto:MakarenaD@barker.co.nz)>  
**Sent:** Monday, July 8, 2024 4:03 PM  
**To:** Duty Planner <[Duty.Planner@fndc.govt.nz](mailto:Duty.Planner@fndc.govt.nz)>  
**Cc:** Lilly Lawson <[LillyL@barker.co.nz](mailto:LillyL@barker.co.nz)>  
**Subject:** Definition of Site

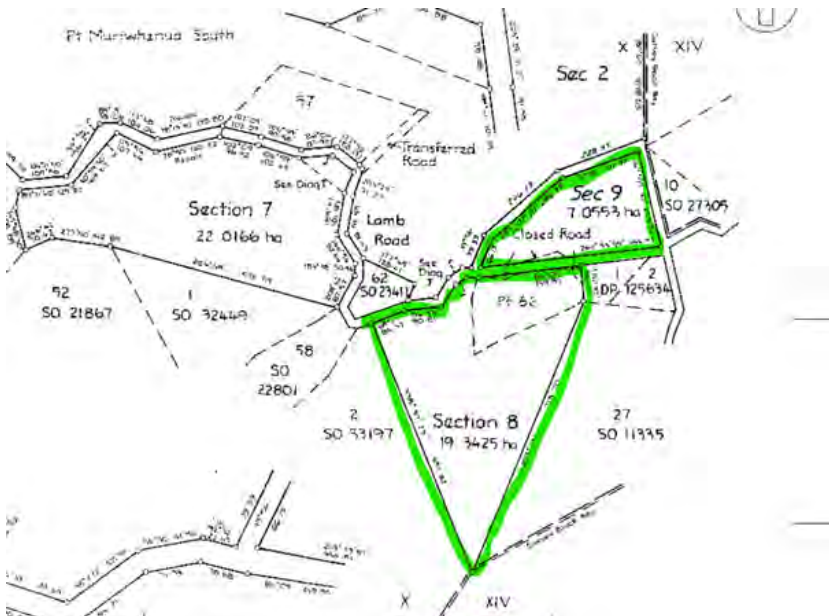
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Kia ora,

We are currently preparing a resource consent application for an activity that is proposed across two separate allotments that are held in a 1 x record of title (see attached).

The record of title is a large farming unit that is approximately 1800ha, and comprises 9 different allotments that are held together in a single record of title. The activity is proposed over two allotments (see snip below) that are separated by legal and formed road.



The Operative Far North District Plan (ODP) defines "site" as:

## SITE

- (a) An area of land which is:
- (i) composed of one allotment in one certificate of title or two or more contiguous allotments held together in one or more certificates of title in such a way that the allotments cannot be dealt with separately without the prior consent of the Council; or
  - (ii) contained in a single allotment on an approved survey plan of subdivision for which approvals under s223 and/or s224 of the Act have been obtained and for which a separate certificate of title could be issued without further consent of the Council.
- (b) Except that in the case of:
- (i) land subdivided under the Unit Titles Act 1972, or stratum subdivision, "site" shall be deemed to be the whole of the land subject to the unit development or stratum subdivision; and
  - (ii) land subdivided under the cross lease or company lease systems (other than strata titles), "site" shall be defined as an area of land containing:
    - any building, accessory buildings, plus any land exclusively restricted to the users of those buildings; or
    - a remaining share or shares in the fee simple creating a vacant part of the whole for future cross lease or company lease purposes.
- (c) In the case of Maori land within the meaning of Te Ture Whenua Maori Act 1993:
- (i) includes a parcel of land created by a partition under s289, provided that its area complies with the Residential Intensity rule for the zone in which the land is located; or
  - (ii) parcels of land partitioned and given effect to, by approval of the Maori Land Court, before 28 April 2000.

For the purposes of resource consent, can you confirm if Council would consider the scenario above (two allotments held in a single record of title, separated by legal road) as **one site** in accordance with clause (a)(i) of the ODP's definition?

In considering the above, there seems to be 3 'arms' to the qualifying criteria of the definition. In summary, these are:

1. A 'site' can be composed of one or more allotment, in one or more record of title;
2. The allotments or records of title must be contiguous; and
3. The allotments cannot be dealt with separately without the prior approval of council.

In this instance, the "site" is made up on 9 allotments (being sections 1 – 9 SO Plan 65943) which are held together in a single record of title (as attached), and while sections 8 & 9 are not 'contiguous' as they are separated by road boundaries (legal and formed roads), they cannot be dealt with separately without the prior consent of council.

If you'd like to clarify/discuss further, please feel free to contact me by phone or email. If this would be best dealt with in a pre-app, please let me know and I'll arrange an application for this.

Ngā mihi | Kind regards,

---

MAKARENA DALTON  
Senior Associate  
027 286 2298  
[MakarenaD@barker.co.nz](mailto:MakarenaD@barker.co.nz)

PO Box 414,  
Kerikeri 0230  
Level 1, 62 Kerikeri Road, Kerikeri

[barker.co.nz](http://barker.co.nz) 



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**FAR NORTH DISTRICT COUNCIL**

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

**Resource Consent Number: 2220800-RMALUC**

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

Far North Solar Farm Limited

**The activity to which this decision relates:** Expand solar farm operations in the rural production zone breaching rules 8.6.5.1.3 Stormwater Management and 12.9.6.2.4 'Installation, maintenance, operation & upgrading of free-standing renewable energy devices and associated structures' as a discretionary activity.

**Subject Site Details**

Address: 121 Lamb Road, Pukenui 0484  
Legal Description: Pt Sec 49 Blk X Houhora East SD  
Record of Title reference: NA-35A/1057

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

**Plans**

1. The activity shall be carried out in accordance with the approved plans prepared by Aquila Capital referenced Module General Arrangement Layout, dated 12-07-2022, drawing number ACRA-NZ-GS-PUK-001, Rev K, and attached to this consent with the Council's "Approved Stamp" affixed to it.
2. The activity shall be carried out in general accordance with the assessment and approved plans prepared by Simon Cocker Landscape Architecture, referenced Landscape, Natural Character and Visual Amenity effects report, dated 16 May 2022., and attached to this consent with the Council's "Approved Stamp" affixed to them:
  - Landscape Plan –Figure 2

Note: Additional plant species can be planted as long as they achieve the intended purpose of provided additional screening.

3. That a copy of this consent complete with a set of approved plans be held on site for the duration of the construction works.

**Landscaping**

4. Implementation of the landscape plan prepared by Simon Cocker, dated 16 May 2022, and provided with RMALUC 2220800 is to be undertaken within the first two planting seasons (approximately March-September) directly following commencement of any of the works relating to the solar farm (from detailed design stage on) and shall be maintained by the consent holder from that point onwards to the satisfaction of the Far North District Council or duly delegated officer.
5. The vegetation and shelters belts as identified within the landscape plan prepared by landscape plan prepared by Simon Cocker, dated 16 May 2022, and provided with RMALUC 2220800 on the site shall not be cut down, damaged or destroyed (except for the purposes of replacing any vegetation that has died) without the prior written consent of the Council. Such consent may be given in the form of resource consent.
6. The consent holder shall ensure that the ground underneath the solar panels is covered in established vegetation at all times to prevent sediments entering stormwater. Should the vegetation under the solar panels not thrive in the shade of the solar panels, then the vegetation shall be immediately replaced with shade tolerant species.

### Access

7. Upgrade the existing entrance to the lot to provide an entrance which complies with the Councils Engineering Standard FNDC/S/6 and 6D, and section 3.3.7.1 of the Engineering Standard and NZS4404:2004.

Advice: Provide evidence that a Traffic Management Plan (TMP) has been approved by Council's Corridor Access Engineer and a Corridor Access Request (CAR) obtained prior to vehicle crossings being constructed or upgraded. Application for TMP and CAR are made via <https://www.fndc.govt.nz/Our-Services/Transport/Roads/Road-closures-and-restrictions>

8. The consent holder shall be responsible for ongoing repairs to the road carriageway and berms for any damage caused by construction traffic.
9. Any debris deposited on the public or private road as a result of the development shall be removed by or at the expense of the applicant.
10. The consent holder is responsible for any repairs and reinstatement required of the Lamb Road carriageway and roadside drain damaged as a result of the development. Such works, where required, will be completed to the satisfaction of the Northland Transport Alliance

### Stormwater

11. Construct the various Drainage channels as identified within the report titled: **Revised Stormwater Assessment of Proposed Solar Farm Development**, Lamb Road Solar Farm by Williamson Water & Land Advisory dated: 08th Sep 2022 Ref WWLA0213
12. In accordance with section 128 of the Act, the Far North District Council may serve notice on the consent holder of its intention to review conditions 8 and 12 of this consent to review the effectiveness of the controls on the stormwater discharge. The review may be initiated within 12 months of the consent being given effect to and annually thereafter. The review may be initiated if the completed stormwater management are found to be insufficient for managing adverse effects caused by stormwater discharge to adjoining/adjacent properties.

13. Should there be any adverse effect on any adjacent properties, the consent holder shall ensure that storm water attenuation and mitigation is designed, monitored and constructed by a Chartered Professional Engineer. The consent holder shall arrange any inspections required.

Note: The cost of this shall be covered by the consent holder

## **Earthworks**

14. All sediment control measures shall be selected, constructed and maintained in accordance with the principles and practices contained within the Auckland Council document entitled "2016/005: Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region" (GD05).

Advice: A draft CNMP has been submitted and approved as part of the consent, a final developed version shall be sent to Councils assigned monitoring officer 10 days before commencing construction.

15. The installation of all erosion and sediment controls shall be supervised by an appropriately qualified and experienced person. The Consent Holder shall provide to the council's assigned monitoring officer certification from the appropriately qualified and experienced person who supervised the installation of the erosion and sediment controls that they have been installed in accordance with the requirements of GD05.
16. The consent holder shall ensure that the ground underneath the solar panels is always covered in established vegetation to prevent sediments entering stormwater. Should the vegetation under the solar panels not thrive in the shade of the solar panels, then the vegetation shall be immediately replaced with shade tolerant species.

## **Noise**

17. The proposed activity is to comply with the permitted noise levels as set out in the District Plan. Any issue of non-compliance with the prescribed levels will necessitate monitoring by council, the costs of which may be required to be recovered from the applicant.
18. That all construction works on-site are to be carried out in accordance with the noise limits recommended for residential area in NZS6803P 1984. "Measurement and assessment of noise from construction, maintenance and demolition work".

## **Review Clause:**

19. In accordance with section 128 of the Resource Management Act 1991, the Far North District Council may serve notice on the consent holder of its intention to review those ongoing conditions (particularly Condition 19) of this consent that are subject to consent notices, annually during the month of July. The review may be initiated for any one or more of the following purposes:

- (i) To deal with any adverse effects on the environment that may arise from the exercise of the consent and which it is appropriate to deal with at a later stage, or to deal with any such effects following assessment of the result of

the Far North District Council of duly delegated Council Officer monitoring the state of the environment in the area.

- (ii) To require the adoption of the best practicable option to remove or reduce any adverse effect on the environment.
- (iii) To deal with any inadequacies or inconsistencies the Far North District Council or duly delegated Council Officer considers there to be, in the conditions of the consent, following the establishment of the activity the subject of this consent.
- (iv) To deal with any material inaccuracies that may in future be found in the information made available with the application (notice may be served at any time for this reason).
- (v) The consent holder shall meet all reasonable costs of any such review.

The actual and reasonable costs of any review undertaken may be charged to the consent holder, in accordance with section 36 of the Act.

**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. All storage of materials and loading and unloading of equipment and plant associated with the development shall take place within the site boundaries unless otherwise approved by Council.

**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. District Plan Rules Affected:

Rule # & Name	Non Compliance Aspect
12.9.6.2.4 'Installation, maintenance, operation & upgrading of free-standing renewable energy devices and associated structures'	The solar farm is unable to comply with all relevant permitted activity rules contained in Chapter 12, - Natural and Physical Resources and is not a community supply as per FNDP definitions so is not a permitted land use 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%.
---------------------------------	---

3. Principal Issues in Contention and Main Findings on those issues:

The Council has determined (by way of an earlier notification report and resolution) that there are no affected persons or affected customary rights group or customary marine title group. The main issues in contention related to stormwater management, amenity values of the rural environment and reverse sensitivity/ land compatibility. These matters were carefully assessed in section 10 of the Notification Report where it was determined that subject to the recommended conditions of consent being imposed the adverse effects of the proposal on the environment would be no more than minor.

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

Adverse effects will be minor:

It is considered the relevant and potential effects have been addressed within the assessment of effects above, and it has been concluded that the adverse effects will be less than minor.

Objectives and policies of the District Plan:

The proposal is considered to have adequately taken into account, and is consistent with relevant statutory provisions, including the following objectives and policies of the District Plan have been considered:

Chapter 8 – Rural Environment and Chapter 8.6 – Rural Production

The objectives and policies in the rural environment seek to enable activities while focusing on the maintenance and enhancement of amenity values; the avoidance of conflict between land use activities (reverse sensitivity); the avoidance or mitigation of adverse effects of development on natural and physical resources; and requires consideration be given to the cumulative effects of non-farming activities.

The proposal is consistent with the objectives and policies of the rural production zone, as it is the most appropriate zone for the activity. The site will continue to be used for production purposes will allowing a second activity to occur therefore maximizing the usage of the site and its resources. The extensive landscaping ensures reserve sensitivity and adverse effects on the surrounding environment are encapsulated within the site, have minimal effects on the neighbours.

### Chapter 12.9 – Renewable Energy & Energy Efficiency

The objectives and policies of this chapter support the encouragement and promotion of energy efficient and development of renewable energy while ensuring the special values of the District have been kept in regard; ensuring the renewable energy development is located in areas where the positive effects are optimised while adverse effects are managed; ensure the development promotes potential national , regional or local community benefit and is located within areas outside of urban and semi-urban areas.

The proposal is supported by the objectives and policies as the site is located in an area outside of the urban and semi urban environment while being close enough to support and provide electricity generation to the power company supporting the Pukenui community. Positive effects are maximised due to the dual nature of the activity and the extensive screening and landscaping that is being carried out.

### Northland Regional Policy 2016 (RPS)

The RPS contains high level policy guidance for the development of lower order statutory documents, including, for example, the Northland Regional Plan and the District Plan. District Plan's must give effect to the regional policy statement of a region and must not be inconsistent with regional plans.

The relevant parts of the RPS that have been considered in relation to this proposal are: Part 3 Objectives: 3.5 - Enabling economic wellbeing, 3.6 - Economic activities – reverse sensitivity and sterilisation, 3.7 - Regionally significant infrastructure 3.8 - Efficient and effective infrastructure, 3.9 – Security of energy supply, 3.12 - Tangata Whenua role in decision-making and 3.13 - Natural Hazard Risk are relevant to the proposal.

The proposal has been assessed against the above provisions with particular consideration given to the Part 5 Policies relating to effective and efficient infrastructure, regionally significant infrastructure, renewable energy and natural hazards.

The policies relating to efficient and effective infrastructure refer to:

- i. the maximisation of resources
- ii. future proofing the ability to harness natural resource such as solar energy,
- iii. using technologies that optimises resource consumption such as renewable technologies.

Policies relating to regionally significant infrastructure refer to:

- i. network electricity infrastructure supplying large communities
- ii. indirect benefits that may be significant

Policies relating to renewable energy refer to:

- i. the recognition and provision for renewable electricity generation activities that Council must provide for through the development, operation, maintenance and upgrading of the activity
- ii. Renewable energy including the maintenance or increase of security of electric supply at the local level
- iii. The diversification of the type and/ or location of the electricity generation
- iv. Promotion of Northland's renewable energy resource and their development.

Policies relating to natural hazards refer to:

- i. Ensuring development is provided for and is appropriate to the level of the risk faced
- ii. The vulnerability of activities within the hazard

- iii. Requiring decision - makers to exercise a degree of caution that reflects the level of uncertainty with regards to the likelihood or consequences of a natural hazard event.
- iv. Building resilience to the potential impacts of natural hazards.
- v. Regionally significant infrastructure being designed to maintain its integrity and function during hazard events.
- vi. Infrastructure providers have demonstrated that the proposed location within the hazard area is the most appropriate to service the needs of the community.
- vii. An assessment identifying the potential for infrastructure to exacerbate flood and erosion hazard risk on neighbouring properties and where the assessment shows that's risk the assessment must outline ways this risk can be minimised.

The proposal is supported by most of the objectives and polices within the RPS as the solar farm is a utility scale farm that will provide a source of renewable energy while creating resilience in the energy network of the Northland. This proposal in particular maximises the efficiency of the site by providing a development that provides a future proof resource.

The proposal will be the second utility scale solar farm and provide additional renewable energy to feed into the existing electrify system assisting int the security of the Far North.

#### National Policy Statement for Renewable Energy Generation 2011 (NPS-REG)

The NPS – REG was gazetted on 14 April 2011, and by 13 May 2011 was applicable to resource consent decision making regardless of when they were lodged.

The matters of national significance to which the NPS - REG applies are:

- (a) The need to develop, operate, maintain and upgrade renewable electricity generation activities throughout New Zealand; and
- (b) The benefits of renewable electricity generation.

The key messaging guidance on the NPS-REG directs local authorities to adopt a positive and proactive approach when assessing resource consent applications, and have a particular regard to the practical implications of achieving NZ's renewable electricity target and the constraints associated with developing, operating, maintaining and upgrading new , existing and consents REG activities.

The policy statement directs Councils to assist central government in meeting its targets for renewable generation of 90% total generation by 2021 and 100% by 2035. There are a number of policies including polices to:

- i. Recognise the benefits of the renewable energy activities
- ii. Acknowledgment of the practical implications of achieving NZ's target for electricity generation
- iii. Acknowledgement of the practical constraints associated with the development operation, maintenance and upgrading of renewable energy generation

The proposal is supported by the NPS-REG and the project is located in an appropriate location and will assist in achieving the countries renewable generation targets.

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

6. No other matters were considered in relevant in making this decision.
7. 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 this resource consent application achieves the purpose of the Act.

### **Approval**

This resource consent has been prepared by Whitney Peat, Senior 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:



**Pat Killalea, Principal Planner**

**Date: 19<sup>th</sup> October 2022**

### **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.

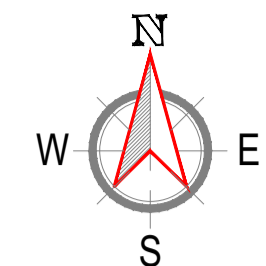
### **Lapsing of Consent**

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.





APPROVED PLAN

Planner: wpeat  
RC: 2220800  
Date: 19/10/22

GENERAL NOTES

1. MODULE TYPE: 545Wp,
2. TOTAL MODULE QUANTITY 5,152 Nos.
3. TOTAL POWER 2,807.84 kWp.
4. 2 x 28, 2 x 14, 2 x 7 MODULE TABLE.,
5. 28 MODULE PER STRING.
6. TILT ANGLE 9° , PITCH 10.0 m.
7. TOTAL MODULE AREA 18,315 sq.m (1.8 ha).
8. ALL DIMENSIONS ARE IN METER UNLESS OTHERWISE SPECIFIED.
9. FINAL LAYOUT WILL BE DETERMINED AFTER SITE SURVEY.

**EW TABLE OPTION**  
**(PUKENUI I MOD. TABLE AZIMUTH 61°)**

LEGEND

- SITE BOUNDARY
- PLANT ROAD
- PV MODULE (545Wp)  
( 2 x 28 MODULE FIELD EW TABLE )
- PV MODULE (545Wp)  
( 2 x 14 MODULE FIELD EW TABLE )
- PV MODULE (545Wp)  
( 2 x 7 MODULE FIELD EW TABLE )
- SINGLE INV. STATION (PE FS2935K)
- DRAINAGE CANAL
- MV CABLE ( INV. TO MV SWITCHGEAR )
- MV CABLE ( MV SWITCHGEAR TO SUBSTATION )

REFERENCE DRAWINGS

No.	DRAWING TITLE	DRAWING No.

R	DATE	DESCRIPTION OF REVISION	REMARKS
K	12-07-2022	DRAFT - PUK. II MODULE AREA ONLY & ROAD UPDATED	
J	19-05-2022	DRAFT - CONTROL ROOM MOVE TO PUK. II AREA.	
I	06-05-2022	DRAFT - DRONE TOPO UPDATED	
H	17-03-2022	DRAFT - PUK I & II TREES, INV STN LOCATION UPDATED	
G	15-03-2022	DRAFT - PUKENUI I & II LAND BOUNDARY UPDATED	
F	14-03-2022	DRAFT - PUKENUI I & II LAND BOUNDARY UPDATED	
E	09-03-2022	DRAFT - PUKENUI I & II LAND BOUNDARY UPDATED	
D	23-02-2022	DRAFT - PUKENUI I & II LAND TREES UPDATED	
C	16-02-2022	DRAFT - PUKENUI II LAND PLOT UPDATED	
B	21-09-2021	DRAFT - DRAINAGE ROUTE UPDATED	
A	09-09-2021	DRAFT	

PROJECT NAME :

**GANESIS - PUKENUI II - 2.8MWp**  
**NEW ZEALAND**

OWNER'S ENGINEER :

GENERAL CONTRACTOR :

**AQUILA CAPITAL** GENERATING ESSENTIAL INVESTMENTS

Aquila Capital Renewables Asia Pte. Ltd.  
138 Market Street #15-03 CapitaGreen  
Singapore 048946. www.aquila-capital.com

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DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE	SIGN	TITLE
HARI	12-07-2022	ARUL	12-07-2022	TIMO	12-07-2022	H.S	MODULE GENERAL ARRANGEMENT LAYOUT

DRAWING No. **ACRA-NZ-GS-PUK-001**

SHEET SIZE	SHEET	SCALE	REV
A1	1 OF 1	.....	K

PUKENUI II - PV SYSTEM DETAILS	
SITE COORDINATES	Lat: -34.8191°N, Lon:173.1069°E
MODULE TYPE	-
MODULE POWER (Wp)	545
MODULE QTY.	5,152
MOUNTING STRUCTURE TYPE	EW TABLE
MOUNTING STRUCTURE TILT	9°
PITCH	10 m
TABLE ARRANGEMENT	2 x 28, 2 x 14, 2 x 7
No. OF MODULE PER STRING	28
<b>NOMINAL POWER (kWp)</b>	<b>2,808</b>
INVERTER	POWER ELECTRONICS - FS2935K
INV. Nom. POWER (kWac)	2935.00
INVERTER QTY.	1.00
<b>AC POWER (kWac)</b>	<b>2,500.00</b>
MODULE AREA	1.83 ha



WILD ECOLOGY

# Ecology Report

Proposed papakāinga development at  
174 Lamb Road,  
Houhora

July 2024

## DOCUMENT QUALITY ASSURANCE

Bibliographic reference for citation: Wild Ecology (2024). *Ecology Report prepared for proposed development at 174 Lamb Road, Houhora*. Report prepared by Wild Ecology for Te Aupouri Commercial Development Ltd.

Prepared for:	Te Aupouri Commercial Development Ltd	
Version:	FINAL	
Date:	30/07/2024	
Author:	Madara Vilde Principal Ecologist Wild Ecology	<i>MVilde</i>
Revision History		
	FINAL	Issue date: 30/07/2024
Status:	DRAFT	Issue date: 29/07/2024
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## 1.0 INTRODUCTION

### 1.1 Project overview

Te Aupouri Commercial Development Ltd ('the Applicant') engaged Wild Ecology to prepare an Ecological Report for a proposed papakāinga development of a site located at 174 Lamb Road, Houhora ('the subject site').

The layout of the proposed development has been comprehensively designed in consultation with Wild Ecology to ensure that the development avoids, minimises or mitigates potential adverse effects on the indigenous habitats and species present within the site boundaries and wider surrounds. This design also aims to achieve ecological enhancement as part of the site development proposal. This is accomplished through sensitive development design, utilizing historically cleared areas and steering development away from high ecological value areas. The remainder of the indigenous vegetation on site, will be enhanced through pest weed and pest animal control, and managed in accordance with a site specific with an Ecological Management Plan to be prepared as a condition of consent. Landscape planting is proposed to connect and expand natural features as described within the Landscape Plan prepared by Barker & Associates (B&A).

### 1.2 Purpose and Scope

The purpose of this Report is to provide a baseline assessment of the ecological features contained within the site boundaries and immediate surrounds, and outline opportunities for ecological enhancement. This report also considers whether the future intensified development of the site can occur in a manner consistent with the relevant ecological provisions in relation to local, regional and national plans, policy statements and regulations associated with the preservation of indigenous habitats.

This report identifies the potential adverse effects of the proposed development on ecological values and the degree to which significant adverse effects can be avoided, remedied, mitigated or offset. Both constraints and opportunities relating to the site's ecological values are identified and discussed.

## 2.0 METHODOLOGY

### 2.1 Desktop review

The desktop investigation included a review of scientific literature (published and unpublished), the Far North District Plan (Operative) and associated ecological site information, and relevant websites. Ecological databases were also accessed. These included:

- Retrolens historic aerial imagery
- DOC Bio-web Herpetofauna database;
- DOC Bat database;
- iNaturalist New Zealand;

- LENZ Threatened Environments Classification;
- Land Use Classification;
- Baseline Highly Productive Land – Manaaki Whenua;
- Wilderlab eDNA database;
- Oblique photography of the site;
- New Zealand Freshwater Fish Database (NZFFD).

## 2.2 Site investigation

The site and surrounding areas were visited on February 13<sup>th</sup> and 14<sup>th</sup>, 2024 and a site walkover was conducted over the entire site with terrestrial and aquatic features identified. The natural features were surveyed and recorded using a GPS unit (Trimble DA2).

Vegetation was recorded and classified in general accordance with Singers *et al.* (2017).

The following fauna surveys were conducted:

- Opportunistic bird surveys were conducted at various parts of the site to record avifauna (bird) present on site.
- A 24hrs acoustic bat survey was undertaken using Acoustic Bat Monitor (SongMeter SM4).
- Basic visual observations and qualitative assessment of habitat values for native lizards (skinks and geckos) was undertaken during site visits.
- An acoustic recorder (SongMeter SM4) was left on site for 24 hrs to obtain avifauna and herpetofauna records.

## 2.3 Watercourse classification

Watercourses on site were classified in accordance with criteria outlined in the Proposed Regional Plan for Northland (February 2024). There were no rainfall events within 48 hrs prior to the site visit carried out on February 13<sup>th</sup>, 2024 (NRC Environmental Data Hub).

## 2.4 Wetland delineation

For wetland delineation protocols in the field the NPS-FM refers to the Ministry for the Environment (MfE) Wetland delineation protocols (2022) which are generally based on following the four main steps outlined in Figure 1. The primary step is based on the Vegetation tool for wetland delineation in New Zealand (Clarkson 2013) to determine the status of wetlands. This step relies on the presence or absence of hydrophytic vegetation as being the dominant vegetation type. The list of hydrophytes used in this assessment are as per the most recently revised list (Clarkson *et al.* 2021). The results from the vegetation tool provided conclusive results and therefore dominance – prevalence hydrophytic vegetation test (Step 2) and hydric soils tool (Step 3) and wetland hydrology tools (Step 4) were not utilised for this site.

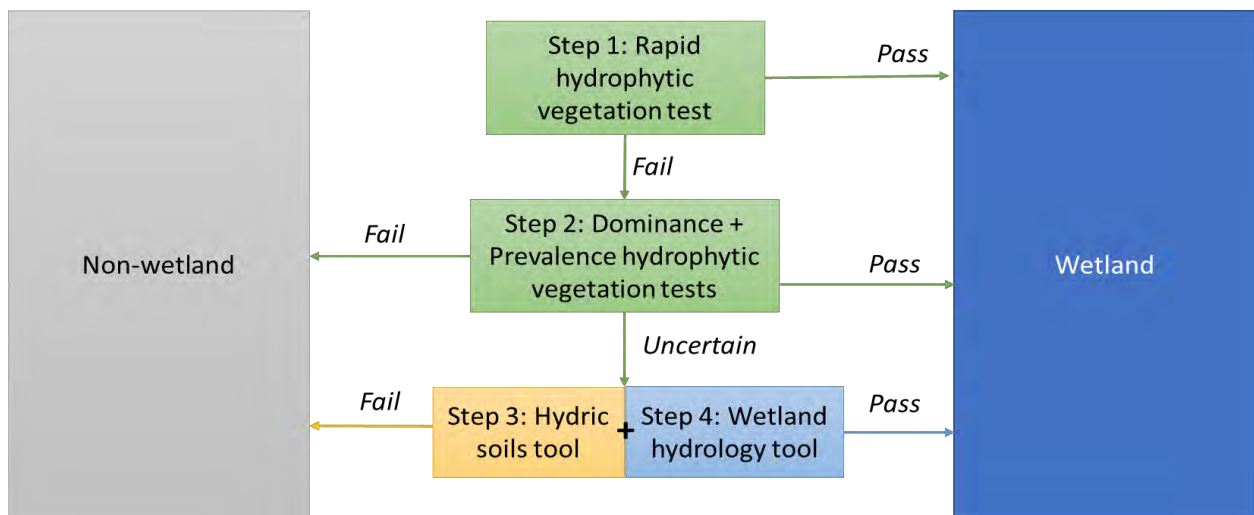


Figure 1: Four steps for delineating wetlands using the hydrophytic vegetation, hydric soils and wetland hydrology tools

## 2.5 Evaluation of Ecological Value (NRPS)

Method 12.2.5.6 of the Far North District Plan (Operative) requires that significance of indigenous vegetation and habitats is assessed by reference to policy 4.4.1 and the significance criteria as outlined under Appendix 5 of the Northland Regional Policy Statement (NRPS (2016)).

## 2.6 Evaluation of Ecological Effects

As a part of the ecological assessment, potential ecological effects associated with the development on both terrestrial and aquatic values on site were described and appropriately assessed. Where necessary, mitigation measures have been outlined to ensure that the site's active development does not result in adverse effects on the environment. The format of this generally follows that of Ecological Impact Assessment (EclA) Guidelines (EIANZ 2018).

## 3.0 ECOLOGICAL CONTEXT

### 3.1 Site location

The site is located approximately 2 km west from Pukenui and State Highway 1 and is zoned 'Rural Production' under the Far North District Plan (Operative) (Figure 2). The proposed development site forms part of the larger title underlying NA80D/748 extending to the north and south of Lamb Road, from herein referred to as the 'northern site' and 'southern site'. The total area proposed for development, which is the focus of this report is approximately 26.4 ha. The site at current day is clad in a mixture of indigenous regenerating terrestrial and wetland vegetation, cutover pine block and exotic grazed pasture.



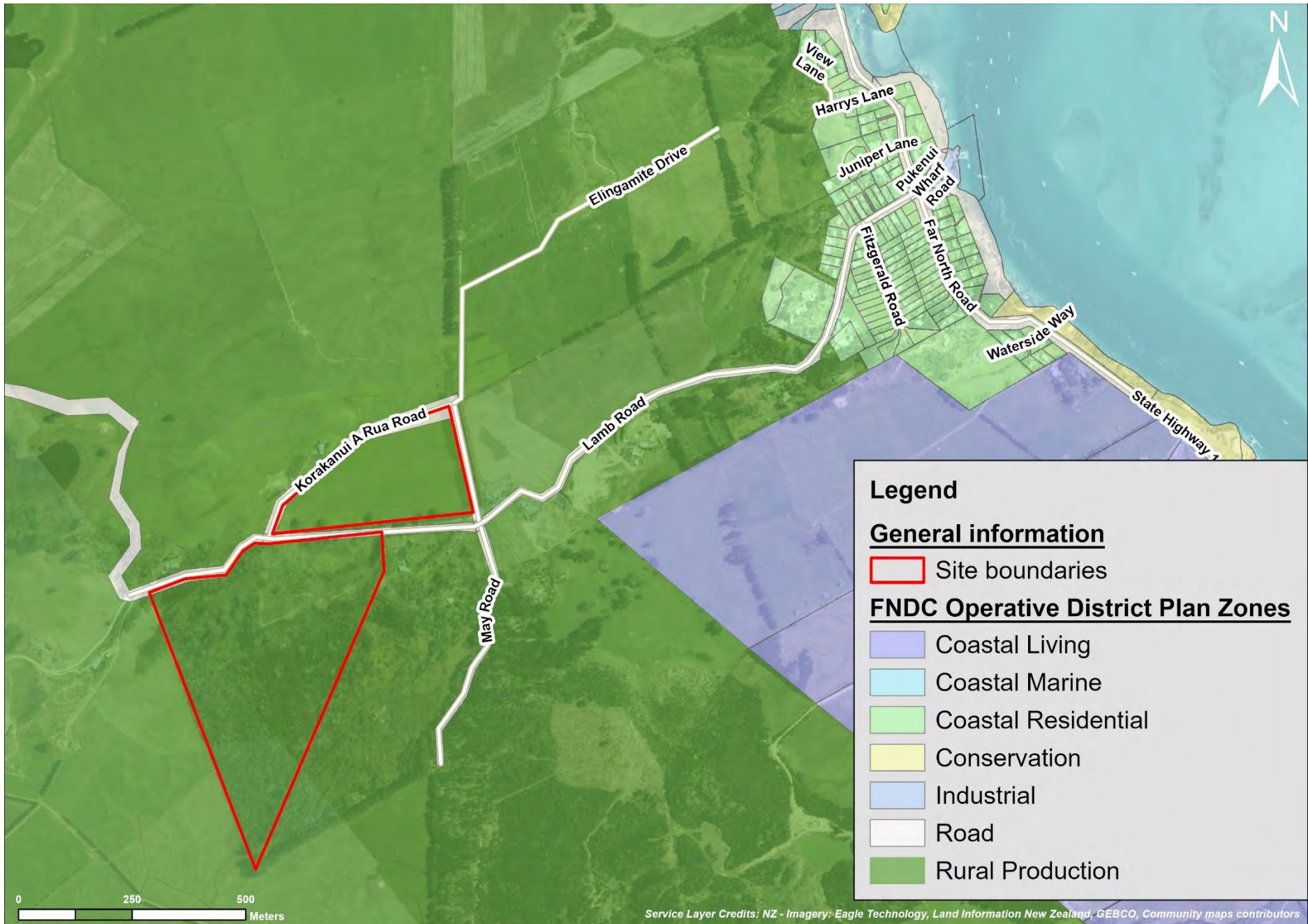


Figure 2: Showing the subject site with oFNDP zoning overlay

### 3.2 Historic land use

Originally the vegetation cover on site and the surrounding area would have been a continuation of the Houhora Harbour ecotone transitional area between freshwater and terrestrial environments.

While the site at current day is clad in a mixture of indigenous and exotic vegetation, the sites vegetation cover historically would have been best represented by manuka, gumland grass tree, Machaerina scrub/sedgeland along the sites northern aspect grading into totara, kanuka, broadleaved forest (WF5) along the more elevated centra aspect of the site merging into bog/fen mosaic towards the south (Singers (2018)) (Figure 3). Anthropogenic land use activities have significantly modified and reduced the extent and quality of the original ecosystem types that would have once extended over the area, through extensive land drainage and conversion into pastoral and exotic forestry land. Minimal representative ecosystems remain, notably the site's northern aspect does not maintain any wetland type features, while the southern aspect has been heavily drained and is more representative of a kanuka dune forest.

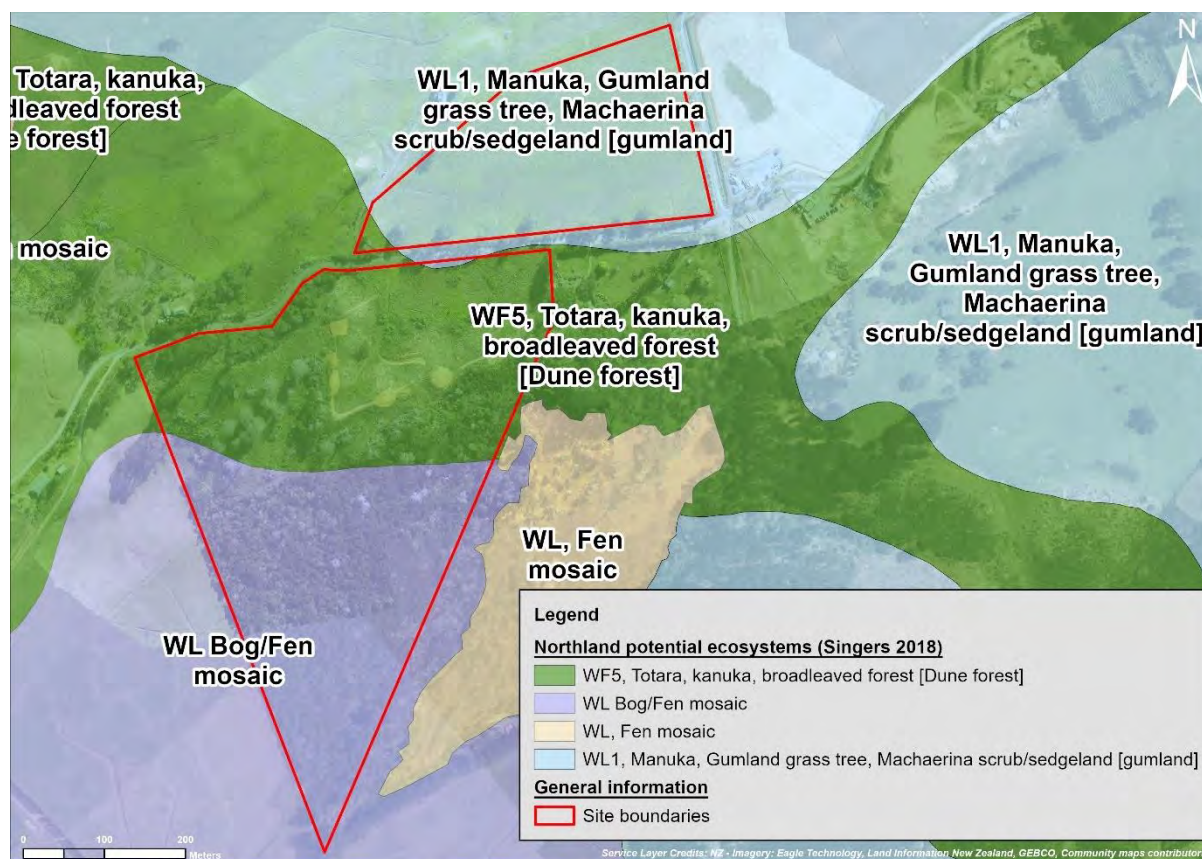


Figure 3: Northland potential ecosystem classification (Singers 2018)

In the earliest available historic aerial imagery (Retrolens) from 1944 (Figure 4), large tracts of vegetation appear to cover the subject site. Based on aerial photography it appears that the area is likely to have been dominated by a secondary type of forest such as kanuka scrub, given the lack of identifiable large primary forest trees. Much of the site and immediate surrounds remain relatively unmodified, albeit access tracks have been established, likely for exploration.

Between 1944 and 1973, it is likely that the site remained disused, and the vegetation cover was somewhat maintained. However, in the aerial photography from 1977 it appears that the site's

some distinctive tracts have been cleared of vegetation, possibly for access to the wider area (Figure 5).

From an ecological perspective the largest change in land use occurs between 1977 and 2003 (Figure 6). It is apparent that the land to the west has been extensively drained, which likely would have significantly lowered the water table onsite, resulting in a significant shift away from what historically might have been more typical wetland vegetation in a trajectory towards more dry terrestrial vegetation. It can also be seen that the northern aspect of the site has been completely cleared of any remnant vegetation. The area to the south of Lamb Road appears to have been converted to a pine forest block which has subsequently been cleared.

Generally, the landcover between 2003 and 2024 remains largely unchanged (Figure 7). The area to the north of Lamb Road is utilised for grazing pasture and is lined with artificial watercourses (drainage channels), while the area to the south of Lamb Road has possibly been reutilised for commercial forestry going through rotational crop cycles, while the less accessible southernmost portion has remained largely unchanged. Land drainage in the wider area intensifies, in particular to the west and south of the site.

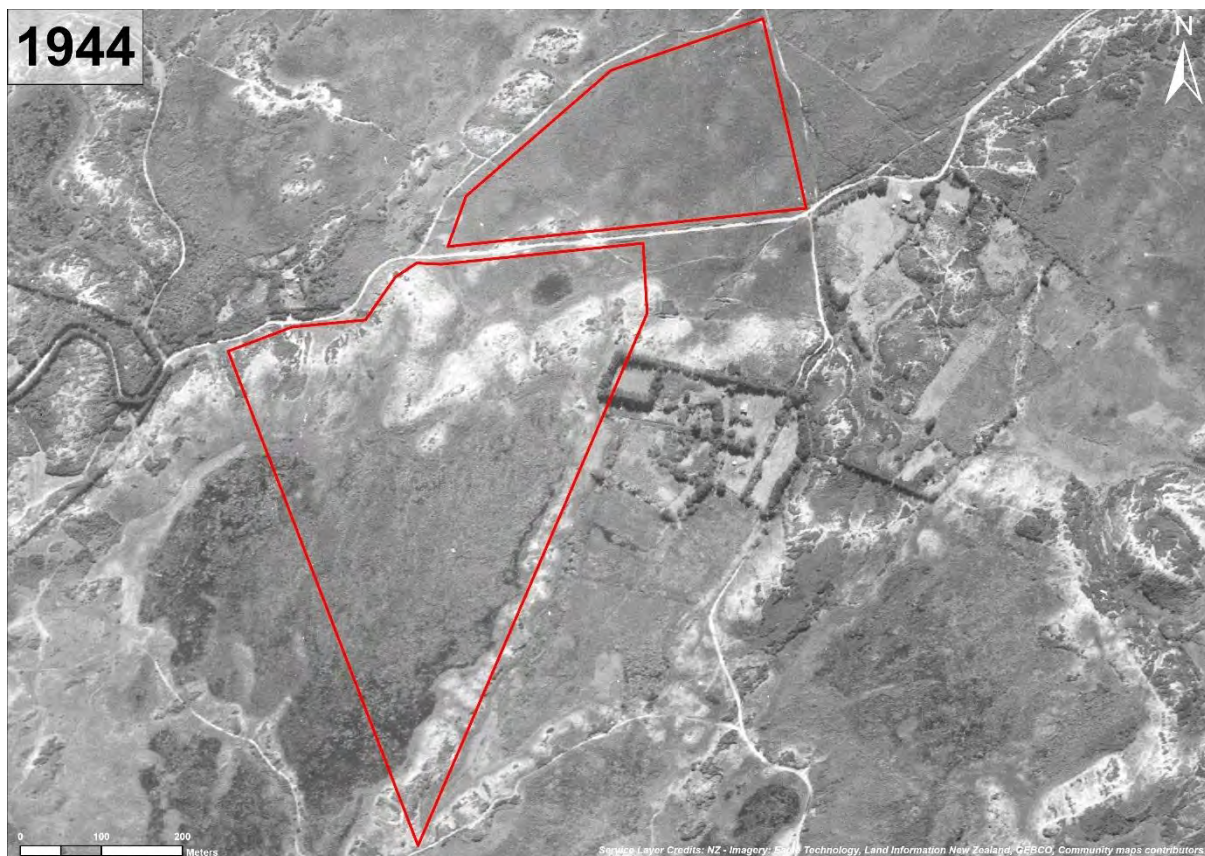


Figure 4: Showing the site and surrounds in 1944 (Source: Retrolens)



Figure 5: Showing the site and surrounds in 1977 (Source: Retrolens)



Figure 6: Showing the site and surrounds in 2005 (Source: LINZ)

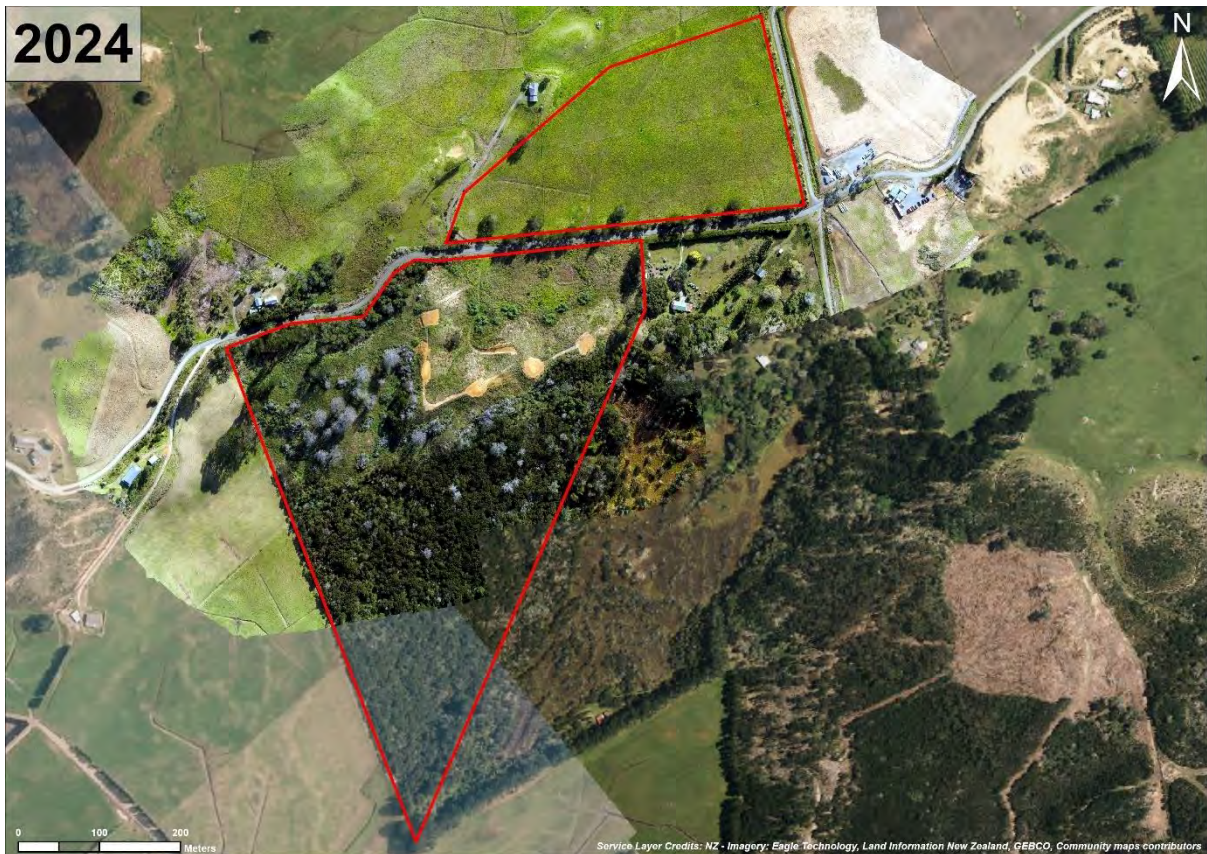


Figure 7: Showing the site and surrounds in the most recent aerial imagery (drone)

### 3.3 Site characteristics

The northern site (area to the north of Lamb Road) is generally flat, while the southern site (the area to the south of Lamb Road) slopes in a northerly and southerly direction from the main ridgeline (Figure 8). The geology of the site is characterised by Early Pleistocene parabolic dunes comprised of weakly cemented and partly consolidated sand in parabolic dunes. Interdune lake and swamp deposits (GNS 2024). A mixture of Te Kopuru sand wet phase (TEKm), Houhora sand (HO), and Ruakaka peaty sandy loam (RK) extend over the site (Figure 9) (Landcare Research 2024).



Figure 8: Showing the site general characteristics (red outline approximate site boundaries) – northern block is generally flat, with southern block rising towards the main ridgeline and then dropping down towards the regenerating kanuka dune forest to the south

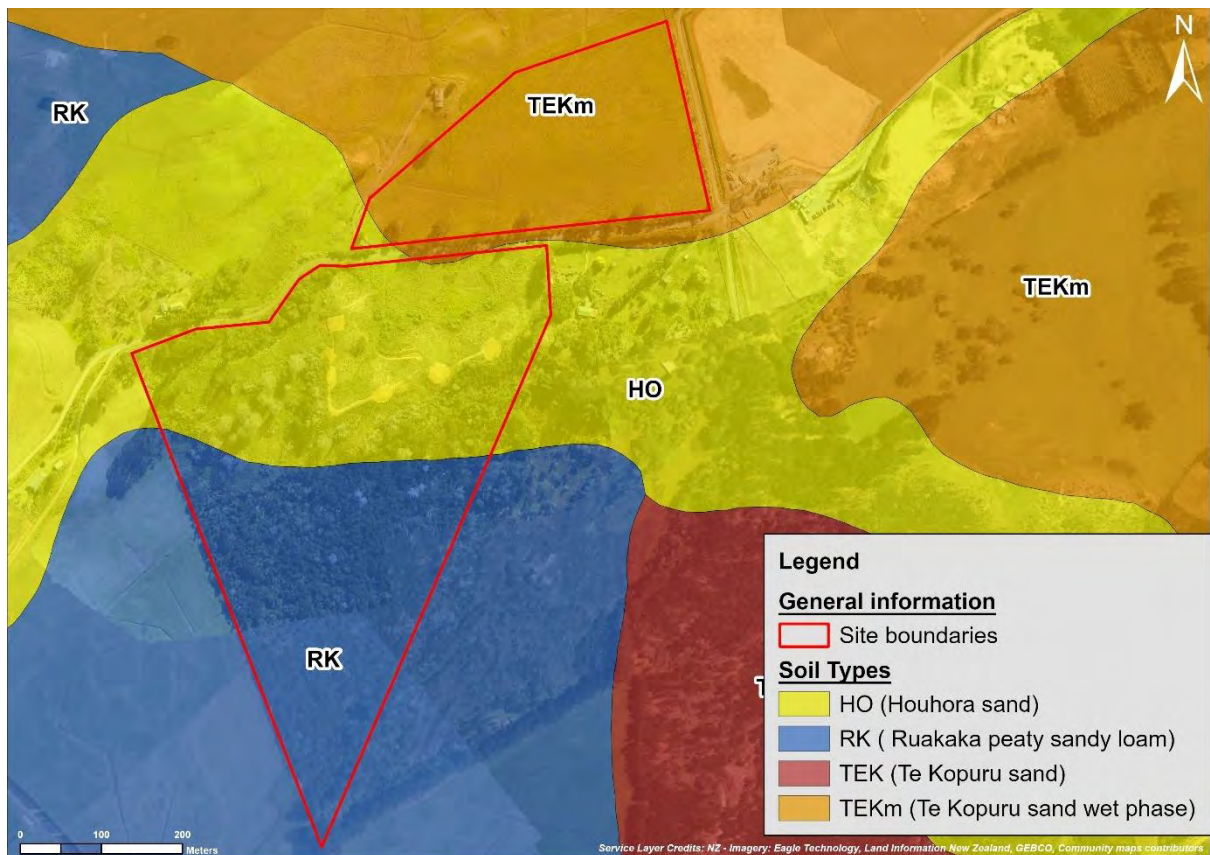


Figure 9: Showing the underlying soil types

Land Use Capability (LUC) inventory was analysed to assess whether the site contains any soils classified as highly productive land (defined as LUC Class 1-3 soils within the National Policy

Statement for Highly Productive Land 2022 (NPS-HPL)). The site is primarily classified as LUC Class 4 land which has limited arable use, and Class 6 land which is unsuitable for pastoral and cropping use (Figure 10). No soils on the site have been identified as highly productive land as defined under NPS-HPL (2022).

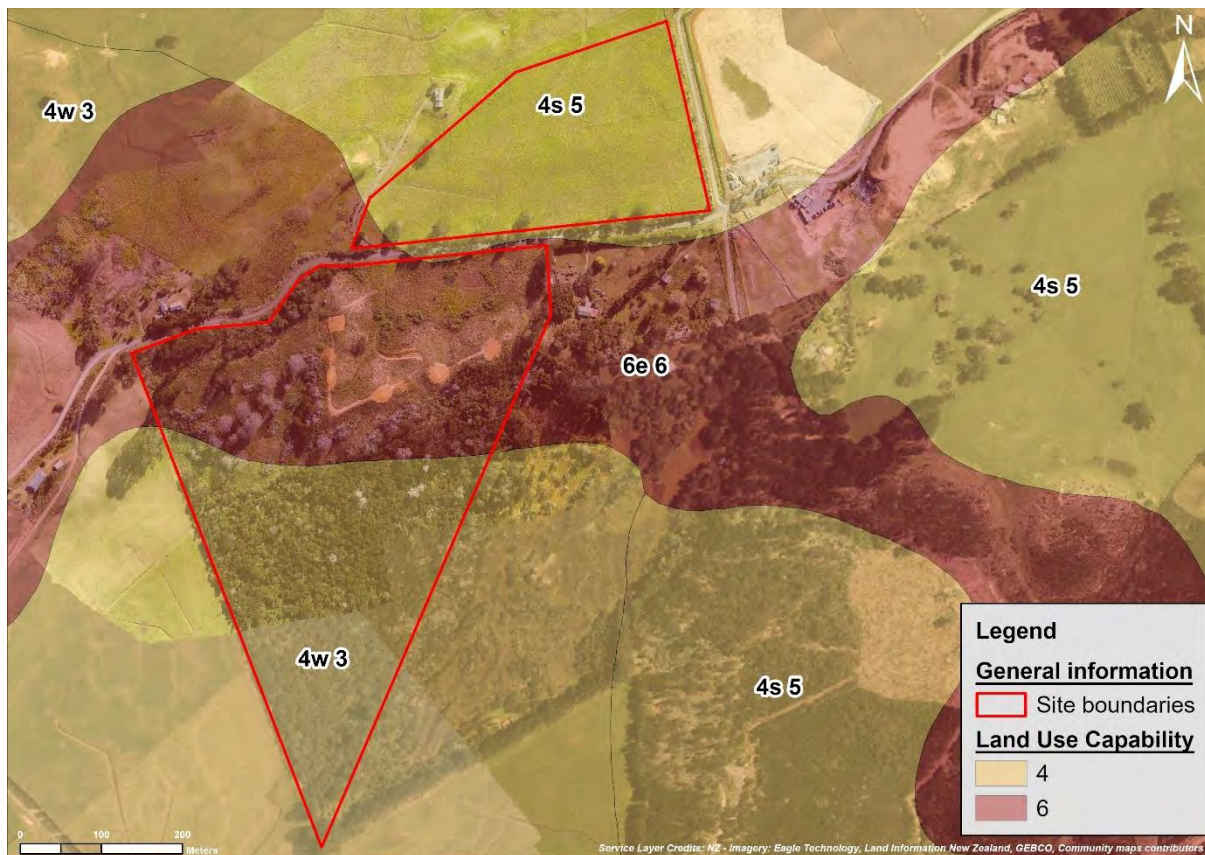


Figure 10: Showing the LUC classification for the site

The site contains no natural watercourses, albeit extensive artificial watercourses (farm drainage channels) are present on the northern site (Figure 11). Some of the artificial watercourses have been identified as a River Flood Hazard Zones 10, 50 and 100-year extent (NRC Open Source Data).

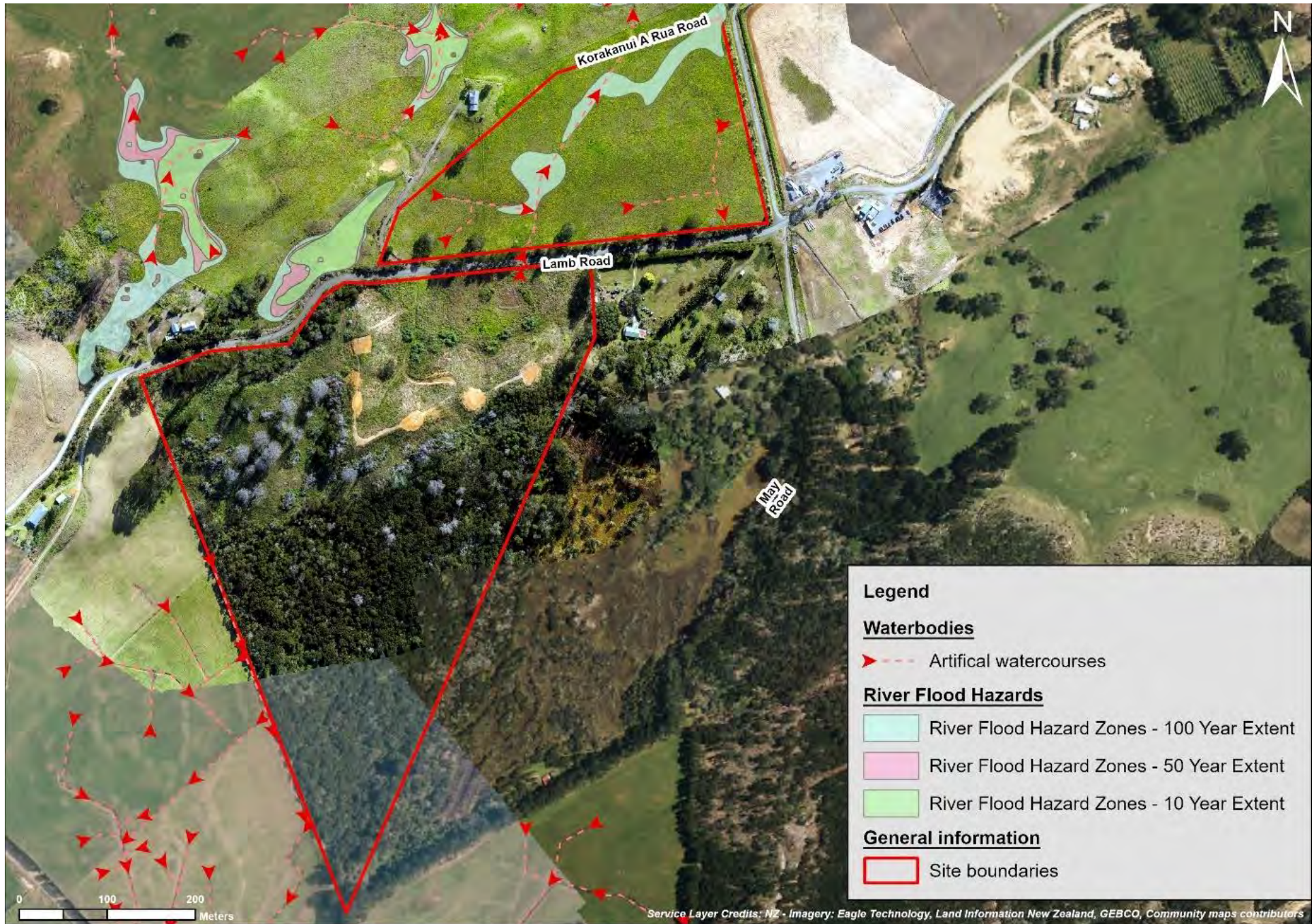


Figure 11: Showing the general hydrological patterns and NRC River Flood Hazard Overlay for the site



The site is situated on within the Aupori Ecological District (ED). Arethusa Swamp (NO3/O39), a designated Protected Natural Area (PNA), extends to the east of the site (Figure 12). Although the vegetation contained within the site boundaries itself has not been designated as an existing Protected Natural Area (PNA), mapping and survey work by Wildlands Consultants (2020) identified it as meeting the criteria for potential Significant Natural Areas (SNAs) in the Far North.

NO3/O39 is described by Conning (1998) as a freshwater wetland ponded by Pleistocene consolidated parabolic dunes. Arethusa Swamp is owned by the Royal Forest and Bird Protection Society, protecting 12.5 ha of this site. Most of NO3/O39 is comprised of *Baumea articulata* and *Eleocharis sphacelata*. Raupo and harakeke are locally frequent. Papyrus is also present. Surrounding the wetland, Sydney golden wattle is emergent over kanuka. Manuka, brush wattle and black wattle occur frequently. A wide range of exotic plant species and other native planted specimens are present as well as frequently occurring kumarahou, mingimingi, mapou, *Pomaderris phyllicifolia*, turutu, *Lepidosperma laterale*, waterfern and bracken. P05/O58 is known to support a number of 'At Risk' flora and fauna including, but not limited to Australasian bittern, banded rails, NI fernbird, spotless crane, Australasian little grebe, shining cuckoo, NZ kingfisher, pukeko, grey warbler and others. This description by Conning is reflective of the characteristics of some of the lesser modified habitats recorded within the subject site boundaries and extending primarily along the southern aspect of the site.

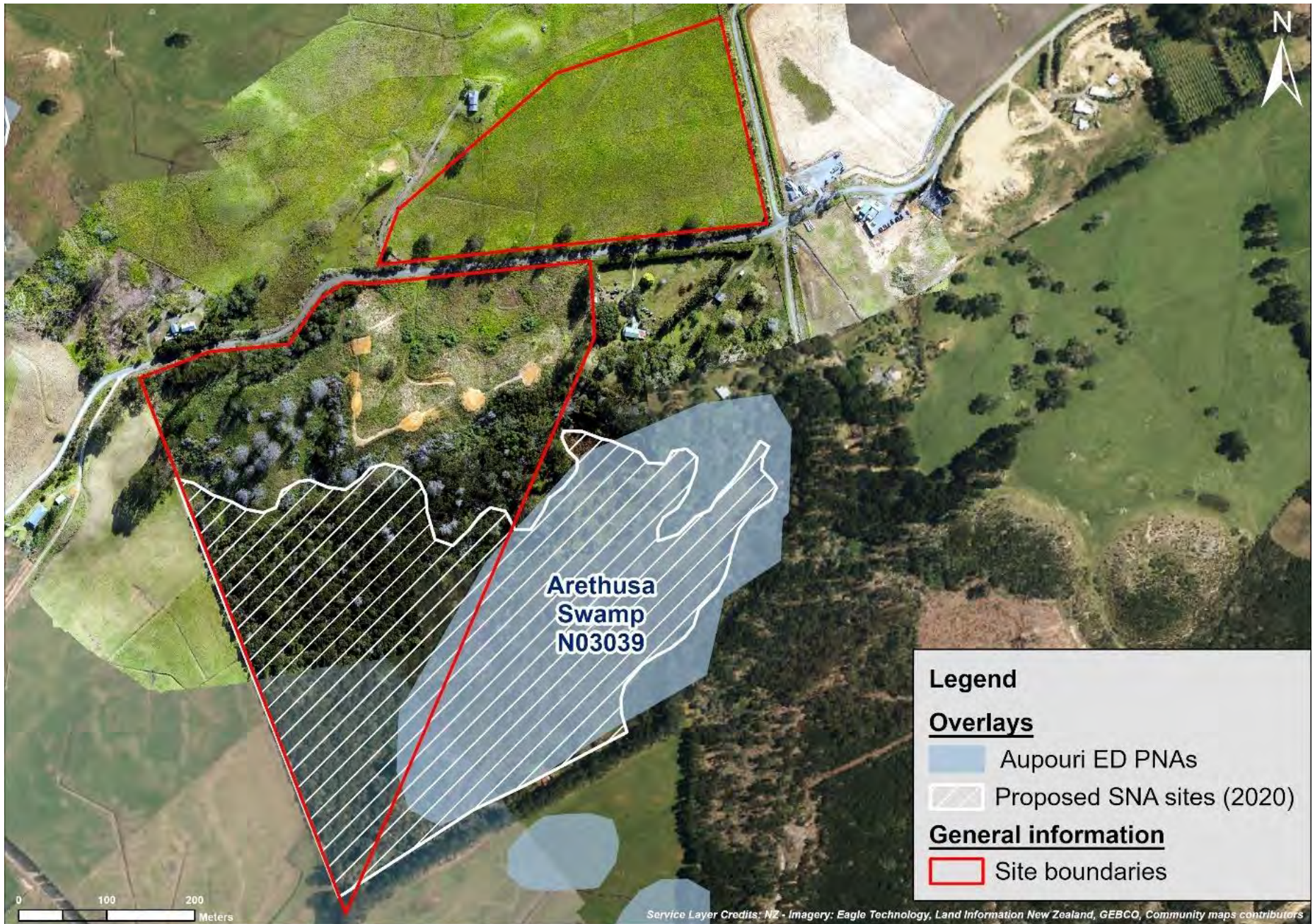


Figure 12: Showing the PNA N03/O39 extending over the subject site and surrounds – note, while the existing onsite vegetation has not been mapped as a PNA, it has been suggested to be included in the SNA overlay (please note this is not operative)

The indigenous vegetation cover on site (Figure 13) is primarily limited to the southern site, which contains regenerating kanuka dune forest (WF5 variation) along the sites less accessible southern aspect and a small *Machaerina* sedgeland (WL11) wetland located nearby Lamb Road. A band of mixed exotic-native scrub (TL.2) extends along Lamb Road. The northern block is devoid of indigenous vegetation and is exclusively in grazed exotic pasture drained by a network of artificial watercourses (farm drains). Each respective vegetation type is described in further detail under Section 4.1 below.

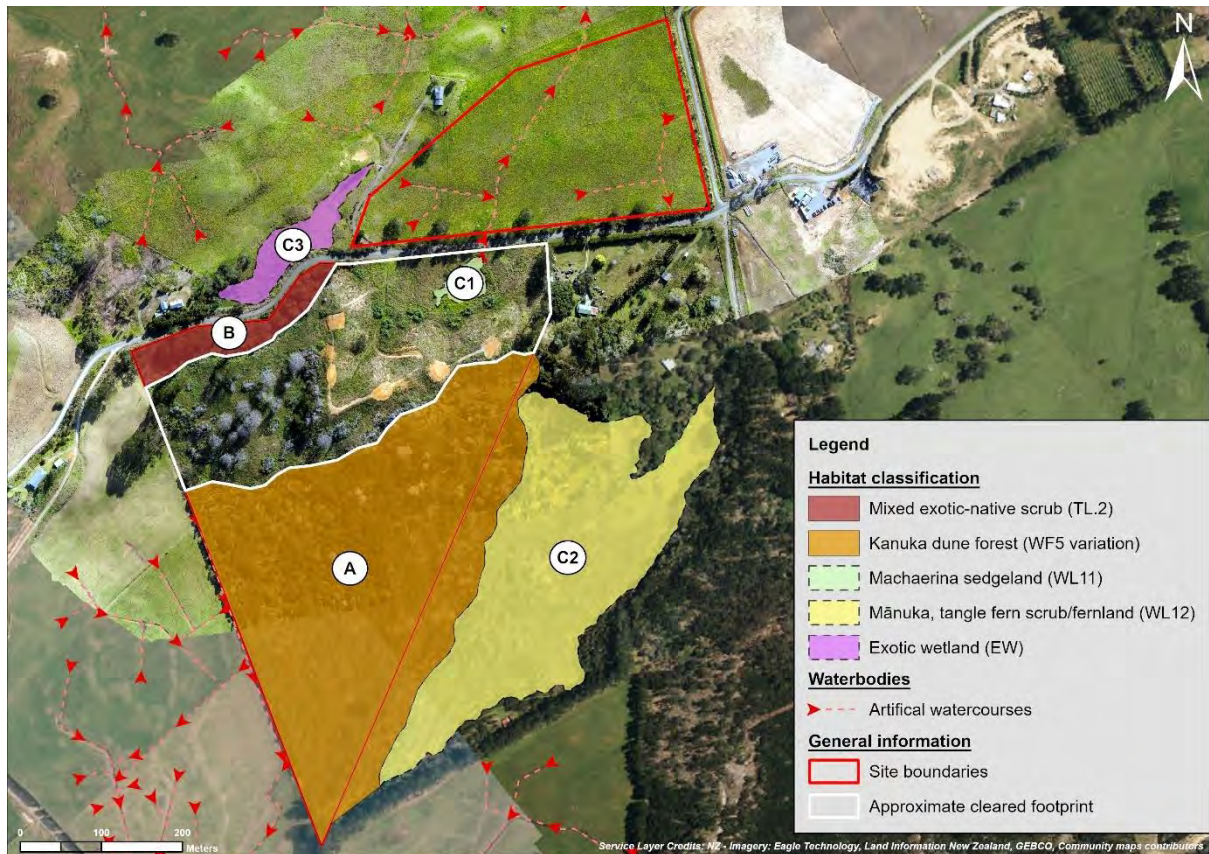


Figure 13: Showing the habitat classification on site at current day

Under Land Environments of New Zealand (LENZ) the majority of the site and immediate surrounds is contained within the 'Category 2 and 5 Threatened Land Environment', where there is 10%–30% indigenous cover left, but much of it is not under legal protection (Figure 14). Indigenous biodiversity in these 'At Risk' environments is under-protected, and thus are more at risk of loss and decline if little of the environment has formal protection.

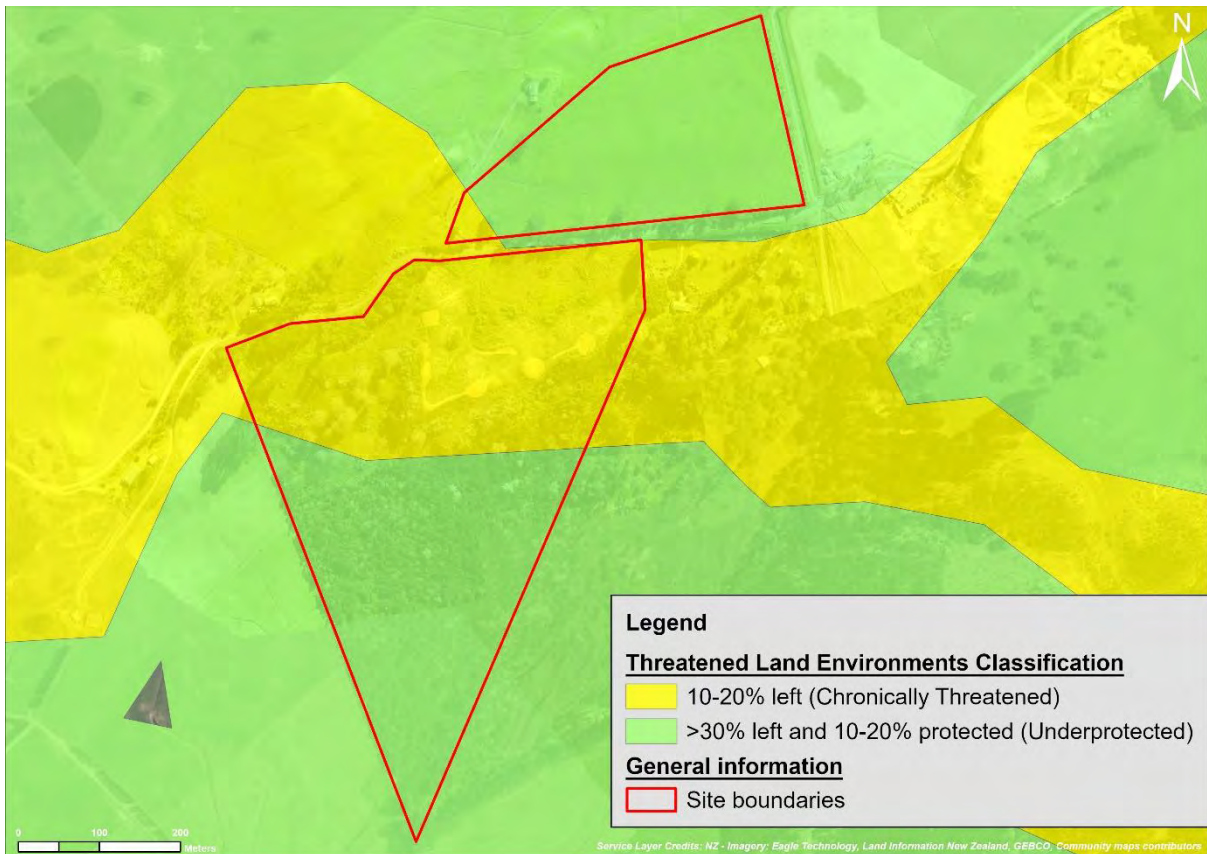


Figure 14: Showing the site and Threatened Environment Classification for New Zealand (2012)

From the analysis conducted above, it is recognised that both the ecological structure and functionality of the site has been historically reduced. The sites' location abounding Arethusa Swamp presents an opportunity to enhance this sensitive ecotone transitional area between freshwater wetland and dune slack forest as part of this development proposal. Imposing development controls coupled with ongoing management of the indigenous vegetation contained on site in accordance with a site-specific Ecological Management Plan will deliver an environmental benefit.

## 4.0 ECOLOGICAL SURVEY RESULTS

### 4.1 Terrestrial

Field surveys were undertaken during February 2024, and the onsite vegetation and vegetation cover directly adjacent to the east, west and south of the site has been described. Habitats identified on site and adjacent can be seen under Figure 15 as depicted in below, each described through a lettering system for ease of identification and description. A general description of species present within these areas is outlined in the following sections.

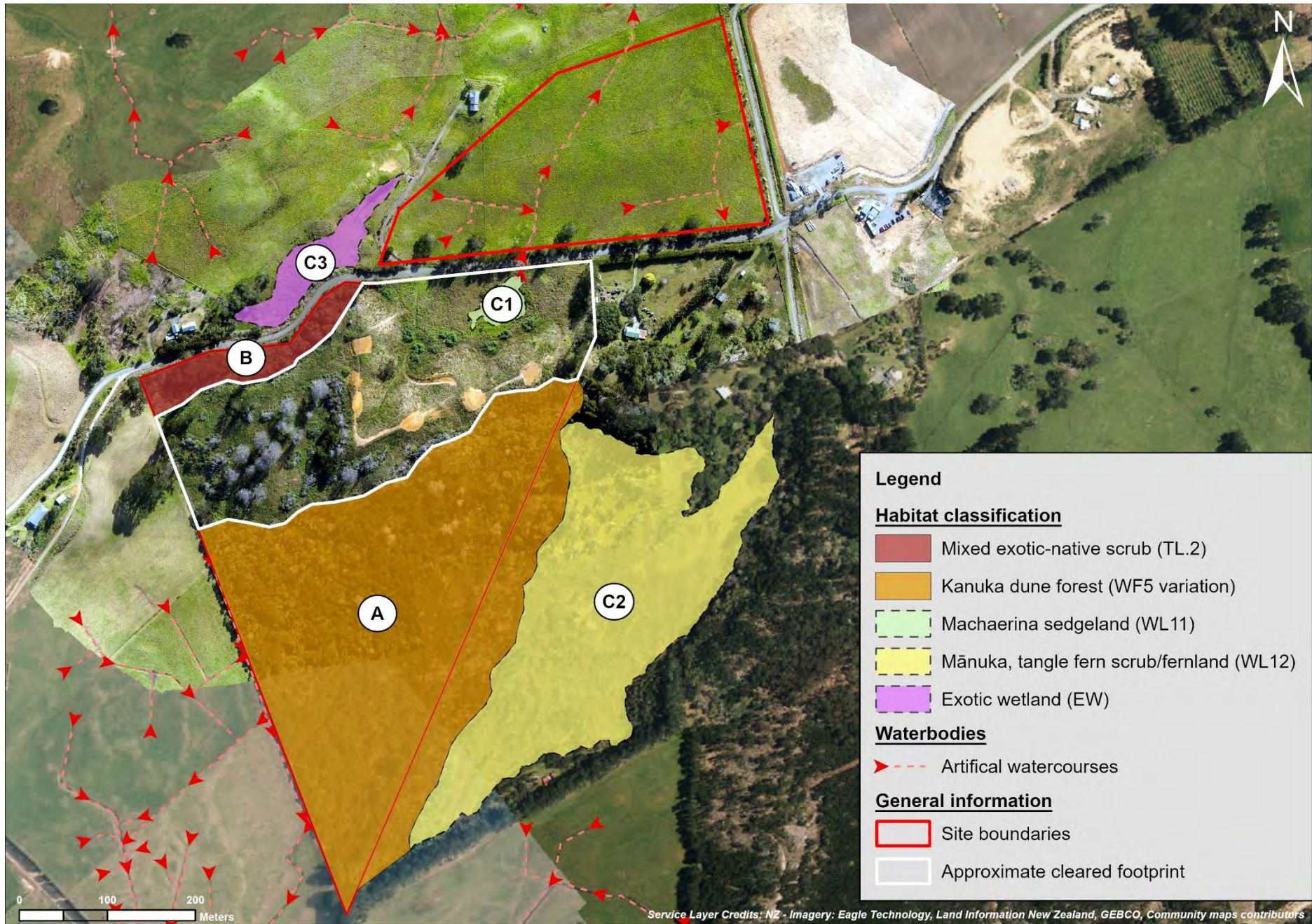


Figure 15: Showing general habitat types noted during field surveys in March 2024

#### 4.1.1. Kanuka dune forest (WF5 variation) (Area A)

Area A is comprised of regenerating kanuka dune forest (WF5 variation) (Figure 16). The regenerating forest remnant is dominated by an emergent/canopy layer of kanuka (*Kunzea ericoides*) dispersed with brush wattle (*Paraserianthes lophantha*), black wattle (*Acacia mearnsii*) and Sydney golden wattle (*Acacia longifolia*). Taihoa (*Cassytha paniculata*) is a common climber throughout. Wilding Radiata pine (*Pinus radiata*) is common throughout representative of past historic land use on site and current nearby exotic forestry plantations. The shrub layer comprises of common mapou (*Myrsine australis*), occasional mingimingi (*Leucopogon fasciculatus*), hangehange (*Geniostoma ligustrifolium*) with sparse houpara (*Pseudopanax lessonii*) and karo (*Pittosporum crassifolium*) with gorse (*Ulex europaeus*), Woolley nightshade (*Solanum mauritianum*) and boneseed (*Chrysanthemoides monilifera*) are dominant on the bush edges. The ground tier layer in the most part is dominated by the climbing asparagus (*Asparagus scandens*), veldt grass (*Ehrharta erecta*), gladiolus (*Gladiolus undulatus*) with the occasional basket grass (*Oplismenus hirtellus subsp. imbecillis*), meadow sword sedge (*Lepidosperma laterale*), tauhinu (*Pomaderris amoena*) and juvenile canopy species. Woolley nightshade is common throughout.

Weedy species incursion within the forest remnant is considered as high (Figure 17) and significant ongoing weed control effort will be required to control the pest plants within this area.



Figure 16: Showing general composition of regenerating kanuka dune forest on site – note weedy species abundance is high



Figure 17: Showing typical understory of the kanuka dune forest – weedy species incidence is high

#### 4.1.2. Mixed exotic–native scrub (Area B)

A band of mixed exotic–native scrub vegetation extends along Lamb Road – the area is steeply sloping from the main ridgeline towards Lamb Road. This habitat type is dominated (Figure 18) by a high number of weedy species (>50%) such as black wattle, Sydney golden wattle, brush wattle, gorse, Wooley nightshade, Chinese and tree privet (*Ligustrum* sp.), willow leaved hakea (*Hakea salicifolia*) and wilding pine (*Pinus* sp.). Some regenerating natives are present throughout such as kanuka, hangehange, mahoe, and some isolated patches of kumarahou, cabbage trees and totara, but exotic species remain dominant.



Figure 18: Showing general composition of the mixed exotic-native scrub extending along Lamb Road

#### 4.1.3. Machaerina wetland (Area C1)

The small Machaerina wetland area (C1) (Figure 19) is dominated by jointed twig rush (*Machaerina articulata*) dispersed with species including but not limited to *Isolepis prolifera*, sharp spike kutakuta (*Eleocharis spachelata*), *Carex longii*, and soft rush (*Juncus effusus*). Exotic pasture species were common throughout the wetland area including kikuyu (*Cenchrus clandestinus*) and Vasey grass (*Paspalum urvillei*).





Figure 19: Showing the Machaerina wetland ecosystem located to the south of Lamb Road

Given that the wetland area on site meets the definition of a 'natural inland wetland' as defined under NPS-FM (2020) and the proposed site's development will occur within a 100m setback from the identified wetland features, consideration will have to be given to applicable NES-FW (2020) regulations in relation to earthworks and stormwater diversions to land within a 100m setback from the identified 'natural inland wetland' area on site.

#### 4.1.4. Manuka, tangle fern scrub/fernland (Area C2) – Arethusa Swamp

The wetland area identified as manuka, tangle fern scrub/fernland is located to the east of the site identified as Arethusa Swamp/Arethusa Reserve (Figure 20) which is owned by the Royal Forest and Bird Protection Society, protecting 12.5 ha of this site. Most of Arethusa Swamp is comprised of regenerating manuka, tangle fern (*Gleichenia dicarpa*), *Baumea articulata* and *Eleocharis sphacelata*. Raupo and harakeke are locally frequent. Papyrus is also present. Surrounding the wetland, Sydney golden wattle is emergent over kanuka. Radiata pine, brush wattle and black wattle occur frequently. A wide range of exotic plant species and other native planted specimens are present as well as frequently occurring kumarahou, mingimingi, mapou, *Pomaderris phyllicifolia*, turutu, *Lepidosperma laterale*, waterfern and bracken.

Based on the site walkover, it was evident that significant weed and pest animal control efforts take place within Arethusa Reserve coupled with restoration planting. Over the years since Forest & Bird acquired the land, many pōhutukawa, kauri, kahikatea and other native trees have been planted.



Figure 20: Showing the Manuka, tangle fern scrub/fermland (Area C2) forming part of Arethusa Swamp owned by Forest and Bird

#### 4.1.5. Exotic wetland (Area C3)

An exotic wetland area is located to the west of the proposed the northern site. This wetland area has likely formed within artificial pond that has not been cleared for some time and has become colonised by common, opportunistic wetland species. At the time of surveys visits could be best described as novel *Juncus* sp. rushland where exotic hydrophytic species such as soft rush (*Juncus effusus*), jointed rush (*Juncus articulatus*), fools' watercress (*Apium nodiflorum*), creeping bent (*Agrostis stolonifera*), and Mercer grass (*Paspalum distichum*) are dominant, with small, isolated patches of more representative indigenous species such as fan-flowered rush (*Juncus sarophorus*) scattered throughout.

This wetland lies outside the proposed development footprint and will not be impacted by the sites development proposal and has been described and highlighted for the purposes of identifying this area as meeting the definition of a natural inland wetland as defined under NPS-FM to ensure it is appropriately recognised.



Figure 21: Showing exotic wetland area C3 – likely formed within an artificial pond area that has been disused and unmaintained for a prolonged period of time

## 4.2. Aquatic

### 4.2.1. Freshwater habitats

Natural watercourses on site are absent. The hydrological features of the site (Figure 22 and Figure 24) limited to artificial watercourses (farm drains) located within the northern site. Analysis of historic imagery suggest that the artificial watercourses were established within the northern site sometime between 1977 and 2003, with additional drainage features added up until 2024. At the time of the survey visit in February 2024, the artificial farm drains on the northern site were dry (Figure 23) or contained minimal water (depth approx. 2cm–5cm). Some of the artificial watercourses have been identified as NRC as a River Flood Hazard Zones 10, 50 and 100–year extent.



Figure 22: Showing the artificial watercourses (red) within the northern development site



Figure 23: Showing one of the artificial watercourses within the northern development site

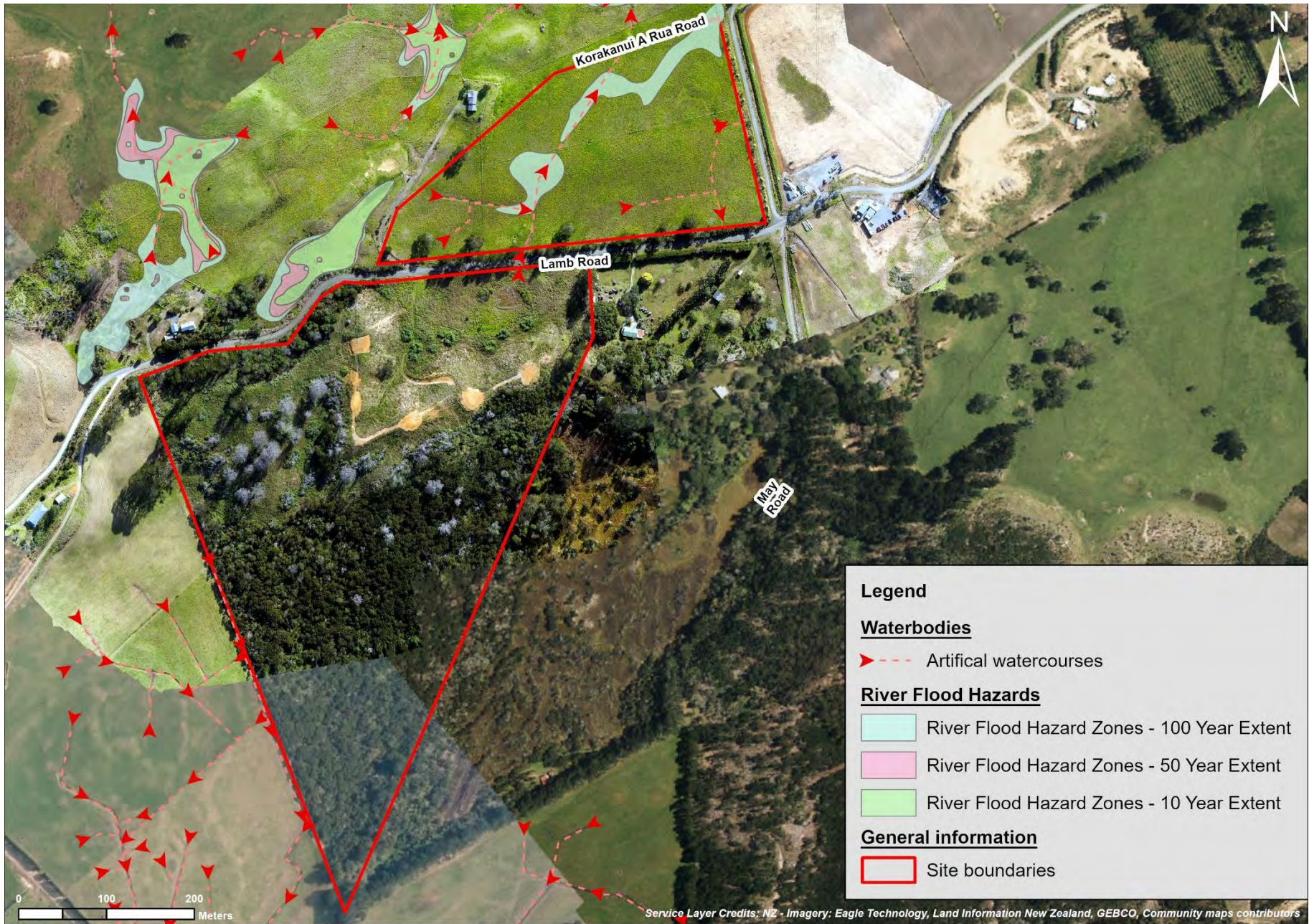


Figure 24: Showing the hydrological patterns of the site and immediate surrounds

#### 4.2.2. Aquatic diversity

The artificial watercourses contained within the northern site are not considered to provide optimal habitat for indigenous fish species. These watercourses are managed as farm drains (periodically dredged and cleared of vegetation) and during site visits in February 2024, they were almost exclusively dry or contained minimal baseflows. Albeit it is not discounted that some more disturbance and pollution tolerant species such as 'Not Threatened' shortfin eel (*Anguilla australis*) may periodically inhabit the on-site artificial watercourses, it is unlikely these species are present on-site year round, and overall habitat suitability for aquatic indigenous fauna is low.

#### 4.3. Avifauna

Avifauna species were observed on the site via opportunistic observations during site visits on February 13<sup>th</sup> and 14<sup>th</sup>, 2024, and deployment of a passive acoustic recorder (SongMeter SM4) for 24 hrs between February 13<sup>th</sup> and 14<sup>th</sup> 2024 with a comprehensive bird species list outlined in Table 4. Overall, the diversity of birds observed was low/moderate, with 7 native/endemic and 3 introduced species.

The birds observed on site are representative of the largely modified nature of the onsite habitats and largely were limited to a low number of common bird species such as New Zealand fantail (*Rhipidura fuliginosa*), sacred kingfisher (*Todiramphus sanctus*), and pukeko (*Porphyrio melanotus*). NI fernbird (*Poodytes punctatus vealeae*), while not recorded on site, were heard in abundance in the adjacent Arethusa Swamp.

Table 1: Bird species recorded on the site during site visits in February 2024

Scientific name	Common name	Conservation status
<i>Acridotheres tristis</i>	Myna	Introduced & Naturalised
<i>Carduelis carduelis</i>	European goldfinch	Introduced & Naturalised
<i>Circus approximans</i>	Swamp harrier	Native & Not Threatened
<i>Gerygone igata</i>	Grey warbler	Endemic & Not Threatened
<i>Hirundo neoxena</i>	Welcome swallow	Native & Not Threatened
<i>Passer domesticus</i>	House sparrow	Introduced & Naturalised
<i>Porphyrio melanotus</i>	Pukeko	Native & Not threatened
<i>Rhipidura fuliginosa</i>	New Zealand fantail	Endemic & Not Threatened
<i>Todiramphus sanctus</i>	Sacred kingfisher	Native & Not Threatened
<i>Vanellus miles</i>	Spur-winged plover	Native & Not Threatened
<i>Zosterops lateralis</i>	Silvereeye	Native & Not Threatened



Figure 25: NI fern bird was recorded in the adjacent Arethusa Swamp

Focusing the proposed development on historically cleared areas and managing the indigenous habitats on-site according to a site-specific Ecological Management Plan will enhance the habitats used by avifauna species. Additionally, implementing pest animal control within the ecological management areas on site will encourage these species to utilize the habitats and benefit the broader Arethusa Swamp/Reserve adjacent to the site.

#### 4.4. Lizards

A visual inspection and habitat suitability assessment of areas likely to be utilized by native lizards for sheltering or foraging (e.g., beneath logs, boulders, and manmade objects) was conducted during site visits in February 2024. Good quality habitat for indigenous lizards is present on the southern site limited to the kanuka dune forest area.

Figure 26 and Table 2 below outline the species likely to occur within the wider area and their corresponding conservation status. The current ecological value of on-site habitats for native lizards is considered to be moderate-high due presence the quality and quantity of suitable habitat.

Table 2: Herpetofauna likely to be present with the surrounding area, including latest Threat Status (Hitchmough et al. 2021)

Common name	Latin name	Threat status	Suitable habitat on site or adjacent?
Pacific gecko	<i>Dactylocnemis pacificus</i>	Not threatened	Suitable habitat in the southern site within the kanuka dune forest

Rainbow/plague skink	<i>Lampropholis delicata</i>	Unwanted organism	Likely present on site and surrounds.
Green and golden bell frog	<i>Ranoidea aurea</i>	Exotic species	Likely present on site and surrounds
Southern bell frog	<i>Ranoidea raniformis</i>	Exotic species	Likely present on site and surrounds
Forest gecko	<i>Mokopirirakau granulatus</i>	At Risk - Declining	Suitable habitat in the southern site within the kanuka dune forest
Elegant gecko	<i>Naultinus elegans</i>	At Risk - Declining	Suitable habitat in the southern site within the kanuka dune forest
Northland green gecko	<i>Naultinus greyii</i>	At Risk - Declining	Suitable habitat in the southern site within the kanuka dune forest
Copper skink	<i>Oligosoma aeneum</i>	At Risk - Declining	Suitable habitat in the southern site within the kanuka dune forest
Ornate skink	<i>Oligosoma ornatum</i>	At Risk - Declining	Suitable habitat in the southern site within the kanuka dune forest
Shore skink	<i>Oligosoma smithi</i>	At Risk - Declining	No suitable habitat on site – recorded 3km east of the site

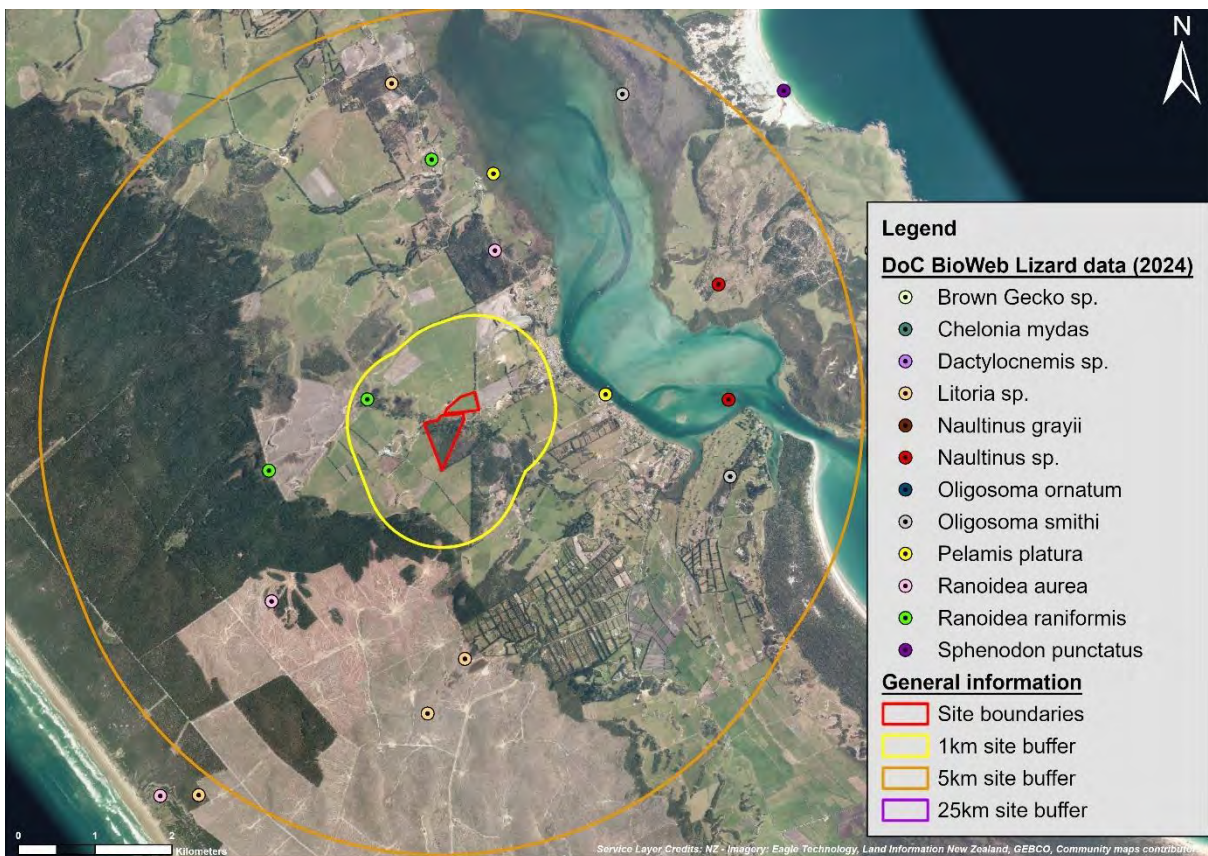


Figure 26: Showing DoC BioWeb database records for herpetofauna within 10-km radius from the subject site

#### 4.5. Bats

New Zealand has two native bat species, being the long-tailed bat (*Chalinolobus tuberculatus*: Threatened-Nationally Critical) and the lesser short-tailed bat (*Mystacina tuberculata*:



Threatened–Nationally Vulnerable). Native bats are ‘absolutely protected’ under the Wildlife Act (1953).

A search of DOC BioWeb (2024) database shows that the closest confirmed long-tailed and short-tailed bat records are located approximately 4km west of the site near 90-Mile Beach in a pine plantation that has been since cleared (Figure 27). Bats are highly-mobile fauna and can travel up to 20km or more in a single night. They have large territories and are listed on the NPSIB’s highly mobile fauna list.

Suitable habitat for bat commuting (forest edges) and roosting (primarily exotic pines) was noted on site, therefore it is considered that the site contains suitable habitat for both bat commuting and potentially roosting.

During the site visit in February 2024, a visual assessment for potential roost sites was undertaken. Trees on site were assessed for their potential to support bat roosts, which comprised of a ground based visual inspection using binoculars to identify any features potentially suitable for roosting bats. Such features may include holes, frost cracks, deadwood, knot holes and limb wounds.

A brief, preliminary acoustic survey using the SongMeter Mini Bat Acoustic Sound Recorder was undertaken. The Acoustic Sound Recorder was set on the subject site for 24 hrs between February 13<sup>th</sup> and 14<sup>th</sup>, 2024. The sound recorder was set up to record bats with a sampling time of 24 hours, set to start 15 minutes before dusk. The overnight weather was cool (minimum 10°C). The results of the survey did not record any long-tailed bat activity during the survey period. However, given the proximity of known presence (<25km), and the highly mobile and transient nature of bats, long-tailed bat presence on site cannot be discounted.

No indigenous mature trees are proposed to be removed as part of the proposal, so bat roost potential on site will not be affected. While it is recommended that the wilding pines within the kanuka dune forest area are controlled, it is recommended that drill & fill technique is used to avoid any potential impacts on any roosting bats. This will allow for the pine trees to decay over time, retaining and creating new deadwood habitat for bat species.

The nature of the site development proposal is unlikely to have any effect on any potential bat populations utilising the area. It is deemed that bat foraging habitat will in fact be enhanced through the protection, enhancement and restoration of the kanuka dune forest area, and provide a protected linear landscape corridor for movement and navigation to the wider area.

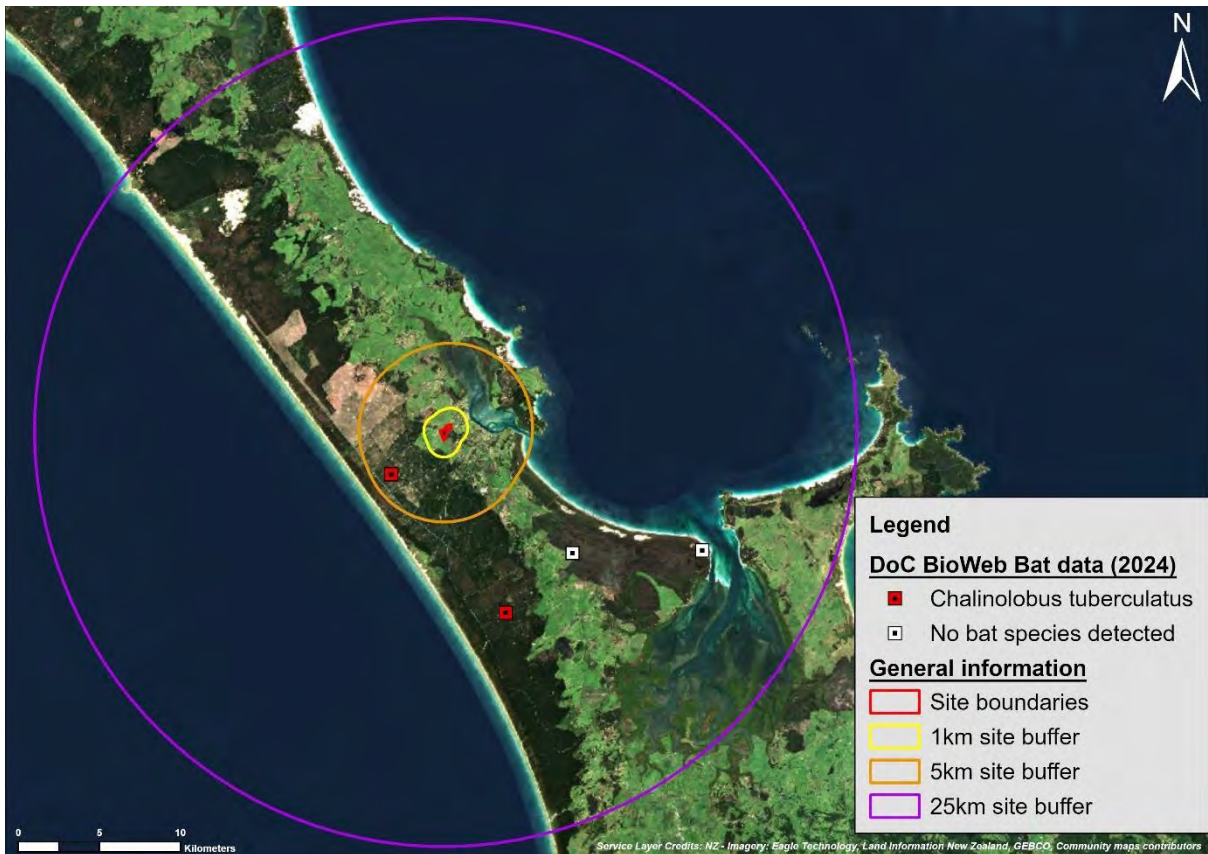


Figure 27: Showing DoC BioWeb database records for long tailed and short-tailed bat(s) within 30-km radius from the subject site

#### 4.6. Summary of values

Method 12.2.5.6 of FNDP requires that in assigning ecological significance to habitats and species noted on site, the ecological matters of Representativeness, Rarity/Distinctiveness, Diversity and Pattern, and Ecological Context have to be considered. This is based on criteria outlined under Appendix 5 of Regional Policy Statement for Northland. Table 3 below outlines the ecological values assigned to the identified ecological features on site.

The overall existing ecological significance of regenerating kanuka dune forest and *Machaerina* wetland is assessed as 'moderate-high' and 'low' for the mixed exotic-native scrubland. It is noted that some negligible (totalling approx. 8m<sup>2</sup>) may be required to be cleared to facilitate accessway construction, this clearance is to be avoided, if possible, through construction design. All indigenous habitats on site are to be enhanced and managed in accordance with a site-specific Ecological Management Plan (EMP). This includes co-ordinated pest weed and pest animal control, as well as permanent stock exclusion.

It is considered that both kanuka dune forest (area A) and *Machaerina* wetland (area C1) identified on site would likely meet a minimum of one of the criteria for ecological significance in Appendix 5 of the RPS and therefore are considered 'significant' and are of Significant Natural Area (SNA) quality/criteria.

Table 3: Assessment of significance of habitats contained within the site boundaries based on Appendix 5 of RPS for Northland

Criteria	Regenerating kanuka dune forest (A)	Machaerina wetland (C1)	Mixed exotic-native scrub (B)
(a) whether the area contains critical, endangered, vulnerable or rare taxa, or taxa of indeterminate threatened status (in the context of this clause, taxa means species and subspecies);	Kanuka dune forest is a 'Critically endangered' ecosystem type under (Singers <i>et al.</i> 2017). While no vulnerable, rare or 'Threatened' taxa were observed, it is likely that this area provides good habitat for indigenous lizard fauna.	Machaerina sedgeland is a 'Critically endangered' ecosystem type under (Singers <i>et al.</i> 2017).	Mixture of exotic-indigenous regenerating scrub extends along Lamb Road. This habitat types has no conservation or threat status (Singers <i>et al.</i> 2017). No critical, endangered, vulnerable or rare taxa, or taxa of indeterminate threatened status were noted within this habitat type during site visits in February 2024.
(b) whether the area contains indigenous or endemic taxa that are threatened or rare in Northland;	No endemic flora or fauna was noted within this habitat type.	No endemic flora or fauna was noted within this habitat type.	No endemic flora or fauna was noted within this habitat type.
(c) whether the area contains representative examples in an ecological district of a particular habitat type;	Representative of its habitat type, albeit weedy species incidence is very high.	Representative of its habitat type.	Habitat has been heavily impacted by previous land clearance activities and does not contain any habitats that could be considered as one of the best representative examples of its particular habitat type.
(d) whether the area has a high diversity of taxa or habitat types for the ecological district;	The site supports the expected habitat types and faunal diversity associated with the range of habitat types present on site.	The site supports the expected habitat types and faunal diversity associated with the range of habitat types present on site.	The site supports the expected habitat types and faunal diversity associated with the range of habitat types present on site.
(e) whether the area forms an ecological buffer, linkage or corridor to other areas of significant vegetation or	This habitat type forms part of the Arethusa Swamp (N03039) (Aupori ED).	Isolated in landscape – dune hollow wetland. Does not form any notable ecological buffer, linkage or corridor.	This habitat type extends along Lamb Road and at current day generally consists of low-quality exotic-regenerating indigenous scrubland habitat type. Does not form any notable ecological buffer, linkage or corridor.

significant habitats of indigenous fauna;			
(f) whether the area contains types that are rare in the ecological district;	While this habitat type remains somewhat common in the ecological district, less than one per cent remain across its entire (national) range. Most of the forest loss was a result of pre-European fires which led to erosion and dune mobility.	This habitat type is not classified as rare in the ecological district, however freshwater wetlands are considered nationally important.	This habitat type is common in the ecological district.
(g) whether the area supports good populations of taxa which are endemic to the Northland or Northland-Auckland regions;	No endemic flora was noted within this habitat type on site. Potential habitat for indigenous lizards.	No endemic flora was noted within this habitat type on site.	No endemic flora or fauna was noted within this habitat type on site.
(h) whether the area is important for indigenous or endemic migratory taxa;	No indigenous migratory taxa were recorded within this habitat type.	A very small, isolated wetland feature, unlikely to be considered as an important habitat for migratory fauna.	No indigenous migratory taxa were recorded within this habitat type.
(i) whether the area supports viable populations of species, which are typical of that type of habitat within an ecological district and retain a high degree of naturalness	The site was observed to support taxa which are typical of regenerating kanuka dune forest, however it does not retain a high degree of naturalness due to heavy invasion by weedy pest plant species. A variety of indigenous lizard species favour this habitat type.	Supports viable population of flora typical of its habitat type and assessed as maintaining moderate degree of naturalness.	This habitat type was observed to support taxa which are typical of regenerating exotic-indigenous shrubland however it does not retain a high degree of naturalness.
Overall	Moderate- High (i.e. Significant)	Moderate-High (i.e. Significant)	Low (i.e. Not Significant)

## 5.0 RELEVANT PLANNING CONSIDERATIONS

The following section summarises the ecological considerations in relation to local, regional and national policy statements and regulations associated with the preservation and mitigation of effects related to potential development of the site. In respect to the proposal, it is considered that the following are applicable:

- Far North District Plan (FNDP) (Operative) 2009 – Rule 12.7.6.1.2. and Rule 12.4.6.1.2
- National Policy Statement for Indigenous Biodiversity (NPS-IB) (2023)
- National Policy Statement for Freshwater Management (NPS-FM) 2020
- Resource Management (National Environmental Standards for Freshwater) Regulations (NES-FW) (2020)

Policies and regulations relating to each of the specific plans are further outlined in sections below.

### 5.1 FNDP Rule 12.7.6.1.1 – Setbacks from Wetlands

Rule 12.7.6.1.1 requires that any building and any impermeable surface must be set back 30m for any wetland of 1 ha or more in area. Given that the wetland areas identified on site and immediate surrounds are less than 1 ha in size (C1 is approx. 2,131 m<sup>2</sup> and C2 is approx. 7,498 m<sup>2</sup>) this rule is not applicable to the proposal.

### 5.2 FNDP Rule 12.4.6.1.2 – Fire risk to residential units

Rule 12.4.6.1.2. requires that residential units shall be located at least 20m away from the drip line of any trees in a naturally occurring or deliberately planted area of scrub or shrubland, woodlot or forest. It is understood that no proposed dwelling shall be located within 20m setback of the existing onsite kanuka dune forest. Any landscape planting nearby 20m setback of all dwellings is to be native low-flammability species only to form a buffer between the dwellings and the existing more flammable kanuka dominated habitats. Ongoing flammable weed management (e.g. gorse) within a 20m setback of all dwellings is recommended to ensure fire risk is minimized.

### 5.3 National Policy Statement for Freshwater Management (2020)

New Zealand has historically lost most of its wetland extent. Those remaining are rare and valuable ecosystems. The core intent of the policies in the NPS-FM (2020) is to provide stronger protection for freshwater bodies and wetlands. It also places a statutory responsibility on territorial and consenting authorities to give effect to Te Mana o te Wai by prioritizing the health and wellbeing of our waterways. With respect to Te Mana o te Wai, the hierarchy of obligations for consenting authorities are;

1. first, to prioritise the health and well-being of water bodies and freshwater ecosystems;
2. second, the health needs of people (such as drinking water); and

3. third, the ability of people and communities to provide for their social, economic, and cultural well-being, now and in the future.

In relation to the proposed development of the site, the application demonstrates a commitment to upholding the hierarchy of obligations outlined in the NPS-FM (2020). The primary objective has been to avoid any potential adverse effects on the identified natural inland wetland areas located on the site and immediate surrounds. The development plan prioritizes the protection and preservation of freshwater ecosystems by minimizing disruptions and preserving the ecological integrity of the wetland areas.

Through these efforts, the proposed development aligns with the NPS-FM 2020's emphasis on maintaining and improving the health and well-being of freshwater bodies, demonstrating a balanced approach to development and environmental stewardship.

#### 5.4 National Environmental Standards for Freshwater Management (2020)

The proposed development (please refer to BDG Architects Drawings and Chester Consultants Site Plan Drawing No 110) has been designed with the input of the results of the habitat classification and delineation provided by Wild Ecology, with the proposed built development to be placed as far as practicable from sensitive receiving environments. Please note that this assessment primarily focuses on the southern site, given that no natural inland wetland areas or natural watercourses are present within the northern site.

Having reviewed the proposed development Site Plan it is understood that no earthworks, vegetation clearance or stormwater discharges shall take place within a 10m setback of an identified natural inland wetland area (C1 and C3) (Figure 28). However, given the scattered nature of the wetland areas on site, it is inevitable that at least some minor earthworks and stormwater discharges will occur within a 100m setback from the identified wetland areas. This is further discussed under Sections 5.3.1-5.3.3 below.

It is considered that the construction of the required infrastructure associated with the proposed development is not likely to change the water level range or hydrological function of the identified wetland areas and will not result, or is not likely to result, in the complete or partial drainage of all or part of a natural inland wetland. Active construction process will need take into account the sensitivity of these natural features, employing strategies that preserve their integrity, such as erosion and sediment controls as well as appropriate management of stormwater flows. It is understood that such controls are proposed as described within the Site Suitability Report prepared by Chester. The identified natural inland wetland area (C1) and its associated margins shall be enhanced as part of the proposed landscape revegetation proposal for the site and incorporated into a well-functioning open space. With mitigation in place the overall effects associated with construction within 100m wetland setbacks are assessed as 'low'.

Based on the analysis above, it is considered that the proposal as it stands has no additional consenting obligations under NES-FW (2020).

### 5.4.1 Stormwater management

According to Chester Civil Design Drawings and Site Suitability Report it is proposed to create a stormwater network to service the development. The network will convey and discharge flows via several wingwall outlets to existing low lying points within topography (primarily roadside or farm drains). It is understood that no earthworks associated with the stormwater network construction and management will be required to take place within a 10m setback of a natural inland wetland.

It is considered that potential adverse effects on the identified natural inland wetland features can be minimized, mitigated, and managed effectively in accordance with Chester Consultants Site Suitability Report and Civil Design Drawings. The overall level of effect with mitigation in place is assessed as 'low.'

### 5.4.2 Building setbacks

All proposed building platforms are shown >50m away from the identified natural inland setback (Figure 28). For the purpose of this assessment, it is considered the site is able to accommodate building platforms and associated infrastructure without adverse effect on the wetland areas should sufficient sediment and erosion control measures be implemented during active earthworks on site.

### 5.4.3 Proposed access and pedestrian footpaths

As shown under Figure 28 the proposed access into the southern site will traverse approximately 15m to the east of identified natural inland wetland area C1. A pedestrian walkway will extend approximately 15m south of wetland area C1. Implementation of standard erosion and sediment controls during construction are recommended to prevent sediment from entering the wetland. It is recommended that construction is conducted during dry seasons or periods when the wetland is less sensitive to disturbance. It is understood that the wetland area margins are to be revegetated with appropriate indigenous species following construction (please refer to the Landscape Plan prepared by B&A for more detail). These recommendations will ensure that the construction of the proposed access and pedestrian walkways within close proximity to the wetland is done in an environmentally responsible manner.

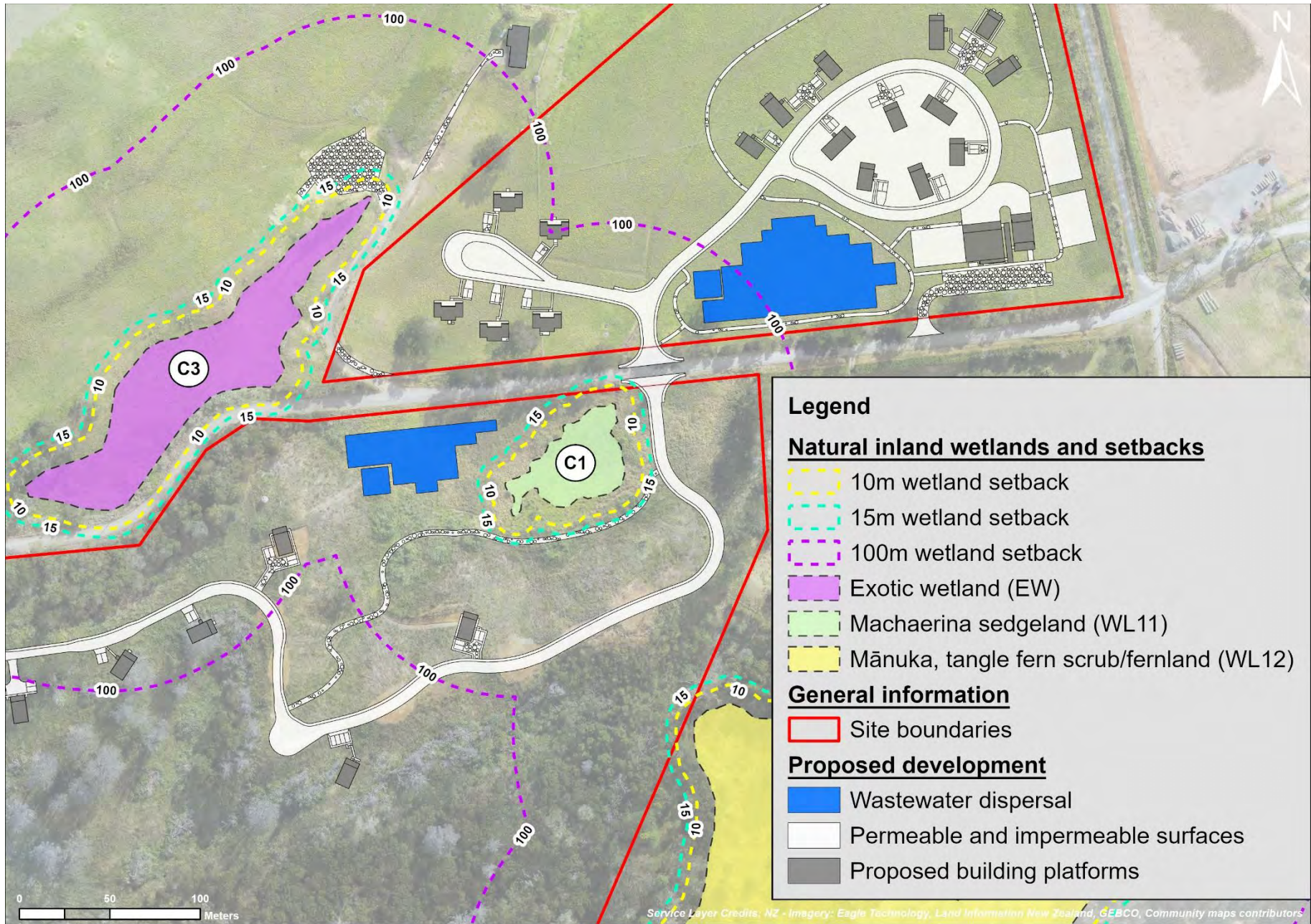


Figure 28: Showing the proposed development layout as per BDG Architects, natural inland wetland areas and associated 10m, 15m and 100m setbacks



## 5.5 National Policy Statement for Indigenous Biodiversity (NPS-IB) (2023)

National Policy Statement for Indigenous Biodiversity (NPS-IB) came into force on August 4<sup>th</sup>, 2023 (commencement date) and applies to indigenous biodiversity in the terrestrial environment throughout Aotearoa New Zealand. The objective of NPS-IB is to maintain indigenous biodiversity across Aotearoa New Zealand so that there is at least no overall loss in indigenous biodiversity after the commencement date.

It is deemed that the proposal gives effect to the objectives and policies of NPS-IB through

- (a) Having been shaped by a careful design-led approach to development that integrates the necessary infrastructure of the proposal with the existing ecological and landscape context and demonstrates a strong commitment to sustainable development principles.
- (b) Applies the effects management hierarchy by avoiding or minimising potential adverse effects in the first instance through development design, and providing mitigation where adverse effects cannot be avoided in the first instance.
- (c) Maximising the environmental benefit that can be achieved from the site development works given that significant net area outside of the immediate development footprint is to serve as an ecological management or landscape planting areas.
- (d) Avoiding or mitigating potential adverse ecological effects through utilising existing structures or previously cleared areas of vegetation (i.e. existing pasture or cleared areas) to facilitate access and site development. Negligible indigenous vegetation clearance may be required to facilitate accessway construction on southern site, which is to be avoided, if possible, through construction design.
- (e) Where any earthworks are to take place near sensitive terrestrial or aquatic environments, earthworks controls have been put in place to ensure that the feature is appropriately protected.
- (f) Illustrates how rural development and growth can be balanced with ecological restoration through complementing the existing ecological values of the site and wider area, while also ensuring that appropriate areas can be developed into high quality housing.

The proposal will ensure that potential adverse effects on indigenous biodiversity are avoided in the first instance through development design. It is noted that some negligible indigenous vegetation clearance may be required to be cleared to facilitate accessway construction on the southern site, this clearance is to be avoided, if possible, through construction design. Should vegetation clearance be required, the overall clearance area size is likely to be negligible (<100 m<sup>2</sup>), and no specific mitigation and off-set is deemed required. Any negligible indigenous vegetation clearance will be accounted for through the wider landscape revegetation planting throughout the site. Furthermore, the proposal includes ongoing management of the indigenous bush and wetland features on site through a site-specific Ecological Management Plan, which underscores a commitment to the restoration and enhancement of indigenous biodiversity. This plan promotes the integrated pest animal and pest weed control to enhance habitat suitability and availability for a range of flora and fauna, contributing to the long-term ecological health and resilience of the area. Through these efforts, the proposal not only mitigates potential impacts

but also actively supports the objectives of the NPS-IB 2023 by fostering a thriving and sustainable natural environment.

## 6.0 POTENTIAL EFFECTS AND MITIGATION

The following sections describe potential ecological effects based on the general layout and location plan and associated services as shown within the proposed Site Plan prepared by BDG Architects. The proposed development areas have been selected in consultation with Wild Ecology to ensure that development footprint is contained, as far as feasible and practicable, within two condensed areas (northern site and southern site) which are relatively free of ecological constraints and thus potential effects are localised and minimised. A brief assessment of potential ecological effects and mitigation measures is provided under Table 4.

Generally, the potential adverse effects associated with the site development on ecological values are:

- Potential loss of habitat for indigenous fauna;
- Potential for injury / mortality to indigenous fauna;
- Potential introduction of plant pathogens;
- Increased presence of pet animals on site;
- Change in flow regime due to increased site imperviousness.

Table 4: Magnitude and level of impact for proposed development before and after mitigation

Effect/activity/ impacted species	Potential habitat impacted	Ecological value	Magnitude of effect (no mitigation)	Comment	Recommended mitigation/management measures	Level of effect (with management in place)
Earthworks and sedimentation, smothering bed	Artificial drains and wetland areas	Low	Moderate	<p>Earthworks associated with the active development of the site have the potential to result in sediment runoff into the on-site and adjacent watercourses and wetland areas.</p> <p>Backfilling/diversion or culverting of artificial watercourses within the northern site may be required.</p>	<p>The only watercourses contained within site boundaries are artificial in nature (farm drainage channels). These are considered to have low ecological value and may require to be backfilled, diverted or piped to facilitate site development. The ecological effect associated with these works is assessed as low should these be carried out in accordance with Auckland Council Guideline Documents 2016/005: Erosion and Sediment Control Guidelines for Land Disturbing Activities in the Auckland Region as required under Section C.8.3 of the NRC Proposed Regional Plan for Northland (February 2024).</p>	Low
Indigenous vegetation clearance	Terrestrial	High	Moderate	<p>Some minor indigenous vegetation clearance (&lt;100 m<sup>2</sup>) may be required to facilitate construction of an access road within the southern site.</p>	<p>Vegetation clearance is to be avoided, where possible, through construction design. Any vegetation clearance if required, would consist of 'edge' vegetation which would likely be limited to scattered kanuka and exotic weeds and be &lt;100 m<sup>2</sup> in size. Overall habitat is to be enhanced through landscape planting which will extend throughout the site and will provide off-set for any potential vegetation lost (noted that the loss is negligible).</p>	Low
Exotic vegetation clearance	Terrestrial	Low	Low	<p>Exotic pest plants are to be controlled on site as per recommendations made within the body of this report and associated EMP.</p>	<p>Wider terrestrial habitat is to be improved through landscape/amenity revegetation planting, pest plant and pest animal control and permanent stock exclusion from indigenous habitats on site.</p>	Positive
Stormwater infrastructure	Wetland habitats	High	High	<p>The development of pasture into additional dwellings and servicing can result in</p>	<p>The proposed stormwater infrastructure construction, management, and dispersal are not</p>	Low

Effect/activity/ impacted species	Potential habitat impacted	Ecological value	Magnitude of effect (no mitigation)	Comment	Recommended mitigation/management measures	Level of effect (with management in place)
and management				alteration to natural drainage patterns and increased catchment imperviousness that can alter hydrology and water quality in the downstream environment.	expected to adversely affect the hydrology, habitat quality, or water quantity of the aquatic habitats on site and in the immediate surroundings, provided they are constructed and maintained in accordance with Chester Consultants' Site Suitability Report and Civil Design Drawings.	
Wastewater infrastructure and management	Wetland habitats	High	High	The development will require on-site wastewater disposal. It is understood that 2 x on-site wastewater dispersal fields will be required to service the northern and southern sites.	All wastewater infrastructure and associated dispersal fields are to be designed by a suitably qualified engineer in accordance with best practice and abide by setback requirements as per PRPN (February 2024). It is recommended that the primary wastewater field(s) should be planted with appropriate low growing native species, which will optimize the system's performance, aid absorption of nutrients, and reduce surface water flows.  Should the wastewater disposal system(s) be installed and maintained as per the recommendations outlined in the associated reports, NRC technical guidance notes and recommendations made above, no adverse effects on freshwater habitats relating to the establishment of the new effluent disposal fields on site are anticipated.	Low
Impacts on natural inland wetland areas	Wetland habitats	High	High	No natural inland wetlands are to be reclaimed or adversely affected on as part of the proposal.	Where any earthworks are required to take place within a 100m setback of a natural inland wetland appropriate sediment and erosion controls are to be implemented in accordance with Chester	Positive

Effect/activity/ impacted species	Potential habitat impacted	Ecological value	Magnitude of effect (no mitigation)	Comment	Recommended mitigation/management measures	Level of effect (with management in place)
				No earthworks, vegetation clearance or stormwater discharges will be required to take place within a 10m setback of natural inland wetland(s).	Consultants Site Suitability Report and Civil Design Drawings.  Wetland area C1 and its margins is to be enhanced as part of revegetation planting, pest plant and pest animal control and permanent stock exclusion.	
Introduction of additional pet animals on site	Terrestrial and aquatic habitats	High	High	Given the presence of NI fernbird recorded in the adjacent Arethusa Swamp (and likely presence of other 'At Risk' and 'Threatened; avifauna and lizard fauna), it is recommended that a ban on pet cats and exotic pest animals (including turtles, rodents, exotic fish, exotic birds, mustelids etc.) for the new development is proposed. Pet dogs can be controlled with secured containment such as electronic pet fences or dog runs.	Restrictions of pet animals on site following development including a ban of pet cats, mustelids, exotic fish, turtles and birds and secured containment for dogs.	Low
Fire risk	Terrestrial habitat	High	High	Introduction of new buildings near/in the bush area has the potential for increasing fire risk	No dwellings shall be located within a 20m setback of the kanuka dune forest. All landscape planting within a 20m setback of all dwellings is to be native low-flammability species only to form a buffer between the dwellings and the existing more flammable kanuka dominated habitats. Ongoing flammable weed management (e.g. gorse) within a 20m setback of all dwellings to ensure fire risk is minimized.	Low

Effect/activity/ impacted species	Potential habitat impacted	Ecological value	Magnitude of effect (no mitigation)	Comment	Recommended mitigation/management measures	Level of effect (with management in place)
Avifauna	Terrestrial habitat	Moderate	Low	No 'At Risk' of 'Threatened' avifauna noted within the immediate development footprint, however works should be minimized to reduce disturbance.	No adverse effect on avifauna anticipated. Habitat is to be improved through landscape/amenity planting, pest plant and pest animal control, domestic pet controls and stock exclusion.	Positive
Lizards	Terrestrial habitat	High	Moderate	Lizard habitat limited to the regenerating kanuka dune forest which will not be impacted on by the proposed development.	No adverse effect on herpetofauna anticipated as only negligible indigenous vegetation clearance (if any) proposed as part of the proposal. Habitat is to be improved through landscape/amenity planting, pest plant and pest animal control, domestic pet controls and stock exclusion.	Positive
Fish and aquatic invertebrates	Aquatic habitat	Low	Moderate	Site does not contain any natural watercourses and is limited to artificial drainage channels which are not considered to provide optimal habitat for aquatic fauna.	Comprehensive sediment and erosion controls should be implemented as part of active site development works.	Low
Bats	Terrestrial	High	Moderate	No previous long-tail bat records within 4km of the site. Site surveys utilising acoustic bat monitor recorded no long tail bat activity. Suitable foraging and roosting habitat is present on site so future use is not discounted.	No adverse effect on bats anticipated. Habitat is to be improved through landscape/amenity planting, pest plant and pest animal control, domestic pet controls and stock exclusion.  For wilding pine control within the kanuka dune forest, it is recommended that drill & fill technique is used to avoid any potential impacts on any roosting bats. This will allow for the pine trees to decay over time, retaining and creating new deadwood habitat for bat species.	Positive

## 6.1 Summary of effects

Overall, the actual or potential adverse effects on ecological values that may result from the proposed development will be generally 'low' provided works are carried out in a manner that gives effect to the expert reporting and recommendations prepared for the proposal. It is therefore deemed that the development can be carried out in a manner that will not adversely affect the ecological values on site.

The development is anticipated to yield positive biodiversity outcomes that serves multiple functions, including ecological enhancement, open space, and recreational opportunities. Collectively, this will improve both the structural and functional connectivity of the onsite indigenous habitat. Additionally, the inclusion of pedestrian footpaths will allow the site residents to enjoy and engage with these natural areas, fostering a greater appreciation for local biodiversity and providing recreational and educational opportunities.

## 7.0 ECOLOGICAL MANAGEMENT PROPOSAL

### 7.1 Ecological management and enhancement

The existing onsite indigenous vegetation (areas A & B as identified under Figure 29) are to be managed in accordance with a site-specific Ecological Management Plan (EMP) which is to be prepared as a condition of consent. The EMP will apply to the areas identified as 'proposed ecological management areas' as presented under Figure 29. The total area proposed for ecological management is approximately 10.4 ha. It is noted that revegetation planting has been proposed to be carried out as part of landscape and amenity planting which may encompass and connect some of the ecological management areas. These areas are depicted and described in more detail under the Landscape Plan prepared by B&A, and the planting areas are to be managed in accordance with a Landscape Management Plan.

The following sections provide general guidance on how to successfully manage the proposed ecological management areas in the future. Integral components of this will include pest animal and plant control, biosecurity and disease management, and maintenance. A more in-depth description is to be provided within the associated Ecological Management Plan, which is to be prepared as a condition of consent.

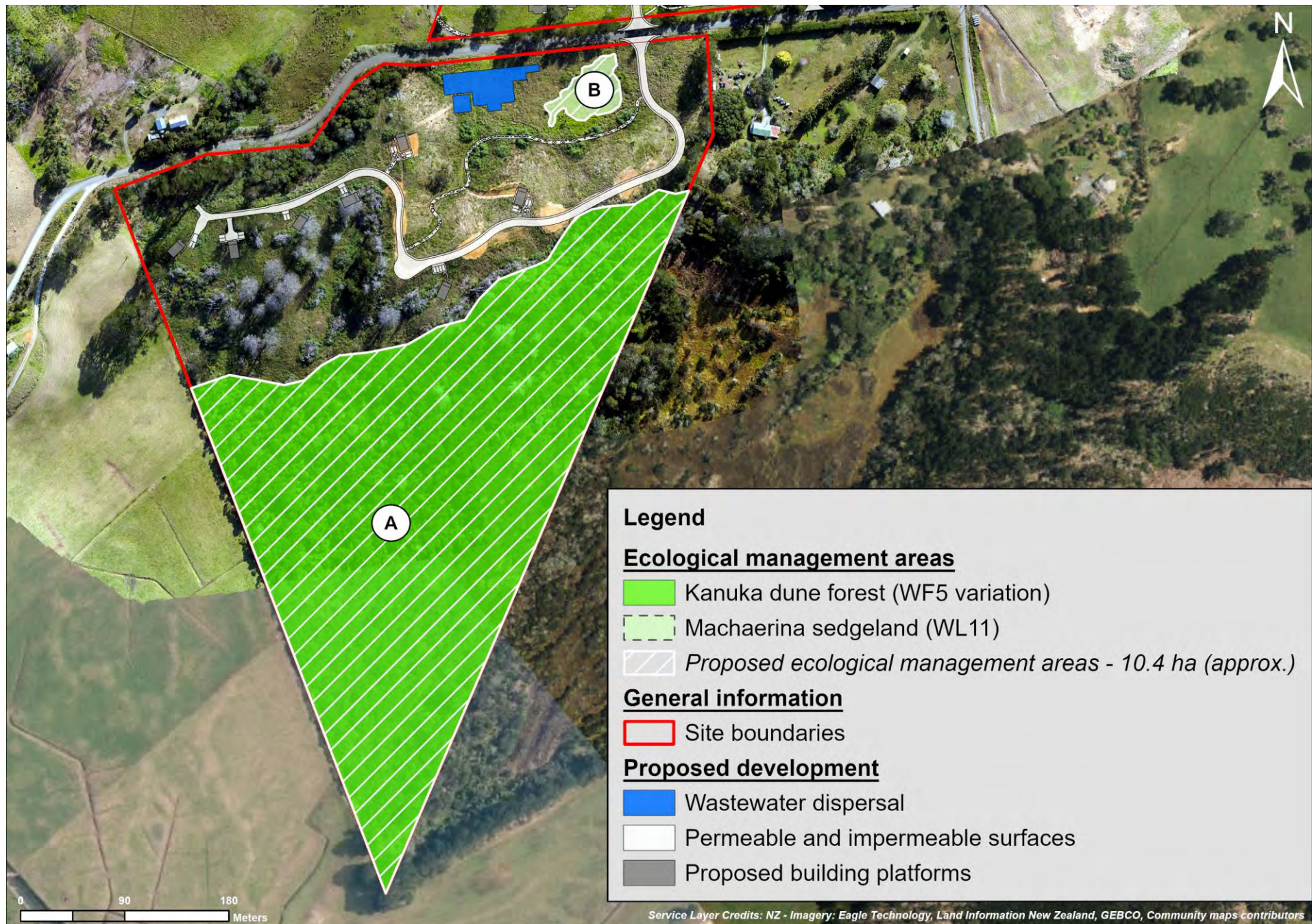


Figure 29: Proposed ecological management areas A & B



## 7.1.1 Pest plant management

The indigenous vegetation contained within the ecological management area A contains a high density of pest plant species or weedy species that will be required to be controlled. Of note were the heavy infestation of boneseed, climbing asparagus, brush wattle, black wattle, Sydney golden wattle, ginger, Radiata pine, pampas, willow-leaved hakea, needle-leaved hakea, Taiwan cherry, Woolley nightshade, Sod's balsam, gladiolus and gorse. Management efforts to control these species within the existing kanuka dune forest areas to participable minimum density are recommended.

Weedy species within proposed ecological management area B are minimal, albeit ongoing vigilance for any weedy species incursions will take place.

Pest plants and weedy species observed within the proposed ecological management areas are briefly summarized under Table 5 below. Some of the pest plants noted on site have been designated as Sustained Control Plants as classified within Northland Regional Pest and Marine Pathway Management Plan (NRPMPMP) (2017–2027).

An Ecological Management Plan (EMP) is to be prepared as a condition of consent to act as a practical management document which can be utilised by the landowner or their contractor to carry out the recommended ecological management actions. The EMP will outline specific management actions and detail species identification and control of the weeds, and ongoing maintenance and monitoring requirements that weedy species are controlled to a practicable minimal density.

Table 5: Pest plants and weedy species recorded within the proposed ecological management areas, their designation and abundance (A = Abundant, C = Common, O = Occasional, S = Sparse)

Latin name	Common name	Designation within NRPMPMP	Abundance/location
<i>Acacia longifolia</i>	Sydney golden wattle	Sustained Control Plants	A
<i>Acacia mearnsii</i>	Black wattle	Not listed	A
<i>Asparagus scandens</i>	Climbing asparagus	Not listed	A
<i>Cortaderia selloana</i>	Pampas	Not listed	A
<i>Gladiolus undulatus</i>	Gladiolus	Not listed	C
<i>Hakea sp.</i>	Willow leaved hakea and needle-leaved hakea	Sustained Control Plants	A
<i>Hedychium flavescens</i>	Wild ginger	Sustained Control Plants	C
<i>Impatiens sodenii</i>	Sod's balsam	Not listed	A
<i>Ligustrum sp.</i>	Tree privet and Chinese privet	Sustained Control Plants	A
<i>Osteospermum moniliferum</i>	Boneseed	Not listed	A

<i>Pinus radiata</i>	Radiata pine	Not listed	C
<i>Prunus campulata</i>	Taiwan cherry	Sustained Control Plants	C
<i>Rubus fruticosus</i> agg.)	Blackberry	Not listed	C
<i>Solanum mauritianum</i>	Woolly nightshade	Sustained Control Plants	C
<i>Ulex europaeus</i>	Gorse	Sustained Control Plants	C
<i>Zantedeschia aetioipica</i>	Arum lily	Not listed	O

### 7.1.2 Pest animal management

While not directly observed during site visits, the site likely supports a full suite of exotic mammalian pest animal species, including possum (*Trichosurus vulpecula*), rats (*Rattus rattus* and *R. norvegicus*), stoats (*Mustela erminea*), and hedgehogs (*Erinaceus europaeus*). These pests are known to have adverse ecological effects on native flora and fauna, including avifauna and lizards, and their browsing can interfere with indigenous plant growth and natural regeneration, harming plant health and survival.

A comprehensive control and monitoring program is to be developed within the body of an Ecological Management Plan (EMP).

### 7.1.3 Revegetation planting

Revegetation planting is proposed to be carried out as part of landscape and amenity planting to connect and expand the existing indigenous vegetation cover on site. Please refer to the Landscape Plans prepared for the proposal by B&A for details associated with the proposed revegetation plantings. All plants to be utilised within revegetation planting are to be eco-sourced and inspected for disease, pest organism presence and pest weeds prior to planting.

### 7.1.4 Stock exclusion

It is recommended that a no-stock covenant is imposed on the proposed development boundaries and that stock-proof fencing is established along the external boundary of each development site, where such fencing typology does not already exist. This is to ensure stock entry from the immediately adjacent sites from roaming into the proposed development areas and subsequently into the ecological and landscape planting management areas. Note, no new fencing is proposed where the development area boundary runs through an existing bush area (i.e the existing kanuka dune forest) to avoid unnecessary vegetation clearance and habitat disturbance.

Alternatively, the proposed ecological management areas A and B will need to be fenced to an appropriate stock-proof standard (7-wire post and batten minimum).

### 7.1.5 Maintenance

Ongoing maintenance including weed control and pest animal control within the proposed ecological management areas is to take place for minimum of 5 years following the completion of the first round of pest weed control and establishment of a pest animal control network. Pest animal bait stations/trap network should be serviced monthly. Maintenance should be carried out bi-annually during Years 1-3 and annually during Years 4 & 5 for a minimum period of five years in spring and late summer.

Ongoing maintenance and monitoring will be described in more detail under an Ecological Management Plan (EMP) which is to be prepared as a condition of consent.

### 7.1.6 Monitoring

For this ecological management proposal to be successful, keeping up to date records of pest plant and animal control efforts are key to determine the success of ecological management efforts.

Upon completing the first round of physical ecological works, the consent holder must submit an Ecological Works Completion Report from a qualified ecologist to the Council. This report should follow the implementation of the initial pest weed and animal control measures and stock exclusion. The Council will conduct inspections as needed to ensure compliance, and all work must meet the satisfaction of the Compliance Monitoring Officer or a similar authority.

Example monitoring forms are to be provided within the body of the Ecological Management Plan which can be used by the Applicant or their engaged suitably qualified contractor to keep up to date maintenance/monitoring records for any pest weed and pest animal control works carried out on site during the 5-year maintenance and monitoring period.

## 8.0 CONCLUSION AND RECOMMENDATIONS

It is considered that the proposed development has been designed through comprehensive opportunities and constraints mapping process which has guided the proposed development to areas within the site boundaries which are of lower ecological value and significance. Development in this area would enable high quality housing development vitally required for the local community while limiting the potential adverse ecological effects which can be addressed through comprehensive ecological management and mitigation principles.

The proposed management actions described within the body of this report will avoid or minimise potential adverse ecological effects associated with the development proposal on the habitats and species likely present on site and immediate surrounds. It is acknowledged that the onsite indigenous vegetation is of moderate-high ecological value, however any actual and potential adverse effects have been managed through development design and proposed mitigation measures outlined under Table 4 above. Provided that they are implemented successfully, adverse effects on the environment would be low, and would, in fact, allow for the

ongoing enhancement and protection of indigenous habitat values within the site boundaries through the provisions of an Ecological Management Plan.

The following recommendations are made to ensure that potential adverse effects associated with the development proposal can be avoided, minimised or mitigated to the extent practicably feasible.

1. That a site-specific Ecological Management Plan (EMP) is prepared for the site (as a condition of consent) to ensure ecological management areas illustrated and listed in Section 7 of this report deliver an ecological benefit. The EMP should as a minimum contain detail regarding management of biosecurity and plant diseases, ongoing maintenance and monitoring, pest weed control, and pest animal control for a minimum of 5 years from initial ecological works implementation. The EMP should also include stock exclusion measures.
2. The consent holder shall implement the required ecological management works as described in the site-specific Ecological Management Plan and provide an Ecological Works Completion Report from a suitably qualified ecologist following the first round of pest weed and pest animal control to the Council, and the Council will undertake inspections as required to confirm compliance.
3. That stock are to be excluded from the development sites in perpetuity through the provisions of a no-stock covenant. Alternatively, the proposed ecological management areas A and B will need to be fenced to an appropriate stock-proof standard (7-wire post and batten minimum).
4. That keeping of pet animals (including a ban of pet cats, mustelids, exotic fish, birds, rodents and turtles) on site following the site development is prohibited to avoid potential adverse effects on 'At Risk' and/or 'Threatened' avifauna and lizard fauna.
5. Any dog kept on site shall be secured/contained to ensure that they cannot roam within the wider area. Secured containment may be in the form of a secure fenced area, dog run or "electronic pet containment fence".
6. The new lot owners will be required to comply with the Northland Plant Pest Management Strategy (NPPMS) and the National Pest Plant Accord (NPPA) and in so doing exclude, and, where necessary, control all known plant pest species (in any category) that occur on the site. This includes avoiding planting any pest species on the site as part of the landscaping, which could become future threats to the ecological management areas as 'garden escapees'. Dumping of green or garden waste into the ecological management areas is prohibited.
7. That regular ongoing maintenance and monitoring of the ecological management areas takes place a minimum annually for a total period of 5-years following the approval of Ecological Completion of Works Report as described under recommendation 2 above. Monitoring should be carried out by a suitably qualified and experienced ecologist or

Council's suitably qualified appointed representative. Monitoring reports should as a minimum include detail on the presence of any weedy species (including their location and density), pest animal presence and condition of the pest animal trap network, comments regarding other obvious breaches relating to ecological matters such as dumping of green waste into the ecological management areas on site or breaches to domestic pet restrictions on site.

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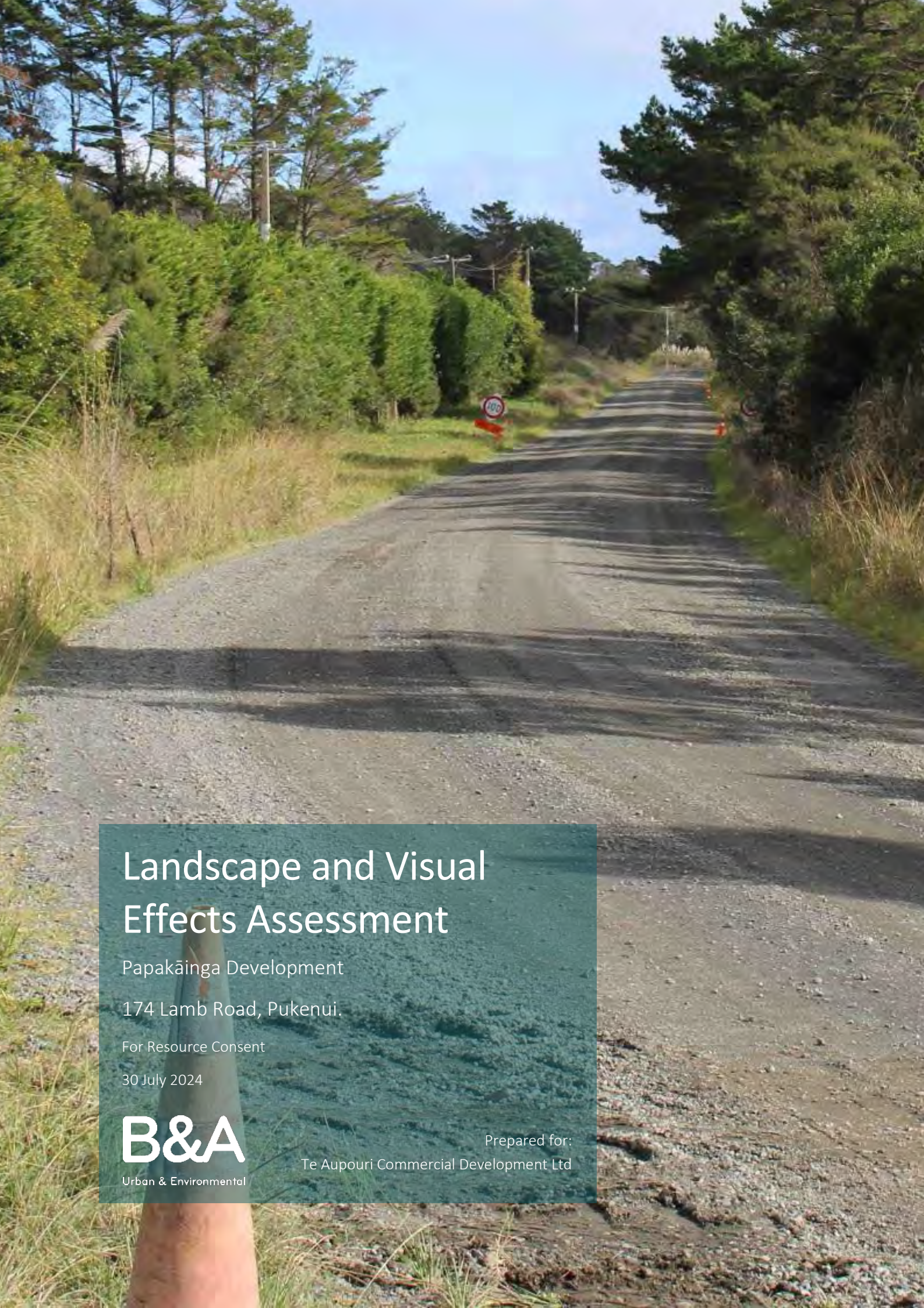
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# Landscape and Visual Effects Assessment

Papakāinga Development

174 Lamb Road, Pukenui.

For Resource Consent

30 July 2024

**B&A**

Urban & Environmental

Prepared for:

Te Aupouri Commercial Development Ltd



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Date:

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## Appendices

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Appendix 2:	Panorama Location Map and Panoramic Photographs
Appendix 3:	ZTV Viewpoint Map Analysis
Appendix 4:	Landscape Assessment Methodology
Appendix 5:	Landscape Plans

## 1.0 Background

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### 1.1 Introduction

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Te Aupouri Commercial Development Ltd ('the applicant') is proposing to create a papakāinga housing development at 174 Lamb Road, Pukenui. Barker & Associates ('B&A') has been engaged to assess the landscape and visual effects of the development. This report provides an overview of the existing environment and a description of the expected effects on the physical landscape and the visual amenity of the surrounding area.

### 1.2 The Proposal

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The proposal is detailed by the architectural drawings - in summary:

- The installation of 24 new off-site constructed houses (including 6 duplexes);
- The construction of a new community centre/ kōhanga reo building and associated car parking;
- Creation of a new access road and JOAL including footpaths;
- Construction of two on-site wastewater disposal fields;
- Amenity landscaping and ecological mitigation planting.



Figure 1. Plan showing proposal (Source BDG Architects Ltd).

### 1.3 Assessment Methodology

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An assessment of landscape effects deals with the effects of change and development on a landscape's values, derived from each of its physical, associative, and perceptual dimensions. Visual effects are a subset of landscape effects, and comprise effects on landscape values as experienced in views. Prior to conducting this assessment, a site visit was undertaken on the 11th of June 2024. Refer to Appendix 4 for the detailed assessment methodology.

## 2.0 Context

### 2.1 Statutory Context

For a full description of the statutory planning context refer to the Assessment of Environmental Effects (AEE). The landscape-relevant planning provisions are set out below.

### 2.2 Planning Provisions – Far North District Plan 2009 (FNDP)

#### 2.2.1 Landscape Relevant Planning Provisions

- Zone: Rural Production
- Overlays: The site is not subject to an ONL/ONF overlay.
  - Housing density: Permitted Activity - One dwelling per 12ha of land. Each residential unit shall have 3,000m<sup>2</sup> for its exclusive use surrounding the unit plus a minimum of 11.7ha elsewhere on the property.
- Building Height: 12m maximum height.
- Building setback from boundaries: 10m from all boundaries, 30m from any wetland of 1ha or more in area (includes impermeable surfaces).
- Building coverage: 12.5% maximum gross site area.

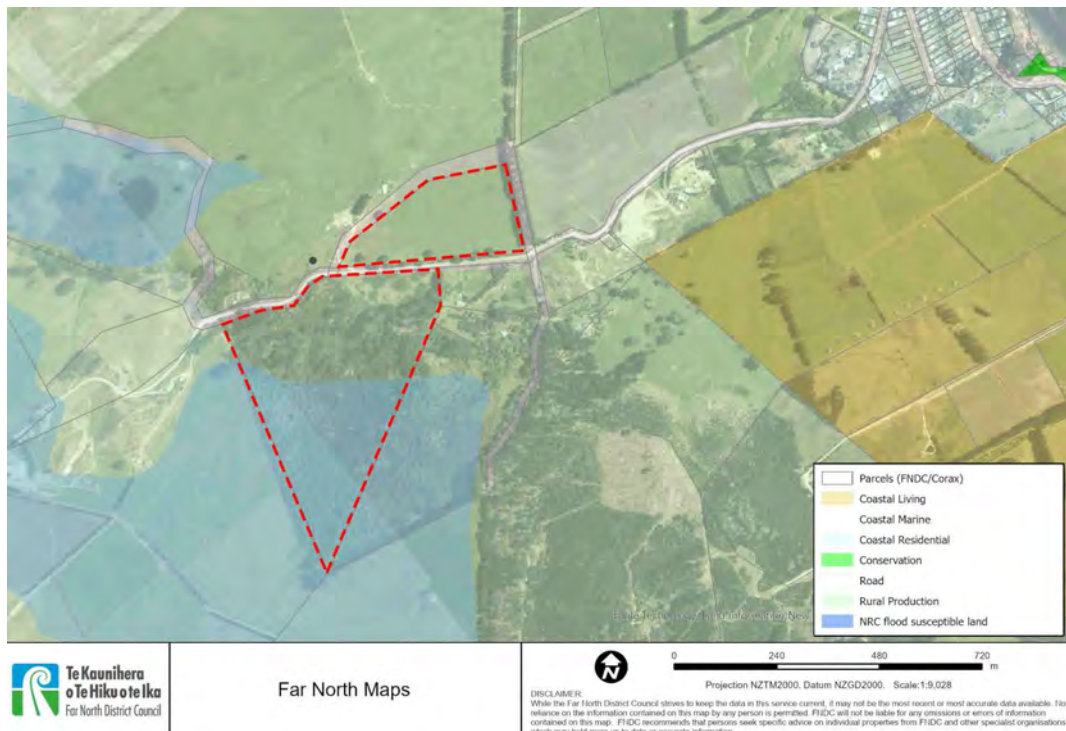


Figure 2. Map showing the site boundary, flood areas and relevant zoning (FNDC online maps).

## 2.3 Site Context

The site is approximately 90km north of Kerikeri. Access to the site is via Lamb Road, approximately 1km east of the Pukenui settlement, State Highway 1 (SH1), and the coast.

The site is in a rural area with small pockets of residential and commercial development spread out along SH1. The broader topography of the area is flat with some notable landscape features including Mount Camel (Te Maunga Tohora) to the east.

Vegetation is generally limited to exotic species found in shelter belts, hedgerows, and extensive pine forest plantations. Open grass pasture is also a key character feature of the broader landscape. Discrete areas of native plant communities are present along parts of the coast, in roadside planting and regenerating bush found at the margins of pine forest and wetlands not suitable for farming.



**Figure 3. The site location within the wider context (Source Google Maps).**

## 2.4 Site Description

The site consists of approximately 25ha of land. It is made up of mainly low lying pasture land, with a portion in the south-western corner occupied by regenerating native scrub and weed plants. The site is bound by other rural properties and is dissected by Lamb Road. A solar electricity farm is currently under construction immediately east of the site.

The northern portion of the site being redeveloped is in pasture, is generally flat, irregularly shaped, and low lying. The presence of natural wetlands within the site indicates the area is often wet and subject to occasional flooding. Existing native vegetation along the Lamb Road boundary screens views into the site and includes some very large macrocarpa trees.

The southern portion of the site being redeveloped is flat near Lamb Road but rises to an elevation of approximately 15m above the level of Lamb Road. The flat area includes a wetland and is entirely in grass whilst the elevated part of the site is also in grass but has been earth worked recently. Refer to Appendix 2 and section 2.5 below.

## 2.5 Site Photographs



Figure 4. The site and photograph locations (Source Google Maps).



Photograph 1 (P1) – Solar farm construction to the right.



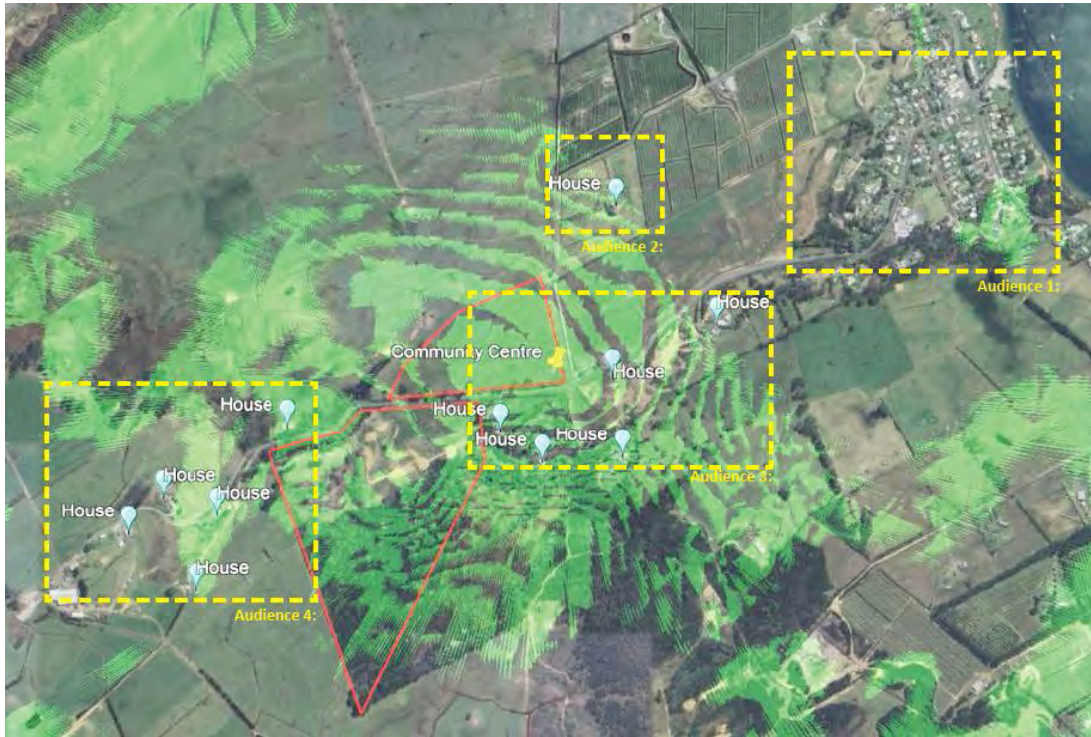
**Photograph 2 (P2) – Mount Camel (Te Maunga Tohora) in centre frame.**



**Photograph 3 (P3) – Looking north from turning head of proposed access road.**

## 2.6 Visual Catchment & Potential Viewing Audiences

The visual catchment is relatively small and localised due to there being few neighbouring houses and the intervening landform and vegetation situated between the site and the Pukenui settlement, refer to Appendix 3.



**Figure 5. Viewshed analysis. Green hatch shows the site can be viewed from. (Source Google Earth).**

### Potential Viewing Audience 1 – Pukenui settlement

There are no views to the site from here as shown by the ZTV analysis and confirmed during the site visit.

### Potential Viewing Audience 2 – 38 Elingamite Drive

There will be views from some parts of this property. However, these views are reduced by a tall existing hedgerow along its southern boundary as well as internal specimen tree planting and a patch of native bush associated with the house. Distance and the position of the outdoor living area of this house also reduce any potential visual impact of the proposal.

### Potential Viewing Audience 3 – Lamb Road Middle

This audience includes five houses along Lamb Road. These include 149, 121, 93 and 49 Lamb Road. None of these houses are likely to have a view to the site given the intervening landform and vegetation.

### Potential Viewing Audience 4 – End of Lamb Road

This audience includes five houses along Lamb Road. These include 208 and the cluster of houses and buildings (which appear to be associated with farm operations) at 216 Lamb Road. None of these houses or structures are likely to have a view to the site given the distance, intervening landform, and vegetation.



## 3.0 Assessment of Effects

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### 3.1 Landscape Character

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Pukenui is a small coastal development centred around the local shops and the Pukenui Wharf which provides commercial and recreational access to the harbour.

The character of the development site and wider area is typical of rural Northland. It is a landscape dominated by flat and rolling pasture bordered by shelterbelts and hedgerows. Roads are relatively narrow and houses and other farm buildings spread well apart.

### 3.2 Landscape Values

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#### Bio-physical values

The existing ecological values of the site are low given the historic rural productive land-use. Existing wetlands have been identified within the site. One is situated near the northern boundary of the site and the other is near the centre of the site, adjacent to Lamb Road, refer to the ecological assessment for detail.

In the wider landscape small, low value remnants of bush, wetland and regenerating scrub are present along stream margins, low lying areas and along the coast.

#### Sensory & perceptual values

When moving through the Pukenui landscape the high degree of human modification is apparent. Despite this, the level of 'naturalness' is high due to the green colour of the pasture and shelterbelts, sparse development, and long views to geological features such as Mount Camel/ Te Maunga Tohora.

#### Associative and cultural values

The site is strongly associated with rural activities by locals, as it forms part of the extensive network of farms.

Cultural values are very high as the site forms part of a larger Iwi settlement with the Crown and is subject to a long history of Māori occupation. Refer to the AEE for more detail.

### 3.3 Landscape Effects

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Refer to Appendix 4 for a detailed explanation of the assessment methodology. Briefly, an assessment of landscape effects deals with the effects of change and development on the landscape as a resource. It considers how a proposal will affect the attributes and values that make up the landscape, its physical, perceptual, and associative aspects, and its distinctive character.

- The proposal will result in both **beneficial** and **adverse landscape effects**. Beneficial effects result from the ecological planting proposed within identified wetland areas. However, there will be adverse effects given the impact of construction activities related to the development of the site.

### 3.3.1 Contributing factors

- A **lower sensitivity to landscape change** of the of the broader area. The landscape is not strongly distinctive with low biophysical and sensory aspects. There is a presence of landscape detractors which make it less vulnerable to the type of change which would result from the proposed development.
- The **magnitude of change** is low, being short in duration and limited to the extents of the site. Most key features and elements are retained particularly with minimal removal of existing vegetation being proposed. Key characteristics of the landscape remain intact with limited aesthetics or perceptual change apparent.

I consider these adverse landscape effects would be **very low** for the following reasons:

- Relatively modest existing vegetation is proposed to be removed;
- The proposed building clustering lessens the overall physical impact of the development through preservation of relatively large, open areas;
- Fencing will be farming appropriate and mostly existing fences retained around the site extents;
- Earthworks will be minimal with the houses proposed to be piled;
- Existing wetlands have been avoided and are proposed to be restored with planting;
- Proposed landscape amenity planting across the site and amongst the proposed houses;
- Enhanced site amenity through a pedestrian path network.

## 3.4 Visual Amenity Effects

---

- The proposal will result in both **beneficial** and **adverse visual amenity effects**. Beneficial effects result from the extensive areas of ecological and amenity/screen planting. However, there will be adverse effects related to the houses introduced through the redevelopment of the site.

### 3.4.1 Contributing factors

- A higher sensitivity and susceptibility to change to views. The views from dwellings and recreation areas where attention is typically focused on the landscape. There is an absence of landscape detractors which make it highly vulnerable to the type of change which would result from the proposed development.
- However, the viewpoint is not typically recognised or valued by the community. Infrequent visitor numbers.
- The magnitude of change is low, most key features of view retained. Low degree of contrast with existing landscape elements (i.e. in terms of form scale, mass, line, height, colour, and texture. Glimpse / no view of the proposed development. Oblique views. Long distance views. Small portion of change visible. Transient. Short Term (0-5 years).

### 3.4.2 Visual Assessment Viewpoints

Refer to Figure 4 and Appendix 2 and 3.

I consider these adverse visual effects would be **low** for the following reasons:

- The site's isolation.

- Minimal existing vegetation is proposed to be removed including boundary planting adjacent to Lamb Road within the northern portion of the site;
- The proposed building clustering reduces the overall visual impact of the development through preservation of open areas and broad views through the site;
- Neither maximum height requirements are materially impacted by the proposal.
- The transient nature of the potential viewing audience, namely people driving past the site along Waioatahi Valley Road.
- Proposed dark/recessive coloured house materials;

## 4.0 Conclusion

---

Overall, I consider the landscape and visual effects to be **very low/less than minor**.

### 4.1 Mitigation Measures

---

#### 4.1.1 Mitigation Incorporated into the Proposal

- Relatively modest existing vegetation is proposed to be removed particularly within the Lamb Road reserve;
- Proposed house clustering and road alignment;
- Pedestrian path network;
- Proposed dark/recessive coloured house materials;
- Landscape proposals for screening and other amenity planting – refer Appendix 5.

#### 4.1.2 Further Mitigation

- Not required.

**Appendix 1 - The Proposal Created by BDG Architects Ltd**

*(Refer to the complete architecture drawing set for full details)*



**NOTE:**  
The area's shown are indicative only and are without consultant input or relevant council approvals. BDG Architects Ltd. accepts no responsibility for the accuracy of these area's and do not recommend they be used as part of any legal agreement or marketing material

Site Area - Overall	
Zone Name	Area
Section 1	1,457,531.2
Section 2	13,715,037.0
Section 3	215,392.5
Section 4	948,667.1
Section 5	1,564,083.3
Section 6	75,041.4
Section 7	190,291.4
Section 8	193,515.7
Section 9	70,585.2
<b>18,430,144.8 m<sup>2</sup></b>	

FOR COUNCIL USE ONLY	

Building Coverage - All Buildings			
Type	Area	Supplier	
<b>Rest of farm</b>			
Farm House	2,234.2	N/A	■
<b>2,234.2 m<sup>2</sup></b>			
<b>Section 8</b>			
Type B	380.9	Bode	■
Type A	492.2	Bode	■
<b>873.1 m<sup>2</sup></b>			
<b>Section 9</b>			
Type E	382.8	Laminata	■
Type D	255.2	Laminata	■
Type C	957.6	Bode	■
Type B	504.7	Bode	■
Type A	246.0	Bode	■
Kohanga reo	467.7	N/A	■
Community Center	231.3	N/A	■
Covered Walkway	66.6	N/A	■
<b>3,111.9 m<sup>2</sup></b>			
<b>6,219.2 m<sup>2</sup></b>			

Impermeable surfaces			
Area			
<b>Rest of farm</b>			
13,123.8			
<b>13,123.8 m<sup>2</sup></b>			
<b>Section 8</b>			
8,725.8			
<b>8,725.8 m<sup>2</sup></b>			
<b>Section 9</b>			
14,904.9			
<b>14,904.9 m<sup>2</sup></b>			
<b>36,754.5 m<sup>2</sup></b>			

Building Coverage		
Rest of Farm	2234.20	0.012%
Section 8	873.10	0.471%
Section 9	3111.90	1.689%
<b># 8 &amp; 9 only</b>	<b>3985.00</b>	<b>2.160%</b>
<b>TOTAL FARM</b>	<b>6219.20</b>	<b>0.334%</b>
Max: 12.85%		

Impermeable Coverage (Buildings + Roads etc)		
Rest of Farm	15308.00	0.84%
Section 8	8728.00	0.47%
Section 9	18216.90	0.99%
<b># 8 &amp; 9 only</b>	<b>26944.90</b>	<b>1.46%</b>
<b>TOTAL FARM</b>	<b>40972.90</b>	<b>2.23%</b>
Max: 19%		

**GENERAL NOTES:**  
SITE ADDRESS: 174 Lamb Road, Houhora  
LEGAL DESCRIPTION of Site: Section 8 and 9 Survey Office Plan, 65943 held in NA800/748  
SECT. 8+9 AREA: 26.4 ha (264100.9m2)  
FARM TOTAL AREA: 1843 ha (18430144.8m2) m<sup>2</sup>  
TERRITORIAL AUTHORITY Northland Regional Council  
PLANNING ZONE Rural Production Zone

Section 8 (South of Lamb Road)  
Climate Zone: 1  
Earthquake Zone: Zone 1  
Exposure Zone: Zone C  
Lee Zone: No  
Rainfall Range: 90 - 100  
Wind Region: A  
Wind Zone: Very High

Section 9 (north of Lamb Road)  
Climate Zone: 1  
Earthquake Zone: Zone 1  
Exposure Zone: Zone C  
Lee Zone: No  
Rainfall Range: 90 - 100  
Wind Region: A  
Wind Zone: High

**HIRB**  
2m + 45° on all site boundaries

**BUILDING HEIGHT**  
+ 12m maximum height

**BUILDING COVERAGE**  
+ 12.5% maximum gross site area

**BUILDING SETBACK FROM BOUNDARIES**  
+ 10m from all site boundaries  
+ 30m from any wetland of 1ha or more in area (includes impermeable surfaces)  
Noting that all earthworks and structures must be setback a minimum of 10m from wetlands under the NES Freshwater. ie surfaces.  
+ 20m From Forest & Bush

**STORMWATER MANAGEMENT**  
+ Maximum 15% of gross site area covered by buildings and other impermeable surfaces  
+ 1 x stormwater drain per access

**TRANSPORTATION**  
Vehicle Access 5 or more dwellings  
+ Legal Width - 7.5m  
+ Carriageway Width - 5m  
+ Maximum Gradient:  
o Unsealed - 1:5  
o Sealed - 1:4

**Parking:**  
+ Standard Residential Dwelling  
o 2 car parks  
+ Pensioner / Kaumatua / Kuia Housing  
o 2 per unit

Site Boundary

10m setback from site boundary

Machaerina sedgeland (WL11) 10m setback required

River Flood Hazard Zones - 100 Year extent (NRC Open Source Data)

Existing Overland Flow Path

→ EOF → EOF →

Mixed exotic-native scrub (TL2)

Kanuka dune forest (WF5 variation)

20m setback from scrub & forest

Proposed footpath to road

Sealed Road

Indicative Pathways

Proposed Fenced Play Area

Proposed Sports Court

Proposed Community Garden

Proposed 'Feature Paving'

Proposed Wastewater Dispersal & Treatment - Refer Civil Engineer

ALL LANDSCAPING REFER TO Joseph McCready (Barker & Associates)

N

+ + +

ALL LANDSCAPING BY  
**Joseph McCready (Barker & Associates)**

Rev.	Transmittal Set Name	Date
A	RESOURCE CONSENT	29/07/2024

**Resource Consent**

**BDG ARCHITECTS**

Level 3, 117 Saint Georges Bay Road,  
Pamell, Auckland, 1052  
PO Box 8577  
www.bdgarchitects.co.nz

**Proposed Site Plan - Overall**

Moekoraha Papakāinga Development  
29/07/2024 Job # 2636 10-01  
Scale: 1:2000 @A1 Rev: A



1 Section 8 - Unit 4 (Unit 3 behind)  
NTS




2 Section 9 - Towards Units 12 & 13a & b  
NTS



ALL LANDSCAPING BY Joseph McCready (Barker & Associates)		
Rev.	Transmittal Set Name	Date
A	RESOURCE CONSENT	29/07/2024

<b>Resource Consent</b>	
	Level 3, 117 Saint Georges Bay Road, Parnell, Auckland, 1052 PO Box 6577 www.bdgarchitects.co.nz
Artist Impressions	
Moekoraha Papakāinga Development	




1 Kohanga Reo & Community Centre - South (Entry)  
NTS



2 Kohanga Reo & Community Centre - North  
NTS



ALL LANDSCAPING BY Joseph McCreedy (Barker & Associates)		
Rev.	Transmittal Set Name	Date
A	RESOURCE CONSENT	29/07/2024
<b>Resource Consent</b>  Level 3, 117 Saint Georges Bay Road, Parnell, Auckland, 1052 PO Box 9577 www.bdgarchitects.co.nz		
<b>Artist Impressions</b> Moekoraha Papakāinga Development 29/07/2024      Job # 2636      00-03		

Appendix 2 - Panorama Location Map and Panoramic Photographs







Panorama Photograph P1



Panorama Photograph P2



Panorama Photograph P3



Panorama Photograph P4

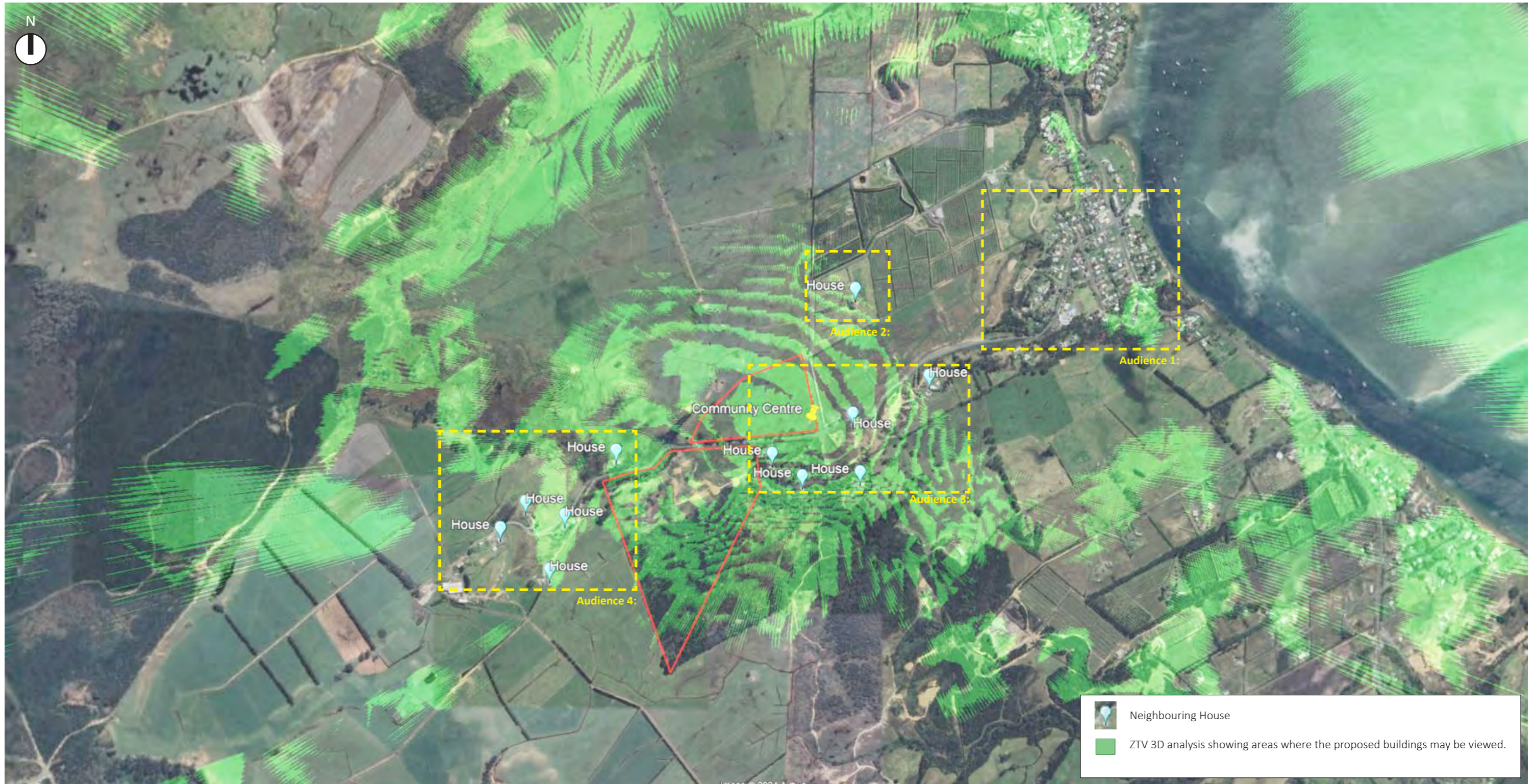


Panorama Photograph P5



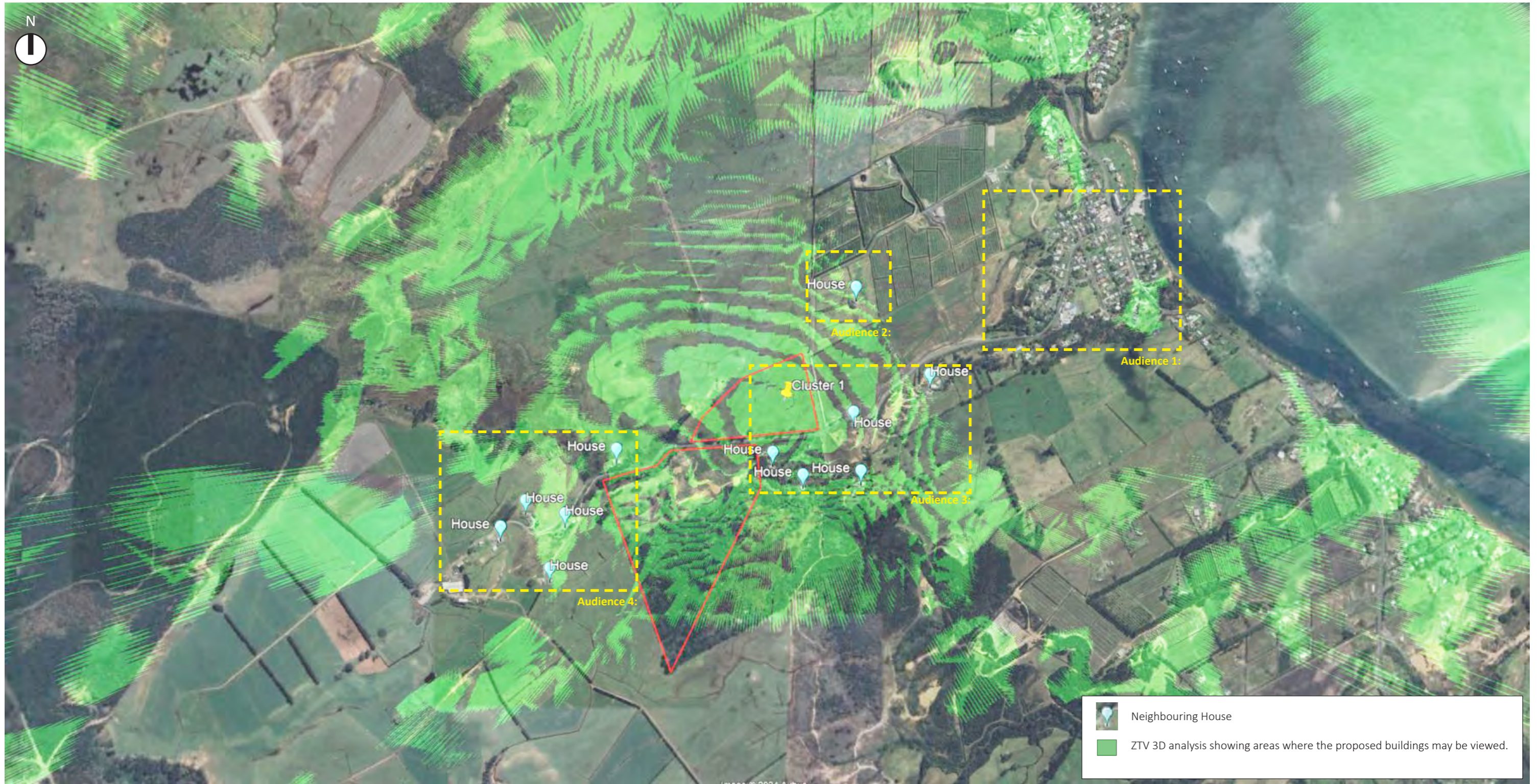
Panorama Photograph P6

Appendix 3 - ZTV Viewpoint Map Analysis



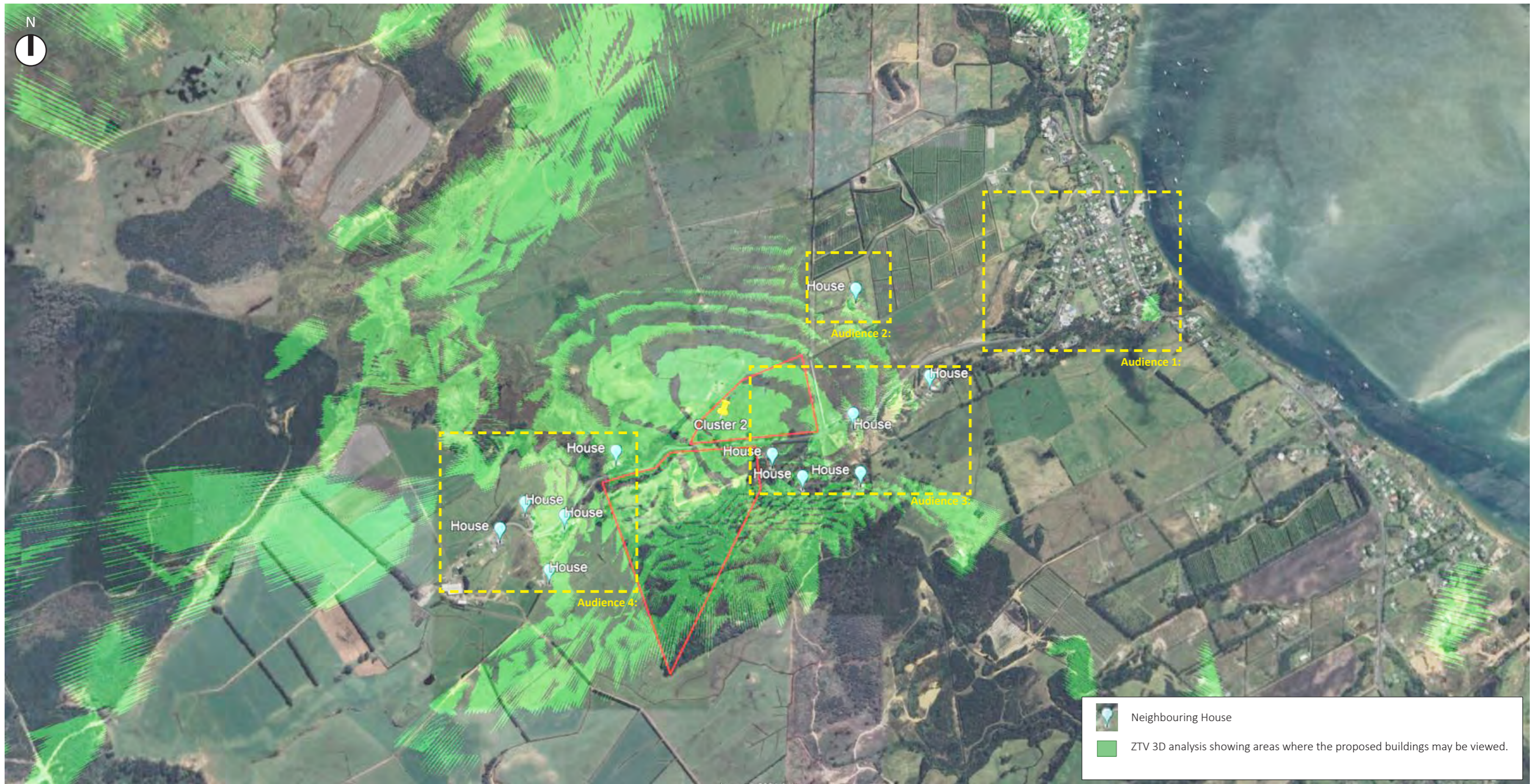
**Notes:**

1. Map produced by Barker & Associates using GoogleEarth.
2. For this project the following parameters were used:
  - Height of proposed buildings: 5m
  - Observer eye height: 1.8m



**Notes:**

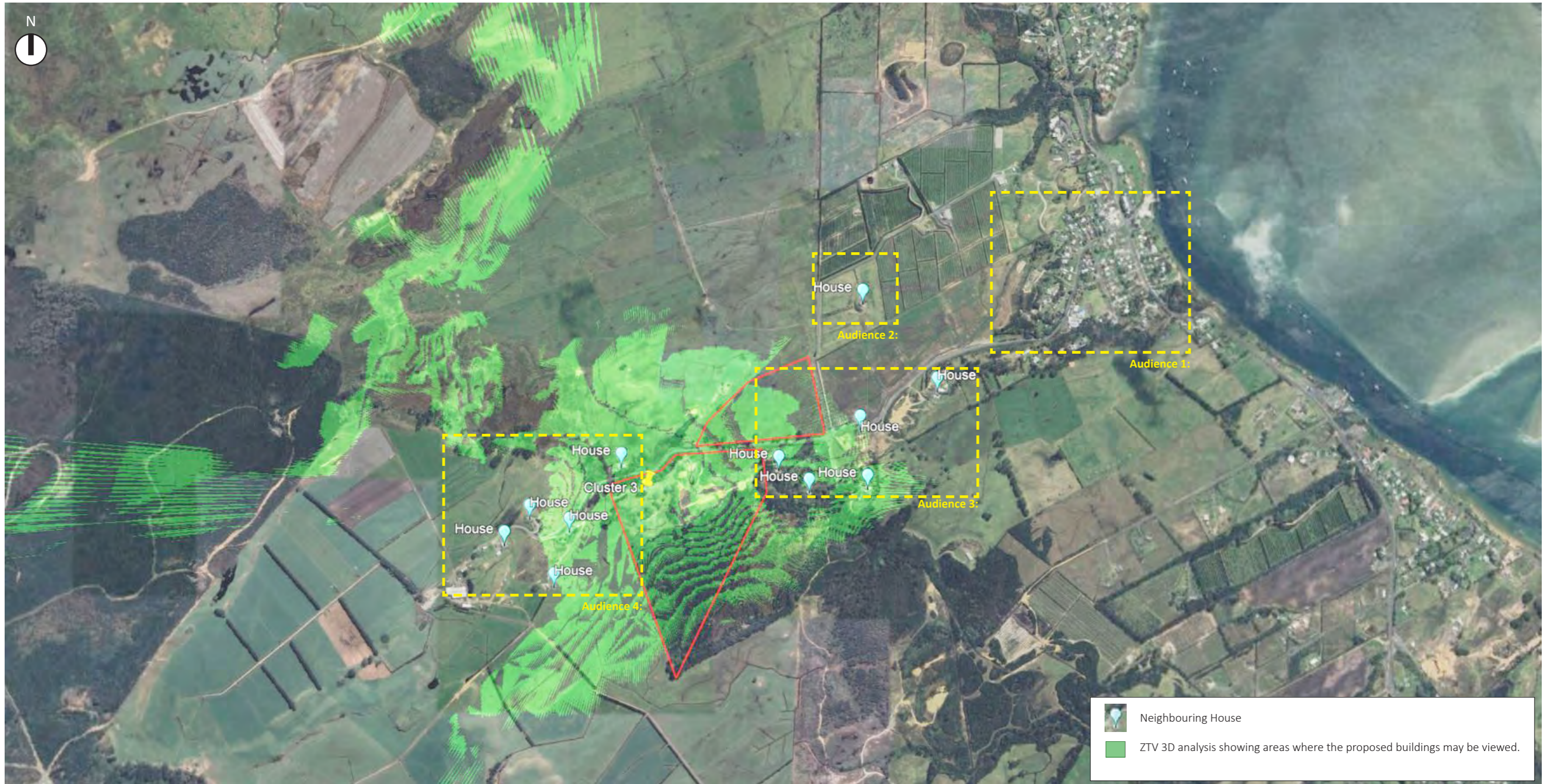
1. Map produced by Barker & Associates using GoogleEarth.
2. For this project the following parameters were used:
  - Height of proposed buildings: 5m
  - Observer eye height: 1.8m



**Notes:**

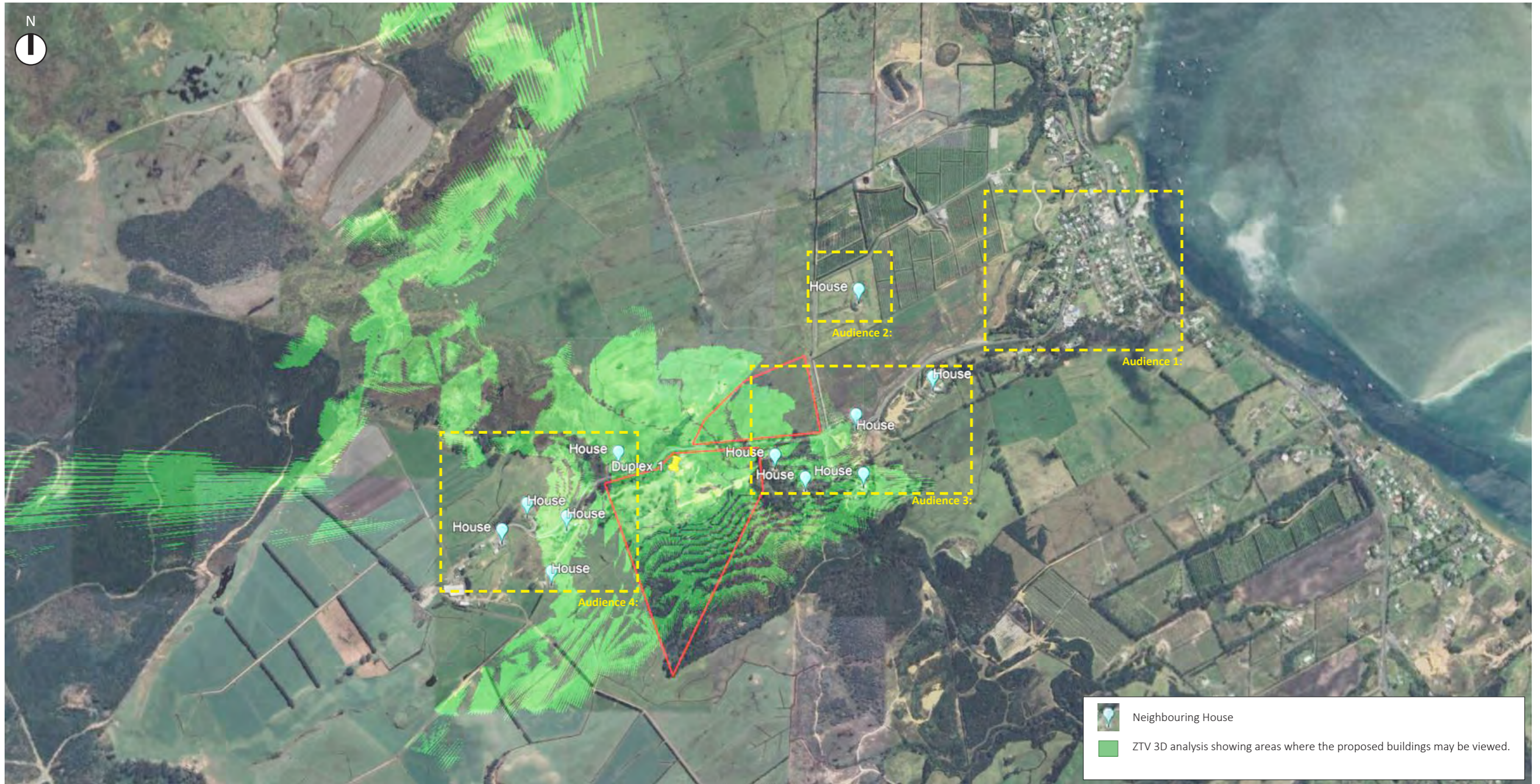
1. Map produced by Barker & Associates using GoogleEarth.
2. For this project the following parameters were used:
  - Height of proposed buildings: 5m
  - Observer eye height: 1.8m





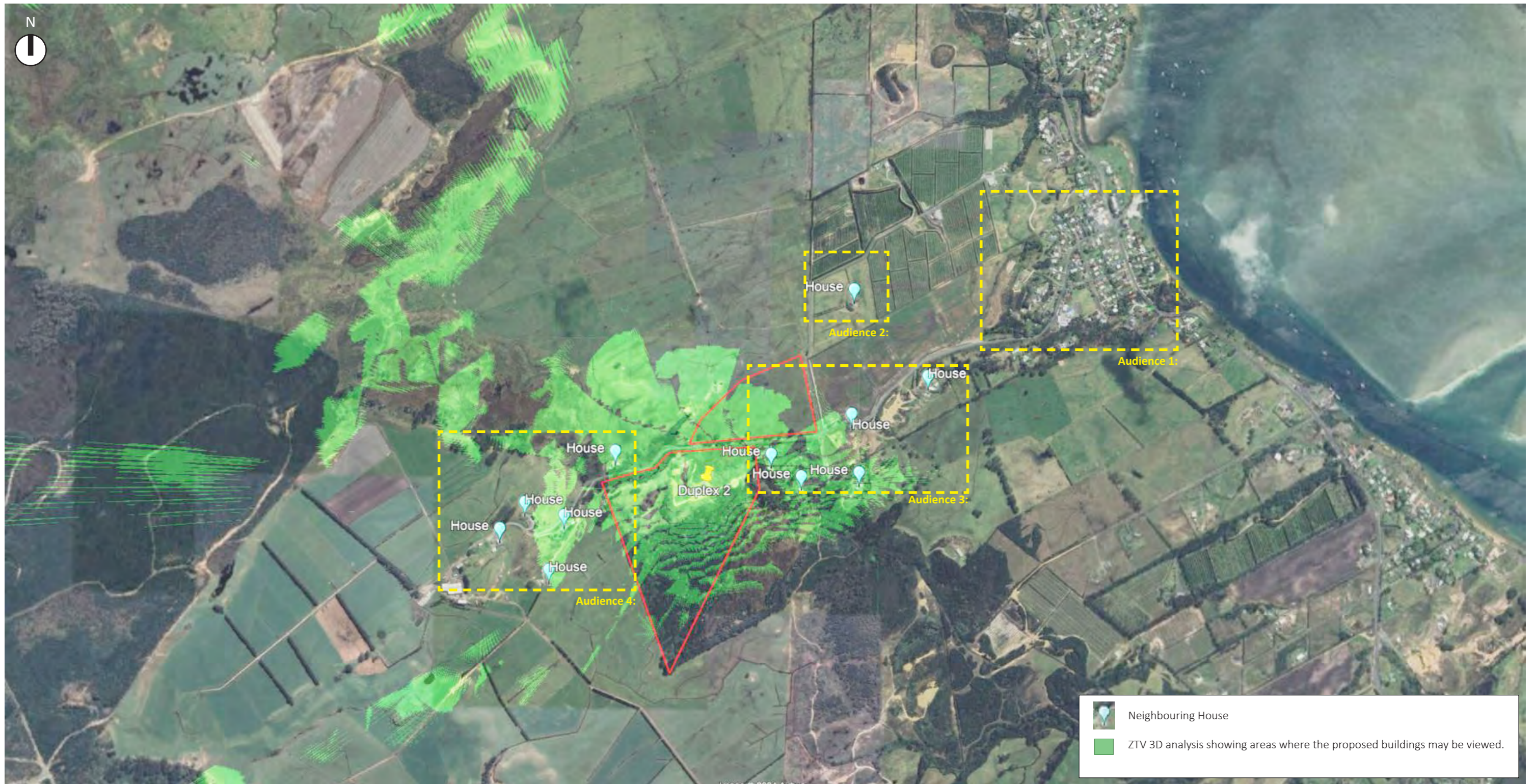
**Notes:**

1. Map produced by Barker & Associates using GoogleEarth.
2. For this project the following parameters were used:
  - Height of proposed buildings: 5m
  - Observer eye height: 1.8m



**Notes:**

1. Map produced by Barker & Associates using GoogleEarth.
2. For this project the following parameters were used:
  - Height of proposed buildings: 5m
  - Observer eye height: 1.8m



**Notes:**

1. Map produced by Barker & Associates using GoogleEarth.
2. For this project the following parameters were used:
  - Height of proposed buildings: 5m
  - Observer eye height: 1.8m

Appendix 4 - Landscape Assessment Methodology

Contributing Factors		Higher	Lower
Sensitivity	Susceptibility to change	The landscape is strongly distinctive with important biophysical, sensory and associative aspects. There is an absence of landscape detractors which make it highly vulnerable to the type of change which would result from the proposed development.	The landscape lacks any distinctive biophysical, sensory or associative aspects. It has many detractors and has the ability to accommodate the proposed development without undue consequences to landscape character.
	The value of the landscape	The landscape requires protection as a matter of national importance (ONF/L).	The landscape is of low or local importance.
Magnitude of Change	Size or scale	Total loss or addition of key features or elements. Major changes in the key characteristics of the landscape, including significant aesthetic or perceptual elements.	The majority of key features or elements are retained. Key characteristics of the landscape remain intact with limited aesthetics or perceptual change apparent.
	Geographical extent	Landscape character area scale.	Site scale, immediate setting.
	Duration and reversibility	Permanent. Long term (over 10 years).	Reversible. Short Term (0-5 years).

Table 1: Determining the significance of landscape effects

Contributing Factors		Higher	Lower
Sensitivity	Susceptibility to change	Views from dwellings and recreation areas where attention is typically focussed on the landscape.	Views from places of employment and other places where the focus is typically incidental to its landscape context.
	Value attached to views	Viewpoint is recognised by the community such as identification on tourist maps or in art and literature. High visitor numbers.	Viewpoint is not typically recognised or valued by the community.  Infrequent visitor numbers.
Magnitude of Change	Size or scale	Loss or addition of key features in the view. High degree of contrast with existing landscape elements (i.e. in terms of form scale, mass, line, height, colour and texture). Full view of the proposed development.	Most key features of view retained.  Low degree of contrast with existing landscape elements (i.e. in terms of form scale, mass, line, height, colour and texture). Glimpse / no view of the proposed development.
	Geographical extent	Front on views. Near distance views; Change visible across a wide area.	Oblique views. Long distance views. Small portion of change visible.
	Duration and reversibility	Permanent. Long term (over 15 years).	Transient. Short Term (0-5 years).

Table 2: Determining the significance of visual effects

Nature of effect	Use and Definition
<b>Adverse (negative):</b>	The proposed development would be out of scale with the landscape or at odds with the local pattern and landform which results in a reduction in landscape and visual values
<b>Neutral (benign):</b>	The proposed development would complement (or blend in with) the scale, landform and pattern of the landscape maintaining existing landscape and visual values
<b>Beneficial (positive):</b>	The proposed development would enhance the scale, landform and pattern of the landscape, improving the landscape and visual quality through removal of damage caused by existing land uses or addition of positive features

Table 3: Determining the nature of effects

Effect Rating	Use and Definition
<b>Very High:</b>	Total loss to the characteristics or key attributes of the receiving environment and /or visual context amounting to a complete change of landscape character.
<b>High:</b>	Major change to the characteristics or key attributes of the receiving environment and /or the visual context within which it is seen; and/or a major effect on the perceived amenity derived from it.
<b>Moderate-High:</b>	A moderate - high level of effect on the character or key attributes of the receiving environment and/or the visual context within which it is seen; and/or have a moderate - high level of effect on the perceived amenity derived from it.
<b>Moderate:</b>	A moderate level of effect on the character or key attributes of the receiving environment and/or the visual context within which it is seen; and/or have a moderate level of effect on the perceived amenity derived from it.
<b>Moderate -Low:</b>	A moderate - low level of effect on the character or key attributes of the receiving environment and/or the visual context within which it is seen; and/or have moderate - low level of effect on the perceived amenity derived from it.
<b>Low:</b>	A low level of effect on the character or key attributes of the receiving environment and/or the visual context within which it is seen; and/or have a low effect on the perceived amenity derived from it.
<b>Very Low:</b>	Very low or no modification to key elements/ features/ characteristics of the baseline or available views, i.e. approximating a 'no change' situation.

Table 4: Determining the overall significance of landscape and visual effects

## Zone of Theoretical Visibility (Viewshed) Mapping

The term 'Zone of Theoretical Visibility' (ZTV) is used to describe the area over which a infrastructure or structure can theoretically be seen and is generated from a Digital Terrain Model (DTM). It is also known as a Zone of Visual Influence (ZVI), Visual Envelope Map (VEM) or Viewshed Map.

There are a number of software packages that will generate a ZTV Analysis – Barker and Associates uses ArcGIS for this. A DTM is generated from either LIDAR data, contours, or break-lines (or a combination of all of these). Observer points are added to the DTM and the resulting ZTV is then produced as an overlay over a topographic base, typically as a transparent colour. The coloured areas represent where a infrastructure or structure is 'theoretically visible'. Traditionally, ZTV mapping is based on 'bare ground' LIDAR or contour data, and therefore does not take into account the screening effects of intervening vegetation or structures in the landscape. Neither does the ZTV take account of the effects of distance. A ZTV analysis also takes into account factors relating to the curvature of the earth and light refraction, which increases over distance.

It should be remembered that while ZTV is a useful assessment tool, is important to recognise its limitations.

For this project, the following parameters were used:

- Nature of target points: Dwellings
- No of target points: 2
- Location of target points: The subject site
- Height of target points: 5m taken from the north-west corner of proposed dwelling. Proposed earthworks were taken into account as well as the proposed height of the dwelling at this location
- Observer Eye Height: 1.7m
- Coefficient of Earth Curvature and Refraction: 0.13

Appendix 5 - Landscape Plans

# B&A

Urban & Environmental

Client: Te Aupouri Commercial  
Development Ltd.

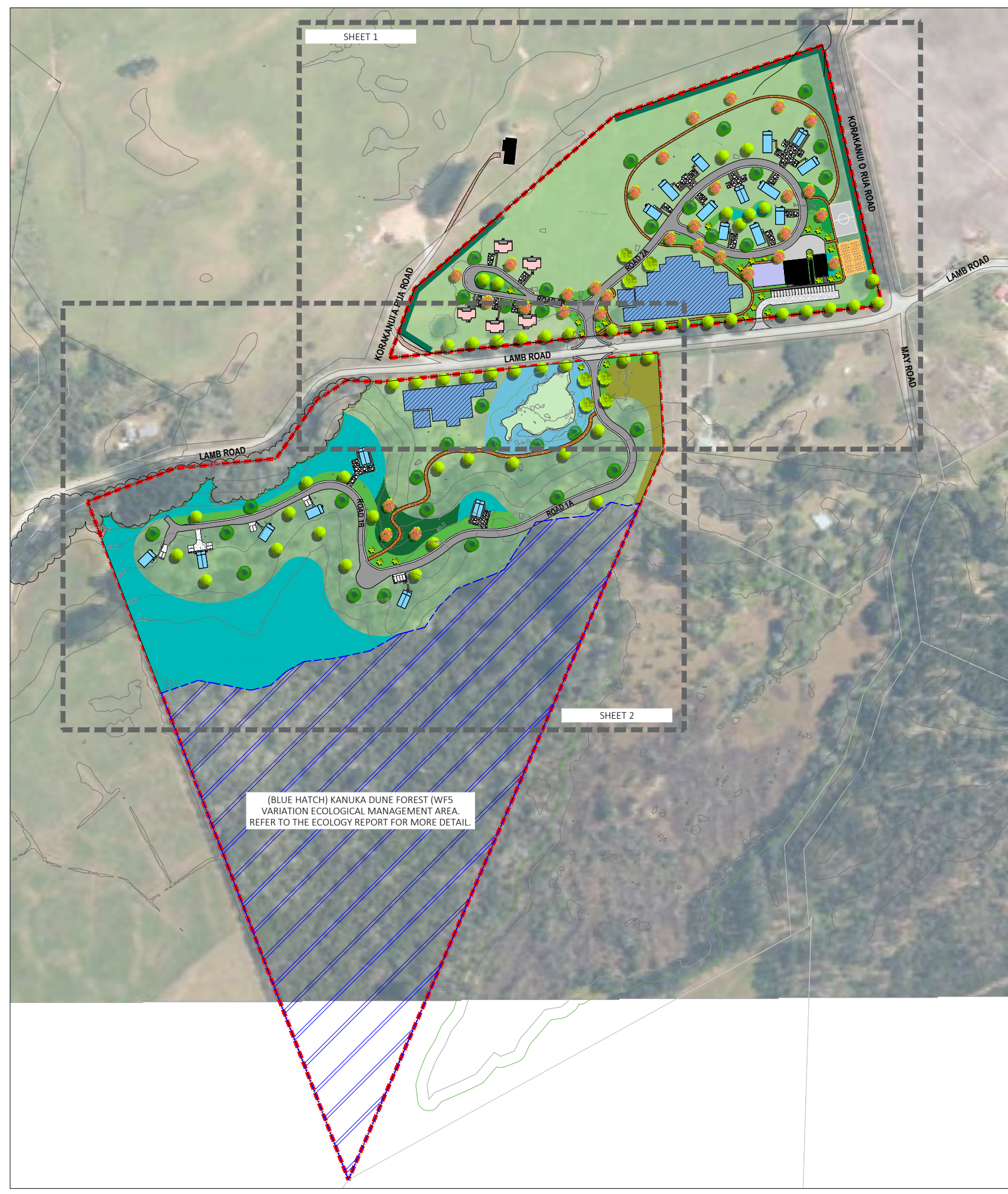
## 137 Lamb Road, Pukenui

LANDSCAPE PLAN SET | FOR RESOURCE CONSENT

30 July 2024

Rev A

Cover Page/Drawing Index (This Page)	LA-000
Landscape Plan Sheet 1	LA-001
Landscape Plan Sheet 2	LA-002
Plant Schedules	LA-003











**KEY**

**Specimen Trees:**

-  Laurelia novae-zelandiae, puketea.
-  Alectryon excelsus, titoki.
-  Metrosideros excelsa, pohutukawa.
-  Podocarpus totara, totara.
-  Rhopalostylis sapida, nikau palm.
-  Populus 'crow's nest', poplar hedgerow.

**Planting Mixes:**

-  Low (<1m high) Amenity Planting.
-  Large Shrub Planting.
-  Low Flammable/Visual Screen Planting Mix.
-  Wetland Buffer Planting.
-  Dryland Planting.
-  Wastewater Disposal Field Planting.



REVISION SUMMARY			
DESIGNED BY:	REV	DATE	DESCRIPTION:
ES	A	30.07.2024	FOR RESOURCE CONSENT
DRAWN BY:			
CHECKED BY:			
APPROVED BY:			

**B&A**  
Urban & Environmental

Barker & Associates  
Level 4, Old South British Building,  
3-13 Shortland Street,  
Auckland  
PO Box 1986, Shortland Street,  
Auckland 1140  
09 375 0900  
admin@barker.co.nz

CLIENT:  
**Te Aupouri  
Commercial  
Development Ltd.**  
NOT FOR CONSTRUCTION

PROJECT:  
174 Lamb Road, Pukenui.  
JOB NO.:  
WNG20280  
DRAWING TITLE :  
LANDSCAPE PLAN SET  
Landscape Plan Sheet 1 of 2

ISSUED	ISSUED FOR:	RESOURCE CONSENT	NORTH:
SCALE:	1:1250 @ A3	DWG NO.:	LA-001
DATE ISSUED:	30.07.2024	REVISION:	A



JosephMA\banda.local\shared\Admin\Jobs\13000-13999 General Jobs\2024\02-27 - 174 Lamb Rd - Proposed Site.dwg\174 Lamb Road Landscape Plans\2024\02-27 - 174 Lamb Rd - Proposed Site.dwg\174 Lamb Road Landscape Drawings 2.dwg



(BLUE HATCH) KANUKA DUNE FOREST (WFS VARIATION ECOLOGICAL MANAGEMENT AREA. REFER TO THE ECOLOGY REPORT FOR MORE DETAIL.

INSERT A

WASTE WATER DISPOSAL FIELD.

MACHAERINA SEDGELAND (WF11) ECOLOGICAL MANAGEMENT AREA. REFER TO THE ECOLOGY REPORT FOR MORE DETAIL.

LAWN.

OPEN GRASS SLOPE.

GRAVEL WALKING TRACK.

OPEN GRASS SLOPE.

EXISTING MIXED EXOTIC-NATIVE SCRUB VEGETATION. RETAIN NATIVE SPECIES FOR VISUAL SCREENING PURPOSES.

LAWN.

(BLUE HATCH) KANUKA DUNE FOREST (WFS VARIATION ECOLOGICAL MANAGEMENT AREA. REFER TO THE ECOLOGY REPORT FOR MORE DETAIL.

LAWN.

LAWN.

(BLUE HATCH) KANUKA DUNE FOREST (WFS VARIATION ECOLOGICAL MANAGEMENT AREA. REFER TO THE ECOLOGY REPORT FOR MORE DETAIL.

REFER INSERT A

KEY		Planting Mixes:	
<b>Specimen Trees:</b>		Low (<1m high) Amenity Planting.	
	Laurelia novae-zelandiae, puketea.	Large Shrub Planting.	
	Alectryon excelsus, titoki.	Low Flammable/Visual Screen Planting Mix.	
	Metrosideros excelsa, pohutukawa.	Wetland Buffer Planting.	
	Podocarpus totara, totara.	Dryland Planting.	
	Rhopalostylis sapida, nikau palm.	Wastewater Disposal Field Planting.	
	Populus 'crow's nest', poplar hedgerow.		

REVISION SUMMARY			
DESIGNED BY:	ES	REV	DATE
		A	30.07.2024
DESCRIPTION:	FOR RESOURCE CONSENT		
DRAWN BY:	ES		
CHECKED BY:	JW		
APPROVED BY:	CW		

**B&A**  
Urban & Environmental

Barker & Associates  
Level 4, Old South British Building,  
3-13 Shortland Street,  
Auckland

PO Box 1986, Shortland Street,  
Auckland 1140

09 375 0900  
admin@barker.co.nz

CLIENT: **Te Aupouri Commercial Development Ltd.**

NOT FOR CONSTRUCTION

PROJECT: 174 Lamb Road, Pukenui.

DRAWING TITLE : **LANDSCAPE PLAN SET**  
Landscape Plan Sheet 2 of 2

JOB NO.: WNG20280

ISSUED FOR: RESOURCE CONSENT

SCALE: 1:1250 @ A3

DATE ISSUED: 30.07.2024

DWG NO.: LA-002

REVISION: A

NORTH:

JosephMA\banda.local\shared\Admin\Jobs\13000-13999\General\Jobs\2024\06-27 - 174 Lamb Rd - Proposed Site.dwg\174 Lamb Road Landscape Plans\2024\06-27 - 174 Lamb Rd - Proposed Site.dwg\174 Lamb Road Landscape Drawings 2.rvt

Plant Information					
#	Botanical Name	Common Name	% of Mix	Grade at Planting (L)	Planting Centres (m)
<b>Ecological Mitigation Planting</b>					
<b>Wetland Buffer Planting</b>					
1	Carex lessoniana	Rautahi	5%	1	0.5
2	Carex virgata	Pukio	5%	1	0.5
3	Carex secta	Purei	5%	1	0.5
4	Cordyline australis	Ti kouka	15%	1	1
5	Cyperus ustulatus	Giant umbrella sedge	5%	1	0.5
6	Dacrycarpus dacrydioides	Kahikatea	10%	1	2
7	Kunzea robusta	Kanuka	10%	1	1.4
8	Leptospermum scoparium	Manuka	20%	1	1.4
9	Machaerina articulata	Jointed rush	5%	1	0.5
10	Machaerina rubiginosa	Orange nut sedge	5%	1	0.5
11	Phormium tenax	Harakeke	15%	1	1.4
			100%		
<b>Dryland Planting</b>					
1	Carpodetus serratus	Putaputaweta	15%	1	1.4
2	Coprosma lucida	Shiny karamu	15%	1	1.4
3	Coprosma robusta	Karamu	15%	1	1.4
4	Corynocarpus laevigatus	Karaka	10%	1	2
5	Geniostoma ligustrifolium	Hangehange	15%	1	1.4
6	Griselinia lucida	Akapuka	10%	1	1.4
7	Myrsine australis	Mapou	10%	1	1.4
8	Pseudopanax arboreus	Five-finger	10%	1	1.4
			100%		
<b>Wastewater Disposal Field Planting</b>					
1	Carex lessoniana	Rautahi	20%	0.5	0.75
2	Carex virgata	Pukio	20%	0.5	0.75
3	Carex secta	Purei	20%	0.5	0.75
4	Cyperus ustulatus	Giant umbrella sedge	20%	0.5	0.75
5	Phormium tenax	Harakeke	20%	0.5	0.75
			100%		

Plant Information					
#	Botanical Name	Common Name	% of Mix	Grade at Planting (L)	Planting Centres (m)
<b>Landscape Amenity Planting</b>					
<b>Specimen Trees</b>					
1	Podocarpus totara	tōtara	As shown	160	As shown
2	Alectryon excelsus	tītoki	As shown	160	As shown
3	Vitex lucens	pūriri	As shown	160	As shown
4	Laurelia novae-zealandiae	puketea	As shown	160	As shown
5	Rhopalostylis sapida	nikau palm	As shown	25	As shown
<b>Hedgerow/Visual Screen Planting</b>					
1	Populus 'Crows Nest'	poplar	100	2m pole	3
<b>Large Shrub Planting</b>					
1	Kunzea ericoides	kānuka	10%	1	1
2	Leptospermum scoparium	mānuka	50%	1	1
3	Coprosma robusta	karamū	5%	1	1
4	Hoheria populnea	houhere	2%	1	1
5	Myrsine australis	māpou	2%	1	1
6	Pittosporum tenuifolium	kōhūhū	5%	1	1
7	Pittosporum eugenioides	tarata	5%	1	1
8	Knightia excelsa	rewarewa	3%	1	1
9	Dodonaea viscosa	akeake	15%	1	1
10	Cordyline australis	ti kouka	3%	1	1
			100%		
<b>Low Flammable / Visual Screen Planting</b>					
1	Carpodetus serratus	Putaputaweta	10%	1	1
2	Coprosma lucida	Shiny karamu	20%	1	1
3	Coprosma robusta	karamū	15%	1	1
4	Corynocarpus laevigatus	Karaka	10%	1	1
6	Geniostoma ligustrifolium	Hangehange	5%	1	1
7	Griselinia lucida	Akapuka	20%	1	1
9	Pseudopanax arboreus	Five-finger	20%	1	1
			100%		
<b>Low (&lt;1m high) Planting</b>					
1	Phormium cookianum	wharariki	40%	1	0.75
2	Apodasmia similis	oioi	30%	1	0.75
3	Arthropodium 'Matapouri Bay'	rengarenga lily	10%	1	0.75
4	Astelia banksii	wharawhara	10%	1	0.75
5	Carex secta	purei	10%	1	0.75
			100%		

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REVISION SUMMARY			
DESIGNED BY:	REV	DATE	DESCRIPTION:
ES	A	30.07.2024	FOR RESOURCE CONSENT
DRAWN BY:	ES		
CHECKED BY:	JW		
APPROVED BY:	CW		

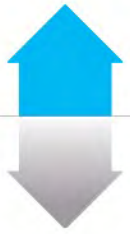


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CLIENT:  
**Te Aupouri Commercial Development Ltd.**  
  
NOT FOR CONSTRUCTION

PROJECT:  
174 Lamb Road, Pukenui.  
  
JOB NO.:  
WNG20280  
  
DRAWING TITLE :  
LANDSCAPE PLAN SET  
Plant Schedules

ISSUED	ISSUED FOR:	RESOURCE CONSENT		NORTH:
SCALE:	N/A	DWG NO.:	LA-003	
DATE ISSUED:	30.07.2024	REVISION:	A	



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## **Preliminary Geotechnical Investigation for Proposed Development at 174 Lamb Road, Pukenui**

Rev A

5 April 2024

Job No. NL230102



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**PRELIMINARY GEOTECHNICAL INVESTIGATION  
FOR PROPOSED DEVELOPMENT AT  
174 LAMB ROAD, PUKENUI**

Job Number:	NL230102
Name of Project:	174 Lamb Road, Pukenui
Client:	Realm Property Group Ltd
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### Appendices:

Appendix A: Drawings

Appendix B: Investigation Logs

Appendix C: Slope Stability Results

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## Report Summary

The following summarises the findings of this report however is not to be taken in isolation. It is a requirement that any user of this report review the document in its entirety, including all appendices.

Feature	Commentary
Proposal	Option 1, 2 & 3 sites are being considered for potential rural residential subdivision. The main consideration is the Option 1 site.
Fill	Not encountered within the test holes however was observed at the edges of the form platform in Option 1 Area.
Natural Soils	Loose to dense Karioitahi Group soils
Unduly Weak, Sensitive, or Compressible Soils	Not Encountered
Groundwater	Not encountered in most of the augerholes on the day of drilling, with the exception of AH20 (drilled within wetland area) where groundwater was measured at 1.1m bpgl.
Seismic Site Class	Site Class C
Slope Stability	Option 1 site - We consider the ridgeline area to be suitable for the future development from a land stability point of view. Option 2 site – The general area comprises gently sloping ground hence no undue global instability concern.
Preliminary Geotechnical Recommendations	Preliminary geotechnical recommendations (e.g. cuts, retaining, pavement, foundations) are provided in Section 9.0 of this report.
Site Constraint	Refer to Section 12.0 of this report.
Pavement	For preliminary design a CBR value of 3% or a modulus of subgrade reaction of 20kPa/mm are considered appropriate for flexible and rigid pavements respectively.

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## 1.0 Introduction

Soil & Rock Consultants (S&RC) were engaged by Realm Property Group Ltd to carry out a geotechnical investigation relating to master planning of a proposed development at 174 Lamb Road, Pukenui.

The findings and recommendations of our investigation and analyses will be presented in a Preliminary Geotechnical Investigation Report suitable for master planning for the development as described in Section 2.0 of this report.

Further geotechnical assessment will be required following completion the final scheme prior to Resource Consent Application.

## 1.1 Limitations

This report has been prepared by Soil & Rock Consultants for the sole benefit of Realm Property Group Ltd (the client) with respect to 174 Lamb Road, Pukenui and the brief given to us. The data and/or opinions contained in this report may not be used in other contexts, for any other purpose or by any other party without our prior review and agreement. This report may only be read or transmitted in its entirety, including the appendices.

The preliminary recommendations given in this report are based on data obtained from discrete locations and soil conditions between locations are inferred only. Our geotechnical models are based on those actual and inferred conditions however variations between test locations may occur and Soil & Rock Consultants should be contacted in this event to confirm or modify the validity of this report.

## 2.0 Site Description

The subject properties are legally described as Section 8 SO 65943, Section 9 SO 65943, and Section 2 SO 65943 designated as Options 1, 2 and 3 respectively in Figure 1. Option 3 property is 174 Lamb Road, Pukenui.

Option 1 - The property is currently vacant. A broad ridgeline traversing from east to west in a zig-zag fashion is present within the northern section of the property. The ridge side slope inclinations range from 20° to 30°. A wetland is present within the northeastern section of the property, between the ridge and the road. The wetland appeared to be dry at time of our site visit. Land to the south of the ridgeline is covered with dense native bush.

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The eastern section of the ridgeline has been cleared of vegetation and five building platforms and associated accessways have been created.

Option 2 - The property is currently vacant and used as grazing land. The ground surface is inclined generally less than 8° with isolated low/depressed areas. Some trees are present along and near the southern boundary. Multiple man-made open channels are present within the property, including a main drainage channel (approximately 1.5m deep near Lamb Road) entering the Option 2 area from across the road (wetland in Option 1 site) extending towards north-northeast beyond the property boundary. Refer to attached site plan for drainage alignment.

Option 3 - The Option 3 property is situated to the north and west of the Option 2 land. A dwelling serviced by a gravel driveway is present near the southeast boundary. Isolated elevated areas are present, including the location of the dwelling platform. The general area is currently used as grazing land. A wetland is present to the south of the property, adjacent to the road.



Figure 1: Aerial Image (Source: Provided by Barker Associates)

## 2.1 Proposed Development

A developed scheme plan was not available at the time of preparation of this report. The general proposal is a rural residential development however the final set-out and number of lots is yet to be finalised.

Hence, this report is intended to support master planning purposes, to aid in identifying potential building platforms and site constraints.

The sites (northern section of Option 1, Option 2 & Option 3) being considered for future development are shown in both Figure 1 above and Figure 2 below. The priority for the development is Option 1, in particular the ridgeline area. Depending on the number of lots, the development may extend to the Option 2 site.

Our scope is to investigate Option 3 site if Option 1 and 2 sites have large areas unsuitable for development. Based on our site walk-over inspection, Option 1 & 2 sites are considered to have sufficient areas to create multiple lots (e.g. >25, depending on lot size).

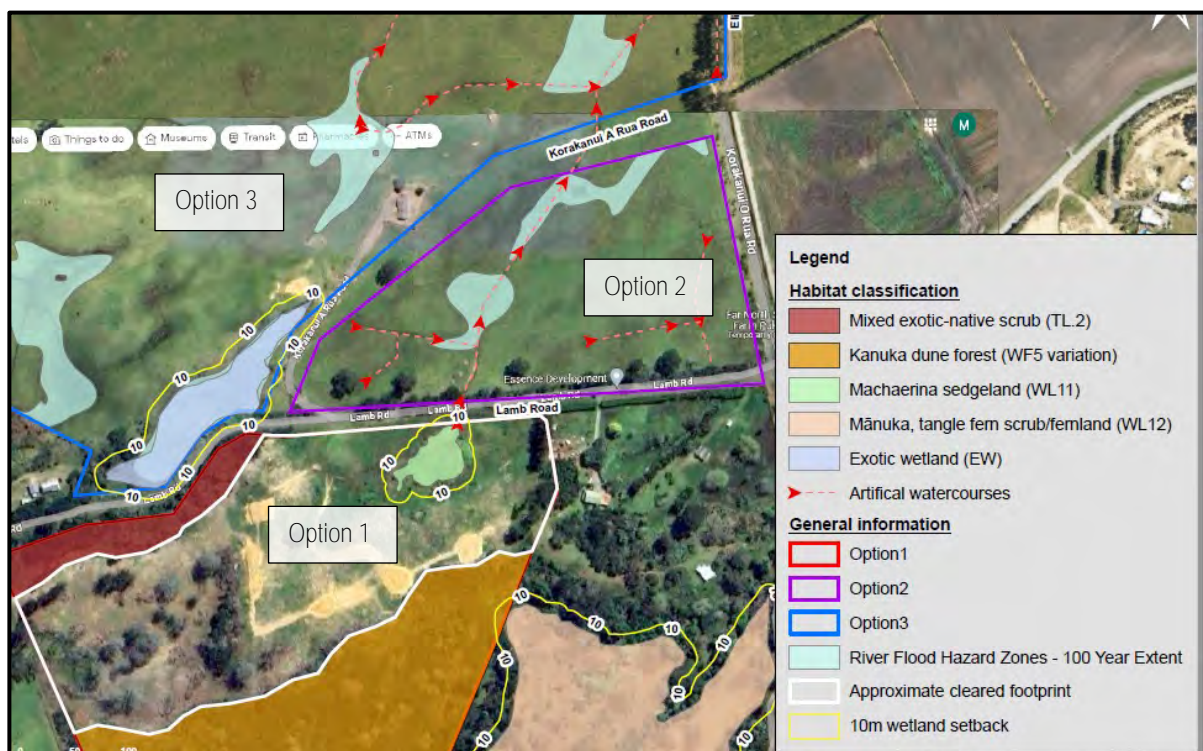


Figure 2: Ecological Plan (Source: Wild Ecology)

### 3.0 Geology

Reference to the GNS New Zealand Geological Web Map 1:250,000 Geology map indicates the site is underlain by dune sand deposits of the Karioitahi Group (See Figure 3). Karioitahi Group soils are described as weakly cemented sand in fixed parabolic dunes with intermixed sand, mud, and peat in interdune deposits.

Loose to cemented sands were encountered during our investigation, with no mud or peat deposits encountered (apart from augerhole AH20, which showed organic-stained sand, drilled within the wetland area).

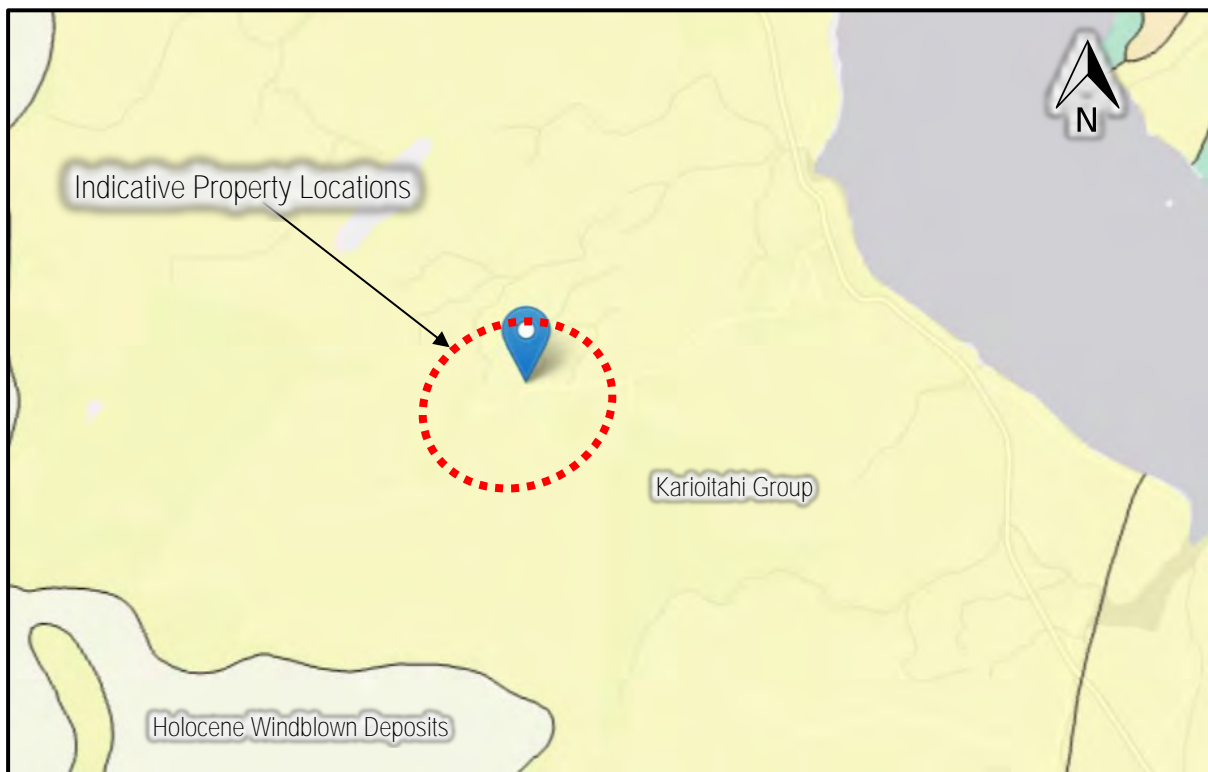


Figure 3: Geological Map (Source: GNS WebMaps Website)

### 4.0 Field Investigation

The field investigation carried out on 12 & 13 March 2024 comprised the following components:

- Visual appraisal of the properties
- Drilling of twenty hand augerholes (AH01 – AH20 inclusive) – Appendix B
- Measurement of three cross section (A-A', B-B' and C-C') using measuring tape and clinometer – Appendix A

---

The test locations are shown on the Site Plan, Drawing No NL230102/1 (Appendix A). The locations were determined from hand-held GPS and are therefore approximate only.

A visual-tactile field classification of the soils encountered during drilling was carried out in accordance with **“Guidelines for the Field Classification and Description of Soil and Rock for Engineering Purposes”**, issued by the New Zealand Geotechnical Society Inc. (2005).

Measurements of undrained shear strength are normally undertaken in the augerholes at intervals of depth using a handheld shear vane in accordance with the New Zealand Geotechnical Society Guidelines for Handheld Shear Vane Tests, dated August 2001. Due to the nature of the underlying soil (sandy material), no vane shear testing was carried out in any test holes.

Dynamic Cone (Scala) Penetrometer testing was carried out in-lieu of shear vane testing where soils became sand-dominated and from the base of each augerholes until refusal or the maximum practical testing depth of the equipment was reached (i.e. AH03). Refusal is defined as five consecutive blow counts of 10 or greater per 50mm penetration or a blow count of 20 for a penetration of 50mm or less. The results are given on the attached sheet (Appendix B).

#### 4.1 Subsurface Conditions

Subsurface conditions have been interpolated between the test locations and localised variations between and away from the test locations will exist.

In general, the soils encountered comprised Karioitahi Group soils. An outline of the soil conditions and investigation results is given below and summarised in Table 1, and detailed descriptions of the soils are given on the attached logs (Appendix B).

- Topsoil. Topsoil was not encountered in any augerholes however may be present away from the test holes.
  - Non-Engineered Fill. Non-engineered fill was not encountered in any augerholes however we note that the material was observed to be present on the edges of the formed platforms in Option 1 site. This material is likely to be push-over debris from the formation of building platforms and is not suitable for support of permanent structures (e.g. dwelling, pavement, retaining wall, etc)
  - Karioitahi Group. Karioitahi Group soils were encountered at each test locations to the termination depths of the augerholes. In general, Scala penetrometer testing carried out within the Karioitahi soils recorded blow counts between 2 and 15 per 100mm penetration, indicating ‘loose to dense’ sands.
-

To confirm the depth to dense sand within the wetland feature in Option 1 site, AH20 was drilled within the wetland area. Organic-stained sand was encountered between 0.3m and 1.0m depth and immediately below (1.1m below present ground level (bpgl)) dense sand was encountered. Sandstone/heavily-cemented sand was observed within the excavation face of the main man-made drainage in Option 2 site, refer to Figure 4 below.



Figure 4: Exposed Sandstone/Heavily-Cemented Sand (Source: S&RC Site Photo – 13 March 2024)

- Scala Penetrometer Testing. In addition to the testing within hand augerholes, Scala penetrometer testing was carried out from the base of each augerhole. Refusal, inferred to represent contact with very dense or cemented sands, was generally encountered at depths ranging between 0.2m and 1.0m below present ground level (bpgl). In AH03 and AH04 refusal was encountered at 8.0m (the maximum practical testing depth of the equipment) and 2.3m bpgl respectively. In AH20 refusal was encountered at 1.3m bpgl.

Based on the observation of the main drainage excavation, refusal in the Option 2 area is considered due to presence of the underlying sandstone/heavily-cemented sand.

- Groundwater. Groundwater was not encountered in most of the augerholes on the day of drilling, with the exception of AH20 where groundwater was measured at 1.1m bpgl.

Groundwater measurements taken during drilling are not always an accurate portrayal of the actual long-term groundwater table as groundwater levels can take time to stabilise within the augerhole following drilling.

Rushes were observed in places, particularly within low/depressed areas. These plants thrive in wet places and generally indicate persistently wet land. Sands generally have good drainage characteristics however due the shallow sandstone/cemented sand (low permeability) surface-water potentially ponds in low areas.

Table 1 – Summary of Subsurface Conditions

Test ID	Termination Depth	Scala Penetrometer Blow Counts (no. of blows / 100mm penetration)	Scala Penetrometer Termination
All depths measured in (m) below present ground level. (Rounded to 1 DP)			
AH01	0.2	4	0.2
AH02	0.7	2 – 7	1.0
AH03	5.0	2 – 8	8.0
AH04	1.8	2 – 12	2.3
AH05	0.3	9	1.0
AH06	0.7	3 – 8	0.7
AH07	0.7	3 – 6	0.7
AH08	0.8	1 – 6	0.9
AH09	0.7	1 – 6	0.8
AH10	0.6	2 – 5	0.8
AH11	0.6	2 – 4	0.6
AH12	0.5	3 – 4	0.6
AH13	0.6	2 – 3	0.7
AH14	0.7	2 – 5	0.8
AH15	0.5	2 – 4	0.6
AH16	0.6	2 – 3	0.6
AH17	0.7	2 – 5	0.8
AH18	0.5	3 – 4	0.6
AH19	0.9	3 - 15	0.7

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Test ID	Termination Depth	Scala Penetrometer Blow Counts (no. of blows / 100mm penetration)	Scala Penetrometer Termination
AH20	1.1	2 – 4	1.3

## 5.0 Sensitive Soils

Sandy soils (e.g. loose sand above sandstone) are potentially susceptible to mechanical disturbance and/or exposure to the elements and soils that test well in-situ can perform poorly when construction is underway. Care is therefore required during construction to ensure the soils are protected to ensure favourable short and long-term subgrade and foundation performance.

## 6.0 Seismic Design Parameters

The site is considered a Class C – **'Shallow Soil Site'** as defined by NZS 1170.5:2004.

The Peak Ground Acceleration (PGA) value for Importance Level 2, adopted for stability analysis of the site is 0.19g (ULS) with an effective earthquake magnitude of 6.5.

## 7.0 Slope Stability

### Qualitative Assessment - Option 1 Site

The Option 1 site comprises a broad ridgeline with side slope inclinations ranging from 20° to 30°. The geology comprises cemented dune sands.

Soil Creep is likely to be operating on these slopes. Soil creep is the slow downslope movement of upper soil horizons, usually confined to the uppermost 1.0m of soil and generally in the order of millimetres per year (or more for un-cemented sands). Soil creep is exacerbated by slope length, slope angle, inundation, groundwater fluctuations, soil expansivity, vegetation, and various surcharge loads and occurs on virtually all ground slopes. It is a normal engineering consideration and does not preclude development.

Groundwater was not encountered in any augerhole (within the elevated land) hence is unlikely to be a contributing factor to soil creep. However, surface-water runoff during times of wet or prolonged rainfall may contribute to such ground movement. Ground cover in the form of vegetation will minimise the degree of soil creep.

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Concentrated stormwater of the type collected from roofs and pavements requires controlled dispersal as it represents an erosion threat if not carefully addressed. This would normally be designed as part of future residential development however any pavement associated with subdivision development should include stormwater control as part of design.

We note that a near-vertical cut, approximately 2.0m high, is present to the north of the site, along the road. The near-vertical cut appears to have been created as part of the road development and exposes cemented sand. Cemented dune sands are generally stable at steep slopes (e.g. 70°), nevertheless any permanent structure should consider the presence of any steep slopes and appropriate instability measures (e.g setbacks, pile foundations, retaining wall, etc) should be included in planning and design stage.

At the time of our investigation no visual evidence of major, deep-seated instability was identified.

#### Qualitative Assessment - Option 2 Site

The Option 2 site comprises very gentle ground slopes hence global instability is considered to be of no threat within the site. In any case, for future development, an appropriate setback from the main drainage channel where depth is greater than 0.6m is recommended. This **is a** 'local' consideration and should unduly constrain subdivision development.

#### Quantitative Assessment Option - 1 Site

To quantitatively check the overall stability of the slopes within the Option 1 site, computer-based stability analyses have been undertaken for the existing topography through cross sections A-A', B-B' and D-D' as indicated on the Site Plan, Drawing No. NL230102/1. Cross sections A-A' and B-B' **were developed** using site measurements while cross section D-D' **was derived from LINZ website contour data** (Lidar). These sections represent the steepest slopes within the Option 1 site.

The computer program 'SLIDE', Version 2018, developed by RocScience Inc. was used for stability calculations. Stability of theoretical translational surfaces was assessed using the Morgenstern-Price method.

No groundwater table was encountered during our investigation and given the free-draining nature of the dune sands and the preferential sheet-flow shedding characteristics related to the slopes, we consider the likelihood of a shallow standing groundwater table development to be low. Therefore, our stability **analyses have been undertaken without a modelled groundwater table for the 'normal' and seismic conditions.**

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Furthermore, the likelihood of an extreme groundwater condition is considered highly unlikely and has not been analysed (this will, however, be required by Council if a Subdivision Consent application is made for this land).

Peak Ground Acceleration (PGA) values for the Northland Region have been determined as per Section 7.0 of this report.

As discussed above, a near-vertical cut was observed along the road. We infer that the cut is of some age and indicates the ability of the dense/cemented sand to stand unsupported at near-vertical angles. The underlying geology is likely comprised on *dense* Karioitahi Group deposits however for conservatism we modelled the upper 1.5m to 2.0m as *weathered* Karioitahi Group Soils, with lesser effective stress shear strength parameters.

Lower-bound effective stress shear strength parameters used for our analyses are summarised in Table 2. These have been developed from the soil description, in-situ strength testing, and our experience with these soil types in both the immediate area and the wider region.

Table 2 – Effective Shear Stress Parameters

Soil Type	Estimated Unit Weight $\gamma$ (kN/m <sup>3</sup> )	Effective Cohesion on the Failure Plane $c'$ (kPa)	Effective Angle of Internal Friction $\phi'$ (°)
Weathered Karioitahi Group Soils	18	3	32
Dense Karioitahi Group Soils	18	6	35

The ratio of resisting forces to disturbing forces is presented as a 'Factor of Safety' (FOS) against slope instability occurring. A FOS of 1 indicates a slope near or at equilibrium.

We have adopted the following for the purposes of our assessment:

- FoS of 1.5 or higher for long-term stability when modelling the existing site conditions (measured groundwater level).
- FoS of 1.0 or higher used for short-term stability to model the effect of seismic loading.

The values above were adopted from Section 2.6.8 of the 'Auckland Council Code of Practice for Land Development and Subdivision, Chapter 2, Earthworks and Geotechnical, Version 2.0, dated May 2023 which is considered a conservative reference. The results of our analyses are provided in Table 3 below.

Table 3 – Stability Analysis Results

Section	Modelled Conditions	Global Factor of Safety within platforms at the ridge top		Compliant
		Required	Calculated	
A-A'	Normal Groundwater	1.5	1.7	Yes
	Seismic Loading	1.0	1.1	Yes
B-B'	Normal Groundwater	1.5	1.6	Yes
	Seismic Loading	1.0	1.1	Yes
D-D'	Normal Groundwater	1.5	1.6	Yes
	Seismic Loading	1.0	>1.0	Yes

### Stability Conclusions

The minimum factors of safety within the potential building areas (Option 1 area, ridge top platforms) were greater than the published Council requirements (see Appendix C).

We therefore consider the potential building areas (ridge top) to be suitable for future development from a global land stability point of view contingent upon the recommendations of this report being adopted in design and construction.

The general area within the Option 2 area is also suitable for residential development from a land stability point of view.

## 8.0 Geotechnical Discussion

The Option 1 area (ridge top) is geotechnically suitable for residential development however slope-setbacks and/or leading-edge piles may be required depending on actual residential development proposals. Pile foundations should be expected where future dwellings are within 5.0m of any slope steeper than 14°.

The investigation within the Option 2 site indicated sandstone/cemented sand (or a very dense stratum) to be present within 1.0m bpgl. We understand that flood-prone areas are present. Geotechnically, the general Option 2 site is suitable for residential development including the flood-prone areas provided

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future building platform are formed above the anticipated flood level and appropriate drainage constructed to divert surface water away from residential development.

These are geotechnical considerations and other considerations may take precedence in the overall scoping of the development.

## 9.0 Preliminary Geotechnical Recommendations

### 9.1 Cuts and Fills

Formation of roading to service future subdivision is anticipated. Within the Option 1 site, additional accessways are likely to be cut into the slopes. As discussed in Section 9.0, cemented dunes sands are generally stable at steep slopes however some form of retaining will be required if future dwelling will be situated within the influence zone of the cut. Alternatively, the dwelling may be supported on **pile foundations, to transfer load below the cut's influence zone.**

All fills, regardless of depth, must be placed in accordance with NZS 4431:2022 with respect to subgrade preparation and standard of compaction.

Essentially, the height of any unsupported face and proximity to building platforms and consented structures will determine the need for retaining or lower-angle battering. Any proposal to create cuts or fills greater than 1.0m in height should be the subject of specific design advice.

### 9.2 Retaining Structures

The following is preliminary advice provided to assist with scoping of any retaining that may be required to develop the subdivision. We anticipate that that retaining would be limited to support of cuts and fills required to form accessways.

**Factors of safety and surcharge loadings appropriate to the conditions should be in accordance with 'Limit State Design of Retaining Walls and Foundations for Geotechnical and Structural Engineers' SESOC Seminar Series 2005.**

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We recommend retaining systems be Engineer-designed and consider both the local and global stability of the site, and any surcharge applicable to the wall. Particular attention should be paid to the influence of building surcharges above, and sloping ground above and below, any retaining wall. Geotechnical retaining wall design parameters are provided in Table 4.

Table 4 – Preliminary Retaining Wall Design Parameters

Parameter	Value
<b>Effective Cohesion <math>c'</math> (kPa)</b>	0
Internal Friction Angle (Stiff Natural Ground / Engineered Fill Only)	30°
Bulk Density (kN/m <sup>3</sup> )	18
$C_u$ for Broms (kPa) (Stiff Natural Ground / Engineered Fill Only)	80

We have **provided an 'equivalent'  $C_u$  for Broms design** however **'Broms for Sand'** may also be used by the designer.

For the design of **'stand-alone'** timber pole retaining walls, soil pressures should be determined for active pressure conditions ( $K_a$ ). For the design of rigid retaining walls or those that are integrated into any building structure, soil pressures should be determined for 'at-rest' pressure conditions ( $K_0$ ).

Sliding resistance for a gravity wall may be calculated using a wall/ground (no plastic membrane) friction angle of 20° and the bulk density provided in Table 4.

No passive resistance should be inferred until the horizontal buttress of stiff natural soil at the downslope side of the retaining pole is at least **4D in width, where 'D' is the diameter of the bored hole**. This discount recognises the lesser buttressing effect of inclined soil and also recognises the potential for soil creep and surface erosion to affect long-term pole performance,

### 9.3 Pavements

All topsoil, non-engineered fill, vegetation, organic or otherwise unsuitable material should be removed from under pavement areas prior to construction.

For preliminary design a CBR value of 3% or a modulus of subgrade reaction of 20kPa/mm are considered appropriate for flexible and rigid pavements respectively. These values should be confirmed by specific testing by S&RC following preparation of the subgrade.

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Any pavement should be underlain by a basecourse of clean, free-draining granular fill as specified by the designer and should be subjected to compaction by a device of appropriate weight and energy. Silty or sandy subgrades are generally sensitive to disturbance and **'static' rolling only (no vibration) is recommended.**

#### 9.4 Foundation Design Recommendations – Indicative

The following is provided in order to inform likely foundation types. It is not to be used for design of foundations or support of a Building Consent.

##### 9.4.1 Shallow Foundations

Shallow (**'spread'**) foundations are considered suitable for the support of typical residential dwellings where within slopes flatter than 1V:4H (14°) or well clear of slopes steeper than the same.

The natural site soils are considered suitable for the use of shallow foundations which may comprise a 'waffle' or 'rib-raft' slab (surface-supported, no embedment) or traditional strip/pad/Senton footings embedded a minimum of 600mm into stiff natural ground or engineered fill.

A Design (Dependable) Bearing Capacity of 150kPa is available for Ultimate Limit State Design of shallow foundations carried out in accordance with B1/AS1 or AS2870:2011, B1/MM4 and AS/NZS 1170:2002. A Strength Reduction Factor ( $\phi_{bc}$ ) of 0.5 has been applied to the Geotechnical Ultimate Bearing Capacity value to determine the Design Bearing Capacity.

The site soil within the general area is considered good ground in terms of NZS3604. Provided the recommended minimum foundation depth above is adopted, future dwellings may be designed using NZS3604:2011, B1/AS1 and the minimum embedment depth given above.

##### 9.4.2 Pile Foundations

Depending on location and design of future dwellings, pile foundations may be required.

Preliminary soil strength parameters applicable to Ultimate Limit State Design in accordance with AS/NZS 1170:2002 are given in Table 5. These parameters may only be adopted for piles with a length-to-diameter ratio greater than five ( $L/D > 5$ ), and that are embedded into stiff natural ground.

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Table 5 – Ultimate Limit State Pile Design Parameters

Material	Ultimate End Bearing Capacity	Ultimate Skin Friction
Karioitahi Group Soils (+2.0m depth)	1,500Pa	30kPa

An 'equivalent'  $C_u$  for skin friction has been given however actual pile adhesion design should be in accordance with Section 4.1.4 (c) of B1/VM4.

A Strength Reduction Factor not greater than  $\phi_{pc} = 0.5$  should be applied to the Geotechnical Ultimate Capacity values to determine the Design (Dependable) Capacity values.

No passive resistance should be inferred until the horizontal buttress of stiff natural soil at the downslope side of the retaining pole is at least **4D in width, where 'D' is the diameter of the bored hole**. Appropriate design parameters provided in Section 10.0 of this report may be adopted to mitigate lateral pressure.

#### 10.0 Stormwater

Concentrated stormwater flows must not be allowed to run onto or over slopes or saturate the ground as this could adversely affect slope stability or foundation conditions. Flows from all impermeable areas must be collected and carried in sealed pipes to a disposal point approved by Council.

We expect this recommendation to apply to accessway construction only at this stage. Future (individual) residential development will carry with it its own design in this respect.

#### 11.0 On-site Wastewater Treatment and Dispersal

The encountered soils are considered suitable for the on-site dispersal of treated wastewater.

We view the near-surface soils as meeting TP58 Soil Category 3 (medium-fine and loamy sand – good drainage). However, for conservativity, we recommend Soil Category 4 (sandy loam – moderate drainage) with maximum dispersal rate of 5mm/day be adopted for future wastewater design. Given the dense, less permeable, soil at shallow depth, dispersal via conventional in-ground soakage trenches should be avoided - dispersal of treated wastewater would best be achieved via Pressure-Compensated Dripline Irrigation (PCDI).

---

Designers should be cognisant of groundwater depth. This could be an issue within the low-lying areas as we expect the wet-season groundwater conditions to be onerous for wastewater design. Raised dispersal beds could be a requirement. Dispersal designs should also consider overland flow features and other water bodies.

Stormwater and wastewater discharges should not interfere with each other.

## 12.0 Site Constraints

Below is the summary of geotechnical site constraints that should be considered in master planning.

### Option 1 Site

- Generally considered suited to further residential development in geotechnical terms.
- Depending on actual location and design of future dwellings, pile foundations may be required. Pile foundations should be expected where future dwellings are within 5.0m of any slope steeper than 14°.
- The formation of additional accessways is likely to cut into ground slopes. As discussed in Section 9.0, cemented dunes sands are generally stable at steep slopes however some form of retaining will be required if future dwelling will be situated within the influence zone of the cut.
- Any cut or fill in excess of 1.0m height requires specific consideration and may require retaining.
- Push-over non-engineered fill (from the formation of existing platform) are present in places.
- Safe stormwater disposal related to impermeable surfaces (accessways) is a likely subdivisional requirements.
- On-site wastewater and stormwater dispersal related to future residential development proposals are achievable.

### Option 2 Site

- In geotechnical terms, there are no obvious constraints to subdivision for residential purposes.
  - The site is low lying with areas prone to flooding. Development within the site should consider potential flood levels.
  - There could be issues with wastewater disposal if the winter and spring groundwater levels are shallow.
-

### 13.0 Future Geotechnical Assessment

Further geotechnical assessment is required following completion the final scheme prior to Resource Consent Application. Depending on the development proposal, the assessment may comprise additional investigation, drawing review and/or desktop assessment.

End of Report Text – Appendices Follow

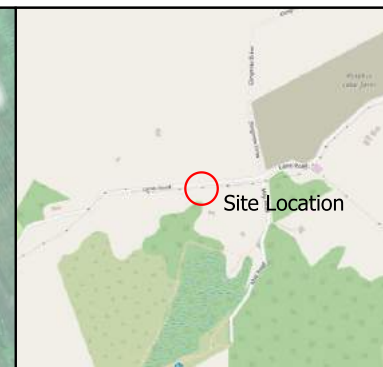
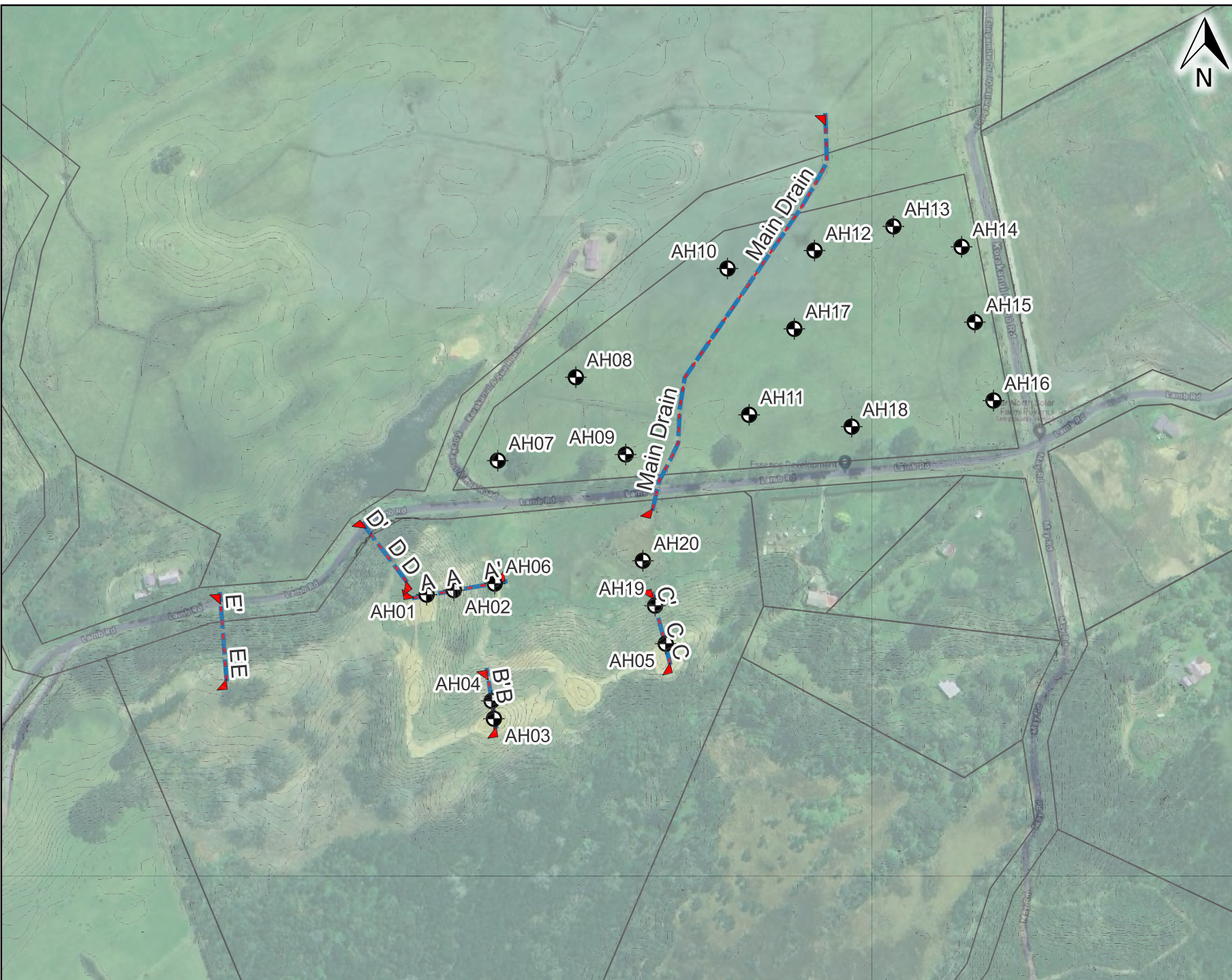
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# Appendix A

## Drawings



- NOTES:
1. Locations of features approximate only.
  2. Buried service locations to be verified on site.
  3. Original sheet size A3.
  4. Boundary data obtained from Council GIS.

- Key:
- Site Boundary
  - - - S&RC Cross Section Locations Feb 2024
  - S&RC Hand Augerhole Locations Feb 2024
  - S&RC Soil Expansivity Sample Locations Feb 2024

AMENDMENTS		
Date	Rev	Description

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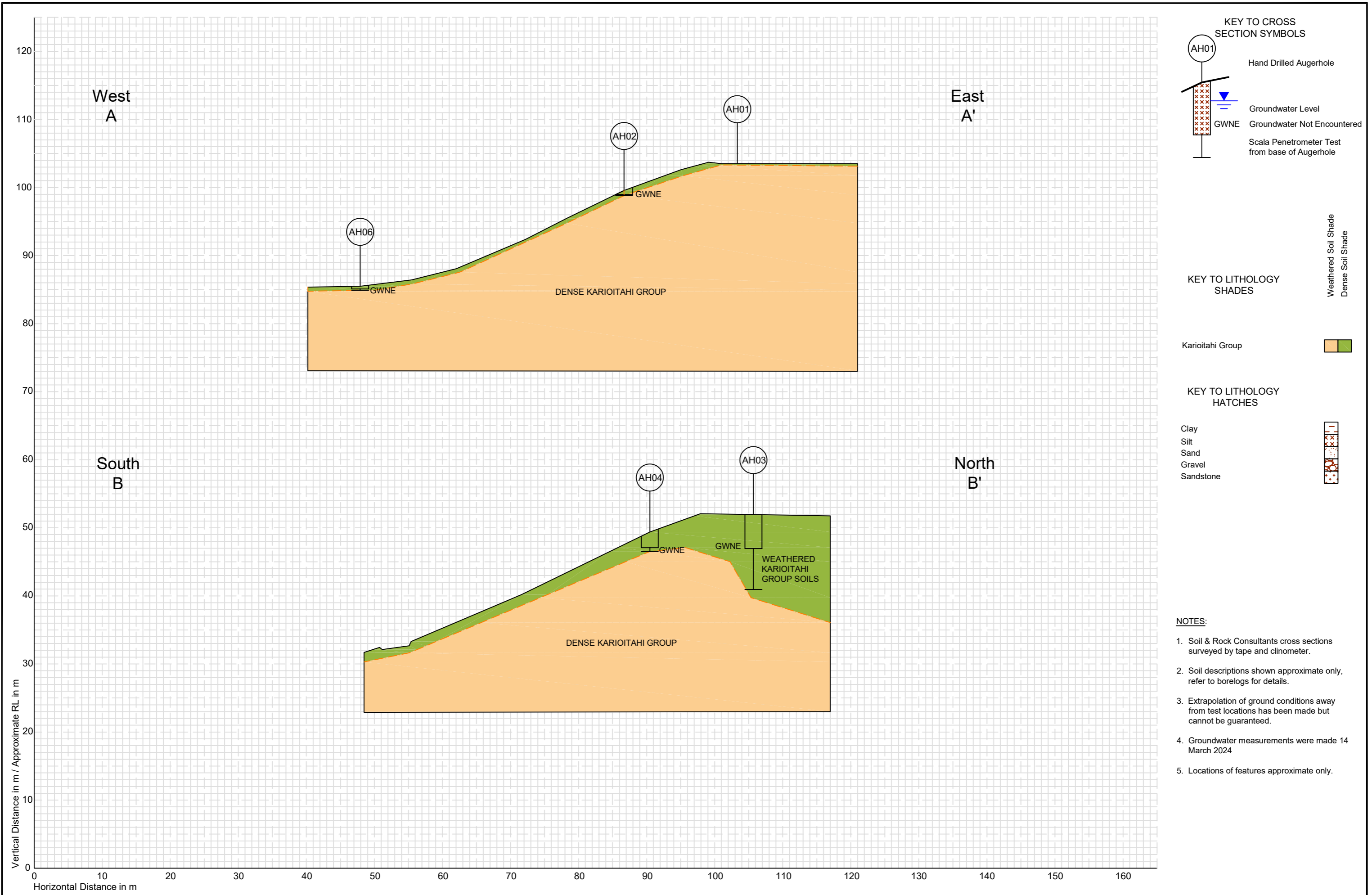
289 Lincoln Road, Waitakere  
PO Box 21-424 Henderson, 0650  
Ph 09 835 1740 Fax 09 835 1847  
www.soilandrock.co.nz

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174 Lamb Road  
Pukenui

Site Plan

Dwg. No.	240104/1		
Scale:	1:4000	Drawn By:	RL
Date:	28/03/2024	Rev.	A
Filename:	O:\Whangarei\NL23-00100-0159\NL230102\GIS\NL230102 - Site Plan - March 2024.gpr		



**KEY TO CROSS SECTION SYMBOLS**

- AH01: Hand Drilled Augerhole
- Groundwater Level: Groundwater Level
- GWNE: Groundwater Not Encountered
- Scala Penetrometer Test from base of Augerhole

**KEY TO LITHOLOGY SHADES**

- Weathered Soil Shade
- Dense Soil Shade

**KEY TO LITHOLOGY HATCHES**

- Clay
- Silt
- Sand
- Gravel
- Sandstone

- NOTES:**
- Soil & Rock Consultants cross sections surveyed by tape and clinometer.
  - Soil descriptions shown approximate only, refer to borelogs for details.
  - Extrapolation of ground conditions away from test locations has been made but cannot be guaranteed.
  - Groundwater measurements were made 14 March 2024
  - Locations of features approximate only.

AMENDMENTS		
DATE	REV	DESCRIPTION

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Your responsive & cost-effective engineers

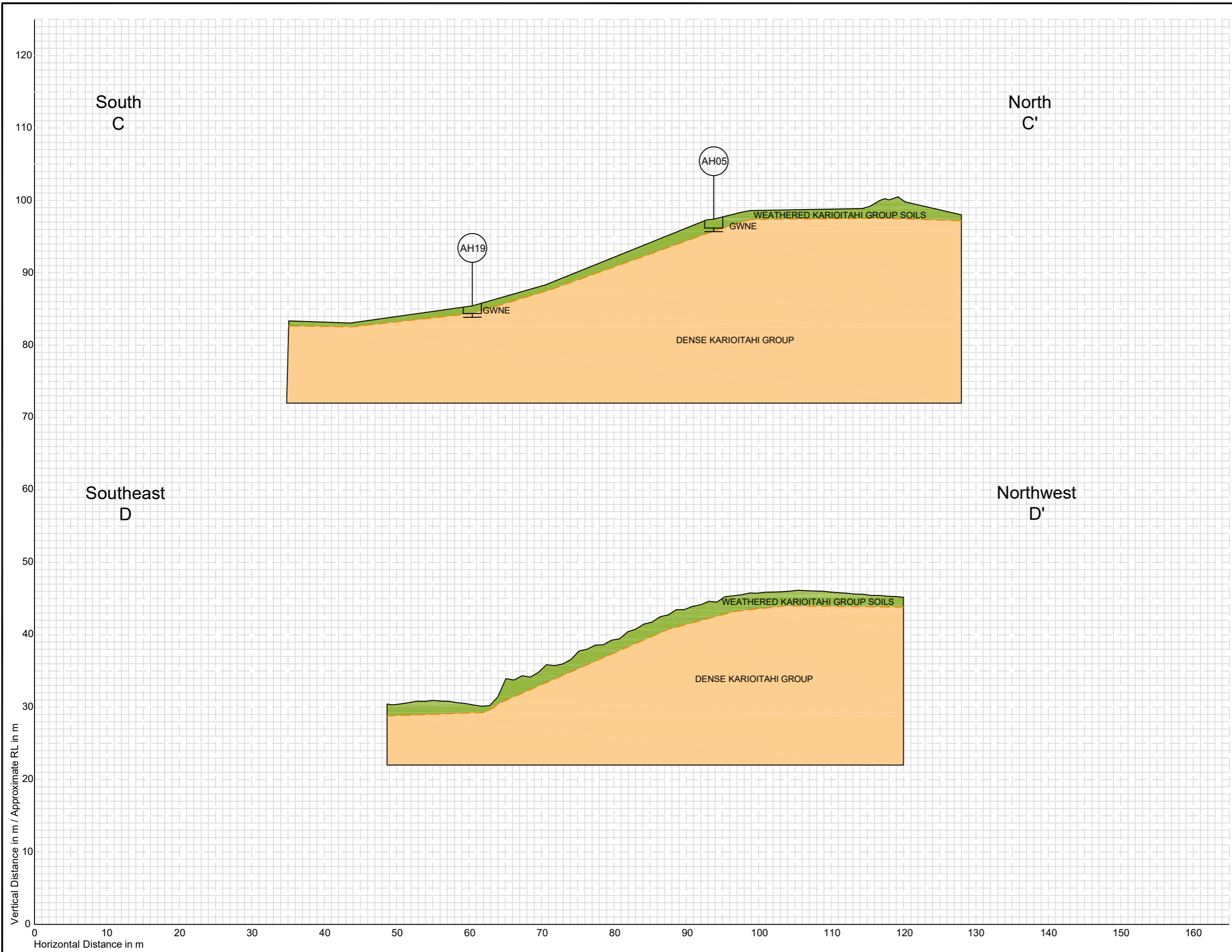
Check all dimensions and levels on site before commencing construction. This drawing and design remains the property of Geotechnical Engineering Ltd. and may not be reproduced without the written permission of Geotechnical Engineering Ltd.

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**174 LAMB ROAD  
PUKENUI**

**CROSS SECTIONS  
A-A' & B-B'**

NL230102/2A	DRAWN: RL	DATE: 28-Mar-24
SCALES: 1: 500 AT A3	CHECKED:	REV.
	DESIGNED:	
Filename: 2430102 - sections.dwg		



**KEY TO CROSS SECTION SYMBOLS**

- AH01 (circle with line) Hand Drilled Augerhole
- Blue triangle Groundwater Level
- Red 'x' pattern GWNE Groundwater Not Encountered
- Vertical line with horizontal bars Scala Penetrometer Test from base of Augerhole

**KEY TO LITHOLOGY SHADES**

- Light green Weathered Soil Shade
- Light orange Dense Soil Shade

**KEY TO LITHOLOGY HATCHES**

- Clay (horizontal lines)
- Silt (diagonal lines)
- Sand (dots)
- Gravel (circles)
- Sandstone (cross-hatch)

- NOTES:**
- Soil & Rock Consultants cross sections surveyed by tape and clinometer.
  - Soil descriptions shown approximate only, refer to borelogs for details.
  - Extrapolation of ground conditions away from test locations has been made but cannot be guaranteed.
  - Groundwater measurements were made 14 March 2024
  - Locations of features approximate only.

AMENDMENTS		
DATE	REV	DESCRIPTION

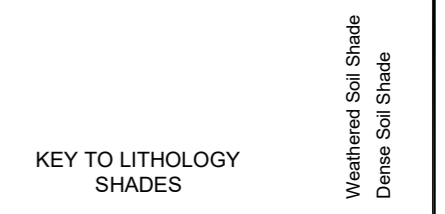
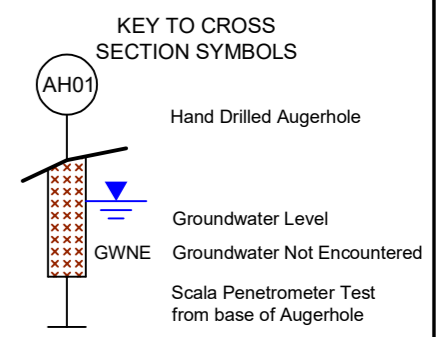
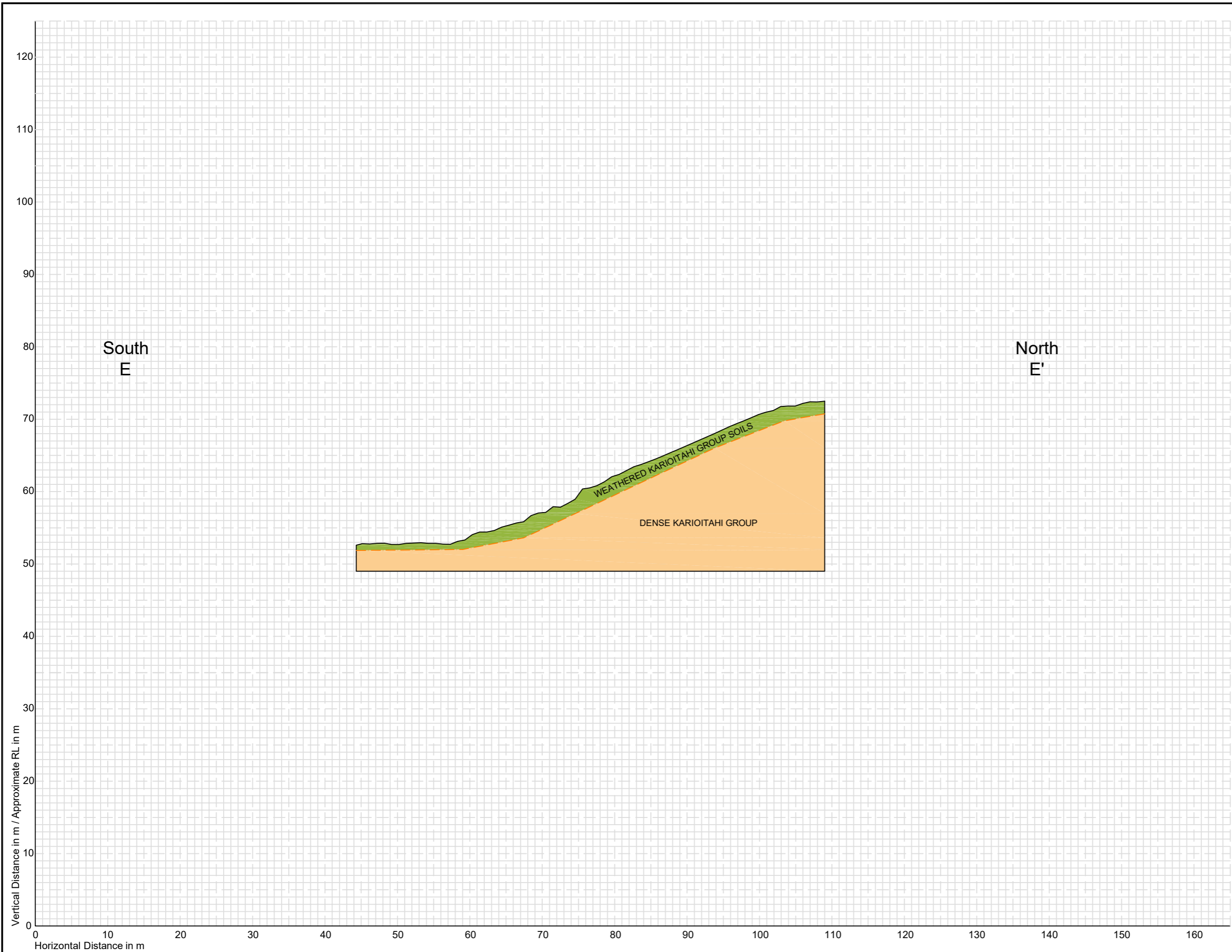
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**174 LAMB ROAD  
 PUKENUI**

**CROSS SECTIONS  
 C-C' & D-D'**

NL230102 / 20	DRAWN: RL	DATE: 28-Mar-24
SCALES: 1: 500 AT A3	CHECKED:	REV.
	DESIGNED:	
Filename: 2430102 - sections.dwg		



- NOTES:**
1. Soil & Rock Consultants cross sections surveyed by tape and clinometer.
  2. Soil descriptions shown approximate only, refer to borelogs for details.
  3. Extrapolation of ground conditions away from test locations has been made but cannot be guaranteed.
  4. Groundwater measurements were made 14 March 2024
  5. Locations of features approximate only.

AMENDMENTS		
DATE	REV	DESCRIPTION

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**174 LAMB ROAD  
PUKENUI**

**CROSS SECTION E-E'**

NL230102 / 20

SCALE: 1:500 AT A3	DRAWN: RL	DATE: 28-Mar-24
	CHECKED: RL	REV.
	DESIGNED:	

Filename: 2430102 - sections.dwg



# Appendix B

## Investigation Logs



CLIENT: Realm Property Group Ltd  
 PROJECT: Geotechnical Investigation, 174 Lam Road, Pukenui

Auger Hole No: AH01  
 Sheet 1 of 1

Drill Type: 50mm Hand Auger Project No: NL230102 Logged By: JN  
 Drilled By: KMAC Coordinates: Shear Vane No - Calibration Date:  
 Date Started: 12/3/24 Ground Elevation: Surface Conditions: Near Level, Sand  
 Date Finished: 12/3/24 Water Level: Groundwater Not Encountered

STRATIGRAPHY	DEPTH (m)	GRAPHIC LOG	Soil description in accordance with the NZ Geotechnical Society Inc 2005 "Guidelines for Field Description of Soil and Rock in Engineering Use"	WATER LEVEL (m)	SCALA PENETROMETER TEST NZS:4402:1986 test 6.5.2 (Blows per 100mm Increment)			LABORATORY TESTS	
					DEPTH (m)	10	20		30 (Blows)
K	0.0		fine to medium SAND, some silt, dark yellow grey, loose, moist (DUNE SAND) brown medium dense		0.0				
	0.5				0.5				
	1.0				1.0				
	1.5				1.5				
	2.0				2.0				
	2.5				2.5				
	3.0				3.0				
	3.5				3.5				
	4.0				4.0				
	4.5				4.5				
	5.0				5.0				

HAND AUGER LOG WITH SCALA NL230102 AH01 - AH20 174 LAMB ROAD 15MARCH24.GPJ S+R\_2013.GDT 15/3/24



CLIENT: Realm Property Group Ltd  
 PROJECT: Geotechnical Investigation, 174 Lam Road, Pukenui

Auger Hole No: AH02  
 Sheet 1 of 1

Drill Type: 50mm Hand Auger Project No: NL230102 Logged By: JN  
 Drilled By: KMAC Coordinates: Shear Vane No - Calibration Date:  
 Date Started: 12/3/24 Ground Elevation: Surface Conditions: Moderate Slope, Soil  
 Date Finished: 12/3/24 Water Level: Groundwater Not Encountered

STRATIGRAPHY	DEPTH (m)	GRAPHIC LOG	Soil description in accordance with the NZ Geotechnical Society Inc 2005 "Guidelines for Field Description of Soil and Rock in Engineering Use"	WATER LEVEL (m)	DEPTH (m)	SCALA PENETROMETER TEST NZS:4402:1986 test 6.5.2 (Blows per 100mm Increment) 10 20 30 (Blows)  SHEAR STRENGTH REMOULDED SHEAR ○ v ⊙ r	LABORATORY TESTS
K. GROUP	0.0 0.5		fine SAND, some silt, light yellow brown, loose, moist (DUNE SAND) dark orange, medium dense  dense		0.0 0.5		
	1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0		END OF BORE. 0.70 METRES. (TOO DENSE TO AUGER)		1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0		

HAND AUGER LOG WITH SCALA NL230102 AH01 - AH20 174 LAMB ROAD 15MARCH24.GPJ S+R\_2013.GDT 15/3/24



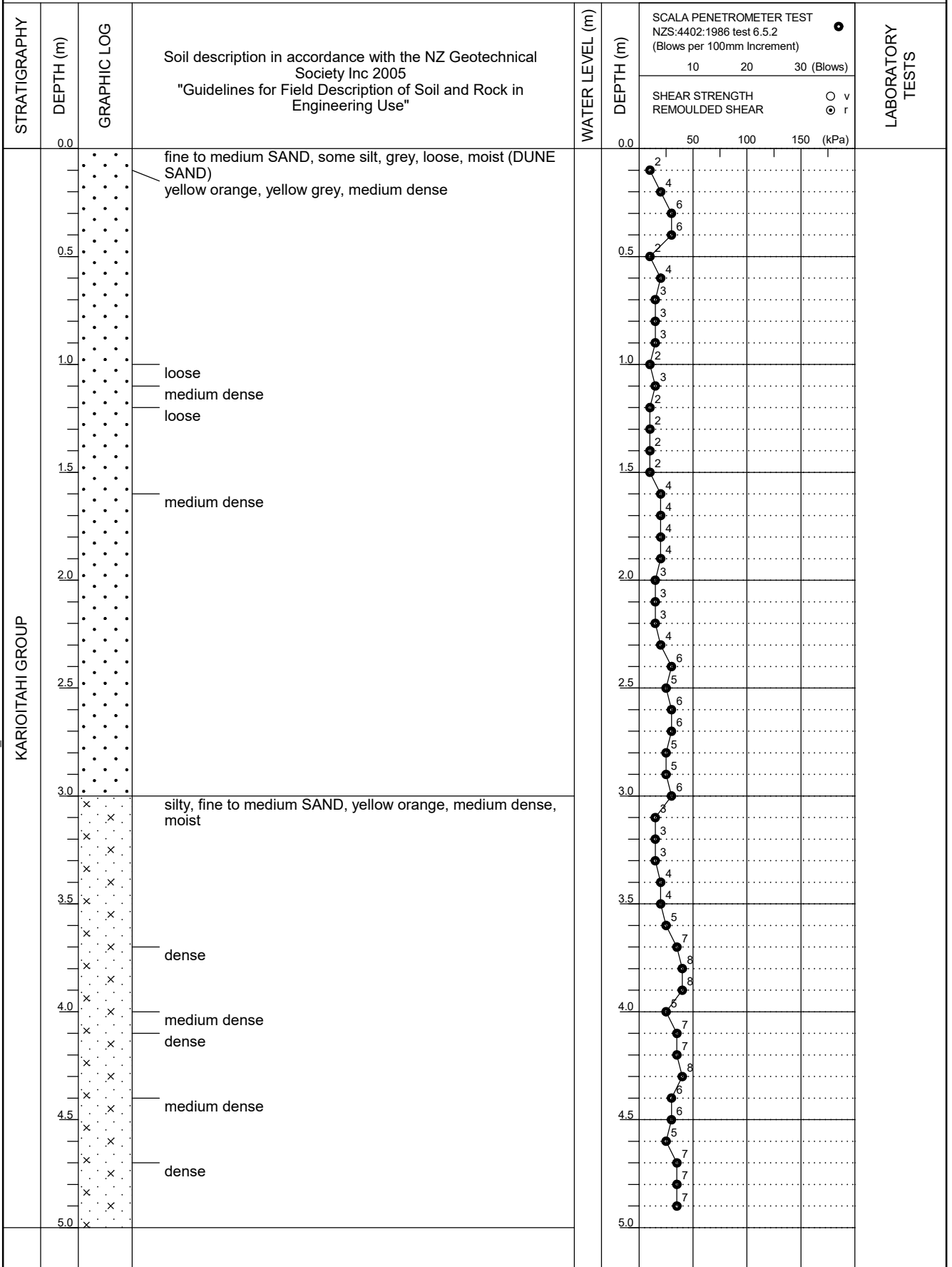


CLIENT: Realm Property Group Ltd  
 PROJECT: Geotechnical Investigation, 174 Lam Road, Pukenui

Auger Hole No: AH03  
 Sheet 1 of 1

Drill Type: 50mm Hand Auger Project No: NL230102 Logged By: JN  
 Drilled By: KMAC Coordinates: Shear Vane No - Calibration Date:  
 Date Started: 12/3/24 Ground Elevation: Surface Conditions: Near Level, Sand  
 Date Finished: 12/3/24 Water Level: Groundwater Not Encountered

HAND AUGER LOG WITH SCALA NL230102 AH01 - AH20 174 LAMB ROAD 15MARCH24.GPJ S+R\_2013.GDT 15/3/24

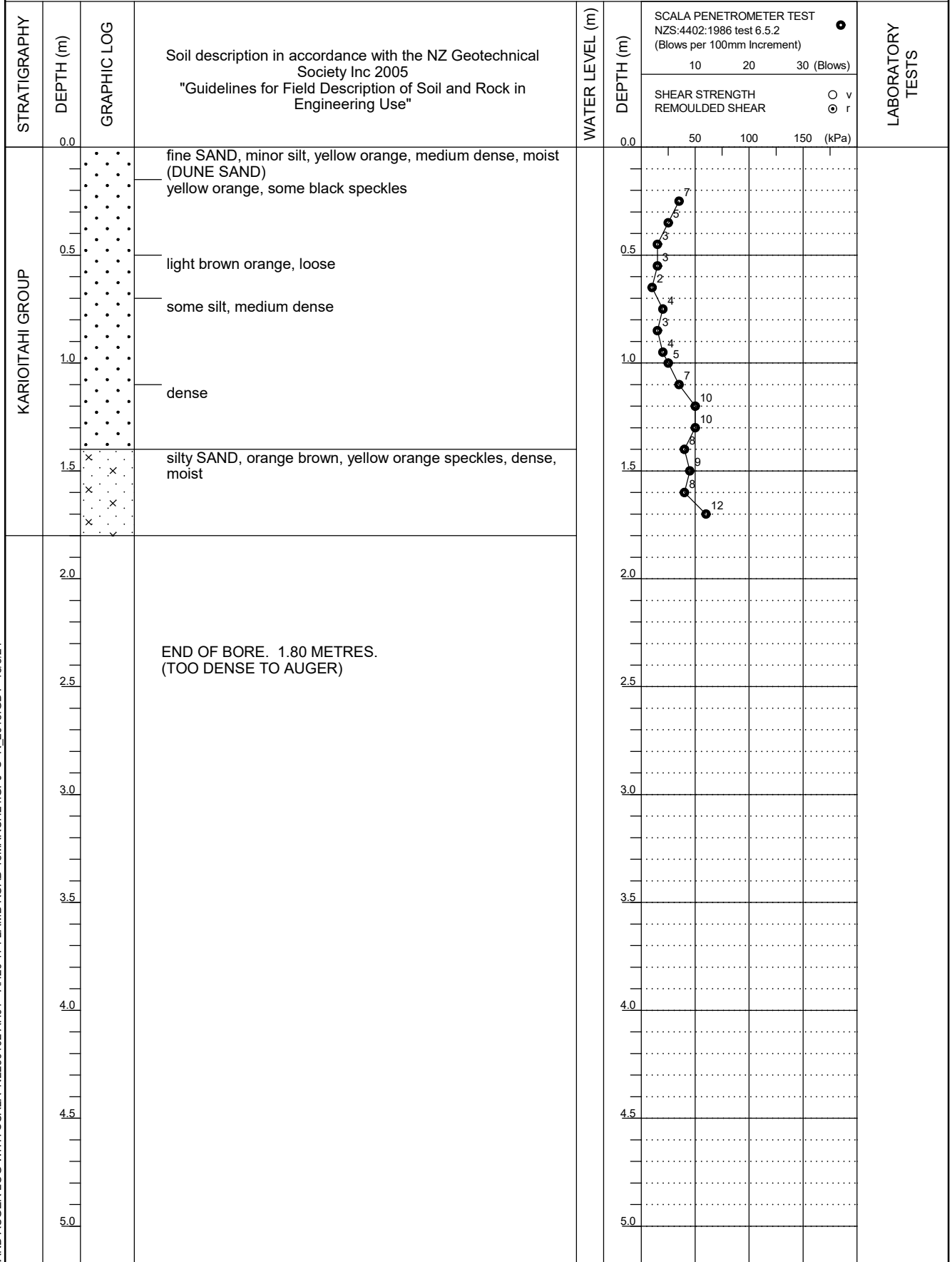




CLIENT: Realm Property Group Ltd  
 PROJECT: Geotechnical Investigation, 174 Lam Road, Pukenui

Auger Hole No: AH04  
 Sheet 1 of 1

Drill Type: 50mm Hand Auger Project No: NL230102 Logged By: JN  
 Drilled By: KMAC Coordinates: Shear Vane No - Calibration Date:  
 Date Started: 13/3/24 Ground Elevation: Surface Conditions: Moderate Slope, Sand  
 Date Finished: 13/3/24 Water Level: Groundwater Not Encountered



HAND AUGER LOG WITH SCALA NL230102 AH01 - AH20 174 LAMB ROAD 15MARCH24.GPJ S+R\_2013.GDT 15/3/24



CLIENT: Realm Property Group Ltd  
 PROJECT: Geotechnical Investigation, 174 Lam Road, Pukenui

Auger Hole No: AH05  
 Sheet 1 of 1

Drill Type: 50mm Hand Auger Project No: NL230102 Logged By: DEG  
 Drilled By: SMB Coordinates: Shear Vane No - Calibration Date:  
 Date Started: 12/3/24 Ground Elevation: Surface Conditions: Moderate Slope, Grass  
 Date Finished: 12/3/24 Water Level: Groundwater Not Encountered

STRATIGRAPHY	DEPTH (m)	GRAPHIC LOG	Soil description in accordance with the NZ Geotechnical Society Inc 2005 "Guidelines for Field Description of Soil and Rock in Engineering Use"	WATER LEVEL (m)	SCALA PENETROMETER TEST NZS:4402:1986 test 6.5.2 (Blows per 100mm Increment)			LABORATORY TESTS
					DEPTH (m)	10	20	
	0.0							
K	0.0		fine to medium SAND, trace silt, some fine to coarse subrounded gravel, orange, yellow, red brown, loose, dry (DUNE SAND) no gravel, dark orange, orange red, dense					
	0.5							
	1.0							
	1.5							
	2.0							
	2.5							
	3.0							
	3.5							
	4.0							
	4.5							
	5.0							

HAND AUGER LOG WITH SCALA NL230102 AH01 - AH20 174 LAMB ROAD 15MARCH24.GPJ S+R\_2013.GDT 15/3/24



CLIENT: Realm Property Group Ltd  
 PROJECT: Geotechnical Investigation, 174 Lam Road, Pukenui

Auger Hole No: AH06  
 Sheet 1 of 1

Drill Type: 50mm Hand Auger Project No: NL230102 Logged By: JN  
 Drilled By: KMAC Coordinates: Shear Vane No - Calibration Date:  
 Date Started: 12/3/24 Ground Elevation: Surface Conditions: Near Level, Grass  
 Date Finished: 12/3/24 Water Level: Groundwater Not Encountered

STRATIGRAPHY	DEPTH (m)	GRAPHIC LOG	Soil description in accordance with the NZ Geotechnical Society Inc 2005 "Guidelines for Field Description of Soil and Rock in Engineering Use"	WATER LEVEL (m)	DEPTH (m)	SCALA PENETROMETER TEST NZS:4402:1986 test 6.5.2 (Blows per 100mm Increment) 10 20 30 (Blows)  SHEAR STRENGTH REMOULDED SHEAR ○ v ⊙ r	LABORATORY TESTS
K. GROUP	0.0 0.5		fine to medium SAND, some silt, dark yellow, loose, moist (DUNE SAND) brown, grey brown, medium dense dense medium dense trace tree roots, dark brown		0.0 0.5		
	1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0		END OF BORE. 0.65 METRES. (TOO DENSE TO AUGER)		1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0		

HAND AUGER LOG WITH SCALA NL230102 AH01 - AH20 174 LAMB ROAD 15MARCH24.GPJ S+R\_2013.GDT 15/3/24



CLIENT: Realm Property Group Ltd  
 PROJECT: Geotechnical Investigation, 174 Lam Road, Pukenui

Auger Hole No: AH07  
 Sheet 1 of 1

Drill Type: 50mm Hand Auger Project No: NL230102 Logged By: DEG  
 Drilled By: SMB Coordinates: Shear Vane No - Calibration Date:  
 Date Started: 13/3/24 Ground Elevation: Surface Conditions: Slight Slope, Grass  
 Date Finished: 13/3/24 Water Level: Groundwater Not Encountered

STRATIGRAPHY	DEPTH (m)	GRAPHIC LOG	Soil description in accordance with the NZ Geotechnical Society Inc 2005 "Guidelines for Field Description of Soil and Rock in Engineering Use"	WATER LEVEL (m)	DEPTH (m)	SCALA PENETROMETER TEST NZS:4402:1986 test 6.5.2 (Blows per 100mm Increment) 10 20 30 (Blows)  SHEAR STRENGTH REMOULDED SHEAR	LABORATORY TESTS
K. GROUP	0.0 0.5		fine SAND, minor silt, brown, grey, loose, moist (DUNE SAND) medium dense trace silt  dark red brown			(Blows per 100mm Increment) 10 20 30 (Blows) (kPa)	
	1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0		END OF BORE. 0.65 METRES. (TOO DENSE TO AUGER)		1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0		

HAND AUGER LOG WITH SCALA NL230102 AH01 - AH20 174 LAMB ROAD 15MARCH24.GPJ S+R\_2013.GDT 15/3/24



CLIENT: Realm Property Group Ltd  
 PROJECT: Geotechnical Investigation, 174 Lam Road, Pukenui

Auger Hole No: AH08  
 Sheet 1 of 1

Drill Type: 50mm Hand Auger Project No: NL230102 Logged By: DEG  
 Drilled By: SMB Coordinates: Shear Vane No - Calibration Date:  
 Date Started: 13/3/24 Ground Elevation: Surface Conditions: Slight Slope, Grass  
 Date Finished: 13/3/24 Water Level: Groundwater Not Encountered

STRATIGRAPHY	DEPTH (m)	GRAPHIC LOG	Soil description in accordance with the NZ Geotechnical Society Inc 2005 "Guidelines for Field Description of Soil and Rock in Engineering Use"	WATER LEVEL (m)	DEPTH (m)	SCALA PENETROMETER TEST NZS:4402:1986 test 6.5.2 (Blows per 100mm Increment) 10 20 30 (Blows)	LABORATORY TESTS
						SHEAR STRENGTH REMOULDED SHEAR	
KARIOITAHU G	0.0		fine SAND, minor silt, brown, light brown, very loose, moist (DUNE SAND) brown, loose trace silt, grey medium dense some silt, dark brown dark brown, brown, red brown			50 100 150 (kPa)	
	1.0		END OF BORE. 0.80 METRES. (TOO DENSE TO AUGER)		1.0		
	1.5				1.5		
	2.0				2.0		
	2.5				2.5		
	3.0				3.0		
	3.5				3.5		
	4.0				4.0		
	4.5				4.5		
	5.0				5.0		

HAND AUGER LOG WITH SCALA NL230102 AH01 - AH20 174 LAMB ROAD 15MARCH24.GPJ S+R\_2013.GDT 15/3/24



CLIENT: Realm Property Group Ltd  
 PROJECT: Geotechnical Investigation, 174 Lam Road, Pukenui

Auger Hole No: AH09  
 Sheet 1 of 1

Drill Type: 50mm Hand Auger Project No: NL230102 Logged By: DEG  
 Drilled By: SMB Coordinates: Shear Vane No - Calibration Date:  
 Date Started: 13/3/24 Ground Elevation: Surface Conditions: Slight Slope, Grass  
 Date Finished: 13/3/24 Water Level: Groundwater Not Encountered

STRATIGRAPHY	DEPTH (m)	GRAPHIC LOG	Soil description in accordance with the NZ Geotechnical Society Inc 2005 "Guidelines for Field Description of Soil and Rock in Engineering Use"	WATER LEVEL (m)	DEPTH (m)	SCALA PENETROMETER TEST NZS:4402:1986 test 6.5.2 (Blows per 100mm Increment) 10 20 30 (Blows)  SHEAR STRENGTH REMOULDED SHEAR ○ v ⊙ r	LABORATORY TESTS
KARIOITAHIG	0.0 0.5		fine SAND, trace silt, light brown, loose, moist (DUNE SAND) trace silt, light grey, medium dense light grey, grey brown red brown		0.0 0.5		
	1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0		END OF BORE. 0.65 METRES. (TOO DENSE TO AUGER)		1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0		

HAND AUGER LOG WITH SCALA NL230102 AH01 - AH20 174 LAMB ROAD 15MARCH24.GPJ S+R\_2013.GDT 15/3/24



CLIENT: Realm Property Group Ltd  
 PROJECT: Geotechnical Investigation, 174 Lam Road, Pukenui

Auger Hole No: AH10  
 Sheet 1 of 1

Drill Type: 50mm Hand Auger Project No: NL230102 Logged By: DEG  
 Drilled By: SMB Coordinates: Shear Vane No - Calibration Date:  
 Date Started: 13/3/24 Ground Elevation: Surface Conditions: Slight Slope, Grass  
 Date Finished: 13/3/24 Water Level: Groundwater Not Encountered

STRATIGRAPHY	DEPTH (m)	GRAPHIC LOG	Soil description in accordance with the NZ Geotechnical Society Inc 2005 "Guidelines for Field Description of Soil and Rock in Engineering Use"	WATER LEVEL (m)	DEPTH (m)	SCALA PENETROMETER TEST NZS:4402:1986 test 6.5.2 (Blows per 100mm Increment)	LABORATORY TESTS
						10 20 30 (Blows)	
						SHEAR STRENGTH REMOULDED SHEAR	○ v ⊗ r
						50 100 150 (kPa)	
K. GROUP	0.0		fine SAND, minor silt, brown, loose, moist medium dense trace silt, grey, brown		0.0		
	0.5		dark red brown		0.5	2 4 5 5 4	
	1.0				1.0		
	1.5				1.5		
	2.0				2.0		
	2.5				2.5		
	3.0				3.0		
	3.5				3.5		
	4.0				4.0		
	4.5				4.5		
	5.0		END OF BORE. 0.60 METRES. (TOO DENSE TO AUGER)		5.0		

HAND AUGER LOG WITH SCALA NL230102 AH01 - AH20 174 LAMB ROAD 15MARCH24.GPJ S+R\_2013.GDT 15/3/24





CLIENT: Realm Property Group Ltd  
 PROJECT: Geotechnical Investigation, 174 Lam Road, Pukenui

Auger Hole No: AH11  
 Sheet 1 of 1

Drill Type: 50mm Hand Auger Project No: NL230102 Logged By: DEG  
 Drilled By: SMB Coordinates: Shear Vane No - Calibration Date:  
 Date Started: 13/3/24 Ground Elevation: Surface Conditions: Slight Slope, Grass  
 Date Finished: 13/3/24 Water Level: Groundwater Not Encountered

STRATIGRAPHY	DEPTH (m)	GRAPHIC LOG	Soil description in accordance with the NZ Geotechnical Society Inc 2005 "Guidelines for Field Description of Soil and Rock in Engineering Use"	WATER LEVEL (m)	DEPTH (m)	SCALA PENETROMETER TEST NZS:4402:1986 test 6.5.2 (Blows per 100mm Increment)	LABORATORY TESTS
						10 20 30 (Blows)	
						SHEAR STRENGTH REMOULDED SHEAR	○ v ⊗ r
						50 100 150 (kPa)	
K. GROUP	0.0		fine SAND, some silt, brown, loose, moist (DUNE SAND) medium dense trace silt, light grey, grey		0.0		
	0.5		red brown		0.5	2 4 3 3 3	
	1.0				1.0		
	1.5				1.5		
	2.0				2.0		
	2.5				2.5		
	3.0				3.0		
	3.5				3.5		
	4.0				4.0		
	4.5				4.5		
	5.0				5.0		
			END OF BORE. 0.55 METRES. (TOO DENSE TO AUGER)				

HAND AUGER LOG WITH SCALA NL230102 AH01 - AH20 174 LAMB ROAD 15MARCH24.GPJ S+R\_2013.GDT 15/3/24



CLIENT: Realm Property Group Ltd  
 PROJECT: Geotechnical Investigation, 174 Lam Road, Pukenui

Auger Hole No: AH12  
 Sheet 1 of 1

Drill Type: 50mm Hand Auger Project No: NL230102 Logged By: DEG  
 Drilled By: SMB Coordinates: Shear Vane No - Calibration Date:  
 Date Started: 13/3/24 Ground Elevation: Surface Conditions: Slight Slope, Grass  
 Date Finished: 13/3/24 Water Level: Groundwater Not Encountered

STRATIGRAPHY	DEPTH (m)	GRAPHIC LOG	Soil description in accordance with the NZ Geotechnical Society Inc 2005 "Guidelines for Field Description of Soil and Rock in Engineering Use"	WATER LEVEL (m)	DEPTH (m)	SCALA PENETROMETER TEST NZS:4402:1986 test 6.5.2 (Blows per 100mm Increment)	LABORATORY TESTS
						10 20 30 (Blows)	
						SHEAR STRENGTH REMOULDED SHEAR	○ v ⊗ r
						50 100 150 (kPa)	
K. GROUP	0.0		fine SAND, minor silt, brown, loose, moist (DUNE SAND) trace silt, dark grey, brown, medium dense		0.0		
	0.5		brown, dark red brown		0.5		
	1.0		END OF BORE. 0.50 METRES. (TOO DENSE TO AUGER)		1.0		
	1.5				1.5		
	2.0				2.0		
	2.5				2.5		
	3.0				3.0		
	3.5				3.5		
	4.0				4.0		
	4.5				4.5		
	5.0				5.0		

HAND AUGER LOG WITH SCALA NL230102 AH01 - AH20 174 LAMB ROAD 15MARCH24.GPJ S+R\_2013.GDT 15/3/24



CLIENT: Realm Property Group Ltd  
 PROJECT: Geotechnical Investigation, 174 Lam Road, Pukenui

Auger Hole No: AH13  
 Sheet 1 of 1

Drill Type: 50mm Hand Auger Project No: NL230102 Logged By: DEG  
 Drilled By: SMB Coordinates: Shear Vane No - Calibration Date:  
 Date Started: 13/3/24 Ground Elevation: Surface Conditions: Slight Slope, Grass  
 Date Finished: 13/3/24 Water Level: Groundwater Not Encountered

STRATIGRAPHY	DEPTH (m)	GRAPHIC LOG	Soil description in accordance with the NZ Geotechnical Society Inc 2005 "Guidelines for Field Description of Soil and Rock in Engineering Use"	WATER LEVEL (m)	DEPTH (m)	SCALA PENETROMETER TEST	LABORATORY TESTS
						NZS:4402:1986 test 6.5.2 (Blows per 100mm Increment)	
K. GROUP						10 20 30 (Blows)	
						50 100 150 (kPa)	
	0.0				0.0		
	0.1	•••••	fine SAND, minor silt, brown, dark brown, loose, moist (DUNE SAND)		0.1		
	0.2	•••••	dark grey, grey, medium dense trace silt		0.2		
	0.3	•••••			0.3		
	0.4	•••••	loose		0.4		
	0.5	•••••	dark red brown		0.5		
	1.0				1.0		
	1.5				1.5		
	2.0				2.0		
	2.5				2.5		
	3.0				3.0		
	3.5				3.5		
	4.0				4.0		
	4.5				4.5		
	5.0				5.0		
			END OF BORE. 0.60 METRES. (TOO DENSE TO AUGER)				

HAND AUGER LOG WITH SCALA NL230102 AH01 - AH20 174 LAMB ROAD 15MARCH24.GPJ S+R\_2013.GDT 15/3/24



CLIENT: Realm Property Group Ltd  
 PROJECT: Geotechnical Investigation, 174 Lam Road, Pukenui

Auger Hole No: AH14  
 Sheet 1 of 1

Drill Type: 50mm Hand Auger Project No: NL230102 Logged By: DEG  
 Drilled By: SMB Coordinates: Shear Vane No - Calibration Date:  
 Date Started: 13/3/24 Ground Elevation: Surface Conditions: Slight Slope, Grass  
 Date Finished: 13/3/24 Water Level: Groundwater Not Encountered

STRATIGRAPHY	DEPTH (m)	GRAPHIC LOG	Soil description in accordance with the NZ Geotechnical Society Inc 2005 "Guidelines for Field Description of Soil and Rock in Engineering Use"	WATER LEVEL (m)	DEPTH (m)	SCALA PENETROMETER TEST NZS:4402:1986 test 6.5.2 (Blows per 100mm Increment) 10 20 30 (Blows)  SHEAR STRENGTH REMOULDED SHEAR ○ v ⊙ r	LABORATORY TESTS
KARIOITAHIG	0.0 0.5		fine SAND, minor silt, brown, loose, moist (DUNE SAND) light grey, brown, medium dense trace silt dark red brown				
	1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0		END OF BORE. 0.65 METRES. (TOO DENSE TO AUGER)		1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0		

HAND AUGER LOG WITH SCALA NL230102 AH01 - AH20 174 LAMB ROAD 15MARCH24.GPJ S+R\_2013.GDT 15/3/24



CLIENT: Realm Property Group Ltd  
 PROJECT: Geotechnical Investigation, 174 Lam Road, Pukenui

Auger Hole No: AH15  
 Sheet 1 of 1

Drill Type: 50mm Hand Auger Project No: NL230102 Logged By: DEG  
 Drilled By: SMB Coordinates: Shear Vane No - Calibration Date:  
 Date Started: 13/3/24 Ground Elevation: Surface Conditions: Slight Slope, Grass  
 Date Finished: 13/3/24 Water Level: Groundwater Not Encountered

STRATIGRAPHY	DEPTH (m)	GRAPHIC LOG	Soil description in accordance with the NZ Geotechnical Society Inc 2005 "Guidelines for Field Description of Soil and Rock in Engineering Use"	WATER LEVEL (m)	DEPTH (m)	SCALA PENETROMETER TEST NZS:4402:1986 test 6.5.2 (Blows per 100mm Increment)	LABORATORY TESTS
						10 20 30 (Blows)	
						SHEAR STRENGTH REMOULDED SHEAR	○ v ⊗ r
						50 100 150 (kPa)	
K. GROUP	0.0		fine SAND, minor silt, brown, loose, moist (DUNE SAND) grey, brown, medium dense trace silt red brown, dark red brown		0.0		
	0.5				0.5		
	1.0		END OF BORE. 0.50 METRES. (TOO DENSE TO AUGER)		1.0		
	1.5				1.5		
	2.0				2.0		
	2.5				2.5		
	3.0				3.0		
	3.5				3.5		
	4.0				4.0		
	4.5				4.5		
	5.0				5.0		

HAND AUGER LOG WITH SCALA NL230102 AH01 - AH20 174 LAMB ROAD 15MARCH24.GPJ S+R\_2013.GDT 15/3/24



CLIENT: Realm Property Group Ltd  
 PROJECT: Geotechnical Investigation, 174 Lam Road, Pukenui

Auger Hole No: AH16  
 Sheet 1 of 1

Drill Type: 50mm Hand Auger Project No: NL230102 Logged By: DEG  
 Drilled By: SMB Coordinates: Shear Vane No - Calibration Date:  
 Date Started: 13/3/24 Ground Elevation: Surface Conditions: Slight Slope, Grass  
 Date Finished: 13/3/24 Water Level: Groundwater Not Encountered

STRATIGRAPHY	DEPTH (m)	GRAPHIC LOG	Soil description in accordance with the NZ Geotechnical Society Inc 2005 "Guidelines for Field Description of Soil and Rock in Engineering Use"	WATER LEVEL (m)	SCALA PENETROMETER TEST NZS:4402:1986 test 6.5.2 (Blows per 100mm Increment)			LABORATORY TESTS
					DEPTH (m)	10	20	
K. GROUP	0.0		fine SAND, trace silt, brown, loose, moist (DUNE SAND) grey brown, medium dense		0.0			
	0.5		red brown		0.5	2	3	3
	1.0		END OF BORE. 0.55 METRES. (TOO DENSE TO AUGER)		1.0			
	1.5				1.5			
	2.0				2.0			
	2.5				2.5			
	3.0				3.0			
	3.5				3.5			
	4.0				4.0			
	4.5				4.5			
	5.0				5.0			

HAND AUGER LOG WITH SCALA NL230102 AH01 - AH20 174 LAMB ROAD 15MARCH24.GPJ S+R\_2013.GDT 15/3/24



CLIENT: Realm Property Group Ltd  
 PROJECT: Geotechnical Investigation, 174 Lam Road, Pukenui

Auger Hole No: AH17  
 Sheet 1 of 1

Drill Type: 50mm Hand Auger Project No: NL230102 Logged By: JN  
 Drilled By: KMAC Coordinates: Shear Vane No - Calibration Date:  
 Date Started: 13/3/24 Ground Elevation: Surface Conditions: Near Level, Grass  
 Date Finished: 13/3/24 Water Level: Groundwater Not Encountered

STRATIGRAPHY	DEPTH (m)	GRAPHIC LOG	Soil description in accordance with the NZ Geotechnical Society Inc 2005 "Guidelines for Field Description of Soil and Rock in Engineering Use"	WATER LEVEL (m)	DEPTH (m)	SCALA PENETROMETER TEST NZS:4402:1986 test 6.5.2 (Blows per 100mm Increment) 10 20 30 (Blows)  SHEAR STRENGTH REMOULDED SHEAR ○ v ⊙ r	LABORATORY TESTS
K. GROUP	0.0 0.5		fine SAND, minor silt, dark grey, white speckles, loose, moist (DUNE SAND) medium dense  some silt, dark red brown		0.0 0.5		
	1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0		END OF BORE. 0.65 METRES. (TOO DENSE TO AUGER)		1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0		

HAND AUGER LOG WITH SCALA NL230102 AH01 - AH20 174 LAMB ROAD 15MARCH24.GPJ S+R\_2013.GDT 15/3/24



CLIENT: Realm Property Group Ltd  
 PROJECT: Geotechnical Investigation, 174 Lam Road, Pukenui

Auger Hole No: AH18  
 Sheet 1 of 1

Drill Type: 50mm Hand Auger Project No: NL230102 Logged By: JN  
 Drilled By: KMAC Coordinates: Shear Vane No - Calibration Date:  
 Date Started: 13/3/24 Ground Elevation: Surface Conditions: Near Level, Grass  
 Date Finished: 13/3/24 Water Level: Groundwater Not Encountered

STRATIGRAPHY	DEPTH (m)	GRAPHIC LOG	Soil description in accordance with the NZ Geotechnical Society Inc 2005 "Guidelines for Field Description of Soil and Rock in Engineering Use"	WATER LEVEL (m)	DEPTH (m)	SCALA PENETROMETER TEST NZS:4402:1986 test 6.5.2 (Blows per 100mm Increment)	LABORATORY TESTS
						10 20 30 (Blows)	
						SHEAR STRENGTH REMOULDED SHEAR	○ v ⊗ r
						50 100 150 (kPa)	
K. GRP	0.0		fine SAND, minor silt, dark grey, white speckles, medium dense, moist (DUNE SAND) dark grey, brown trace silt, dark red brown		0.0	3 4 4 4	
	0.5				0.5		
	1.0		END OF BORE. 0.45 METRES. (TOO DENSE TO AUGER)		1.0		
	1.5				1.5		
	2.0				2.0		
	2.5				2.5		
	3.0				3.0		
	3.5				3.5		
	4.0				4.0		
	4.5				4.5		
	5.0				5.0		

HAND AUGER LOG WITH SCALA NL230102 AH01 - AH20 174 LAMB ROAD 15MARCH24.GPJ S+R\_2013.GDT 15/3/24





CLIENT: Realm Property Group Ltd  
 PROJECT: Geotechnical Investigation, 174 Lam Road, Pukenui

Auger Hole No: AH19  
 Sheet 1 of 1

Drill Type: 50mm Hand Auger Project No: NL230102 Logged By: DEG  
 Drilled By: SMB Coordinates: Shear Vane No - Calibration Date:  
 Date Started: 12/3/24 Ground Elevation: Surface Conditions: Slight Slope, Grass  
 Date Finished: 12/3/24 Water Level: Groundwater Not Encountered

STRATIGRAPHY	DEPTH (m)	GRAPHIC LOG	Soil description in accordance with the NZ Geotechnical Society Inc 2005 "Guidelines for Field Description of Soil and Rock in Engineering Use"	WATER LEVEL (m)	DEPTH (m)	SCALA PENETROMETER TEST NZS:4402:1986 test 6.5.2 (Blows per 100mm Increment) 10 20 30 (Blows)  SHEAR STRENGTH REMOULDED SHEAR	LABORATORY TESTS
KARIOITAHU G.	0.0 0.5 1.0		fine SAND, trace silt, light brown, medium dense, moist (DUNE SAND) light grey light grey, brown light grey, dense white minor silt, light grey, light brown brown		0.0 0.5 1.0		
	1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0		END OF BORE. 0.90 METRES. (TOO DENSE TO AUGER)		1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0		

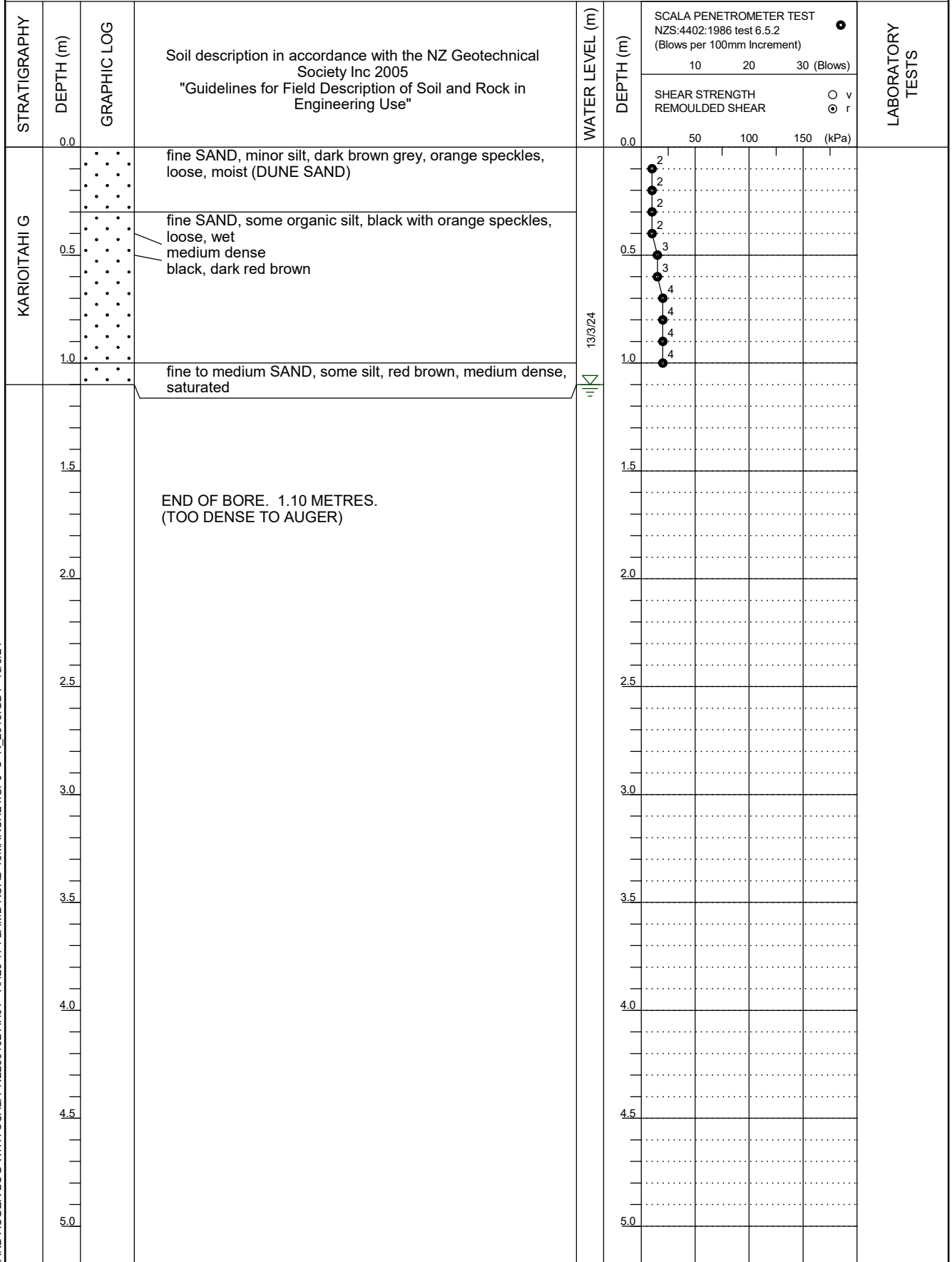
HAND AUGER LOG WITH SCALA NL230102 AH01 - AH20 174 LAMB ROAD 15MARCH24.GPJ S+R\_2013.GDT 15/3/24



CLIENT: Realm Property Group Ltd  
 PROJECT: Geotechnical Investigation, 174 Lam Road, Pukenui

Auger Hole No: AH20  
 Sheet 1 of 1

Drill Type: 50mm Hand Auger Project No: NL230102 Logged By: DEG  
 Drilled By: SMB Coordinates: Shear Vane No - Calibration Date:  
 Date Started: 13/3/24 Ground Elevation: Surface Conditions: Slight Slope, Grass  
 Date Finished: 13/3/24 Water Level: 1.10m 13/3/24



HAND AUGER LOG WITH SCALA NL230102 AH01 - AH20 174 LAMB ROAD 15MARCH24.GPJ S+R\_2013.GDT 15/3/24

**SCALA PENETROMETER SHEET - TABLE OF BLOWS PER INCREMENT**

**JOB NO:** NL230102

**TESTED BY:** DEG, JN, KMAC, SMB

**JOB NAME:** 174 Lamb Road, Pukenui

**DATE:** 12-13/3/24

Depth of Penetration [mm]	AH01	AH02	AH03	cont...	AH04	AH05	AH06	AH07	AH08	AH09	AH10	AH11
DEPTH START [m] ▸	0.15	0.70	5.00	7.00	1.80	0.30	0.65	0.65	0.80	0.65	0.60	0.55
50 mm	20+	7	4	5	7	6	20+	20+	20+	19	8	20+
100		10	3	5	9	7				20+	11	
150		12	4	4	10	7					20+	
200		10	4	5	8	11						
250		10	4	6	9	12						
300		10	4	5	10	11						
350			3	4	10	12						
400			2	5	10	13						
450			2	5	10	10						
500			2	6	10	11						
550			2	6		12						
600			3	7		12						
650			3	6		12						
700			4	6								
750			4	6								
800			4	8								
850			6	7								
900			5	6								
950			6	6								
1000			5	6								
1050			4									
1100			4									
1150			4									
1200			4									
1250			5									
1300			4									
1350			4									
1400			3									
1450			6									
1500			5									
1550			4									
1600			5									
1650			5									
1700			4									
1750			5									
1800			6									
1850			6									
1900			5									
1950			7									
2000			5									
DEPTH END [m] ▸	0.20	1.00	7.00	8.00	2.30	0.95	0.70	0.70	0.85	0.75	0.75	0.60

Testing Method: NZS 4402:1988 Test 6.5.2 Dynamic Cone Penetrometer

**SCALA PENETROMETER SHEET - TABLE OF BLOWS PER INCREMENT**

**JOB NO:** NL230102

**TESTED BY:** DEG, JN, KMAC, SMB

**JOB NAME:** 174 Lamb Road, Pukenui

**DATE:** 12-13/3/24

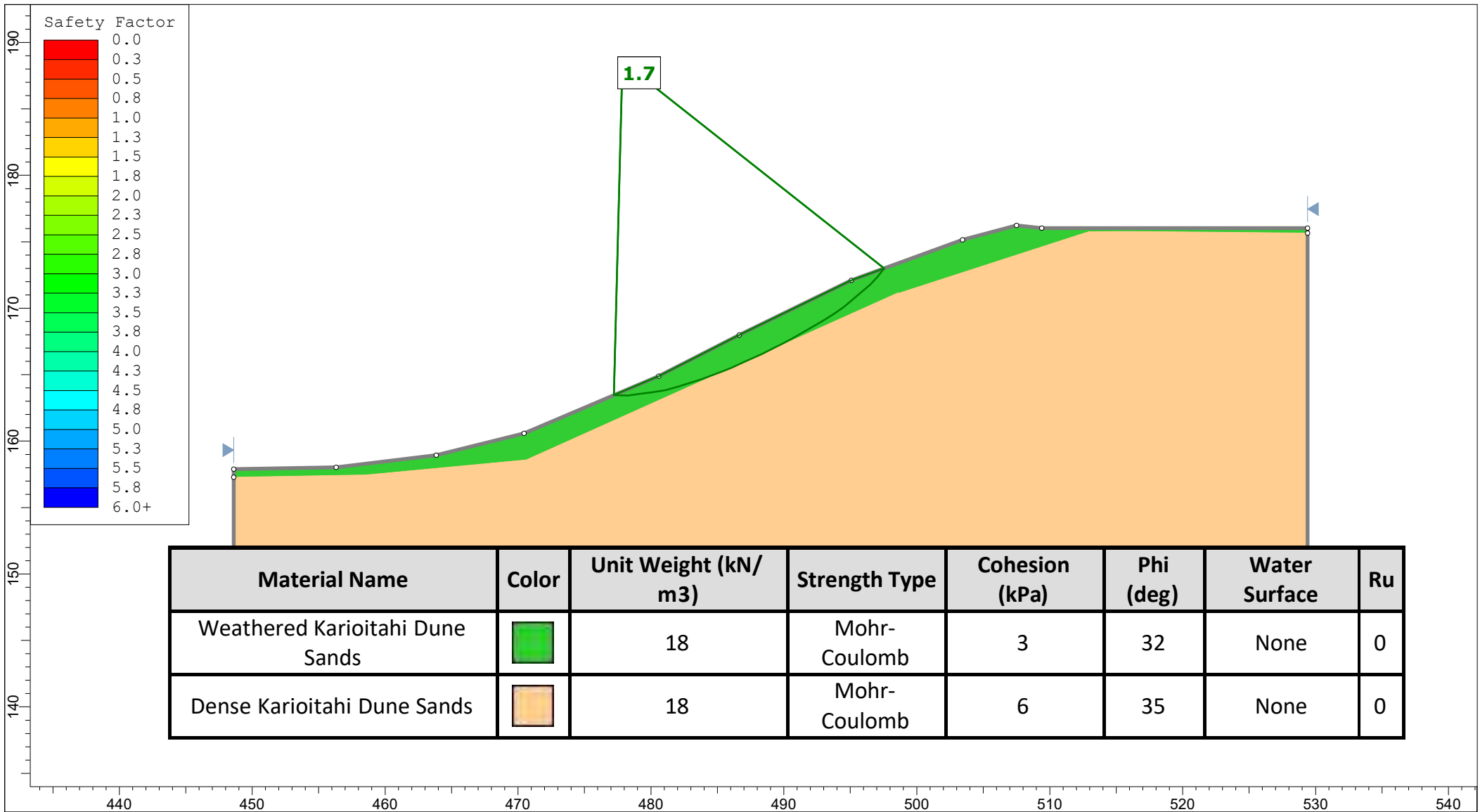
Depth of Penetration [mm]	AH12	AH13	AH14	AH15	AH16	AH17	AH18	AH19	AH20			
DEPTH START [m] ▸	0.50	0.60	0.70	0.50	0.50	0.65	0.45	0.90	1.20			
50 mm	20+	16	20+	20+	20+	5	10	20+	12			
100		20				20+	20+		20+			
150												
200												
250												
300												
350												
400												
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1900												
1950												
2000												
DEPTH END [m] ▸	0.55	0.70	0.75	0.55	0.55	0.75	0.55	0.70	1.30			



Testing Method: NZS 4402:1988 Test 6.5.2 Dynamic Cone Penetrometer




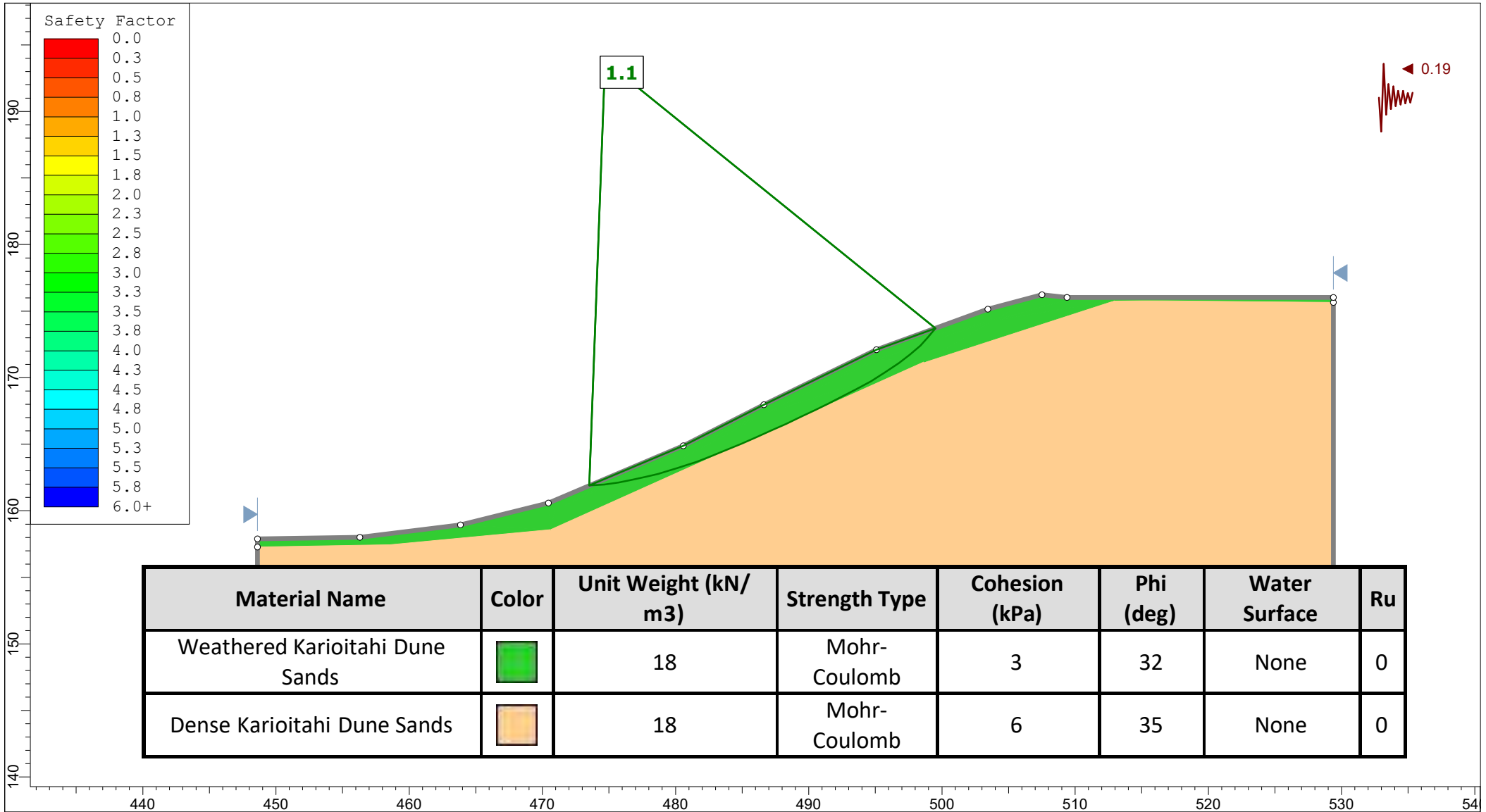
# Appendix C



## Slope Stability Results




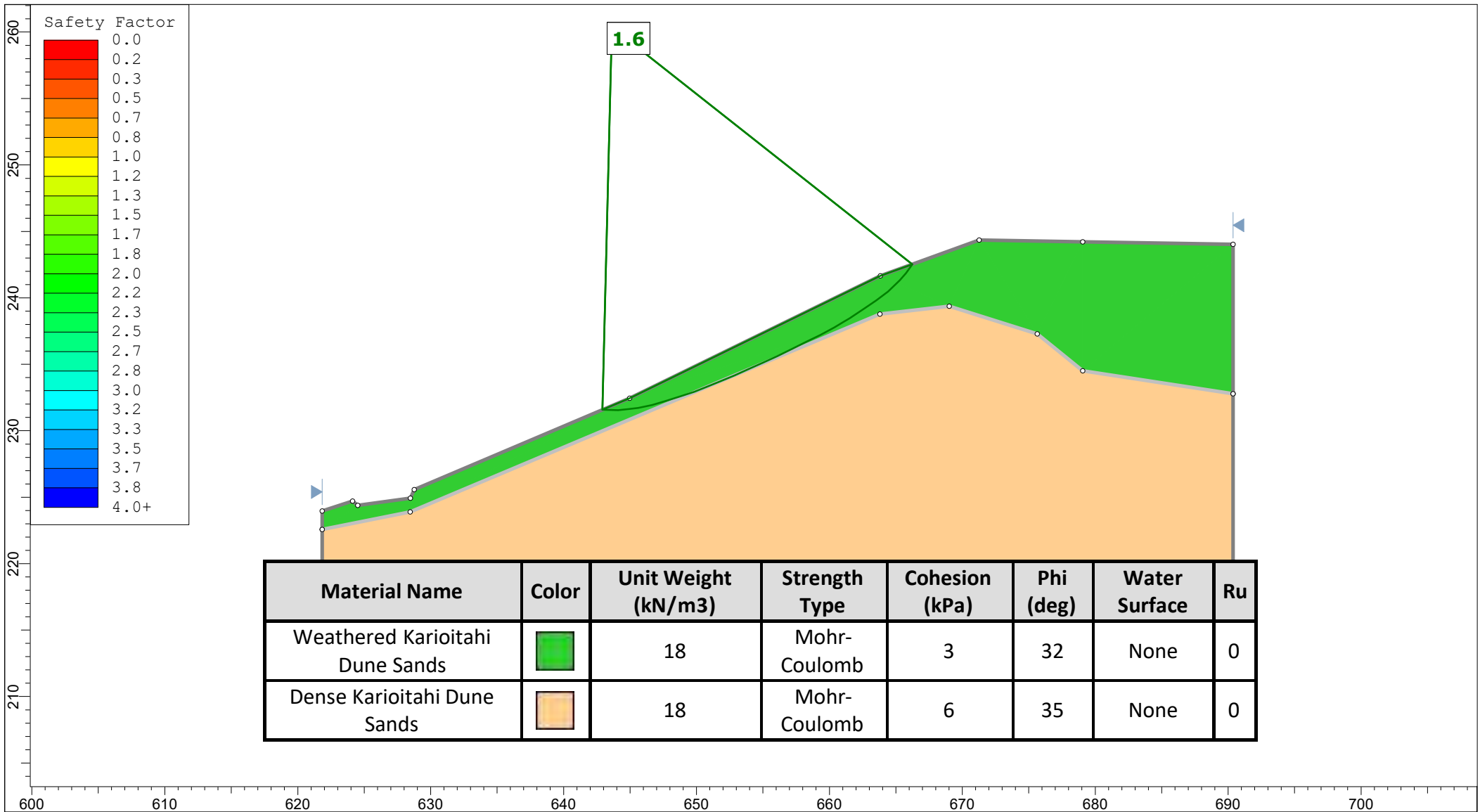
Material Name	Color	Unit Weight (kN/m <sup>3</sup> )	Strength Type	Cohesion (kPa)	Phi (deg)	Water Surface	Ru
Weathered Karioitahi Dune Sands		18	Mohr-Coulomb	3	32	None	0
Dense Karioitahi Dune Sands		18	Mohr-Coulomb	6	35	None	0


 <b>Soil&amp;Rock Consultants</b> <i>Your responsive &amp; cost-effective engineers</i>	Project	174 Lamb Road, Pukenui		
	Group	Sec A-A' - Existing Topography	Scenario	Normal Groundwater Condition
	Drawn By	RL	Company	Soil & Rock Consultants
	Date	25/03/2024	File Name	NI230102 Slide A-A.slm



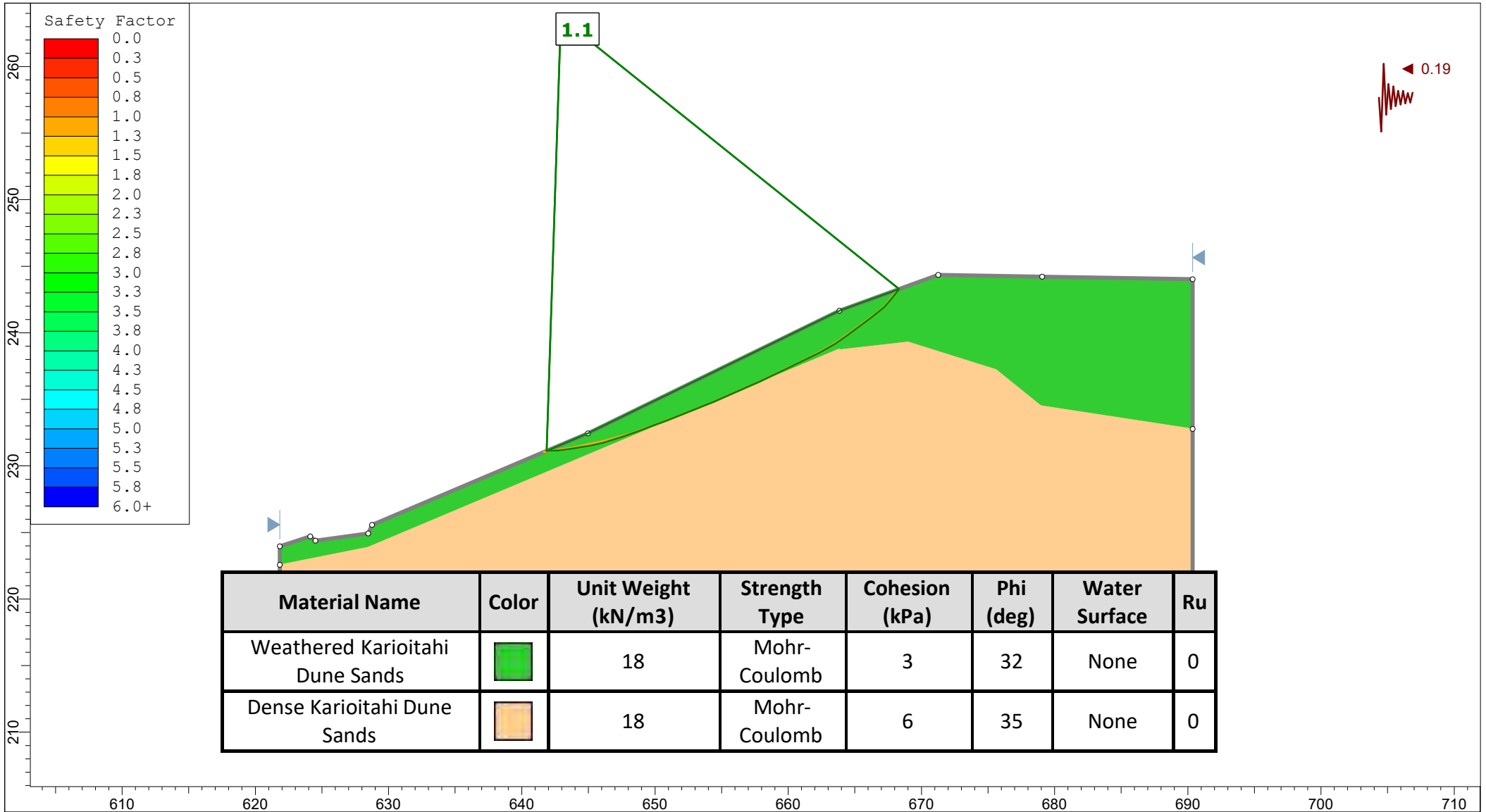
Material Name	Color	Unit Weight (kN/m <sup>3</sup> )	Strength Type	Cohesion (kPa)	Phi (deg)	Water Surface	Ru
Weathered Karioitahi Dune Sands		18	Mohr-Coulomb	3	32	None	0
Dense Karioitahi Dune Sands		18	Mohr-Coulomb	6	35	None	0



 <b>Soil&amp;Rock Consultants</b> <i>Your responsive &amp; cost-effective engineers</i>	Project	174 Lamb Road, Pukenui	
	Group	Sec A-A' - Existing Topography	Scenario Seismic Condition
	Drawn By	RL	Company Soil & Rock Consultants
	Date	25/03/2024	File Name NI230102 Slide A-A.slm




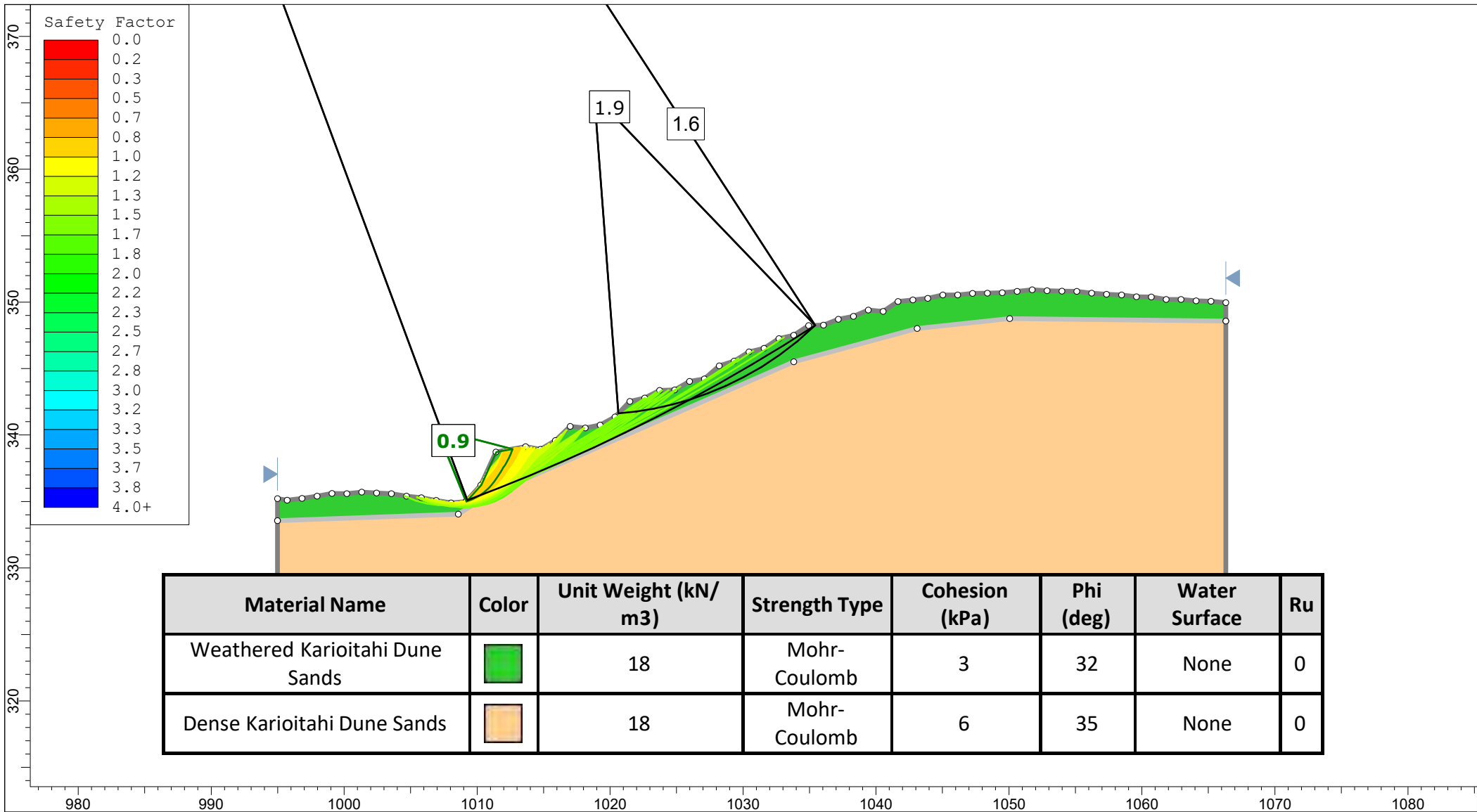
 <b>Soil &amp; Rock Consultants</b> <i>Your responsive &amp; cost-effective engineers</i>	Project	174 Lamb Road, Pukenui	
	Group	Sec B-B' - Existing Topography	Scenario: Normal Groundwater Condition
	Drawn By	RL	Company: Soil & Rock Consultants
	Date	25/03/2024	File Name: NI230102 Slide B-B.slm








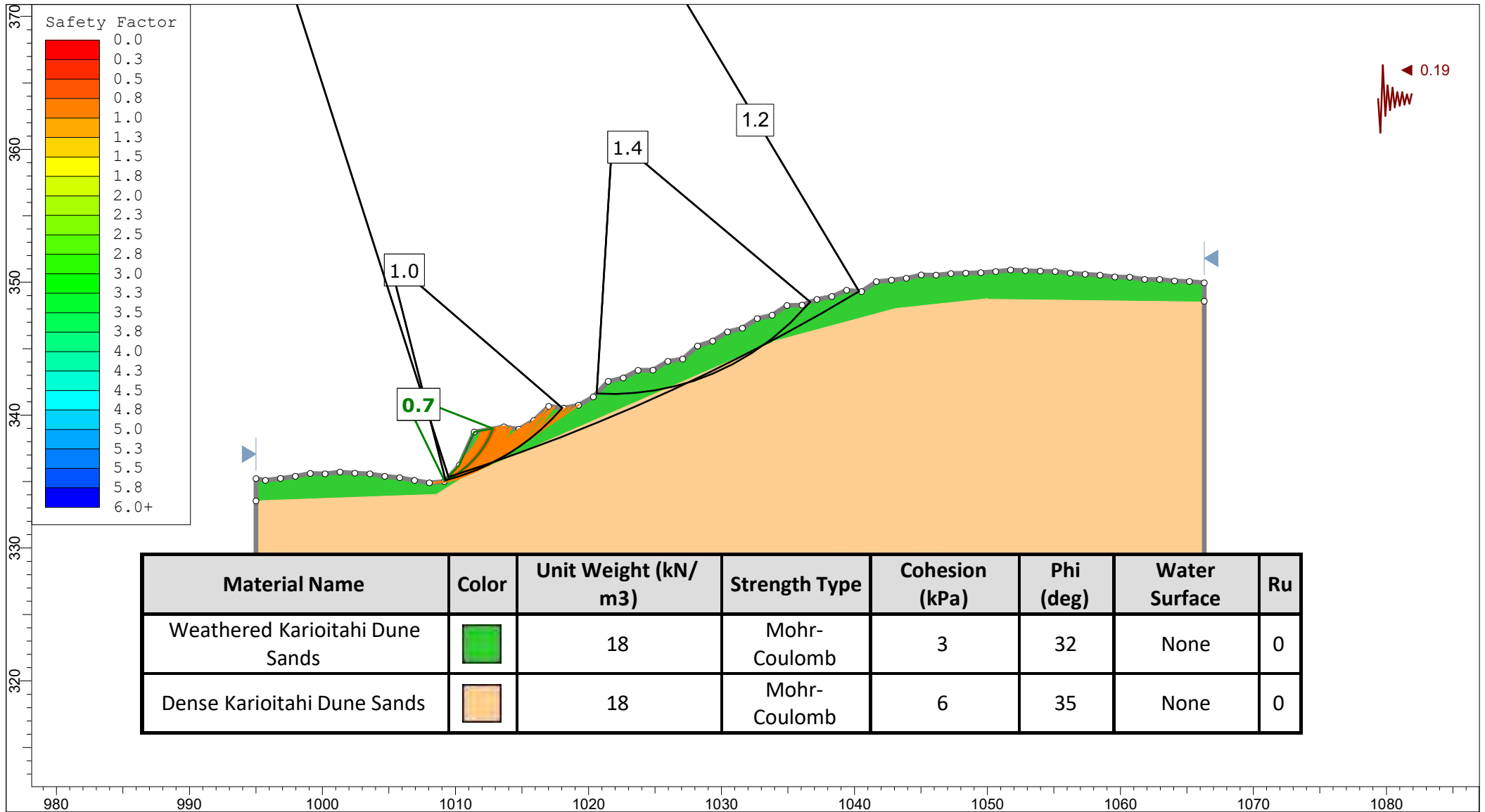
Material Name	Color	Unit Weight (kN/m <sup>3</sup> )	Strength Type	Cohesion (kPa)	Phi (deg)	Water Surface	Ru
Weathered Karioitahi Dune Sands		18	Mohr-Coulomb	3	32	None	0
Dense Karioitahi Dune Sands		18	Mohr-Coulomb	6	35	None	0



 <b>Soil&amp;Rock Consultants</b> <i>Your responsive &amp; cost-effective engineers</i>	Project	174 Lamb Road, Pukenui	
	Group	Sec B-B' - Existing Topography	Scenario Seismic Condition
	Drawn By	RL	Company Soil & Rock Consultants
	Date	25/03/2024	File Name NI230102 Slide B-B.slm



Material Name	Color	Unit Weight (kN/m <sup>3</sup> )	Strength Type	Cohesion (kPa)	Phi (deg)	Water Surface	Ru
Weathered Karioitahi Dune Sands		18	Mohr-Coulomb	3	32	None	0
Dense Karioitahi Dune Sands		18	Mohr-Coulomb	6	35	None	0

 <b>Soil &amp; Rock Consultants</b> <i>Your responsive &amp; cost-effective engineers</i>	Project	174 Lamb Road, Pukenui		
	Group	Sec D-D' - Existing Topography	Scenario	Normal Groundwater Condition
	Drawn By	RL	Company	Soil & Rock Consultants
	Date	25/03/2024	File Name	NI230102 Slide D-D.slm



Material Name	Color	Unit Weight (kN/m <sup>3</sup> )	Strength Type	Cohesion (kPa)	Phi (deg)	Water Surface	Ru
Weathered Karioitahi Dune Sands		18	Mohr-Coulomb	3	32	None	0
Dense Karioitahi Dune Sands		18	Mohr-Coulomb	6	35	None	0



Project		174 Lamb Road, Pukenui	
Group	Sec D-D' - Existing Topography	Scenario	Seismic Condition
Drawn By	RL	Company	Soil & Rock Consultants
Date	25/03/2024	File Name	NI230102 Slide D-D.slm



31 July 2024

Job No: NL230102

Realm Property Group Ltd  
c/- Barker Associates  
Attention: Makarena Dalton

MEMORANDUM TO PRELIMINARY GEOTECHNICAL INVESTIGATION  
FOR PROPOSED DEVELOPMENT AT  
174 LAMB ROAD, PUKENUI

Introduction

Soil & Rock Consultants (S&RC) issued a report titled '*Preliminary Geotechnical Investigation for Proposed Development at 174 Lamb Road, Pukenui*', Rev A, Ref No. NL230102, dated 5 April 2024. This letter should be read in conjunction with the report discussed above.

This letter may be used to support Land Use Consent application to Far North District Council.

The S&RC April 2024 report was intended for master planning. Three areas, Options 1, 2 and 3, were being considered at the time. Option 1 area comprises broad ridgeline while Options 2 and 3 areas are grazing lands with isolated low/depressed sections.

The original scope is to investigate Option 3 site if Option 1 and 2 sites have large areas unsuitable for development. Options 1 and 2 areas have sufficient development potential hence Option 3 was not investigated.

Due to the topography (i.e. ridgeline, low/depressed) of the potential development areas, full intrusive investigation was carried out to ensure geotechnical suitability. Preliminary geotechnical recommendations and parameters were provided in S&RC April 2024 report.

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## Review

Final concept drawings (i.e. proposed site plan, earthworks plan, etc) have been completed and are attached to this letter. We consider the geotechnical aspects of the proposed development, as shown on the attached drawings to be geotechnically suitable.

Site specific geotechnical assessment in the form further investigation and/or geotechnical drawing review (i.e. foundation plans) will be required at Building Consent Stage.

## Limitations

Review of the design calculations has not been undertaken by S&RC. This letter does not remove the typical Council requirements to process Consent application.

## Closure

We trust the above is satisfactory. If you have any queries, please contact us at your convenience.

Yours faithfully

SOIL & ROCK CONSULTANTS

Prepared by:

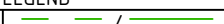
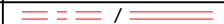

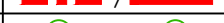
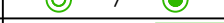


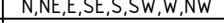
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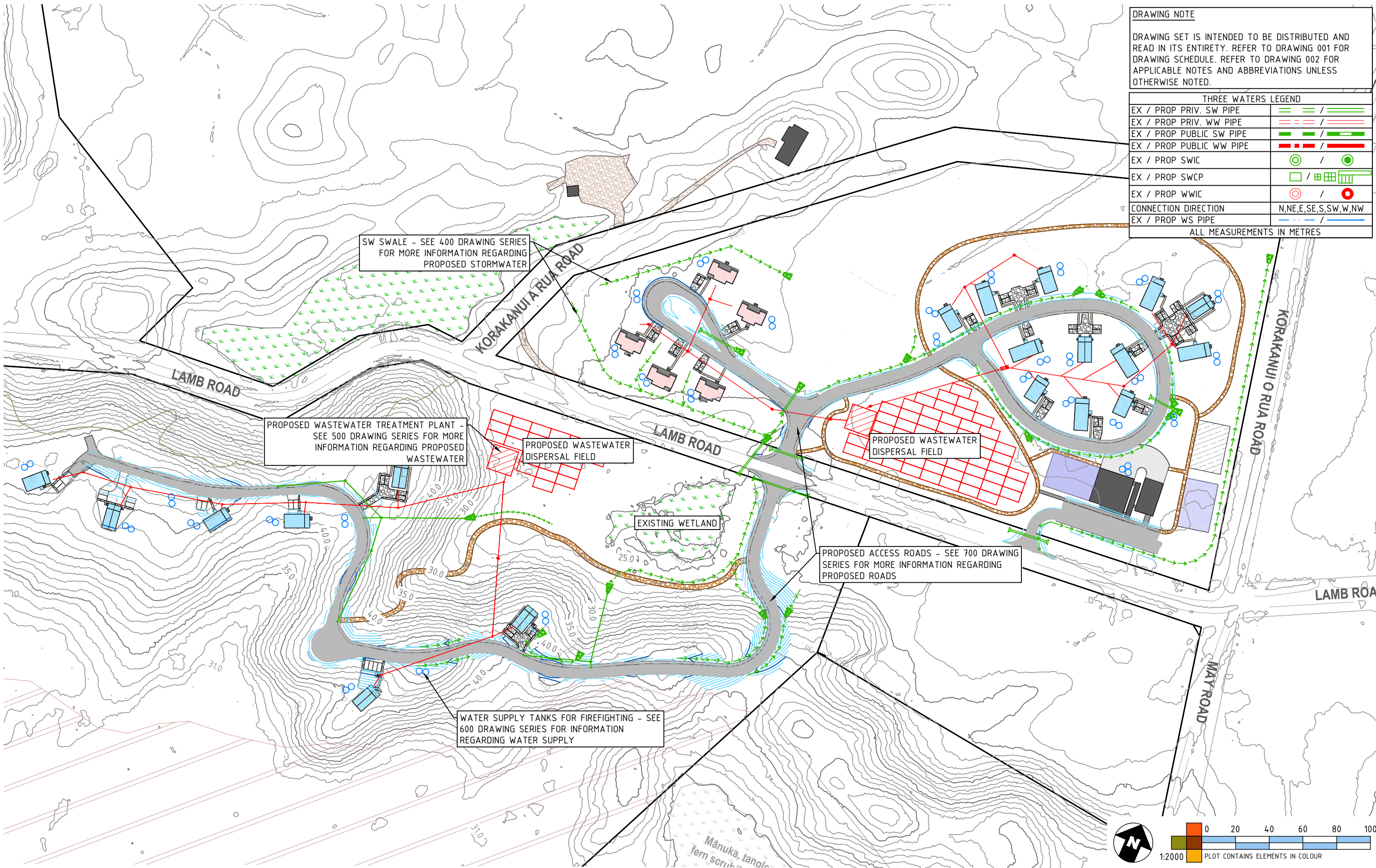
Randy Lineses  
Senior Geotechnical Engineer  
MEngNZ

Ilai Waqa  
Principal Geotechnical Engineer  
CMEngNZ, CPEng

Attachment, drawings prepared by Chester Consultants Ltd:

- Proposed site plan
- Earthworks plan

DRAWING NOTE	
DRAWING SET IS INTENDED TO BE DISTRIBUTED AND READ IN ITS ENTIRETY. REFER TO DRAWING 001 FOR DRAWING SCHEDULE. REFER TO DRAWING 002 FOR APPLICABLE NOTES AND ABBREVIATIONS UNLESS OTHERWISE NOTED.	
THREE WATERS LEGEND	
EX / PROP PRIV. SW PIPE	
EX / PROP PRIV. WW PIPE	
EX / PROP PUBLIC SW PIPE	
EX / PROP PUBLIC WW PIPE	
EX / PROP SWIC	
EX / PROP SWCP	
EX / PROP WWIC	
CONNECTION DIRECTION	N,NE,E,SE,S,SW,W,NW
EX / PROP WS PIPE	
ALL MEASUREMENTS IN METRES	

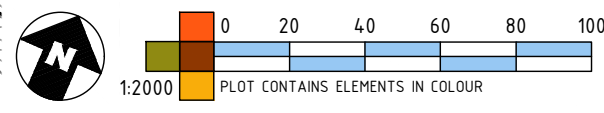


Rev	Date	FOR CONSENT Amendments	PL By
0	29/07/24		

Drafter: P LIEBENBERG  
 Designer: P LIEBENBERG  
 Checker: N JULL  
 Date: 29/07/2024

Job Title: PROPOSED DEVELOPMENT AT 174 LAMB ROAD, PUKENUI  
 Client: REALM PROPERTY GROUP LTD  
 Address: 174 LAMB ROAD, PUKENUI  
 Drawing Title: PROPOSED SITE PLAN

Drawing: 110 Rev: 0  
 Scale: 1:2000 @ A3  
 Project: 15657  
 Issue: FOR CONSENT



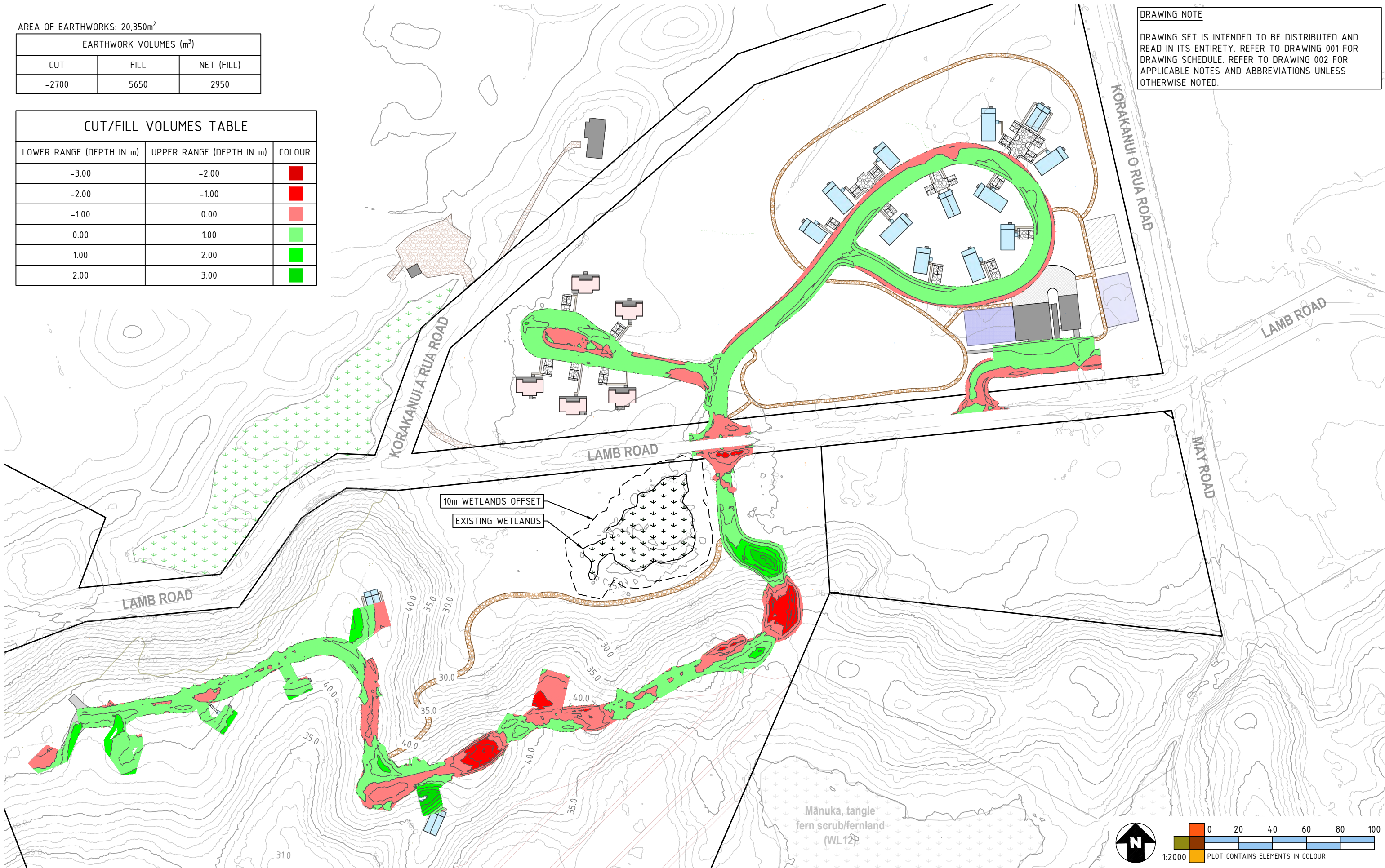
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AREA OF EARTHWORKS: 20,350m<sup>2</sup>

EARTHWORK VOLUMES (m <sup>3</sup> )		
CUT	FILL	NET (FILL)
-2700	5650	2950

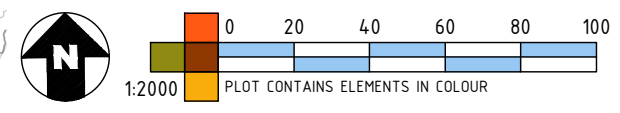
CUT/FILL VOLUMES TABLE		
LOWER RANGE (DEPTH IN m)	UPPER RANGE (DEPTH IN m)	COLOUR
-3.00	-2.00	Red
-2.00	-1.00	Red
-1.00	0.00	Light Red
0.00	1.00	Light Green
1.00	2.00	Green
2.00	3.00	Green

**DRAWING NOTE**  
 DRAWING SET IS INTENDED TO BE DISTRIBUTED AND READ IN ITS ENTIRETY. REFER TO DRAWING 001 FOR DRAWING SCHEDULE. REFER TO DRAWING 002 FOR APPLICABLE NOTES AND ABBREVIATIONS UNLESS OTHERWISE NOTED.



Rev	Date	Amendments	PL By
0	29/07/24	FOR CONSENT	PL

Drafter: P LIEBENBERG	Job Title: PROPOSED DEVELOPMENT AT 174 LAMB ROAD, PUKENUI	Drawing: 200	Rev: 0
Designer: P LIEBENBERG	Client: REALM PROPERTY GROUP LTD	Scale: 1:2000 @ A3	
Checker: N JULL	Address: 174 LAMB ROAD, PUKENUI	Project: 15657	
Date: 29/07/2024	Drawing Title: EARTHWORKS PLAN	Issue: FOR CONSENT	



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C:\Users\PeterLiebenberg\Chester\_Consultants\Central\_Library - 15657 - Lamb 15A3 0 Design\A3 2 Civil\3.21 ACAD\DWG Layout\15657\_C-DWG-200.dwg 1/29/2024 5:44 pm LAST SAVED BY: PeterLiebenberg

**Proposal:** Moekoraha Papakāinga Development involving the construction of 30 residential units, and community facilities comprising a 467.24m<sup>2</sup> kohanga reo designed for 30 children and 5 staff, and a 230.5 m<sup>2</sup> community building with a maximum occupancy of 50 persons.

**Address:** 174 Lamb Road

**District Plan:** Operative Far North District Plan (FNDP)

Site Zoning		
Zone	Rural Production Zone	
Overlays/Controls	Nil	
Designations	Nil	
Rule	Compliance	Non-Compliance
<b>Rural Production Zone - 8.6.5.1 PERMITTED ACTIVITIES</b>		
<p><b>8.6.5.1.1 RESIDENTIAL INTENSITY</b> Residential development shall be limited to one unit per 12ha of land. In all cases the land shall be developed in such a way that each unit shall have at least 3,000m<sup>2</sup> for its exclusive use surrounding the unit plus a minimum of 11.7ha elsewhere on the property. Except that this rule shall not limit the use of an existing site, or a site created pursuant to Rule 13.7.2.1 (Table 13.7.2.1) for a single residential unit for a single household, provided that all other standards for permitted activities are complied with.</p>		<p>The site (as defined above) has a total area of 1,850ha. There are 5 existing dwellings onsite and 24 proposed. This equates to 1 dwelling per 64ha of land.</p> <p>However, the dwellings located in Section 9 do not have access to a 3,000m<sup>2</sup> exclusive use area. This is predominantly due to the looped road and configuration of dwellings, rather than insufficient land area.</p> <p>As such, the proposal is a <b>non-complying activity</b>.</p>
<p><b>8.6.5.1.2 SUNLIGHT</b> No part of any building shall project beyond a 45-degree recession plane as measured inwards from any point 2m vertically above ground level on any site boundary</p>	<p>All buildings will be setback by a minimum of 10m from all site boundaries. All buildings will be less than 12m in height, including within minimum freeboard.</p> <p><b>Complies.</b></p>	
<p><b>8.6.5.1.3 STORMWATER MANAGEMENT</b> The maximum proportion of the gross site area covered by buildings and other impermeable surfaces shall be 15%.</p>	<p>Existing and proposed impermeable surface coverage has been calculated on drawing 10-01 of the Architectural Plans provided in <b>Appendix 5</b> and summarised below:</p> <ul style="list-style-type: none"> <li>Existing (farm houses and driveways): 15,358m<sup>2</sup></li> </ul>	



Rule	Compliance	Non-Compliance
	<ul style="list-style-type: none"> <li>Section 8: Building coverage of 873m<sup>2</sup> + other impermeable surface 8,726m<sup>2</sup> = 9,599m<sup>2</sup></li> <li>Section 9: Building coverage of 3112 + other impermeable surfaces 14,905m<sup>2</sup>.</li> </ul> <p>The impervious surface coverage of the site, including the existing and proposed development is <b>42,973m<sup>2</sup> or 0.23%</b>.</p> <p><b>Complies.</b></p>	
<b>8.6.5.1.4 SETBACK FROM BOUNDARIES</b> No building shall be erected within 10m of any site boundary; with the following exceptions;	<p>The buildings are all setback in excess of 10m from the any site boundary.</p> <p>Exceptions (a) – (e) are not relevant to this proposal.</p> <p><b>Complies.</b></p>	
<b>8.6.5.1.5 TRANSPORTATION</b> Refer to Chapter 15 – Transportation for Traffic, Parking and Access rules	<p>An Assessment on Transportation Provisions is included further below.</p>	
<b>8.6.5.1.7 NOISE</b> (a) All activities except Temporary Military Training Activities shall be so conducted as to ensure that noise from the site shall not exceed the following noise limits as measured at or within the boundary of any other site in this zone, or at any site in the Residential, Coastal Residential or Russell Township Zones, or at or within the notional boundary of any dwelling in any other rural or coastal zone: 0700 to 2200 hours 65 dBA L10 2200 to 0700 hours 45 dBA L10 and 70 dBA Lmax	<p>The proposal involves residential activities, a kohanga reo and community facility. The nearest residential unit at 133A/B and 149 Lamb Road are approximately 135m from the notional boundary of the kohanga reo activity. On this basis, compliance with the permitted noise thresholds is anticipated.</p> <p><b>Complies.</b></p>	
<b>8.6.5.1.8 BUILDING HEIGHT</b> The maximum height of any building shall be 12m	<p>The buildings comply with the 12m height restriction.</p> <p><b>Complies.</b></p>	
<b>8.6.5.1.10 BUILDING COVERAGE</b> Any new building or alteration/addition to an existing	<p>The additional building coverage resultant from the proposal is 3,895m<sup>2</sup>.</p>	

Rule	Compliance	Non-Compliance
<p>building is a permitted activity if the total Building Coverage of a site does not exceed 12.5% of the gross site area.</p>	<p>The existing building coverage is 2,234.2m<sup>2</sup>.</p> <p>The total building coverage is 6,219.20m<sup>2</sup> or 0.034%, the proposal therefore complies with.</p> <p><b>Complies.</b></p>	
<p><b>8.6.5.1.11 SCALE OF ACTIVITIES</b></p> <p>For activities other than those provided for in the exemptions below, the total number of people engaged at any one period of time in activities on a site, including employees and persons making use of any facilities, but excluding people who normally reside on the site or are members of the household shall not exceed</p> <p>i. For activities ancillary to farming or plantation forestry activities, 8 persons per site or 2 person per 1 hectare of net site area, whichever is the greater</p> <p>ii. For all other activities, 4 persons per site or 1 person per 1 hectare of net site area, whichever is the greater.</p> <p>Provided that:</p> <p>(a) this number may be exceeded for a period totalling not more than 60 days in any 12-month period where the increased number of persons is a direct result of activities ancillary to the primary activity on the site; or</p> <p>(b) this number may be exceeded where persons are engaged in constructing or establishing an activity (including environmental enhancement) on the site; or</p> <p>(c) this number may be exceeded where persons are visiting marae</p>	<p>i. N/A</p> <p>ii. The proposal includes a Kohunga Reo and Community Facility. The Kohanga Reo is designed to accommodate 30 children and 5 staff, with a total of 35 persons engaged in the activity at any one time. The Community Facility has been designed for a maximum capacity of 50 persons at any one time. A total of 85 persons will be engaged in these activities. The remainder of the site is used for productive farming purposes or residential activities. Given the 1,850ha size of the site, the maximum number permitted on the site is 1,850 persons.</p> <p><b>Complies.</b></p>	
<p><b>8.6.5.2.2 Papakainga Housing</b></p> <p>Papakinga housing is a controlled activity in the Rural Production Zone provided that:</p>		<p>(a) The proposal does not comply with all District Wide matters.</p> <p>(b) Moekoraha Papakāinga development does not</p>

Rule	Compliance	Non-Compliance
<p>(a) It complies with all the standards for permitted activities in this zone and in Part 3 – District Wide Provisions, except for the standards for residential intensity; and</p> <p>(b) Each residential unit has at least 3,000m<sup>2</sup> surrounding the unit for its exclusive use; provided that the amount of land elsewhere on the site, in addition to the 3,000m<sup>2</sup> surrounding the unit is not less than that required for the discretionary activity residential intensity standard to Rule 8.6.5.4.1)</p>		<p>achieve the minimum 3000m<sup>2</sup> exclusive use area for each dwelling.</p> <p>The proposal does not comply with the Discretionary Activity standards for Residential Intensity (8.6.5.4.1) accordingly, the proposal is a <b>non-complying</b> activity pursuant to 8.6.5.1.</p>
<p><b>8.6.5.4.2 Integrated Development</b></p> <p>Applies to integrated development on Maori freehold land and Maori customary land and Crown land reserved for Maori.</p>		<p>The land to which the proposal relates does not fall within the three land types specified as it is land that has been obtained through redress but is not freehold. As such, this rule does not apply.</p>
<p><b>Transportation</b></p>		
<p><b>15.1.6C.1.1 Private Accessways in all zones.</b></p> <p>(a) The construction of private accessway, in addition to the specifics also covered within this rule, is to be undertaken in accordance with Appendix 3B-1 in Part 4 of this Plan.</p> <p>(b) Minimum access widths and maximum centreline gradients, are set out in the Appendix 3B-1 table except that the grade shall be: All urban zones; excluding the Commercial and Industrial Zones No steeper than 1:8 adjacent to the road boundary for at least 5m. Commercial and Industrial Zones No steeper than 1:20</p>	<p>(b) All gradients will comply.</p>	<p>(a) Accessways will be provided in general accordance with Appendix 3B-1 and FNDC's Engineering Standards. However, in all cases the accesses do not propose a minimum of 5m width carriageway where 5 or more Household Equivalents (HE) are proposed.</p> <p>(c) The main private accessways to Section 8 and 9 serve more than 8 HE's and will not be vested to council and are proposed to remain private.</p> <p>(d) N/A</p>

Rule	Compliance	Non-Compliance
<p>adjacent to the road boundary for a length of at least 6m.</p> <p>(c) A private accessway may serve a maximum of 8 household equivalents.</p> <p>(d) Where a subdivision serves 9 or more sites, access shall be by public road.</p>		<p>Pursuant to 15.1.6C.2 the private accessway would be assessed as a <b>Discretionary Activity</b>.</p>
<p><b>15.1.6A.1 Maximum Daily One-Way Traffic Movements Rural Production Zone</b></p> <ul style="list-style-type: none"> <li>• 60</li> <li>• Restricted Discretionary Activity if between 61 – 200.</li> </ul>		<p>The Rural Production Zone provides for up to 60 daily one-way traffic movements as a permitted activity.</p> <p>Based on Appendix 3B of the FNDC, TIFS for the proposal area calculated using the following ratios:</p> <ul style="list-style-type: none"> <li>• Papakāinga Housing: 5 per house</li> <li>• Kaumatua / Kuia Unit = 2 per house</li> <li>• Kohanga Reo (education facility) = 75 per 100m<sup>2</sup></li> <li>• Community Facility (Place of Assembly) = 2 per person the facility is designed for</li> </ul> <p>The proposal involves the following:</p> <ul style="list-style-type: none"> <li>• 12 kaumatua/kuia units: 24 TIFs</li> <li>• 18 Papakāinga housing units: 90 TIFs</li> <li>• 468m<sup>2</sup> Kohanga Reo: 358 TIFs</li> <li>• 50 Person max occupancy community facility: 100 TIFs</li> </ul> <p>As such, the maximum daily one-way traffic movements from the proposal, including the residential and kohanga reo and community centre components results in a traffic intensity factor of <b>575</b>.</p> <p>Pursuant to 15.1.6A.5 the traffic intensity aspect of the proposal would be assessed as a <b>Discretionary Activity</b>.</p>

Rule	Compliance	Non-Compliance
<p><b>15.1.6B.1.1 On-Site Car Parking Spaces</b></p> <p><b>Appendix 3C.1</b></p> <ul style="list-style-type: none"> <li>• House on Papakainga – 1 space for the first house plus one space per additional houses</li> <li>• Pensioner/Kaumatua/Kuia Housing – 1 per house</li> <li>• Childcare Centre - 1 per every 4 children</li> <li>• Other Buildings used for Social, Cultural or Recreational purposes – 1 per every 4 persons facility is designed for.</li> </ul>	<p>A total of 48 carparks are proposed for the papakāinga houses, this complies with thee 24 carparks in Appendix 3C.1.</p> <p>The combined number of carparks provided for the Kohanga Reo and Community Building is 20, including 16x standard carparks, 2 wide carparks and 2 accessible carparks.</p> <p>In accordance with Appendix 3C.1, 7.5 carparks would be required for the 30 children the Kohanga Reo is designed for, and an additional 12.5 for the 50 people the community building is designed for.</p> <p>Therefore, the proposal <b>complies</b> with the parking spaces required and would be a permitted activity in accordance with 15.1.6B.1.1.</p>	
<p><b>15.1.6C.1.3 Passing Bays on Private Accessways in All Zones</b></p> <p>(a) Where required, passing bays on private accessways are to be at least 15m long and provide a minimum useable access width of 5.5m</p> <p>(i) Passing bays are required:</p> <p>(ii) in rural and coastal zones at spacing not exceeding 100m;</p> <p>(b) on all blind corners in all zones at locations where the horizontal and vertical alignment of the private accessway restricts the visibility.</p> <p>(c) All accesses serving 2 or more sites shall provide passing bays and vehicle queuing space at the</p>	<p>(a) There are passing bays proposed on Road 1B, the configuration of the passing bays meet the dimensional requirements of 15.1.6C.1.3. Complies.</p> <p>(b) Refer to Engineering Drawings prepared by Chester’s Engineering. Complies.</p> <p>(c) Complies.</p>	

Rule	Compliance	Non-Compliance
<p>vehicle crossing to the legal road.</p>		
<p><b>15.1.6C.1.5 Vehicle Crossing Standards in Rural and Coastal Zones</b></p> <p>(a) Private access off roads in the rural and coastal zones the vehicle crossing is to be constructed in accordance with Council “Engineering Standards and Guidelines”.</p> <p>(b) Where the access is off a sealed road, the vehicle crossing splays shall be surfaced with permanent impermeable surfacing for at least the first 5m from the road carriageway or up to the road boundary, whichever is the lesser.</p> <p>(c) Where the vehicle crossing serves two or more properties the private accessway is to be 6m wide and is to extend for a minimum distance of 6m from the edge of the carriageway.</p>	<p>Standard (b) is not applicable to the proposal because Lamb Road is not a sealed road.</p>	<p>Site access is proposed to be directly from Lamb Road which will require three connections, proposed to have a sealed surface. As Lamb Road is a gravel surface, the connections are currently shown on Chester’s Engineering Plans in <b>Appendix 8</b> as flush carriageways, rather than configured as vehicle crossings. It is proposed that the final design is discussed and agreed on with Council as part of Engineering approval. It is proposed that once the design is agreed, the connections will be designed in accordance with the Far North District Council Standard for Vehicle Crossings in Rural and Coastal Zones.</p> <p><b>Resource consent is required as a discretionary activity.</b></p>
<p><b>15.1.6C.1.4 Access over Footpaths</b></p> <p>Vehicle access over footpaths:</p> <ul style="list-style-type: none"> <li>• No more than two crossings per site; and</li> <li>• The maximum width of a crossing shall be 6m for all activities (except service stations)</li> </ul>	<p>Lamb Road does not include any public footpath, therefore Rule 15.1.6C.1.4 does not apply to the proposal.</p>	
<p><b>Chapter 12 Natural and Physical Resources - Indigenous Vegetation</b></p>		
<p><b>12.2.6.1.2 INDIGENOUS VEGETATION CLEARANCE IN THE</b></p>	<p>(a) There is no remnant forest, and there are no lakes, wetlands, rivers within the site as defined by the FNDP.</p>	

Rule	Compliance	Non-Compliance
<p><b>RURAL PRODUCTION AND MINERALS ZONES</b></p> <p>Clearance of indigenous vegetation in the Rural Production and Minerals Zones which is more than 10 years old is a permitted activity where:</p> <p>(a) it is not in a remnant forest, not within 20m of a lake (as scheduled in Appendix 1C), indigenous wetland or continually flowing river, and the clearance does not exceed 2ha per site existing as at 1 February 2005 in any 10-year period while this rule is in force; or</p> <p>(b) if in a remnant forest, it is not within 20m of a lake (as scheduled in Appendix 1C), indigenous wetland or continually flowing river, and the clearance does not exceed 500m<sup>2</sup> per site existing as at 1 February 2005 in any 10 year period while this rule is in force.</p>	<p>The proposal involves minor clearance of regenerating kanuka forest. The cleared area will be less than 100m<sup>2</sup>. Complies.</p> <p>(b) N/A</p> <p><b>Complies.</b></p>	

### Chapter 12 Natural and Physical Resources – Lakes Rivers Wetlands & CMA

<p><b>Rule 12.7.6.1.2 Setbacks from smaller lakes, rivers and Wetlands</b></p> <p>Any building and any impermeable surface must be set back from the boundary of lakes (where the lake bed has an area of less than 8ha) smaller continually flowing rivers (where the average width of the river bed is less than 3m) and wetlands except that this rule does not apply to man-made private water bodies.</p> <p>The setback shall be:</p> <p>(a) 3 x the area (ha) of the lake (e.g. if the lake is 5ha in area, the setback shall be 15m); and/or</p> <p>(b) 10 x the average width of the river where it passes through or past the site; provided that in</p>	<p>All buildings and impermeable surfaces are required to be setback at least 30m from any wetland which of 1 ha or more in area.</p> <p>The wetlands located on site are 2,131m<sup>2</sup> and 7,498m<sup>2</sup> in size and therefore this rule is not applicable to the proposal. Irrespective of this, all buildings and impermeable surfaces are setback in excess of 30m from the wetlands.</p> <p><b>Complies.</b></p>	
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Rule	Compliance	Non-Compliance
<p>both cases the minimum setback shall be 10m and the maximum setback shall be no more than the minimum required by Rule 12.7.6.1.1 above;</p> <p>(c) 30m for any wetland of 1ha or more in area.</p> <p>Provided that these setbacks do not apply:</p> <ul style="list-style-type: none"> <li>(i) to river crossings, including but not limited to, fords, bridges, stock crossings and culvert crossings; or</li> <li>(ii) to activities related to the construction of river crossings; or</li> <li>(iii) to pumphouses utilised for the drawing of water from the lake, river or wetland, provided such pumphouse covers less than 25m<sup>2</sup> in area; or</li> <li>(iii) to buildings and impermeable surfaces associated with utility service structures, provided that they do not exceed 2m in height or 5m in area; or (v) to activities associated with the maintenance, replacement and upgrading of existing linear network utilities; or</li> <li>(iv) (vi) where there is a legally formed and maintained road between the property and the coastal marine area, lake or river.</li> </ul> <p>These setbacks do not apply to river crossings or activities related to the construction of river crossings, or to access for the maintenance of existing utility service structures, linear network</p>		



Rule	Compliance	Non-Compliance
<p>utilities or pump houses permitted by this rule.</p> <p>Note 1: Attention is also drawn to the rules applying in the Coastal Hazard 1 Area (Rule 12.4.6.3.1) and Coastal Hazard 2 Area (Rules 12.4.6.1.1 and 12.4.6.2.1).</p> <p>Note 2: A schedule of Lakes is provided in Appendix 1C.</p>		

### Chapter 12 Natural and Physical Resources – Natural Hazards

#### Rule 12.4.6.1.2 Fire risk to Residential Units

a) Residential units shall be located at least 20m away from the drip line of any trees in a naturally occurring or deliberately planted area of scrub or shrubland, woodlot or forest;

(b) Any trees in a deliberately planted woodlot or forest shall be planted at least 20m away from any urban environment zone, Russell Township or Coastal Residential Zone boundary, excluding the replanting of plantation forests existing at July 2003

The proposal complies with this rule, no dwellings are proposed to be located within 20m of the existing onsite kanuka dune forest and landscape planting around dwellings near this setback required are proposed to be native low-inflammable species.

**Complies**

### Chapter 12 Natural and Physical Resources – Soil and Minerals

#### Rule 12.3.6.1.1 Excavation and/or Filling, excluding Mining and Quarrying, in the Rural Production Zones or Kauri Cliffs Zone

Excavation and/or filling, excluding mining and quarrying, on any site in the Rural Production Zone or Kauri Cliffs Zones is permitted, provided that:

(a) It does not exceed 5,000m<sup>3</sup> in any 12-month period per site; and

(b) It does not involve a continuous cut or filled face exceeding an average of 1.5m in

(b) Cut/fill heights will range between 0.5m and 3m, however, the majority will be between 0.5m and 1m. As such, average cut and fill faces will be less than 1.5m in height.

(a) The estimated earthwork volume exceeds 5,000m<sup>3</sup> with 2,700m<sup>3</sup> of Cut and 5,650m<sup>2</sup> of Fill proposed.

**Restricted discretionary activity** in accordance with 12.3.6.2.3.

Rule	Compliance	Non-Compliance
<p>height over the length of the face i.e. the maximum permitted average cut and fill height may be 3m.</p>		
<p><b>Rule 12.3.6.1.4 Nature of Filling Material in All Zones</b>            Filling in any zone shall meet the following standards:</p> <ul style="list-style-type: none"> <li>(a) The fill material shall not contain putrescible, pollutant, inflammable or hazardous components; and</li> <li>(b) The fill shall not consist of material other than soil, rock, stone, aggregate, gravel, sand, silt, or demolition material; and</li> <li>(c) The fill material shall not compromise more than 5% vegetation (by volume) of any land</li> </ul>	<p>Compliance anticipated.</p>	
<p><b>Rule 12.7.6.1.4</b>            Land use activities which produce human sewage effluent (including grey water) are permitted provided that:</p> <ul style="list-style-type: none"> <li>(a) the effluent discharges to a lawfully established reticulated sewerage system; or</li> <li>(b) the effluent is treated and disposed of onsite such that each site has its own treatment and disposal system no part of which shall be located closer than 30m from the boundary of any river, lake, wetland or the boundary of the coastal marine area.</li> </ul>	<p>The waste created by the development is proposed to be treated and disposed of by a system which has no part closer than 30m from the bank of any river, lake, wetland, or the boundary of the coastal marine area.</p>	

**Proposal:** Moekoraha Papakāinga Development involving the construction of 30 residential units, and community facilities comprising a 467.24m<sup>2</sup> kohanga reo designed for 30 children and 5 staff, and a 230.5 m<sup>2</sup> community building with a maximum occupancy of 50 persons.

**Address:** 174 Lamb Road

**District Plan:** Proposed Far North District Plan (PDP)

Site Zoning	
Zone	Rural Production Zone
Overlays/Controls	Treaty Settlement Land Overlay
Designations	N/A

Rule	Compliance	Non-Compliance
<b>Rules and Standards That Have Immediate Legal Effect under the PDP</b>		
<b>Part 2 – District Wide Matters / National Environment Values / Ecosystems and Indigenous Biodiversity</b>		
<b>IB-R2</b> Indigenous Vegetation Clearance and Any Associated Land Disturbance within a Significant Natural Area for Papakāinga <b>Activity status: Permitted</b> <b>Where:</b> <b>PER-1 It does not exceed:</b> <ol style="list-style-type: none"> <li>1,500m<sup>2</sup> for a <u>marae</u> complex, including associated <u>infrastructure</u> and access; and</li> <li>500m<sup>2</sup> per <u>residential unit</u>.</li> </ol>	A very minor (no more than 30 m <sup>2</sup> ) is required to be cleared to accommodate the accessway within Section 8. The amount required complies with the maximum allowable area permitted to be cleared within an SNA for the purposes of Papakāinga. <b>Permitted.</b>	
<b>Part 2 – District Wide Matters / General District Wide Matters / Earthworks</b>		
<b>EW-R12</b> Earthworks and the Discovery of Suspected Sensitive Material <b>Activity status: Permitted</b> <b>Where:</b> <b>PER-1</b> The earthworks complies with standard EW-S3 - Accidental Discovery Protocol.	The proposal will comply with standard EW-S3 – Accidental Discovery Protocol.	
<b>EW-R13</b> Earthworks and Erosion and Sediment Control <b>Activity status: Permitted</b> <b>Where:</b> <b>PER-1</b> The earthworks complies with standard EW-S5 Erosion and sediment control.	Erosion and sediment control measures are proposed in accordance with GDO5. <b>Permitted</b>	

# PROPOSED RESIDENTIAL SUBDIVISION

174 Lamb Road | Pukenui

Transportation Assessment Report

**Prepared For**

Realm Property Group

**Date of Issue**

July 2024

team

The logo for 'team' features the word in a lowercase, sans-serif font. Below the text is a graphic element consisting of three curved, parallel lines that sweep upwards and to the right, suggesting motion or a stylized 'e'.

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# Quality Assurance & Version Management

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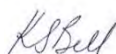
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## Version Management

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# 1. Introduction

This report considers the traffic related aspects of a proposed papakainga residential development, a Kohanga Reo and community facility at 174 Lamb Road in Pukenui.

The proposal involves the development of the subject site that is divided by Lamb Road. The subject site consists of Section 8 which is located on the southern side of Lamb Road and Section 9 which is located on the northern side of Lamb Road.

The details of the proposed development are as follows

## Section 8 – (Southern side)

- 11 residential dwellings

## Section 9 – (Northern side)

- 19 residential dwellings
- Kohanga Reo (30 children)
- Community Facility (50 occupants)

Vehicle access to each component of the development will be via three connections to Lamb Road and will be formed as private roads. The layout of the proposed development of the subject site is shown in the following site plan.

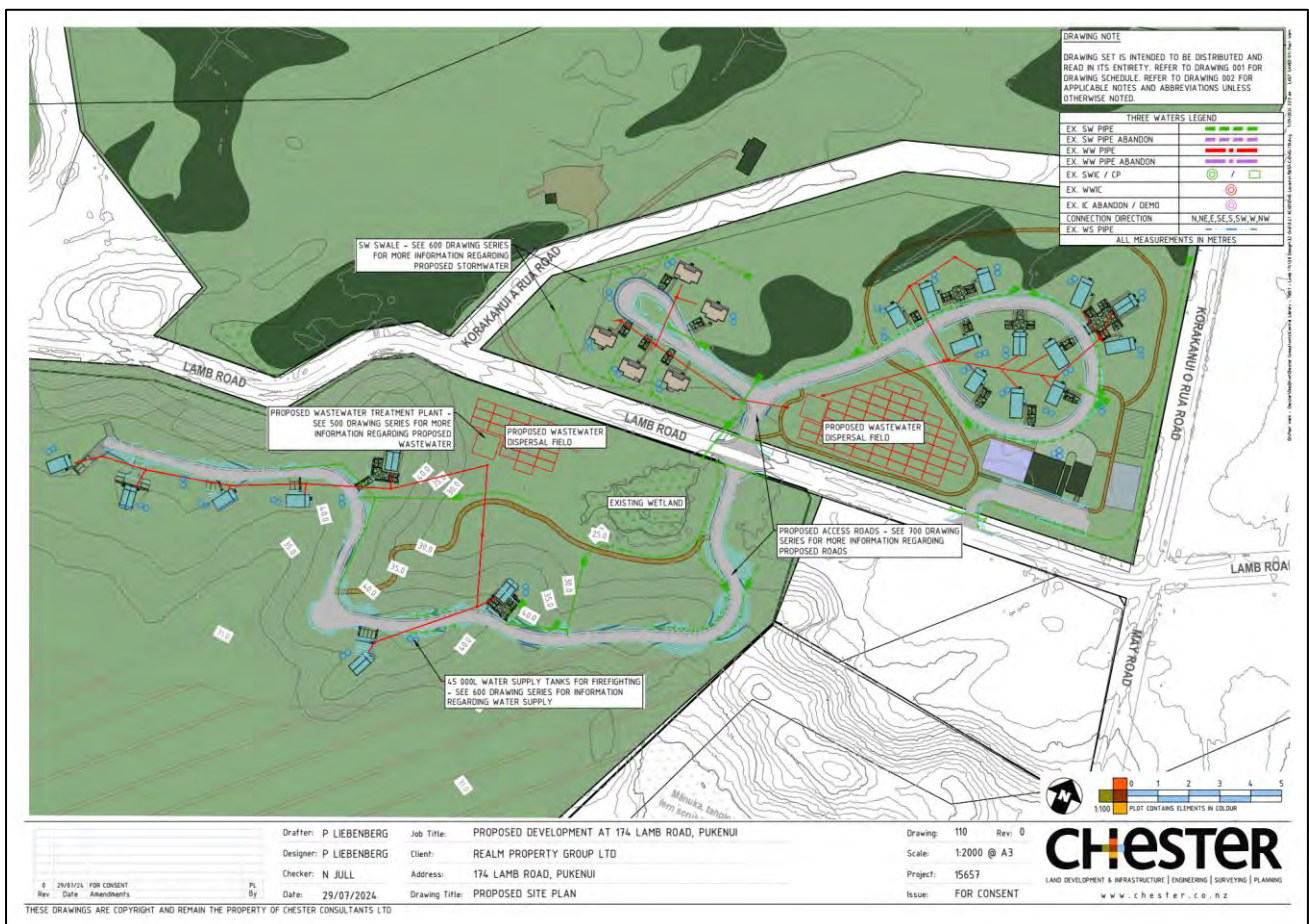


Figure 1: Site Plan

## 2. Assessment Methodology

The site is zoned 'Rural Production' under the operative Far North District Plan and 'General Residential' under the proposed Far North District Plan. The following illustration has been sourced from the Far North District – Operative District Plan.

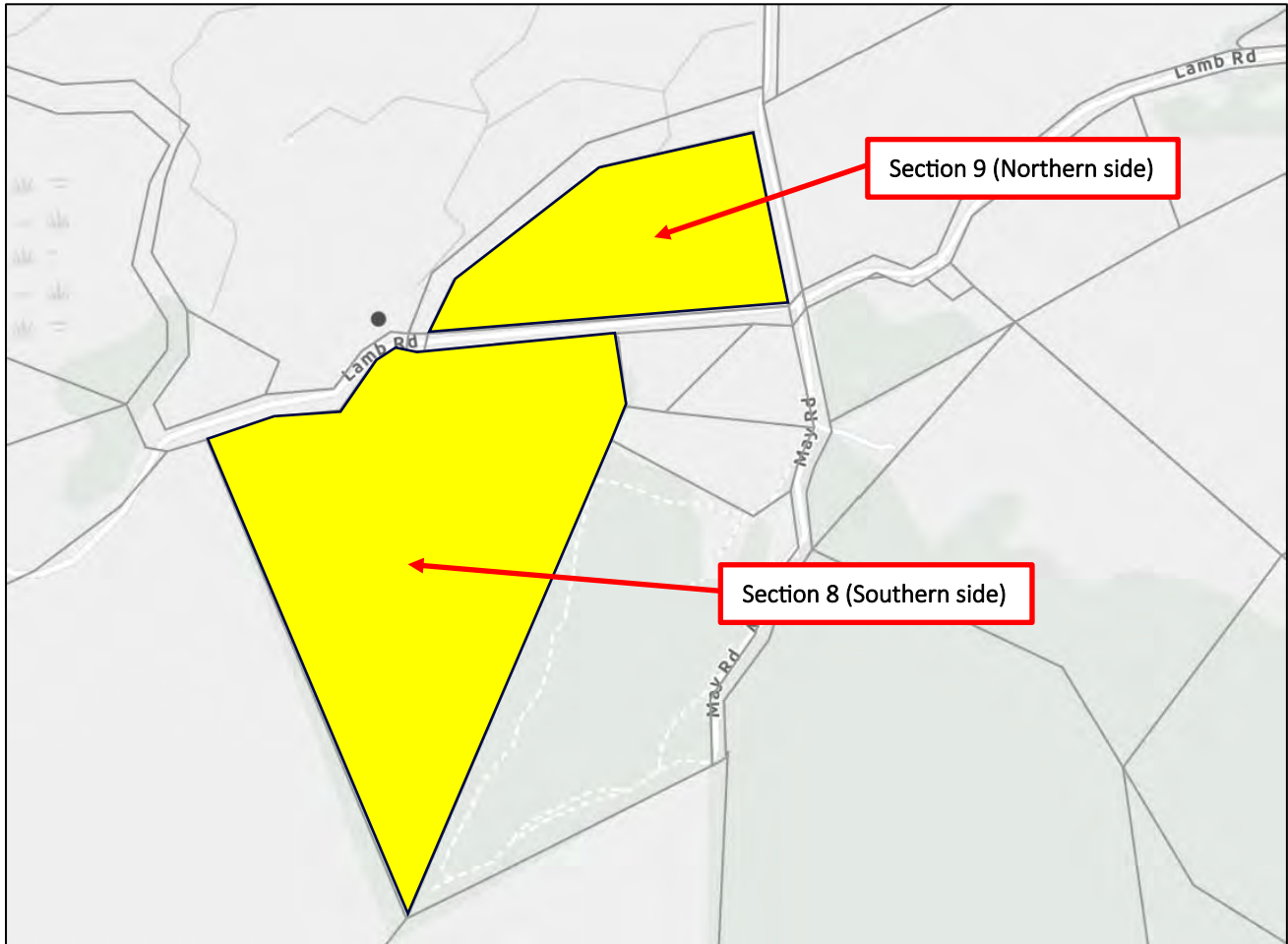


Figure 2: District Plan map

This assessment considers the traffic related requirements of the Far North District Council Operative District Plan and specifically the requirements of 'Chapter 15 – Transportation' and 'Appendix 3' have been considered.

The Far North District Council Engineering Standards (FNDCEs) have also been referred to with regard to the configuration of the access roads within the development.

The FNDCEs requires<sup>1</sup> that:

- a vehicular access that serves eight or less lots or Household Units shall be private access ways, except where FNDC agrees that they become public road through resource consent conditions.
- Unless approved otherwise through the resource consent conditions, private accessways serving more than eight lots or Household Units shall be formed to the requirements of the relevant road standard.

<sup>1</sup> FNDCEs 3.2.28. Private Accessways

On this basis, the roads within the development that serve less than eight dwellings will be considered in relation to the dimensional requirements for private accessways and the roads that serve more than eight dwellings will be considered in relation to the dimensional requirements for the relevant road category.

It is noted that some traffic related requirements differ between the Operative District Plan and the Engineering Standards, particularly in relation to parking dimensions and parking/traffic generation rates. In these situations, the requirements of the Operative District Plan have been considered.

The Far North District Plan- Appendix 3A: 'Traffic Intensity Factors' provides the following daily traffic generation rates and parking rates that are relevant to this proposal.

#### Daily Traffic generation Rates

- House on Papakainga: 5 per house
- Kuia/Kaumatua housing on Papakainga: 2 per house
- Child Care centres: 75 per 100m<sup>2</sup> GBA
- Places of Assembly: 2 per person the facility is designed for

#### Parking Spaces Required

- House on Papakainga: 1 space for the first house plus 1 space per 2 additional houses
- Kuia/Kaumatua housing on Papakainga: 1 per house
- Child Care centres: 1 per every 4 children
- Places of Assembly: 1 per 5 person the facility is designed for

These traffic generation rates and parking requirements will be referred to later in this report.

### 3. The Existing Traffic Environment

The location of the site in relation to the surrounding road network and properties is shown in the following aerial photograph.



Figure 3: Surrounding Road and Wider Network

#### 3.1 Traffic and Roding Characteristics

The proposed subdivision has a sole road frontage to Lamb Road.

##### 3.1.1 Lamb Road

Lamb Road functions as a local road and has a connection to the wider network via Far North Road. Lamb Road connects with Far North Road at its eastern end and terminates at its western end. Additionally, Lamb Road has a connection to Korakanui O Rua Road which also has a connection to Far North Road via other neighbouring roads.

Lamb Road in the vicinity of the subject site has a loose metal surface and has a carriageway width of six metres.

There is a 100km/h speed restriction in place, however the operating speed is estimated as being in the order of 60-65km/h.

The configuration of Lamb Road is shown in the following photograph taken in the vicinity of the site and looking towards the west.



Figure 4: Lamb Road

### 3.1.2 Pedestrian Amenity

Given the rural nature of the area surrounding the site, no footpaths are provided on Lamb Road. The nearest pedestrian amenity to the site is located approximately 1.2km east of the site adjacent to Pukenui School.

### 3.1.3 Passenger Transport

There are no bus stops located within easy access to the subject site.

The nearest bus stop is located at the Pukenui shops on Far North Road (at the eastern end of Lamb Road) which is approximately 1.7 km from the site.

This bus stop is serviced by the Far North Link and operates one morning service from Pukenui to Kaitaia on Thursdays.

The proposed development is considered to have very limited options in terms of public transport.

### 3.1.4 Crash Analysis

To determine if there are any existing operational issues in the vicinity of the site, a study of the crash record maintained by Waka Kotahi (NZTA) has been undertaken for the 5-year period 2019-2023 inclusive. Crashes that occurred and were reported during 2024 were also included.

The searched area covered Lam Road within approximately 500 metres of the proposed intersection between the proposed private roads and Lamb Road. The searched area is shown in the following figure.

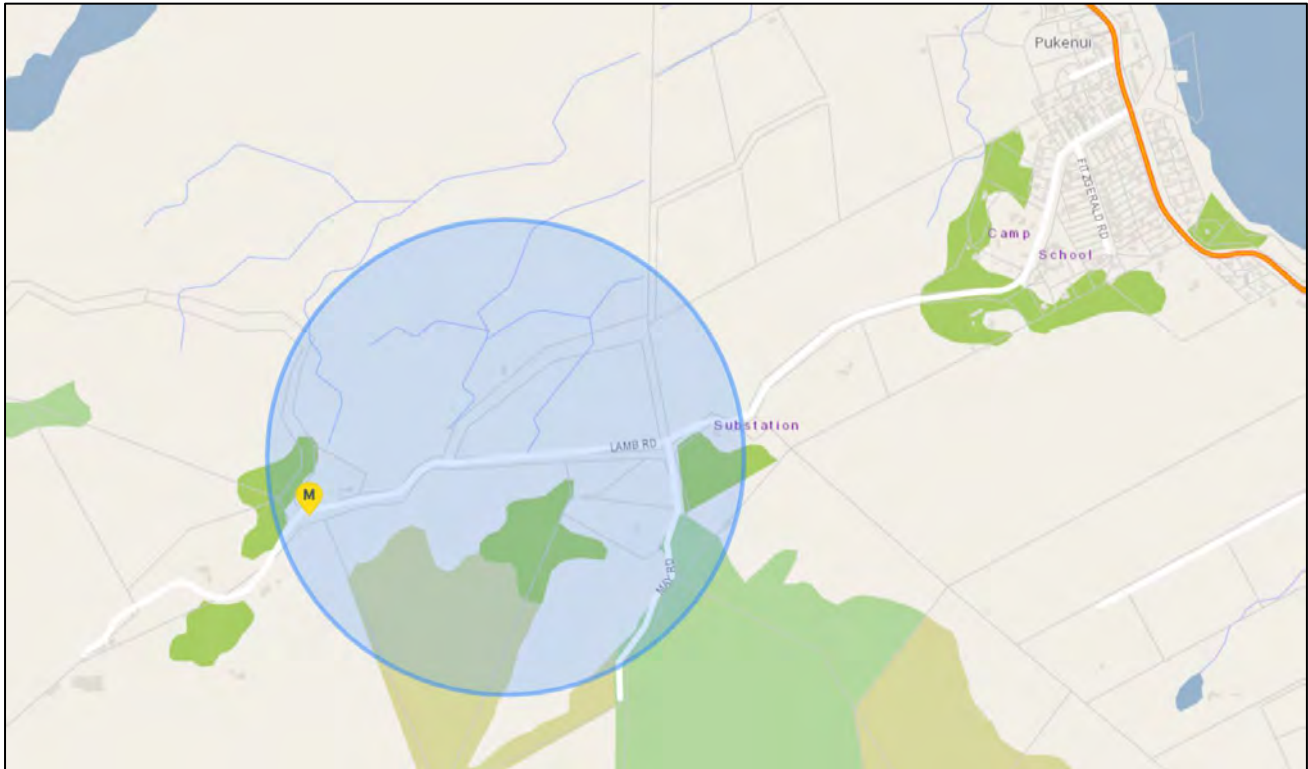


Figure 5: CAS searched area

There was one crash reported as occurring within the searched area for the given timeframe.

The crash was a minor injury crash that involved an inexperienced driver travelling westbound on Lamb Road that failed to navigate a bend along the road and lost control of their vehicle.

The crash record does not indicate any inherent issues with the layout of Lamb Road in the vicinity of the site.



## 4. The Proposal

The proposal involves the development of the site to provide a papakainga residential development, a Kohanga Reo and community facility.

The details of the proposed development are as follows:

- 30 residential dwellings
- Kohanga Reo (30 children)
- Community Facility (50 occupants)

Vehicle access to each component of the development will be via three connections to Lamb Road and will be formed as private roads. The layout of the site and the roading connections to Lamb Road are shown in the following site plan.

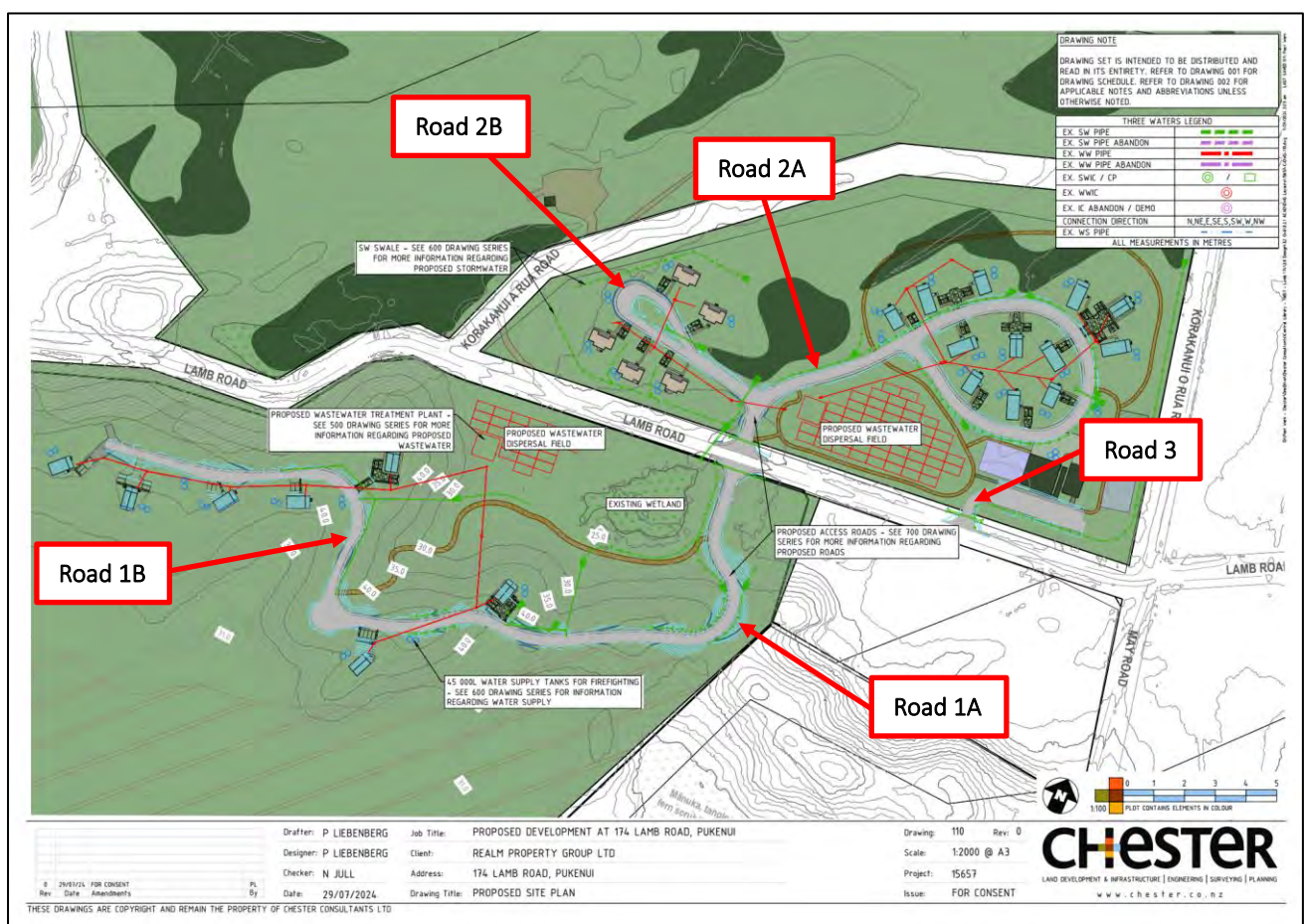


Figure 6: Roading plan

## 4.1 Private Access Road 1 (Road 1A & Road 1B)

As can be seen above, Road 1 will provide the sole vehicle connection to the southern side of the development which will have 11 residential dwellings.

The connection to Road 1 is located 58 metres west of the eastern boundary of the southern area. There are very good sight lines available in both directions along Lamb Road from the Road 1 position as follows:

- To the west: 217 metres
- To the east: 269 metres

These available sightlines are shown in the following photographs.



Figure 7: Road 1 – View to the West



Figure 8: Road 1 – View to the East

These available sightlines easily meet the 'Minimum Sight Distance From Vehicle Entrances' requirements of the FNDCE<sup>2</sup> for the posted speed limit of 100km/h and for the calculated Approach Sight Distance (ASD) for a gravel surface with an operating speed of 65km/h, which is 98 metres.

---

<sup>2</sup> FNDCE – Sheet 4- Traffic Sightlines for Vehicle Entrances

### 4.1.1 Road 1A

The first section of Road 1 (Road 1A) will slope up from Lamb Road to a cul-de-sac turning head. This section of the road will provide access to eleven dwellings which will consist of three standalone houses and six houses configured as three duplexes that will be for Kuia/Kaumatua.

The layout of Road 1A is shown in the following plan.

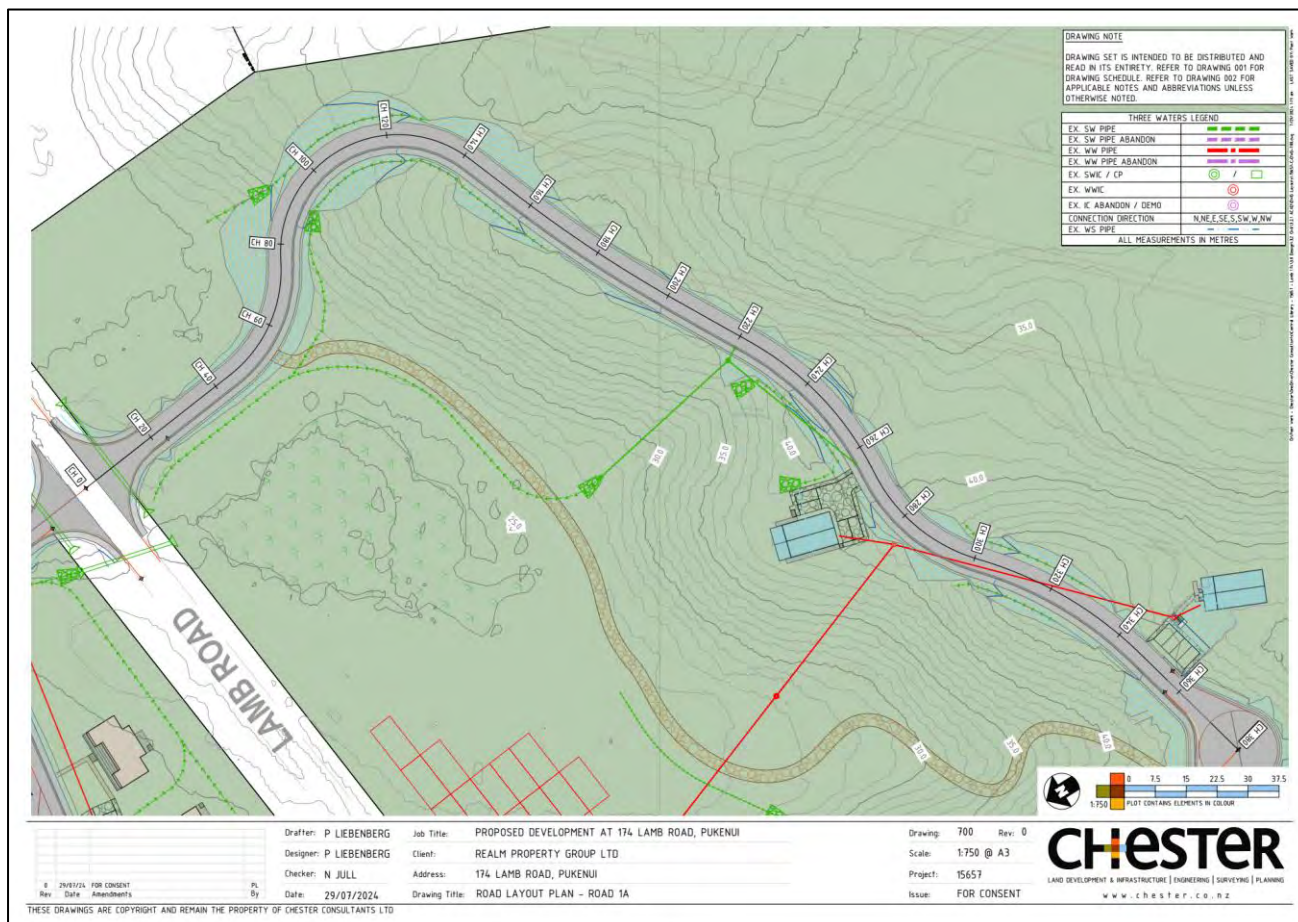


Figure 9: Road 1A Layout

As previously discussed in the ‘Methodology’ section, given that Road 1A serves more than eight dwellings, the road has been configured to meet the dimensional requirements for the relevant road category.

The following daily traffic generation rates have considered.

- House on Papakainga: 5 per house
- Kuia/Kaumatua housing on Papakainga: 2 per house

With three standalone houses and six houses configured as three duplexes that will be for Kuia/Kaumatua, the estimated daily traffic generation for Road 1A will be 27 vehicle movements/day.

On this basis, with less than 50 vehicle/day, Road 1A is considered to be a ‘Low Volume Access Road’ which have the following cross-sectional dimensions<sup>3</sup>.

<sup>3</sup> FNDCES – Table 3-3: Rural Road Design Criteria

- Overall Width: 7 metres
- Movement Lane Width: 2 x 2.5 metres
- Unsealed Shoulder: 2 x 0.5 metres
- Sealed Shoulder: 2 x 0.5 metres
- Cyclists: Shared in movement lane
- Pedestrians: Shared on shoulder & berm.

The cross-section of Road 1A is shown in the following illustration.

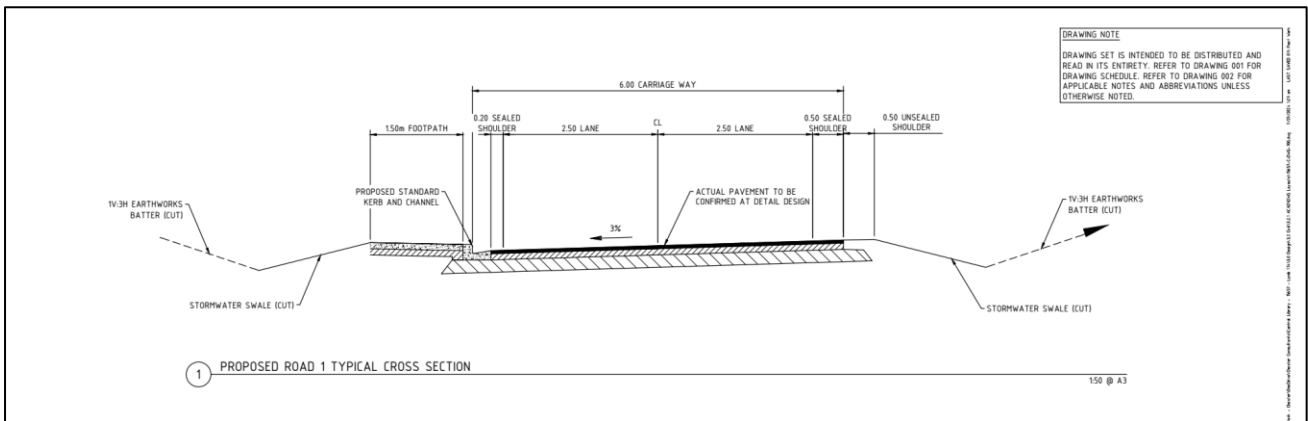


Figure 10: Road 1A – Cross-section

As can be seen above, the cross-section of Road 1A is very similar to the ‘Low Volume Access Road’ cross-section and has an additional 1.5-metre-wide footpath adjacent to the carriageway.

Road 1A has a suitable cross-section to accommodate simultaneous two-way vehicle movements and will also accommodate the spatial requirements of a 11.5-metre-long Large Rigid Truck (LRT). Tracking curves simulating these vehicle movements are provided as an appendix to this report.

The proposed gradient of Road 1A is shown in the following long section.

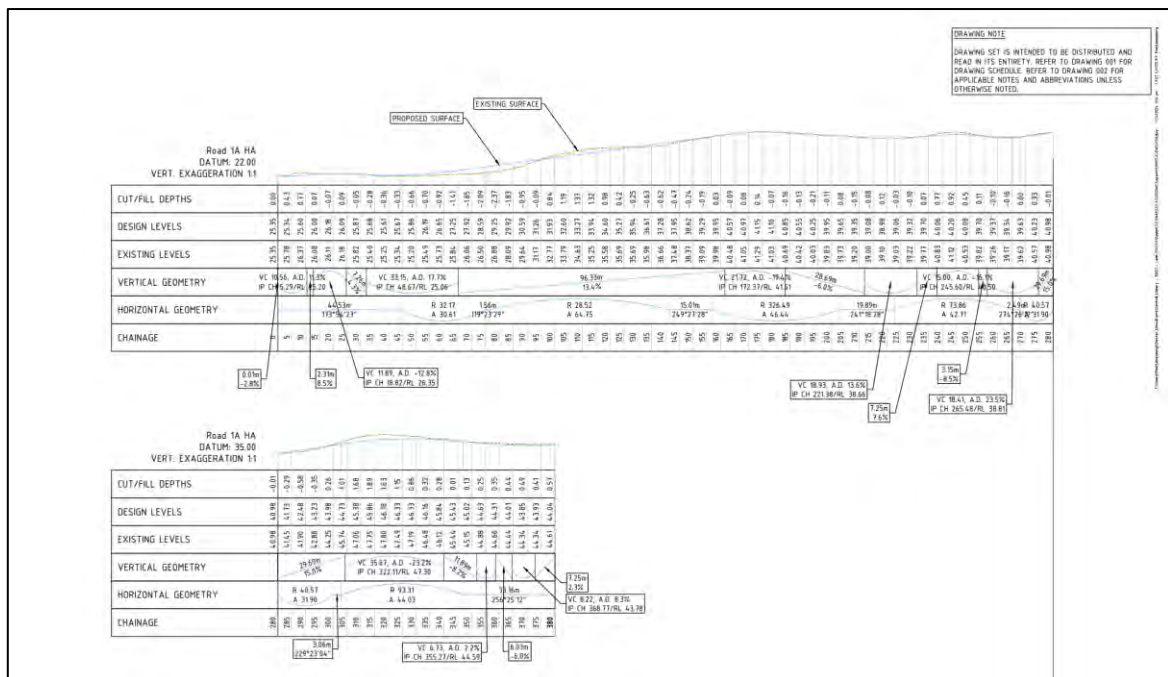


Figure 11: Road 1A – Long section

As can be seen above, the maximum gradient of Road 1A is 23.5%. Given the steep topography on the southern side of the site, the gradient related requirements for a 'Low Volume Access Road' (maximum 12.5%) are unable to be met.

However, the gradient related requirements for 'Private Access' (Sealed maximum gradient 1:4) are met<sup>4</sup>.

### 4.1.2 Road 1B

The second section of Road 1 (Road 1B) will slope up from the cul-de-sac turning head to the southern termination of the road. This section of the road will provide access to seven dwellings which will consist of three standalone houses and four houses configured as two duplexes that will be for Kuia/Kaumatua.

The layout of Road 1B is shown in the following plan.

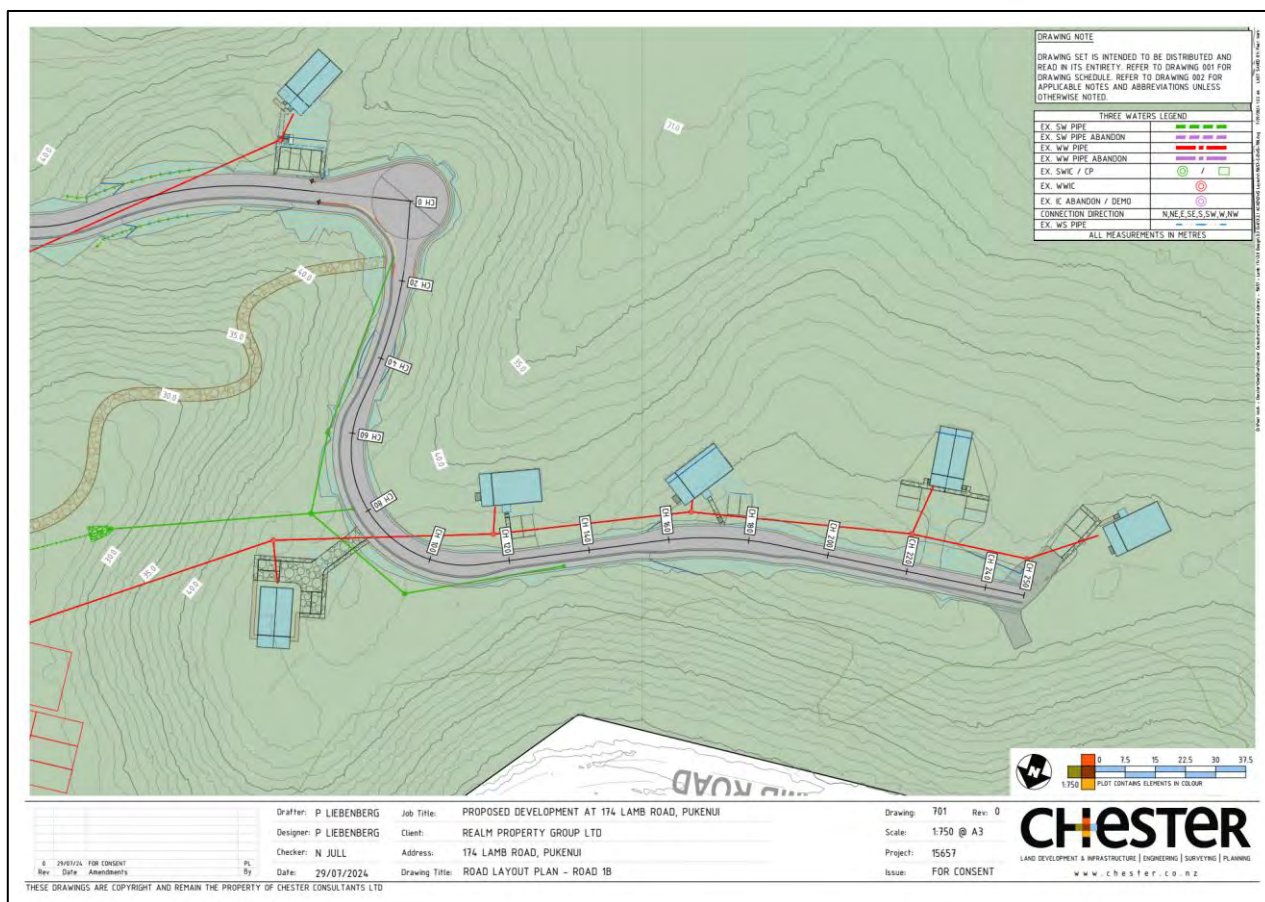


Figure 12: Road 1B Layout

As previously discussed in the 'Methodology' section, given that Road 1B serves less than eight dwellings, the road has been configured to meet the dimensional requirements for private accessways.

The Minimum width requirements for Private Accessways serving 6-8 household units are as follows<sup>5</sup>.

- Unsealed Shoulder: 2 x 0.25 metres
- Surfaced Width: 2 x 2.75 metres
- Total Width: 6.0 metres

<sup>4</sup> Appendix 3B-1 Standards for Private Access

<sup>5</sup> FNDCEs – Table 3-16: Minimum Width Requirements – Private Accessways

Road 1B will have a similar cross-section as Road 1A, however one-way sections will be provided that have a carriageway width of 3.5 metres. Passing bays which have the full carriageway width of Road 1A will be provided at two locations along Road 1B, where vehicles can stop and yield to vehicles approaching from the other direction.

These passing bays are located at the two corners along Road 1B so that there are good sightlines available between each passing bay. The configuration of the passing bays meet the dimensional requirements of the District Plan<sup>6</sup>.

The use of these passing bays is simulated with tracking curves that are provided as an appendix to this report.

The proposed gradient of Road 1B is shown in the following long section.

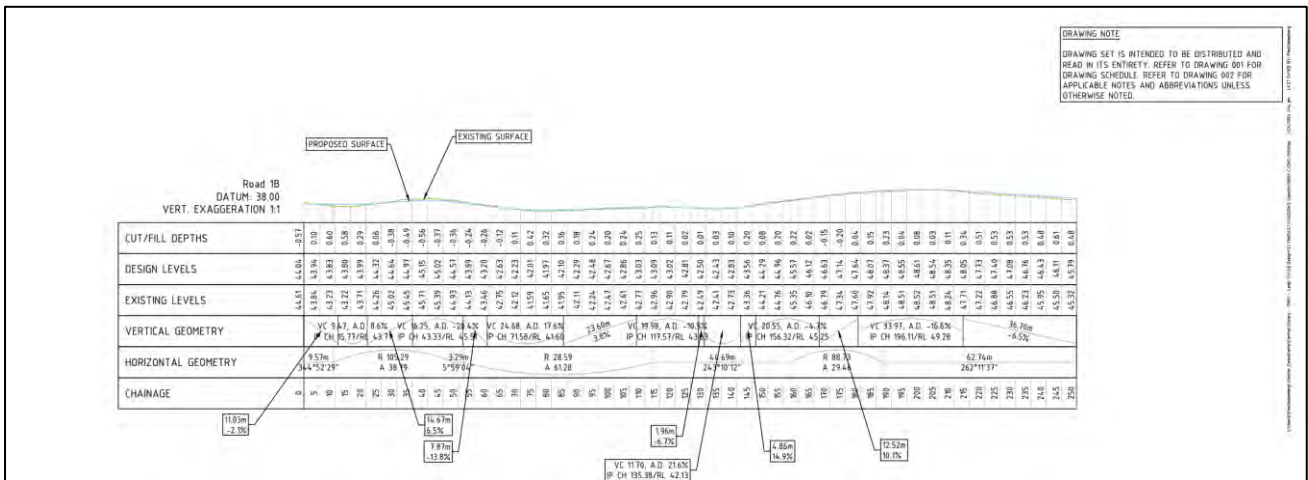


Figure 13: Road 1B – Long section

As can be seen above the maximum gradient of Road 1B is 20.4% which meets the gradient related requirements for 'Private Access' (Sealed maximum gradient 1:4).

### 4.1.3 Road 1 Cul-de-sac

The cul-de-sac that connects the two sections of Road 1 has been designed so that an 8-metre-long Medium Rigid Truck (MRT) can undertake a U-turn within the turning area and an 11.5-metre-long Large Rigid Truck (LRT) can undertake a 3-point turn to turn around. Tracking curves simulating these vehicle movements are provided as an appendix to this report.

This arrangement is considered to meet the requirements of FNDCEs<sup>7</sup>

### 4.1.4 Road 1 Turning head

A turning head has also been provided at the southern termination of Road 1B, which enables a 11.5-metre-long Large Rigid Truck (LRT) to turn around.

This arrangement is also considered to meet the requirements of FNDCEs<sup>8</sup>

<sup>6</sup> FNDC – 15.1.6c.1.3

<sup>7</sup> FNDCEs – 3.2.16.2 Cul-de-sac Head design

<sup>8</sup> FNDCEs – 3.2.16.1 No Exit Roads.

## 4.2 Private Access Road 2 (Road 2A & Road 2B)

Road 2 will provide the sole vehicle connection to the residential component of the development that is located on the northern side of the site.

The connection to Road 2 is located 58 metres west of the eastern boundary of the southern area of the site. There are very good sight lines available in both directions along Lamb Road from the Road 2 position as follows:

- To the west: 217 metres
- To the east: 269 metres

These available sightlines are shown in the following photographs.



Figure 14: Road 2 – View to the West





Figure 15: Road 2 – View to the East

These available sightlines easily meet the ‘Minimum Sight Distance From Vehicle Entrances’ requirements of the FNDCEs<sup>9</sup> for the posted speed limit of 100km/h and for the calculated Approach Sight Distance (ASD) for a gravel surface with an operating speed of 65km/h, which is 98 metres.

---

<sup>9</sup> FNDCEs – Sheet 4- Traffic Sightlines for Vehicle Entrances

### 4.2.1 Road 2A

The first section of Road 2 (Road 2A) will extend between Lamb Road and terminate at the northern end as a crescent shape. Road 2A will provide a vehicle connection to 14 dwellings which will consist of ten standalone houses and four houses configured as two duplexes that will be for Kuia/Kaumatua.

Road 2A also provides a connection to Road 2B which serves an additional five houses.

The layout of Road 2A is shown in the following plan.

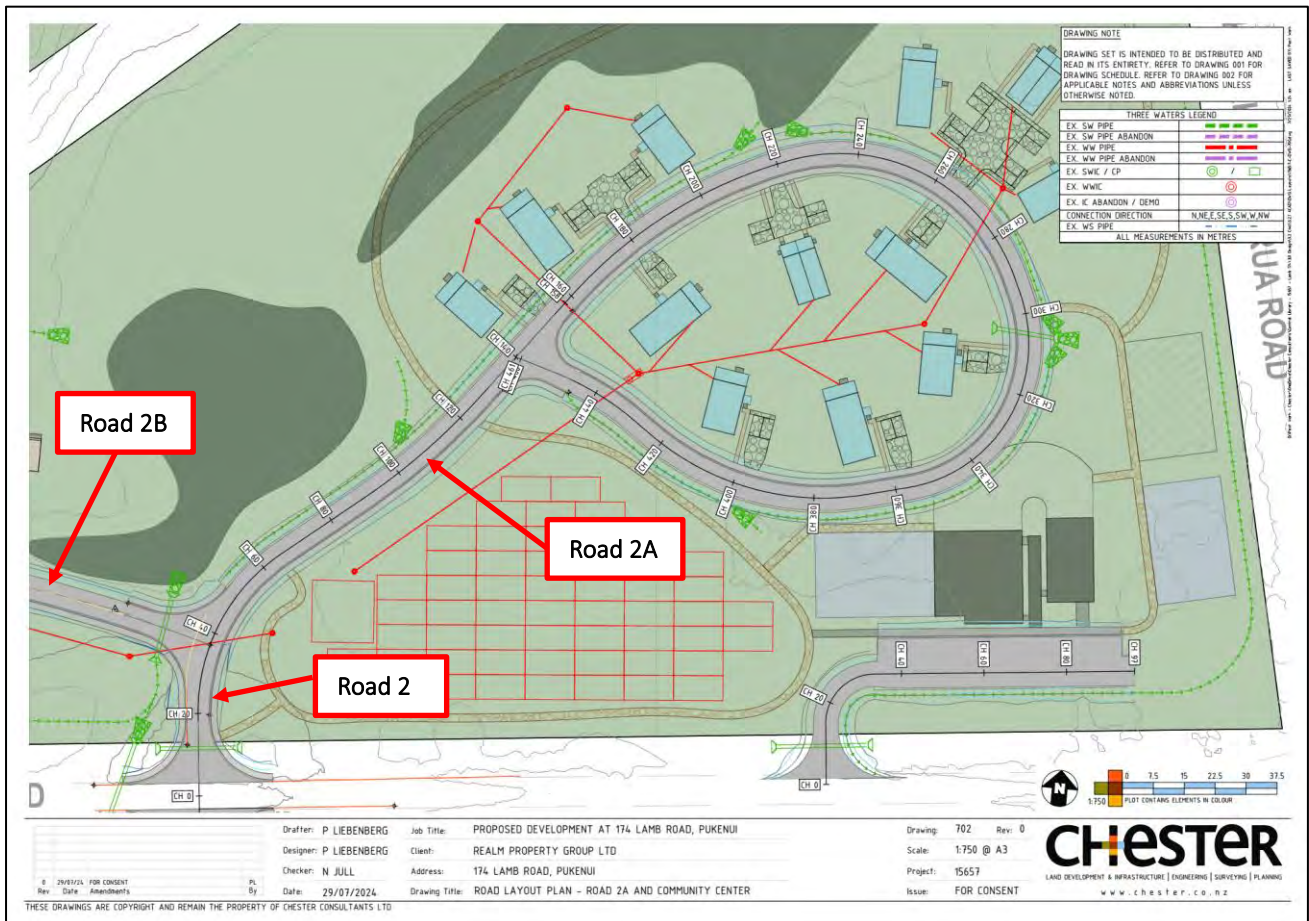


Figure 16: Road 2A Layout

As previously discussed in the ‘Methodology’ section, given that Road 2A serves more than eight dwellings, the road has been configured to meet the dimensional requirements for the relevant road category.

The following daily traffic generation rates have considered.

- House on Papakainga: 5 per house
- Kuia/Kaumatua housing on Papakainga: 2 per house

With a total of 15 standalone houses and four houses configured as two duplexes that will be for Kuia/Kaumatua, the estimated daily traffic generation for Road 2A will be 83 vehicle movements/day.

On this basis, with between 50-200 vehicles/day, Road 2A is considered to be a 'Access Road' which have the following cross-sectional dimensions<sup>10</sup>.

- Overall Width: 7 metres
- Movement Lane Width: 2 x 2.5 metres
- Unsealed Shoulder: 2 x 0.5 metres
- Sealed Shoulder: 2 x 0.5 metres
- Cyclists: Shared in movement lane
- Pedestrians: Shared on shoulder & berm.

The cross-section of Road 2A is shown in the following illustration.

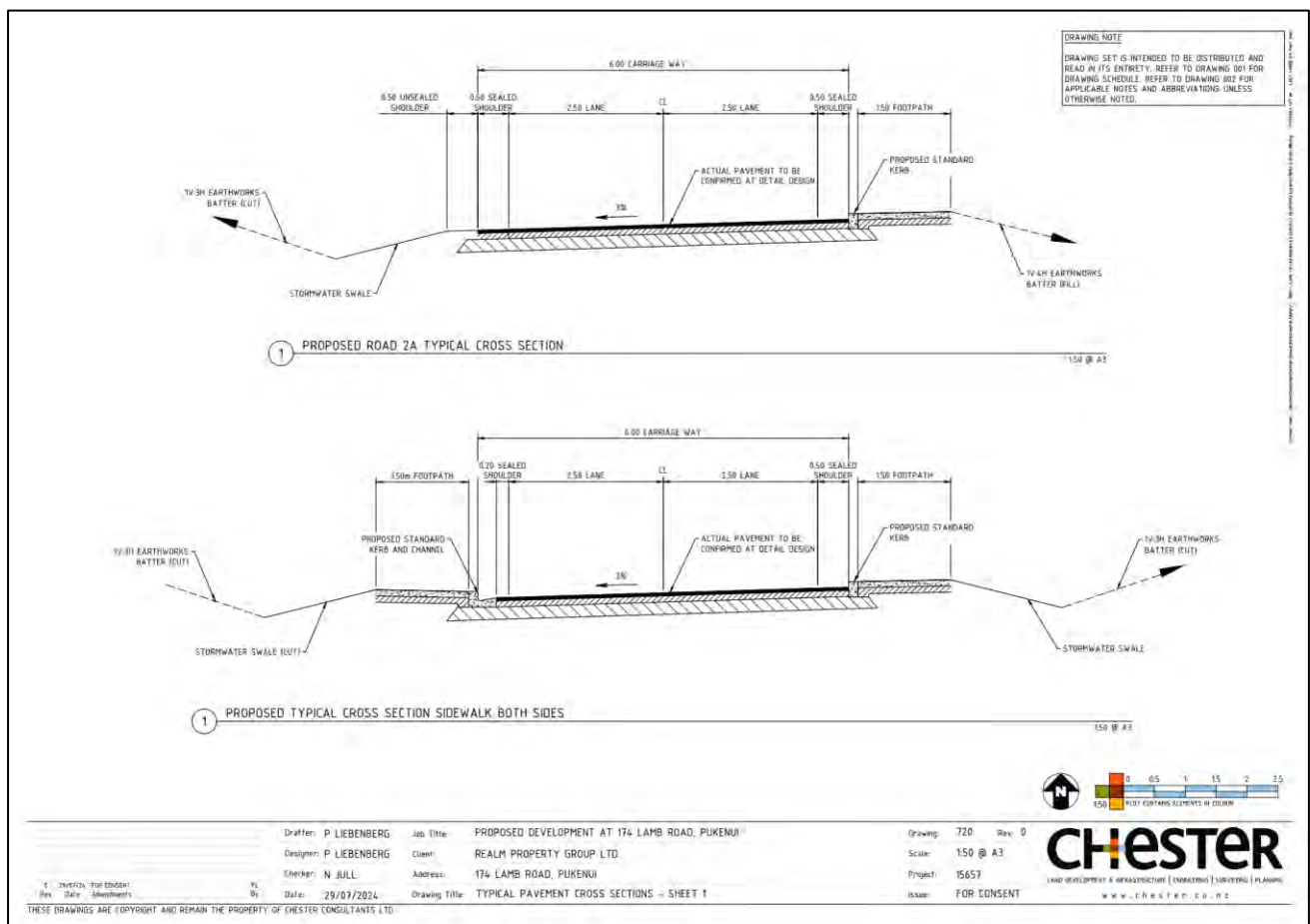


Figure 17: Road 2A – Cross-section

As can be seen above, the cross-section of Road 2A is very similar to the 'Access Road' cross-section and has an additional 1.5-metre-wide footpath adjacent to the carriageway. This footpath is generally located on one side of the carriageway, with section of Road 2A between Lamb Road and Road 2B having a footpath on both sides of the carriageway.

Road 2A has a suitable cross-section to accommodate simultaneous two-way vehicle movements and will also accommodate the spatial requirements of a 11.5-metre-long Large Rigid Truck (LRT). Tracking curves simulating these vehicle movements are provided as an appendix to this report.

<sup>10</sup> FNDCEs – Table 3-3: Rural Road Design Criteria

The proposed gradient of Road 2A is shown in the following long section.

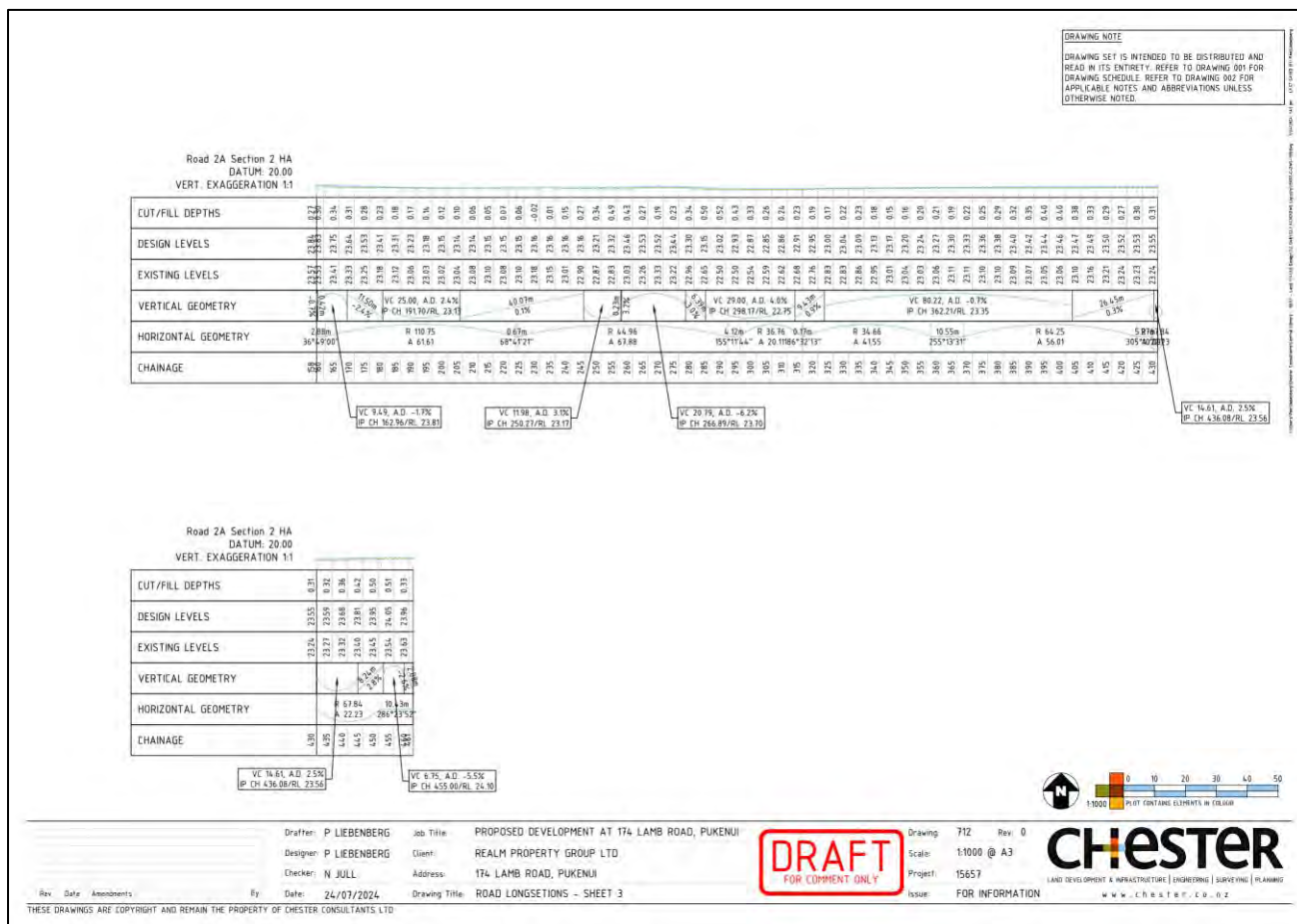


Figure 18: Road 2A – Long section

As can be seen above, the maximum gradient of Road 2A is 6.2%. This maximum gradient meets the gradient related requirements for an ‘Access Road’ (maximum 12.5%).

### 4.2.2 Road 2B

Road 2B intersects with Road 2A and terminates as a crescent shape. The Road will have a similar cross-section to Road 2A, except for the crsnt shaped end of the road that will be configured for one-way movements that will operate in a clockwise direction.

Road 2B will provide a vehicle connection to five standalone houses. As previously discussed in the ‘Methodology’ section, given that Road 2B serves less than eight dwellings, the road has been configured to meet the dimensional requirements for private accessways.

The Minimum width requirements for Private Accessways serving 3-5 household units are as follows<sup>11</sup>.

- Unsealed Shoulder: 2 x 0.25 metres
- Surfaced Width: 1 x 4.0 metres
- Total Width: 4.5 metres

<sup>11</sup> FNDCEs – Table 3-16: Minimum Width Requirements – Private Accessways

Given that at Road 2A has an 'Access Road' cross section and an adjacent footpath, Road 2B is considered to be meet the requirements of the District Plan.

The layout of Road 2B is shown in the following plan.

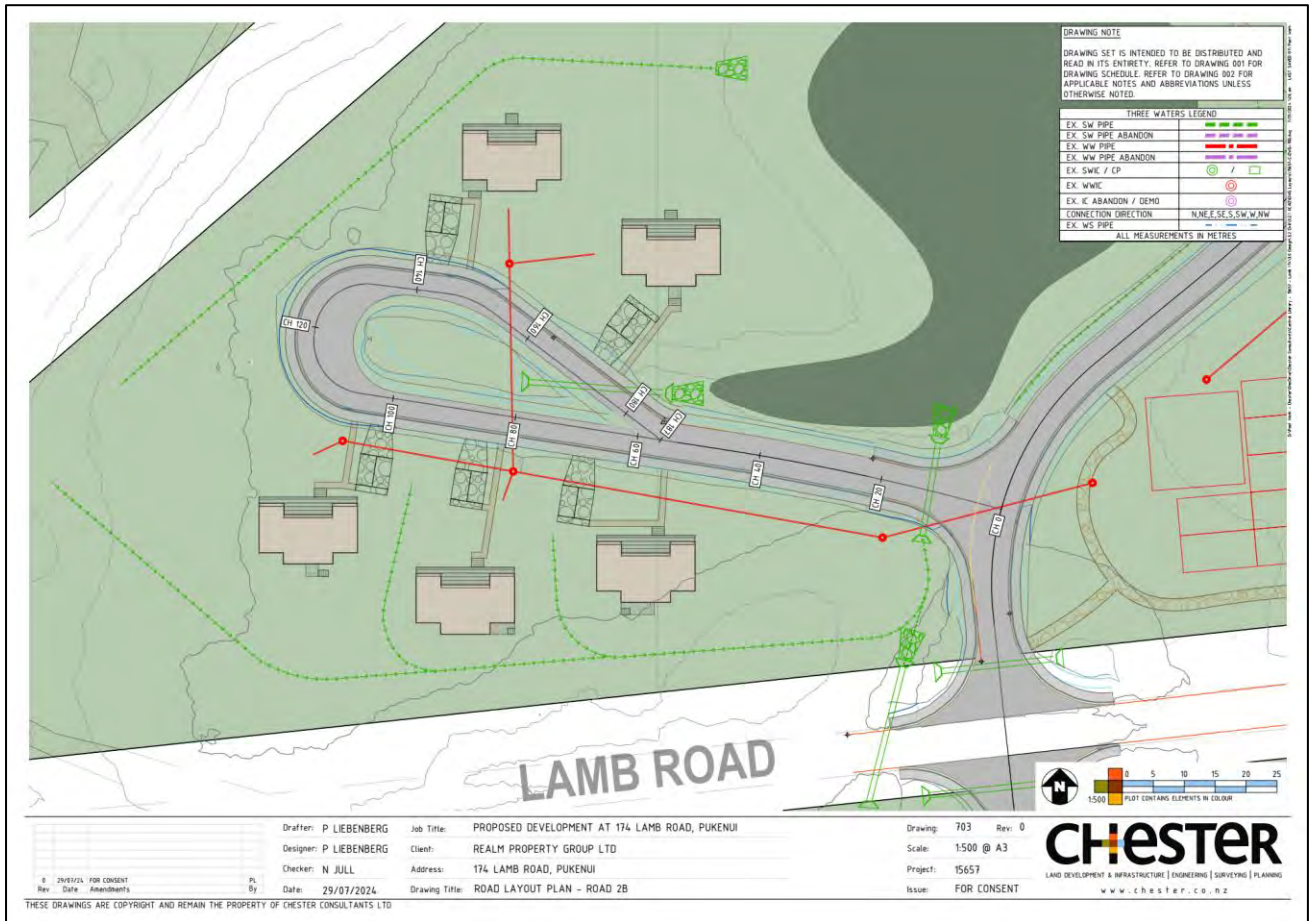


Figure 19: Road 2B Layout

The proposed gradient of Road 2B is shown in the following long section.

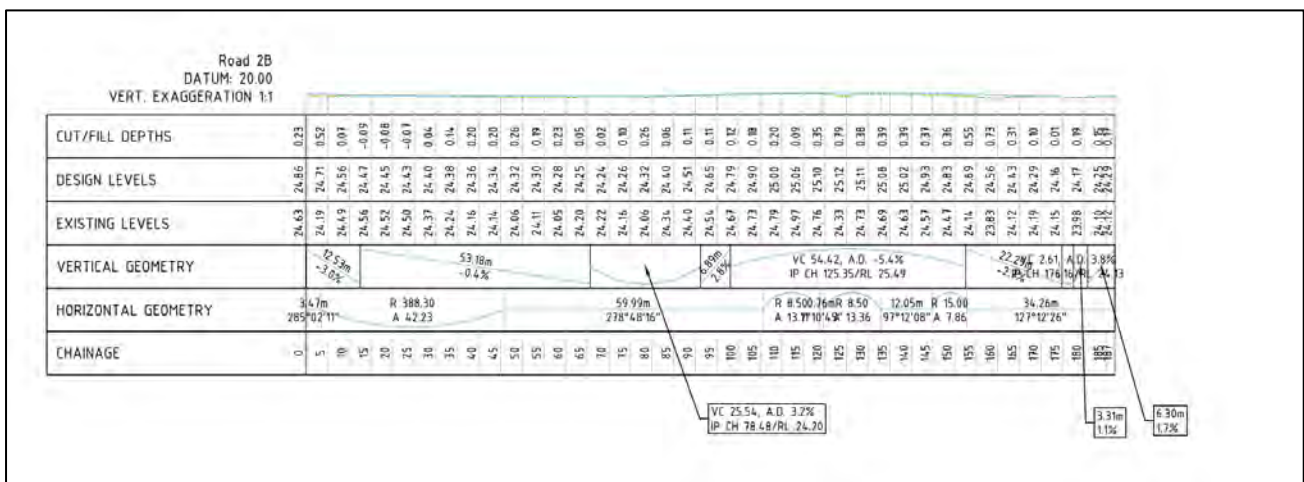


Figure 20: Road 2B - Long section

As can be seen above, the maximum gradient of Road 2B is 5.4%. This maximum gradient meets the gradient related requirements for an 'Access Road' (maximum 12.5%).

### 4.3 Private Access Road 3 (Road 3)

Road 3 will provide the sole vehicle connection to the carpark that will be provided for the Kohanga Reo (30 children) and Community Facility (50 occupants).

The connection to Road 3 is located 93 metres east of the eastern boundary of the southern area. There are very good sight lines available to the west along Lamb Road from the Road 3 position which has been measured as being in excess of 350 metres.

This available sightline is shown in the following photograph.



Figure 21: Road 3 – View to the West

This available sightline easily meets the 'Minimum Sight Distance From Vehicle Entrances' requirements of the FNDCEs<sup>12</sup> for the posted speed limit of 100km/h and for the calculated Approach Sight Distance (ASD) for a gravel surface with an operating speed of 65km/h, which is 98 metres.

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<sup>12</sup> FNDCEs – Sheet 4- Traffic Sightlines for Vehicle Entrances

The sightline from Road 3 to the east is currently constrained by scrub that is located in the road reserve. This constrained view is shown in the following photograph.



**Figure 22: Road 3 – View to the East (constrained by vegetation)**

It is understood that this vegetation will be removed to provide improved sight lines in this direction.

The improved sightlines will be in the order of 110 metres.

This sightline exceeds the calculated Approach Sight Distance (ASD) for a gravel surface with an operating speed of 65km/h, which is 98 metres.

In the event that Lamb Road is sealed, it is expected that the operating speed will potentially increase.

Given that the Approach Sight Distance (ASD) for a sealed road with an operating speed of 80km/h is 103 metres, the available sightline is also considered to be acceptable if the road is sealed and the operating speed increases.

This improved sightline is shown in the following photograph.



**Figure 23: Road 3 – Improved view to the East (removal of vegetation)**

Road 3 will have a similar cross section to Road 1 and Road 2, which is considered to be suitable for the intended use.

Given the relatively level site in the vicinity of Road 3, there is also not expected to be any gradient related issues.

In summary, the cross-sections of the proposed private access roads generally meet the dimensional requirements of the District Plan are considered to be suitable for the intended use.

All of the access roads on the northern side of Lamb Road meet the gradient related requirements for 'access roads'.

Given the topography of the southern side of Lamb Road, the gradient related requirements for access roads are not met, however the gradient related requirements for private accesses are met.



## 4.4 Residential Dwellings – Access and Parking

Each dwelling will be provided with two parking spaces, with a pedestrian connection provided between the parking and the dwelling.

As previously discussed in the Methodology Section the relevant parking requirements are as follows:

- House on Papakainga: 1 space for the first house plus 1 space per 2 additional houses
- Kuia/Kaumatua housing on Papakainga: 1 per house

Application of these parking rates result in the following parking requirements for the residential component of the development.

- House on Papakainga (18): 10 spaces
- Kuia/Kaumatua housing on Papakainga (12): 12 spaces
- Total requirement: 22 spaces.

With 60 parking spaces provided (two spaces/dwelling) the District Plan parking requirements are easily exceeded for the residential component of the development.

All residential parking spaces are 5 metre long and are a minimum 2.6 metre wide. Vehicles either reverse directly to/from the adjacent private road or are served by driveways that have been designed to enable a car to turnaround onsite and enter/depart the driveway in a forward direction.

On this basis, the parking dimensional requirements of the District Plan are considered to be met.

Tracking curves simulating the manoeuvring to and from each of the residential parking spaces are provided as an appendix to this report.

### 4.5 Kohanga Reo/ Community Facility – Parking

A parking area will be provided specifically for Kohanga Reo/Community facility use and will be accessed via the Road 3 connection to Lamb Road.

The parking area will provide 20 parking spaces including two accessible spaces that will be configured so that they are suitable for people with disabilities.

Five cycle parking spaces will also be provided adjacent to the parking area.

The parking area is shown in the following plan.

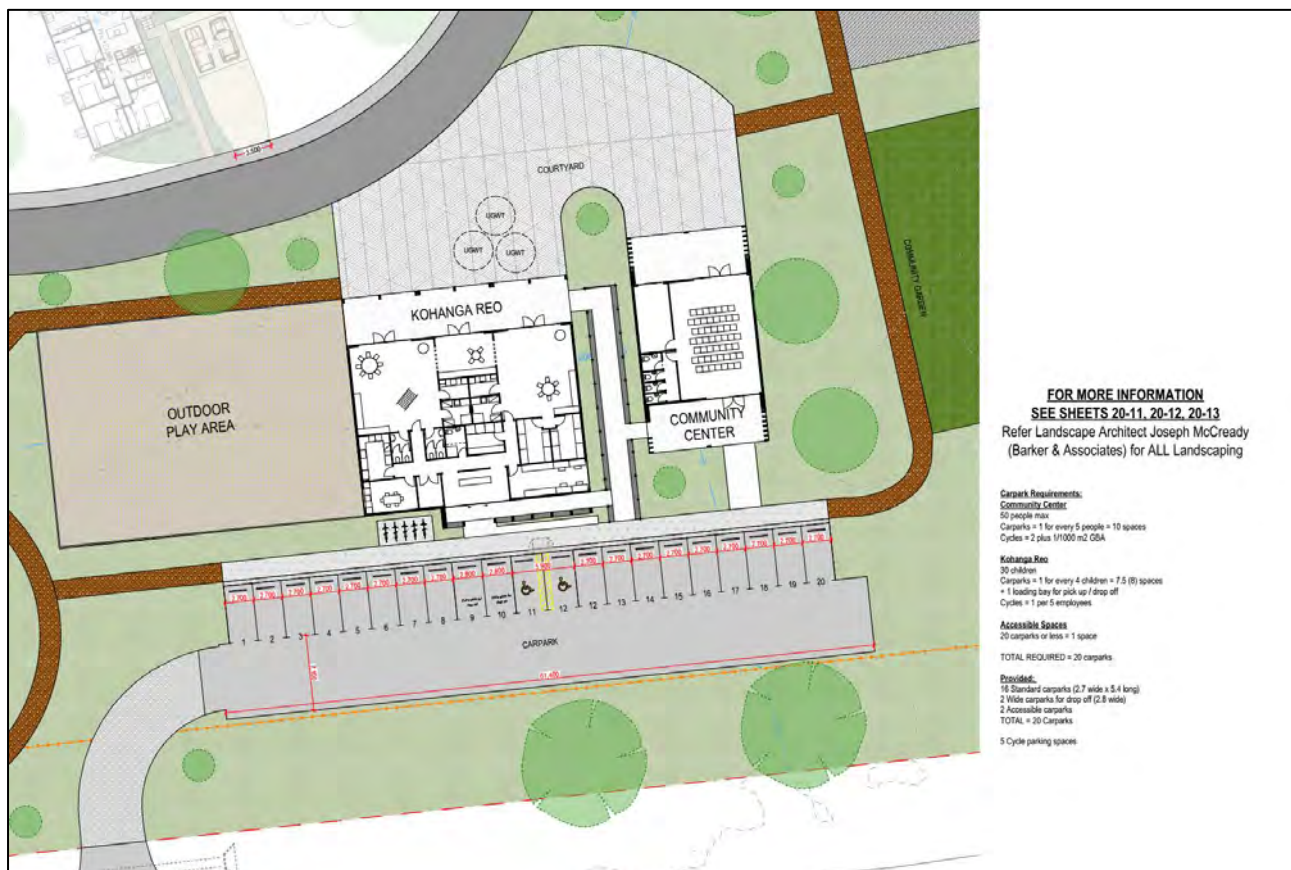


Figure 24: Kohanga Reo/Community Facility Parking

As previously discussed in the Methodology Section the relevant parking requirements are as follows:

- Child Care centres: 1 per every 4 children
- Places of Assembly: 1 per 5 person the facility is designed for

Application of these parking rates result in the following parking requirements for the Kohanga Reo/Community facility component of the development.

- Kohanga Reo (30 Children): 8 spaces
- Community Facility (50 people): 10 spaces
- Total requirement: 18 spaces

With 20 parking spaces provided, the District Plan parking requirements are exceeded for Kohanga Reo/Community facility component of the development.

The parking spaces are all 5.4 metres long and have 7.1 metres of manoeuvring. The majority of spaces are 2.7 metres wide, with two spaces being 2.8 metres wide which are suitable for drop-off purposes and will be labelled accordingly.

The two mobility spaces are 3.5 metres wide and have a centrally located shared 'working space'.

The parking spaces easily exceed the dimensional requirements of the District Plan and are considered to be suitable for their intended use.

## 4.6 Traffic Generation

As previously discussed in the methodology section the following District Plan traffic generation rates have been considered.

### Daily Traffic generation Rates

- House on Papakainga: 5 per house
- Kuia/Kaumatua housing on Papakainga: 2 per house
- Child Care centres: 75 per 100m<sup>2</sup> GBA
- Places of Assembly: 2 per person the facility is designed for

Application of these rates results in the following daily traffic movements

- House on Papakainga (18): 90 vehicles/day
- Kuia/Kaumatua housing on Papakainga (12): 24 vehicles/day
- Child Care centres (477.11 m<sup>2</sup>): 358 vehicles/day
- Places of Assembly: 100 vehicles/day
- Total: 572 vehicles/day

As can be seen above, based on the District Plan traffic generation rates, the estimated daily traffic generation of the development is 572 vehicles/day.

This is very low number of daily traffic movements from a traffic engineering perspective and will be easily accommodated by Lamb Road and the surrounding network.

It is generally accepted that peak hour volumes are in the order of 10 % of the daily total, with this resulting in approximately 57 vehicle movements/hour occurring in the peak periods. This volume of traffic is expected to occur without issue at the two-way access connections to Lamb Road.

## 5. Conclusion

This assessment considers the traffic related requirements of the Far North District Council Operative District Plan and specifically the requirements of 'Chapter 15 – Transportation' and 'Appendix 3' have been considered.

The Far North District Council Engineering Standards (FNDCES) have also been referred to with regard to the configuration of the access roads within the development.

The proposed subdivision has a sole road frontage to Lamb Road. There is a 100km/h speed restriction in place, however the operating speed is estimated as being in the order of 60-65km/h.

The proposed development is considered to have very limited options in terms of public transport.

The crash record does not indicate any inherent issues with the layout of Lamb Road in the vicinity of the site.

There are very good sightlines available for Road 1 and Road 2 in both directions along Lamb Road. The sightline to the east for Road 3 is currently constrained by vegetation, however the sightline will be acceptable when the vegetation is removed.

The cross-sections of the proposed private access roads generally meet the dimensional requirements of the District Plan are considered to be suitable for the intended use.

All of the access roads on the northern side of Lamb Road meet the gradient related requirements for 'access roads'.

Given the topography of the southern side of Lamb Road, the gradient related requirements for access roads are not met, however the gradient related requirements for private accesses are met.

With 60 parking spaces provided (two spaces/dwelling) the District Plan parking requirements are easily exceeded for the residential component of the development and the dimensional requirements of the District Plan are considered to be met.

With 20 parking spaces provided, the District Plan parking requirements are exceeded for Kohanga Reo/Community facility component of the development and easily exceed the dimensional requirements of the District Plan and are considered to be suitable for their intended use.

The estimated daily traffic generation of the development is 572 vehicles/day. This is very low number of daily traffic movements from a traffic engineering perspective and will be easily accommodated by Lamb Road and the surrounding network.

It is generally accepted that peak hour volumes are in the order of 10 % of the daily total, with this resulting in approximately 57 vehicle movements/hour occurring in the peak periods. This volume of traffic is expected to occur without issue at the two-way access connections to Lamb Road.

## Appendix

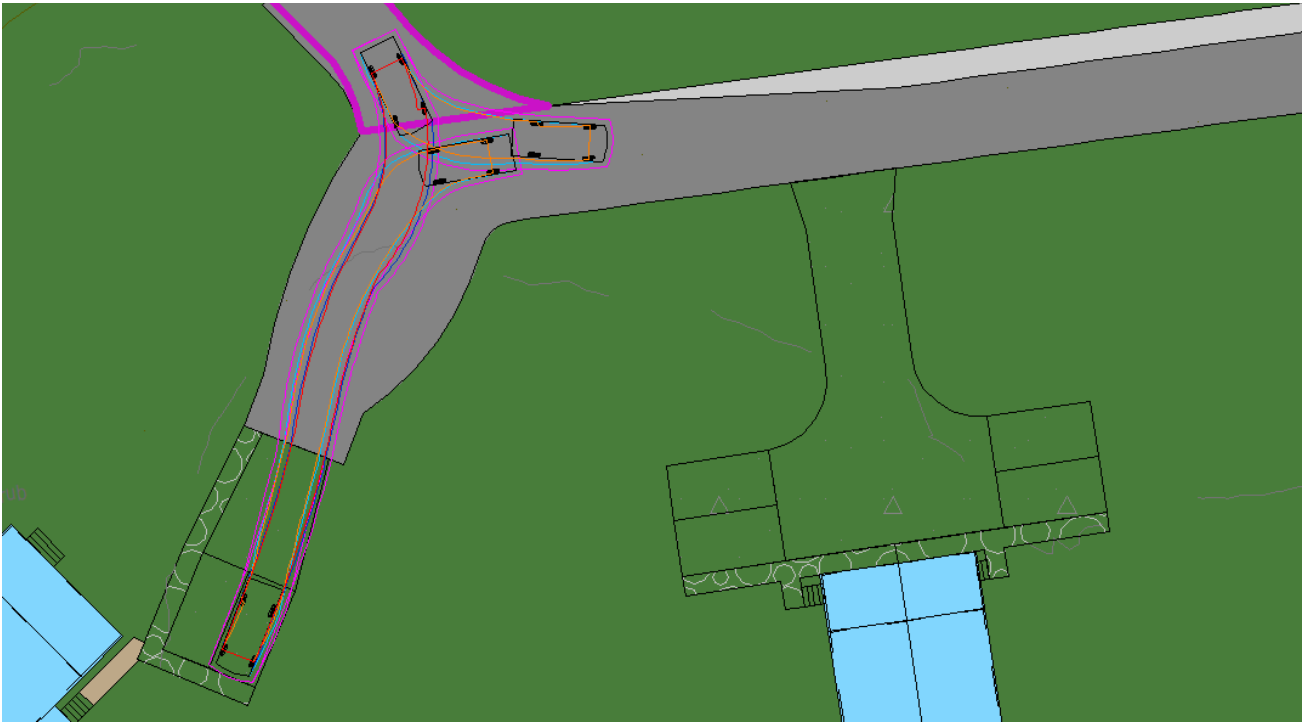


Figure 25: Road 1- Unit 1 Parking Space 1 – 85<sup>th</sup> percentile car.

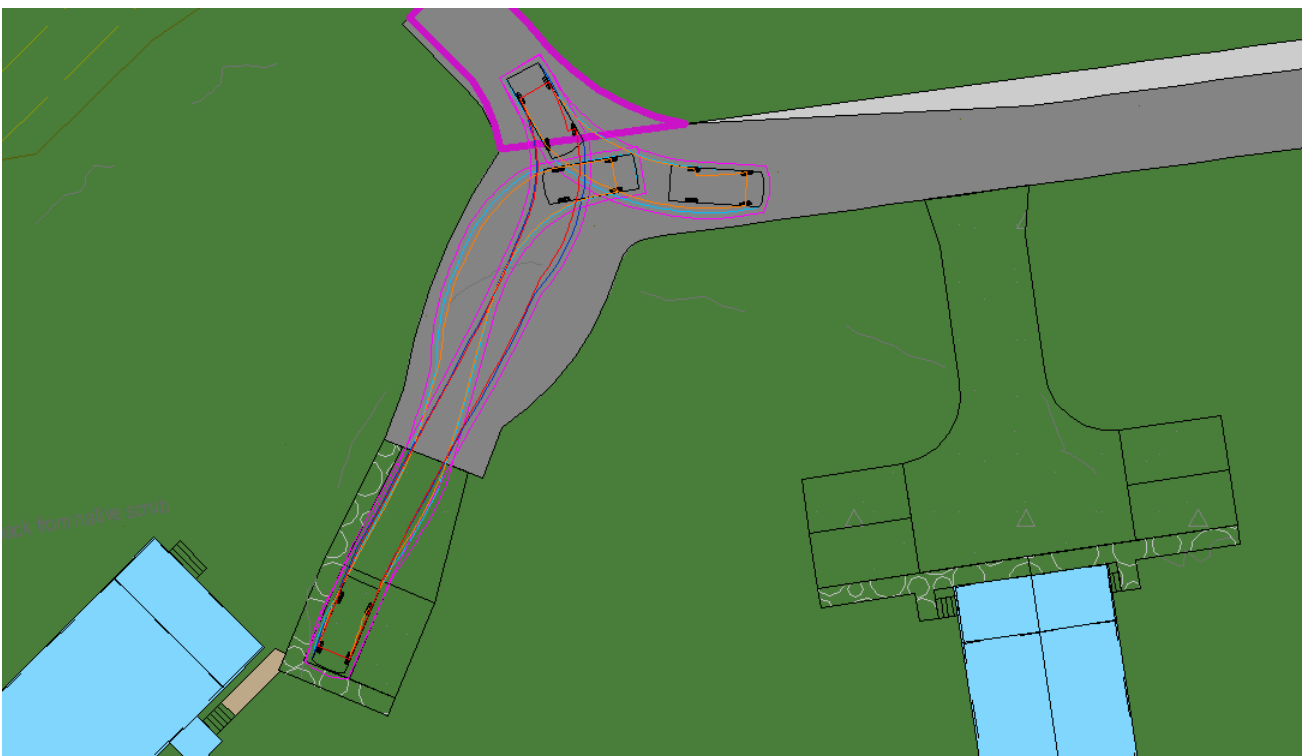


Figure 26: Road 1- Unit 1 Parking Space 2 – 85<sup>th</sup> percentile car.

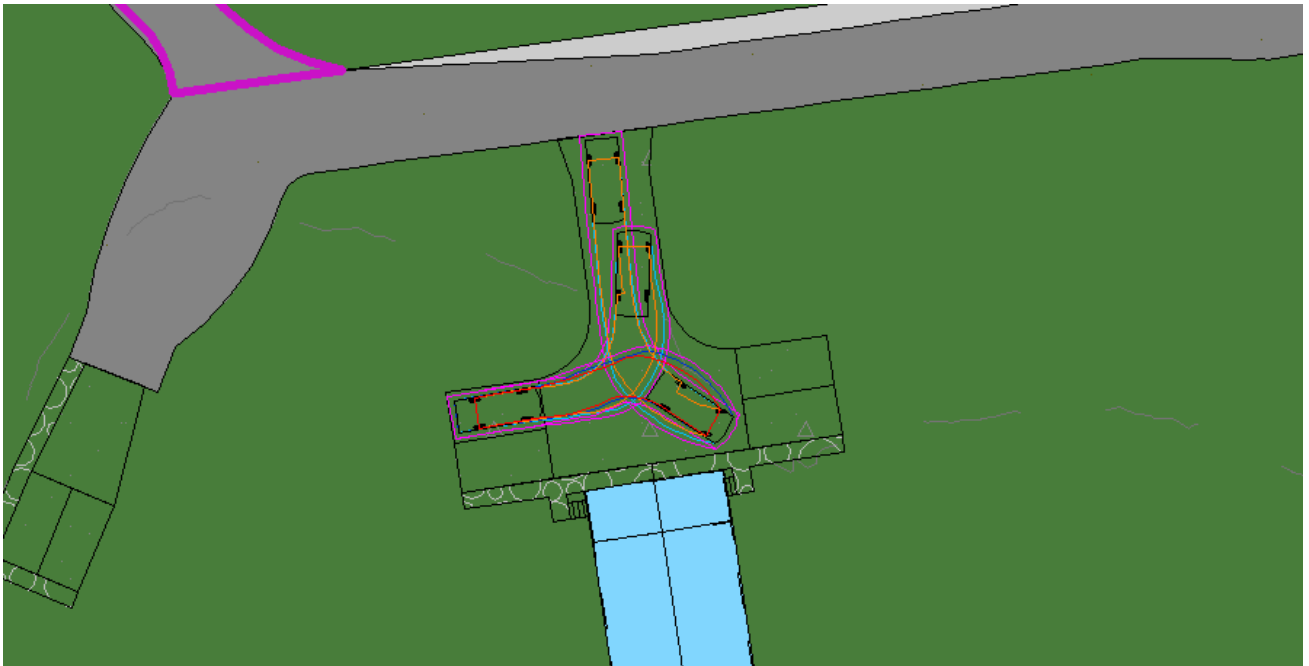


Figure 27: Road 1- Unit 2a Parking Space 1 – 85<sup>th</sup> percentile car.

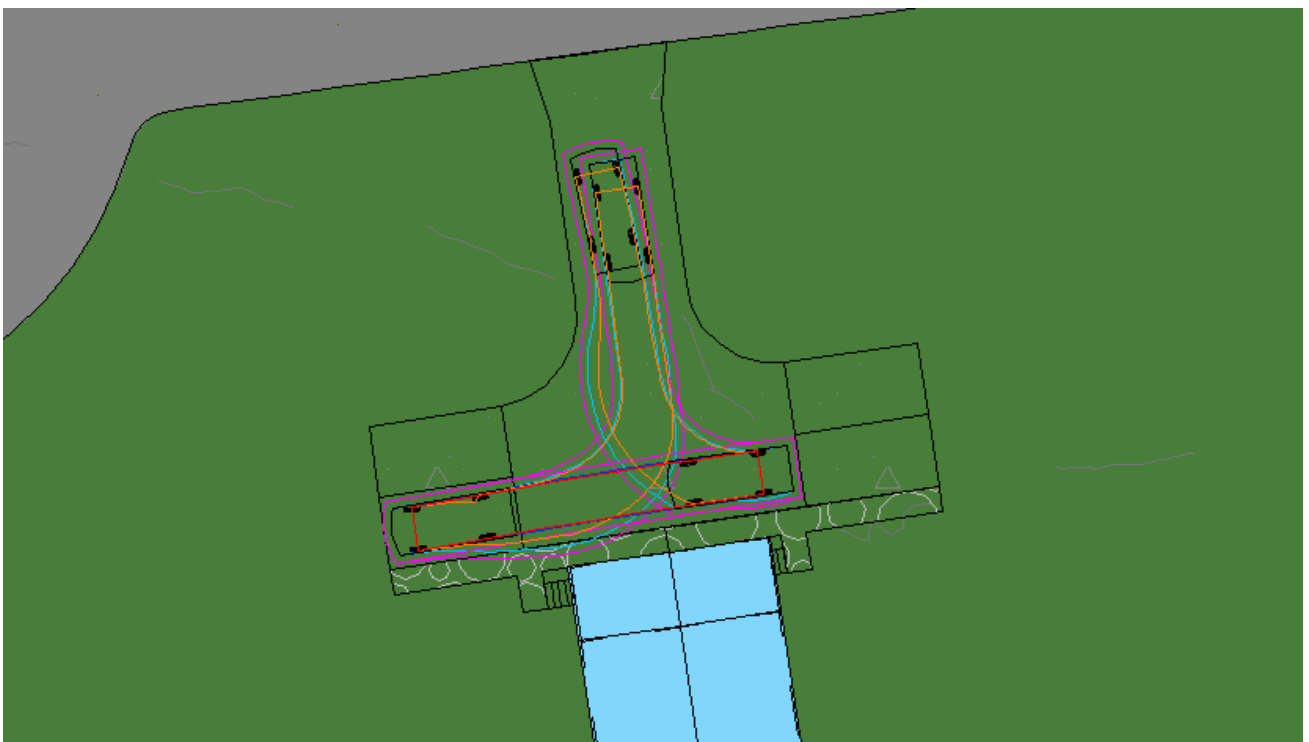


Figure 28: Road 1- Unit 2a Parking Space 2 – 85<sup>th</sup> percentile car.

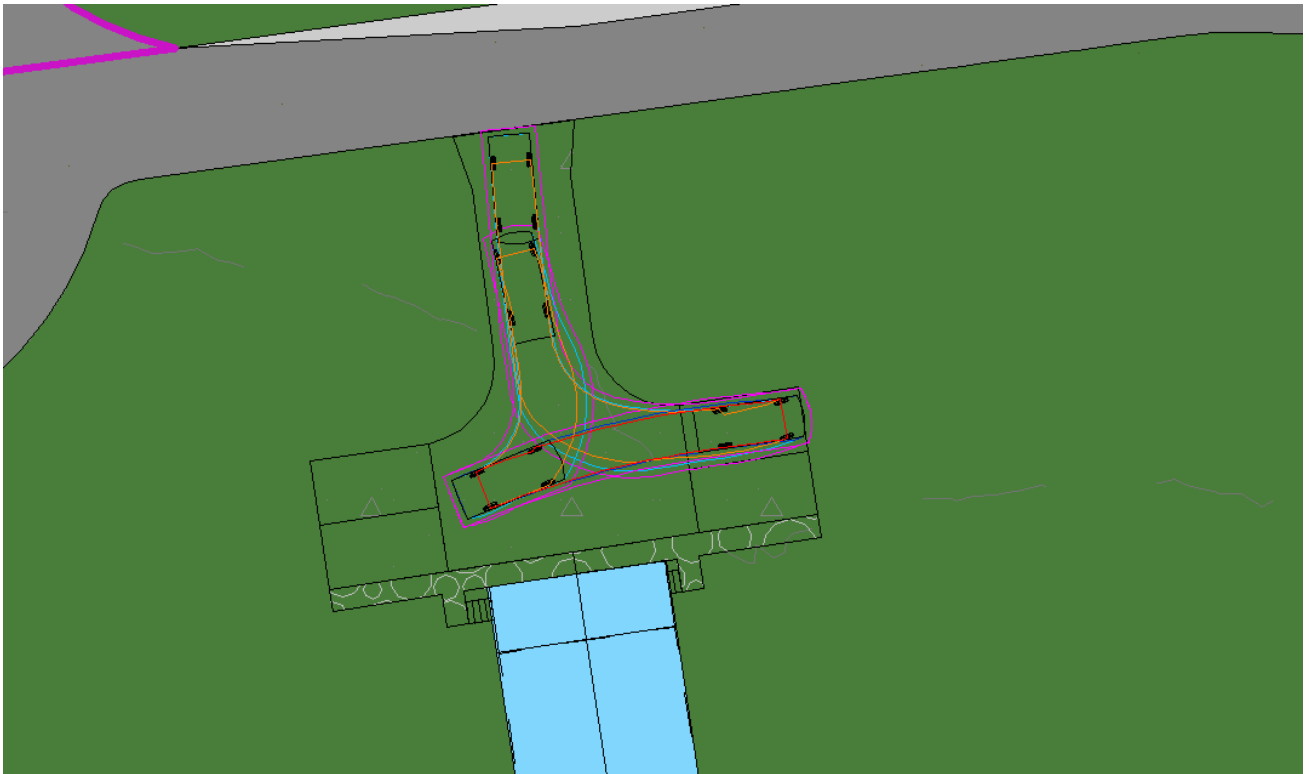


Figure 29: Road 1 Unit 2b Parking Space 1 – 85<sup>th</sup> percentile car.

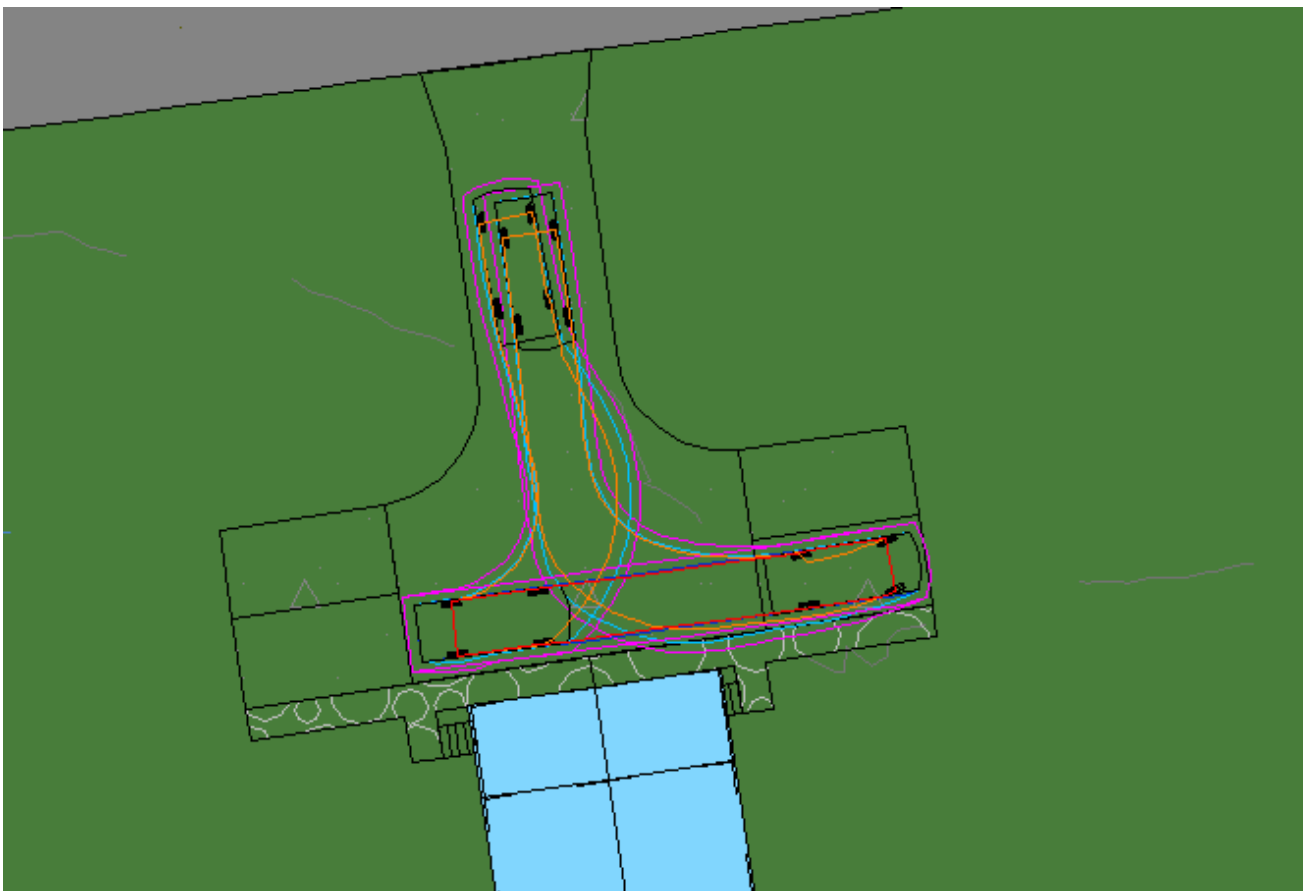


Figure 30: Road 1- Unit 2b Parking Space 2 – 85<sup>th</sup> percentile car.

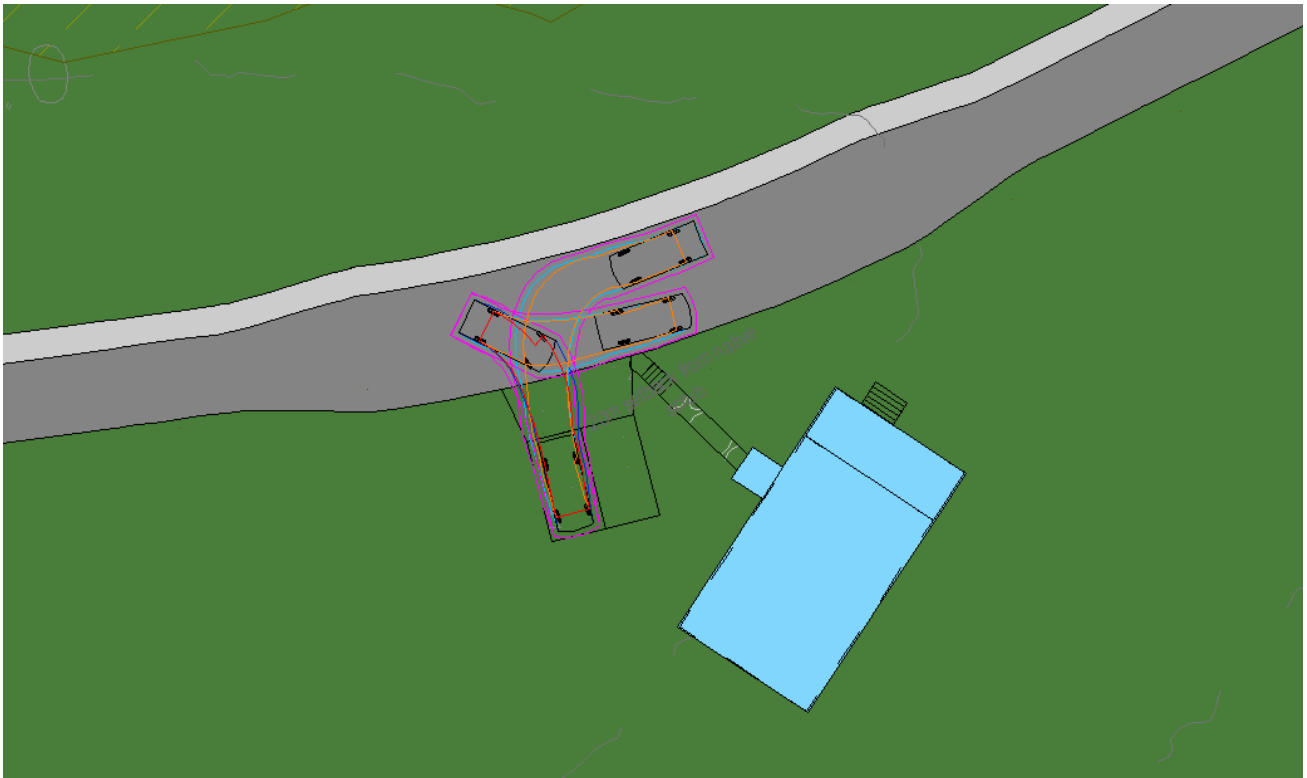


Figure 31: Road 1 Unit 3 Parking Space 1 – 85<sup>th</sup> percentile car.

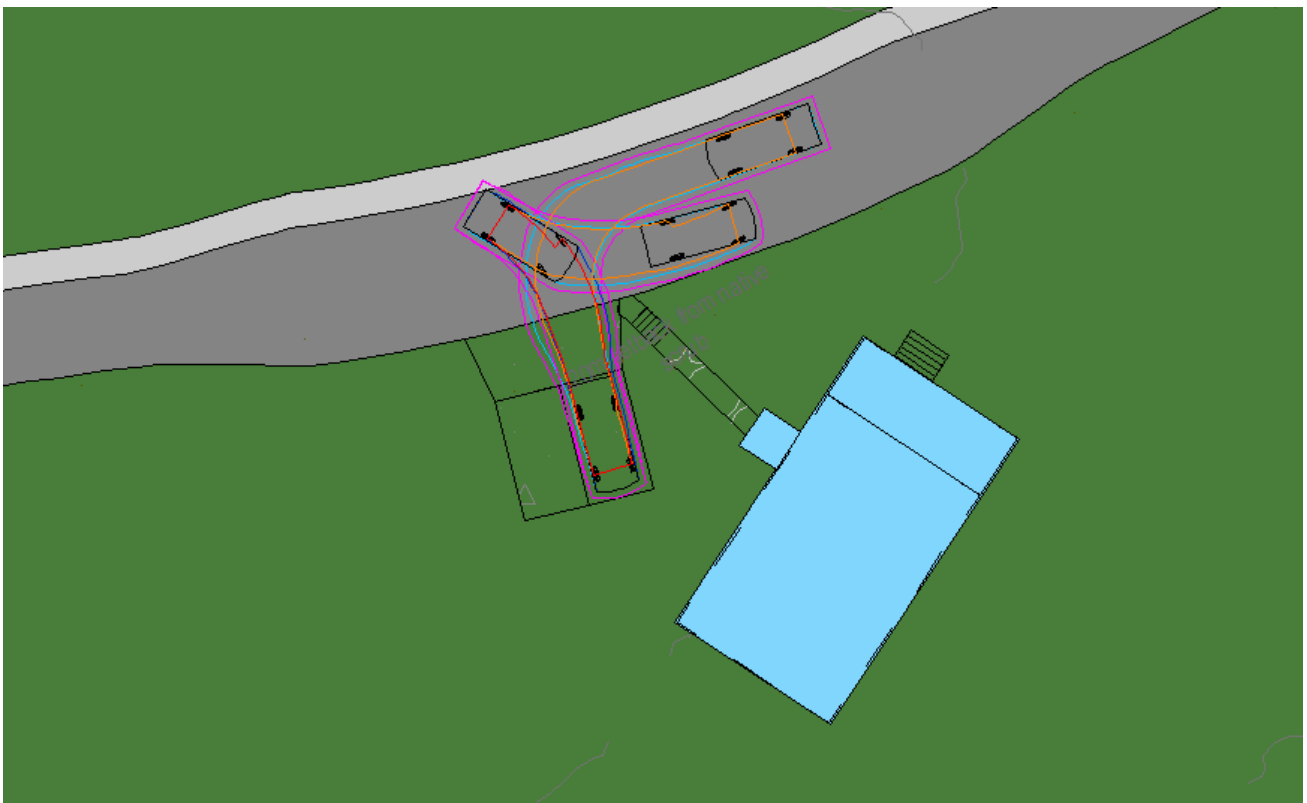


Figure 32: Road 1- Unit 3 Parking Space 2 – 85<sup>th</sup> percentile car.



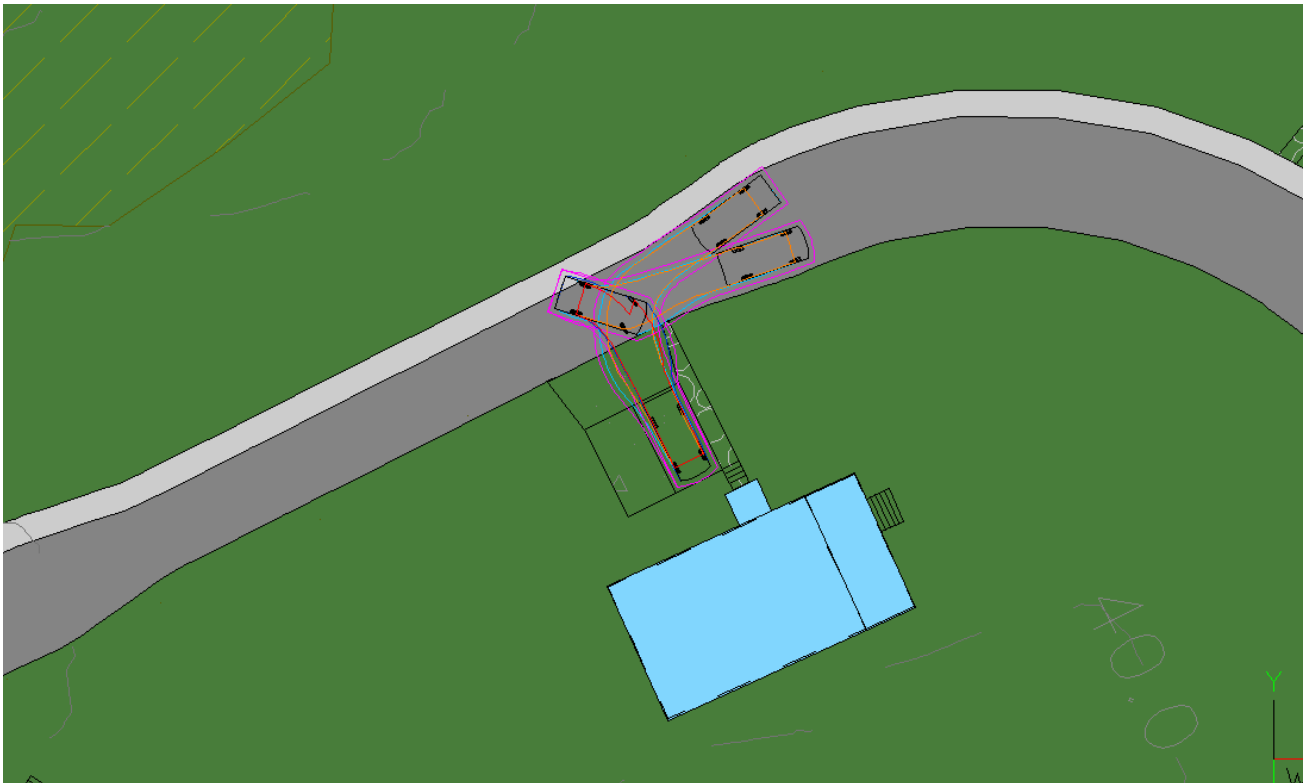


Figure 33: Road 1 Unit 4 Parking Space 1 – 85<sup>th</sup> percentile car.

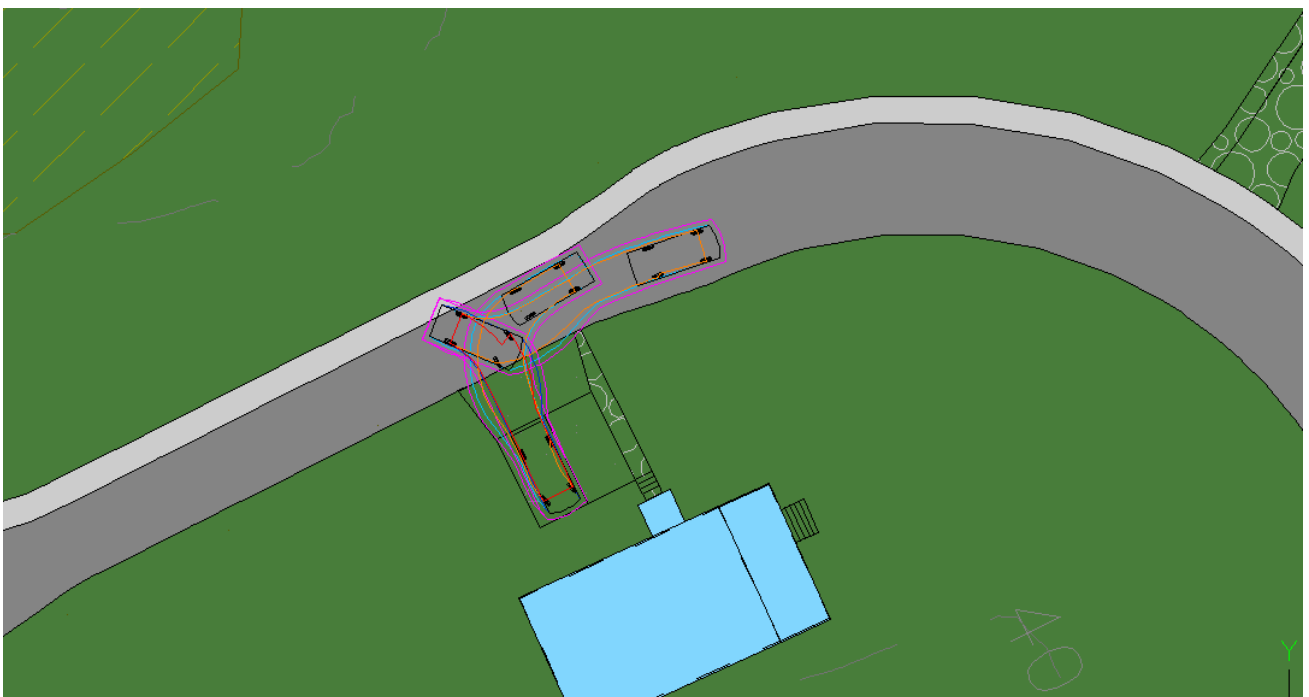


Figure 34: Road 1 Unit 4 Parking Space 2 – 85<sup>th</sup> percentile car.

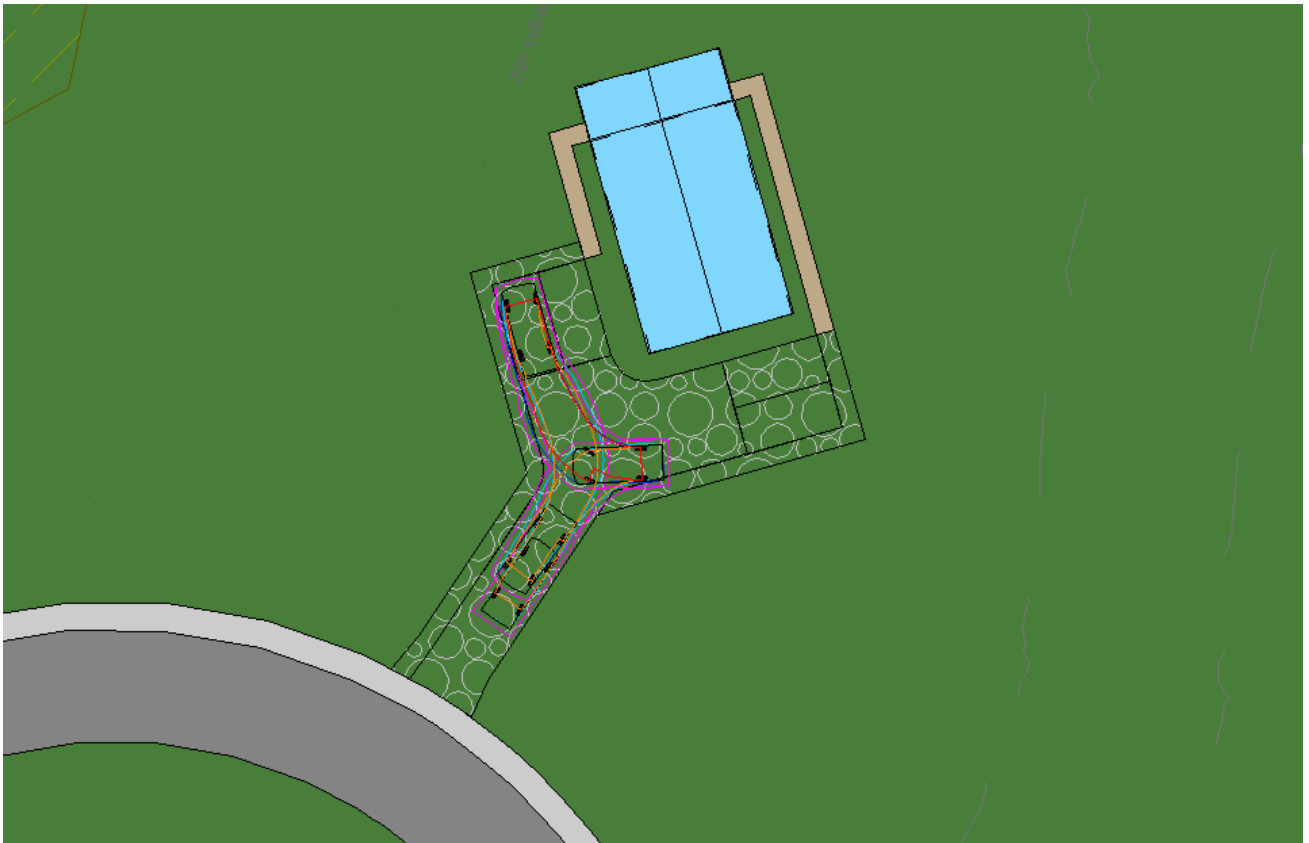


Figure 35: Road 1- Unit 5a Parking Space 1 – 85<sup>th</sup> percentile car.



Figure 36: Road 1- Unit 5a Parking Space 2 – 85<sup>th</sup> percentile car.

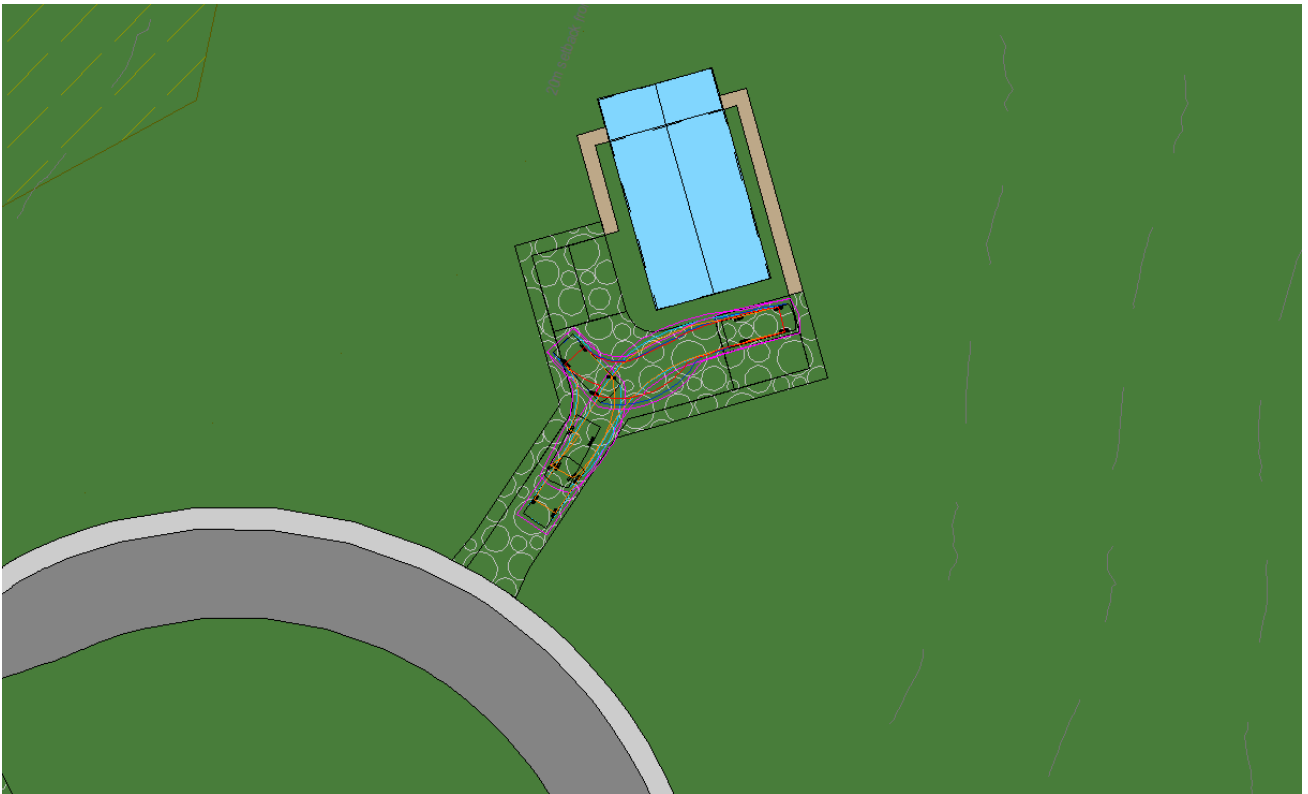


Figure 37: Road 1- Unit 5b Parking Space 1 – 85<sup>th</sup> percentile car.



Figure 38: Road 1- Unit 5b Parking Space 2 – 85<sup>th</sup> percentile car.

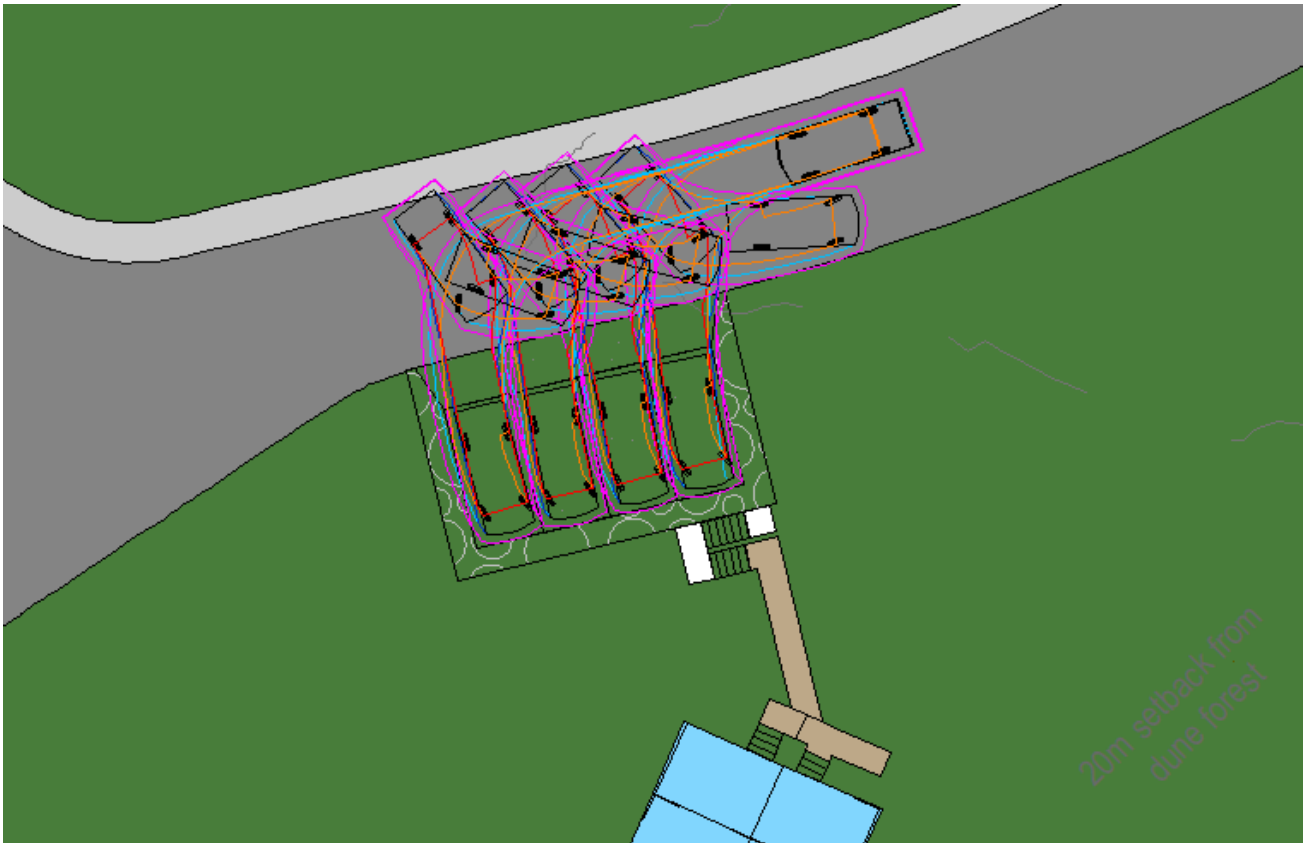


Figure 39: Road 1- Unit 6a and Unit 6b (4 spaces) – 85<sup>th</sup> percentile car.

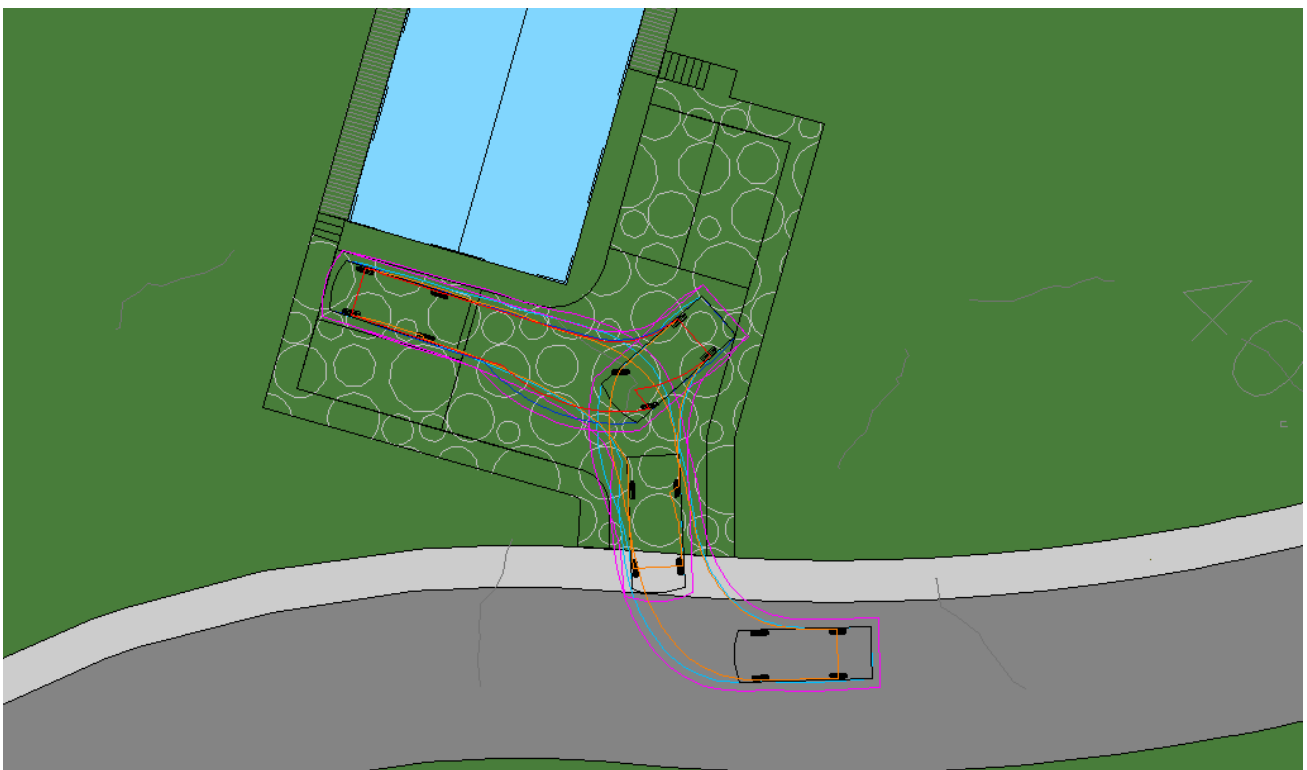


Figure 40: Road 1- Unit 7a Parking Space 1 – 85<sup>th</sup> percentile car.

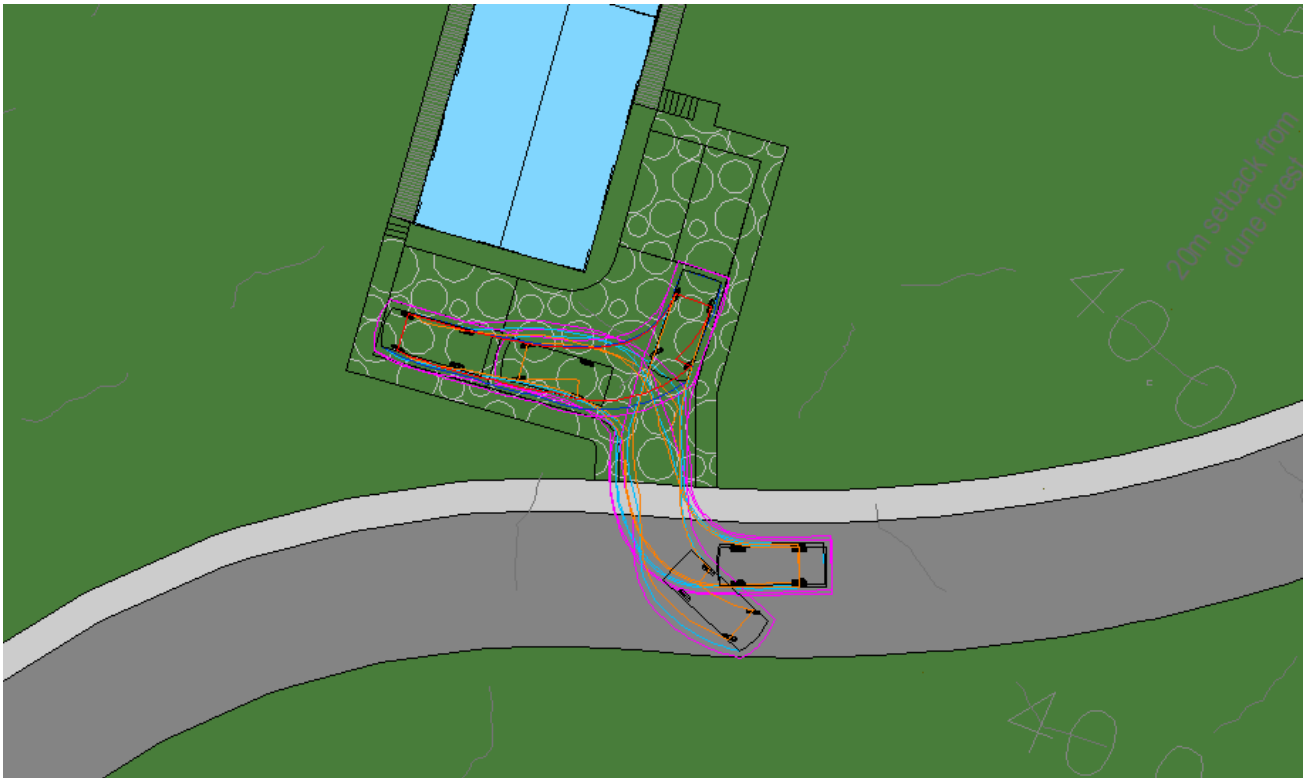


Figure 41: Road 1- Unit 7a Parking Space 2 – 85<sup>th</sup> percentile car.

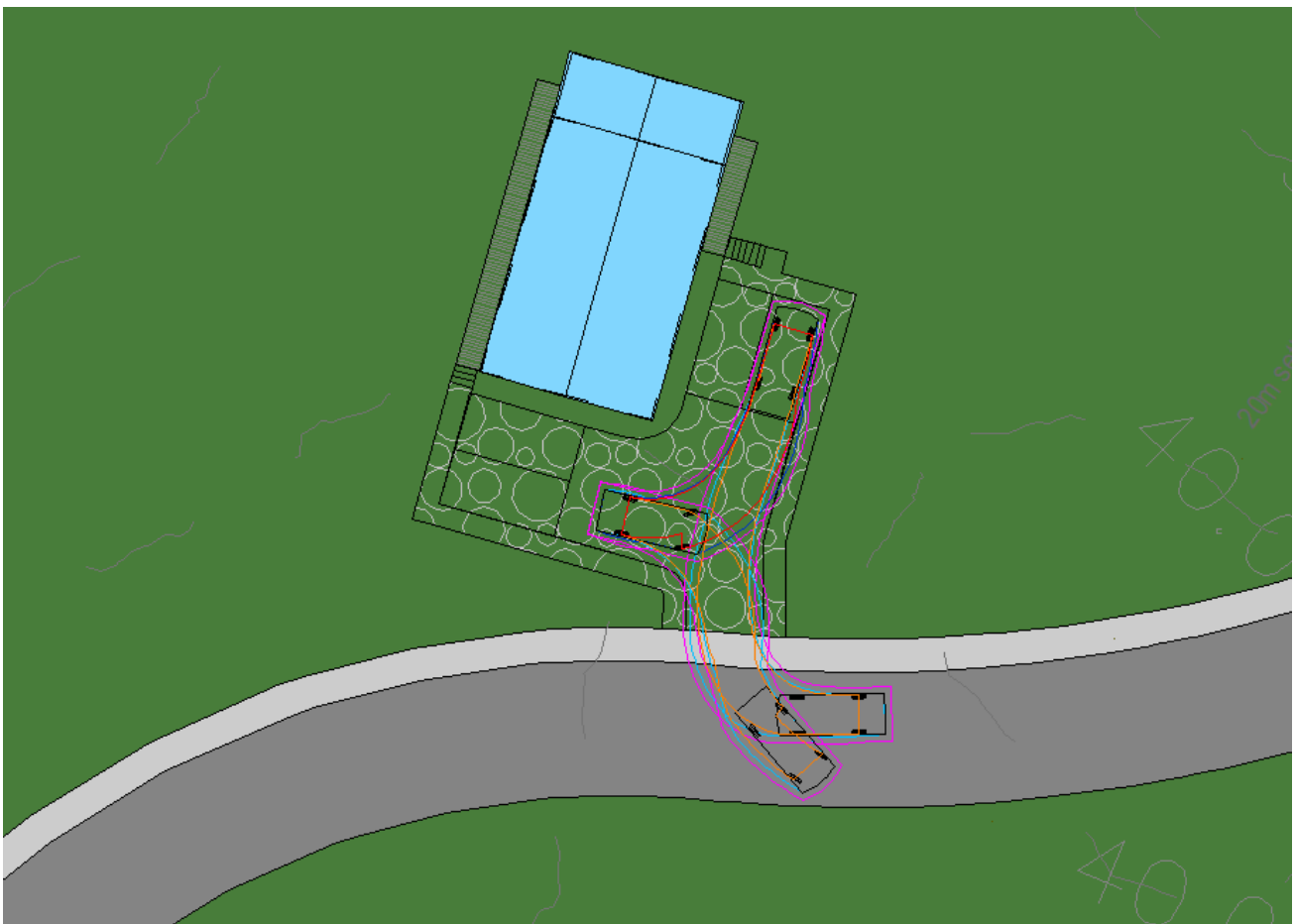


Figure 42: Road 1- Unit 7b Parking Space 1 – 85<sup>th</sup> percentile car.

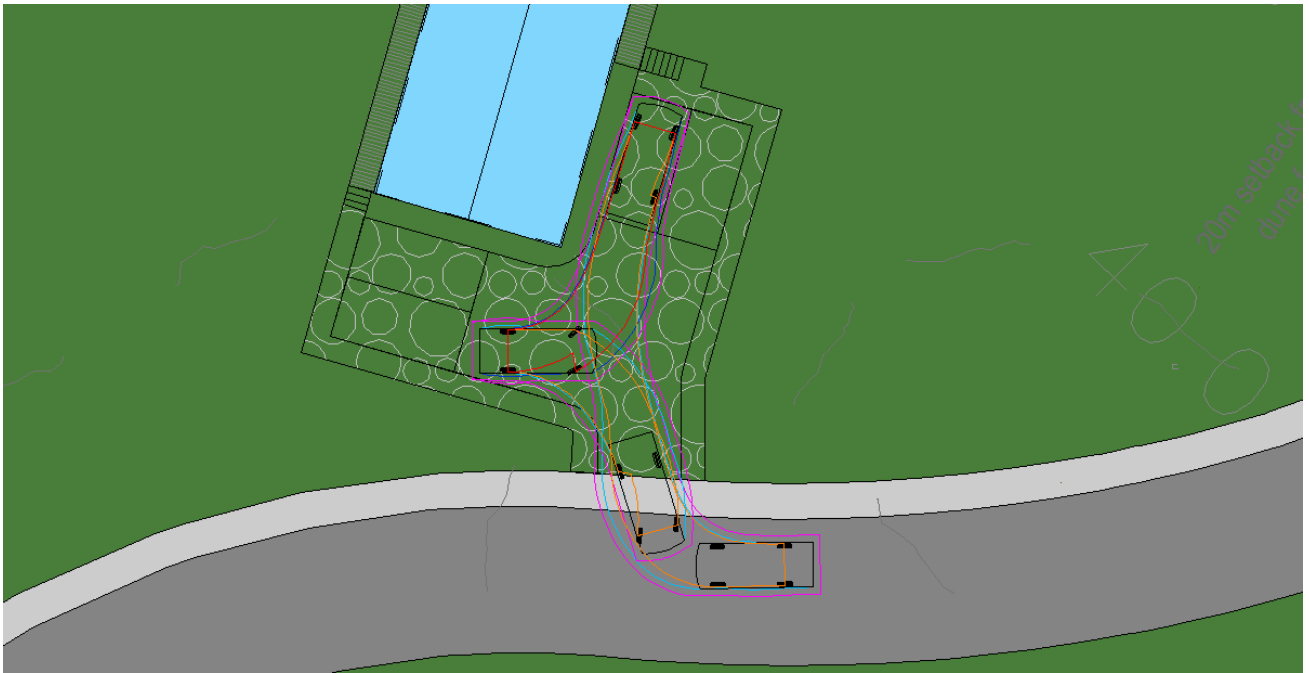


Figure 43: Road 1- Unit 7b Parking Space 2 – 85<sup>th</sup> percentile car.

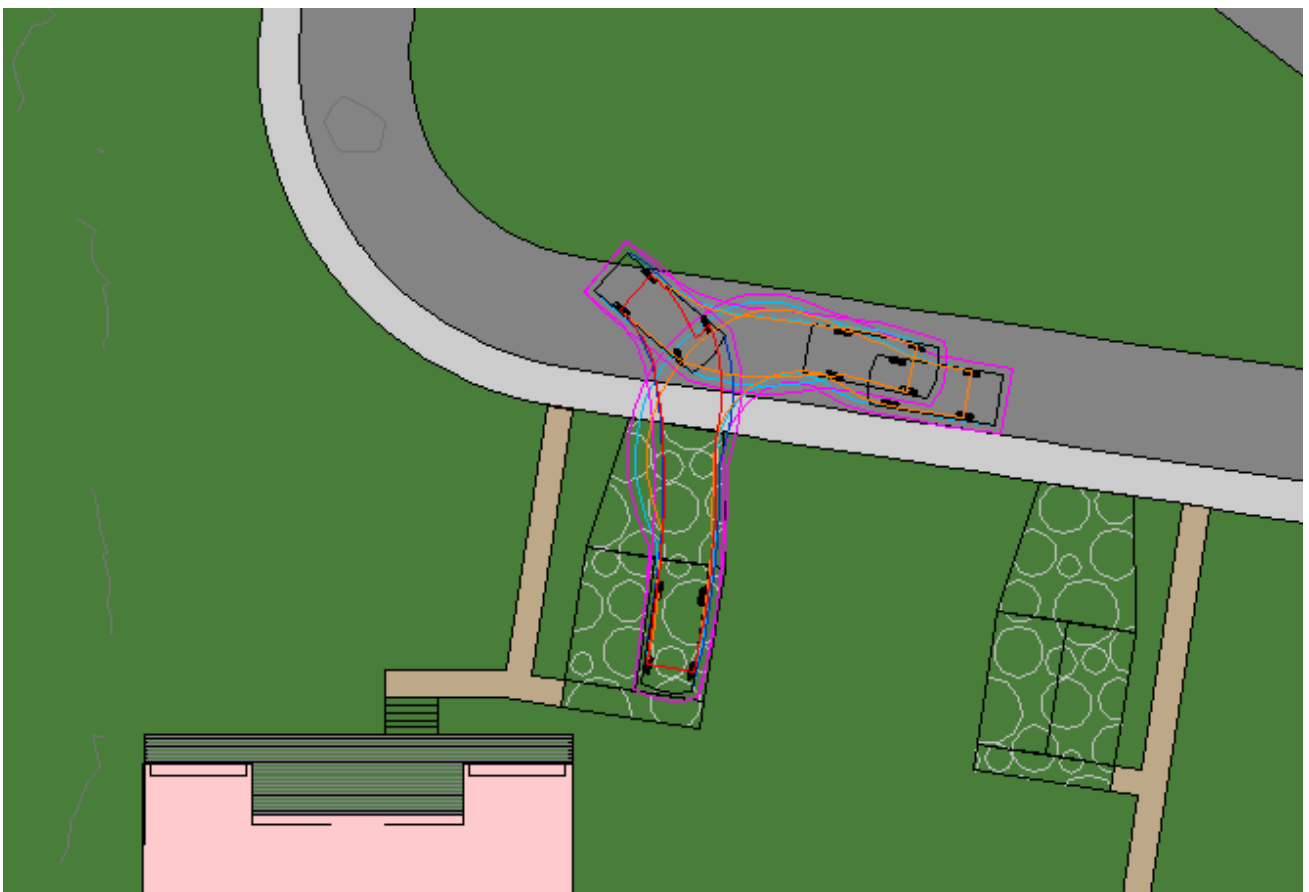


Figure 44: Road 2B- Unit 1 Parking Space 1 – 85<sup>th</sup> percentile car.

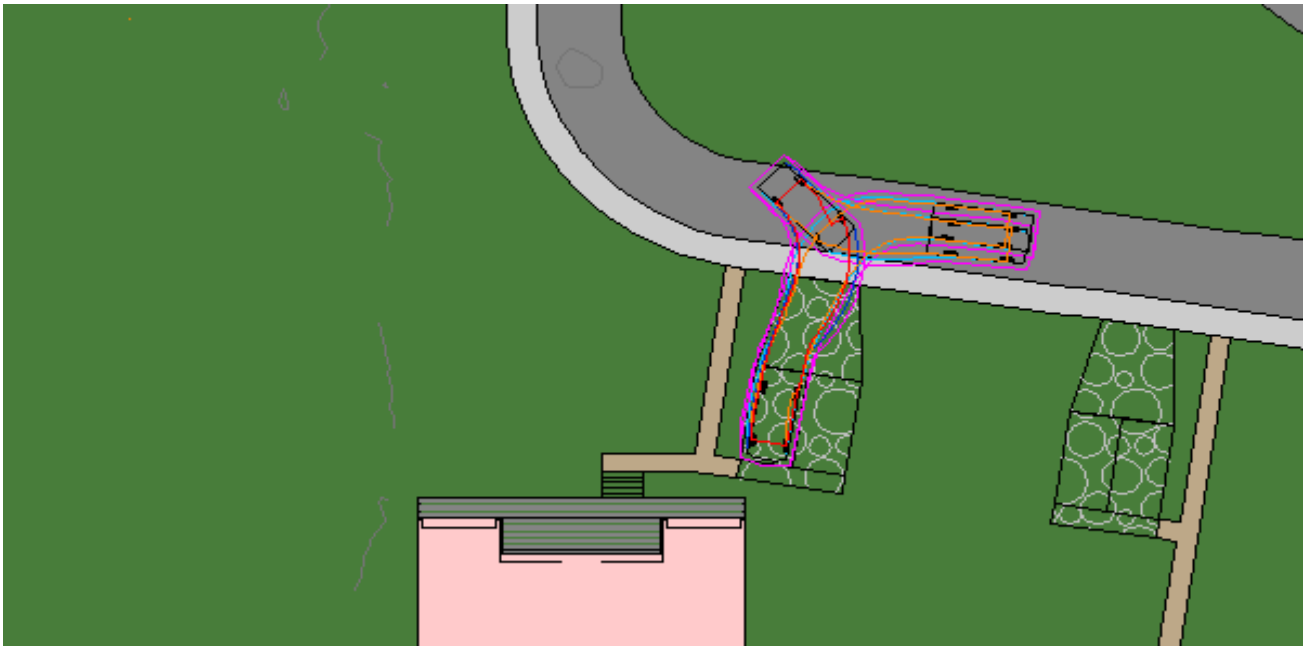


Figure 45: Road 2B- Unit 1 Parking Space 2 – 85<sup>th</sup> percentile car.

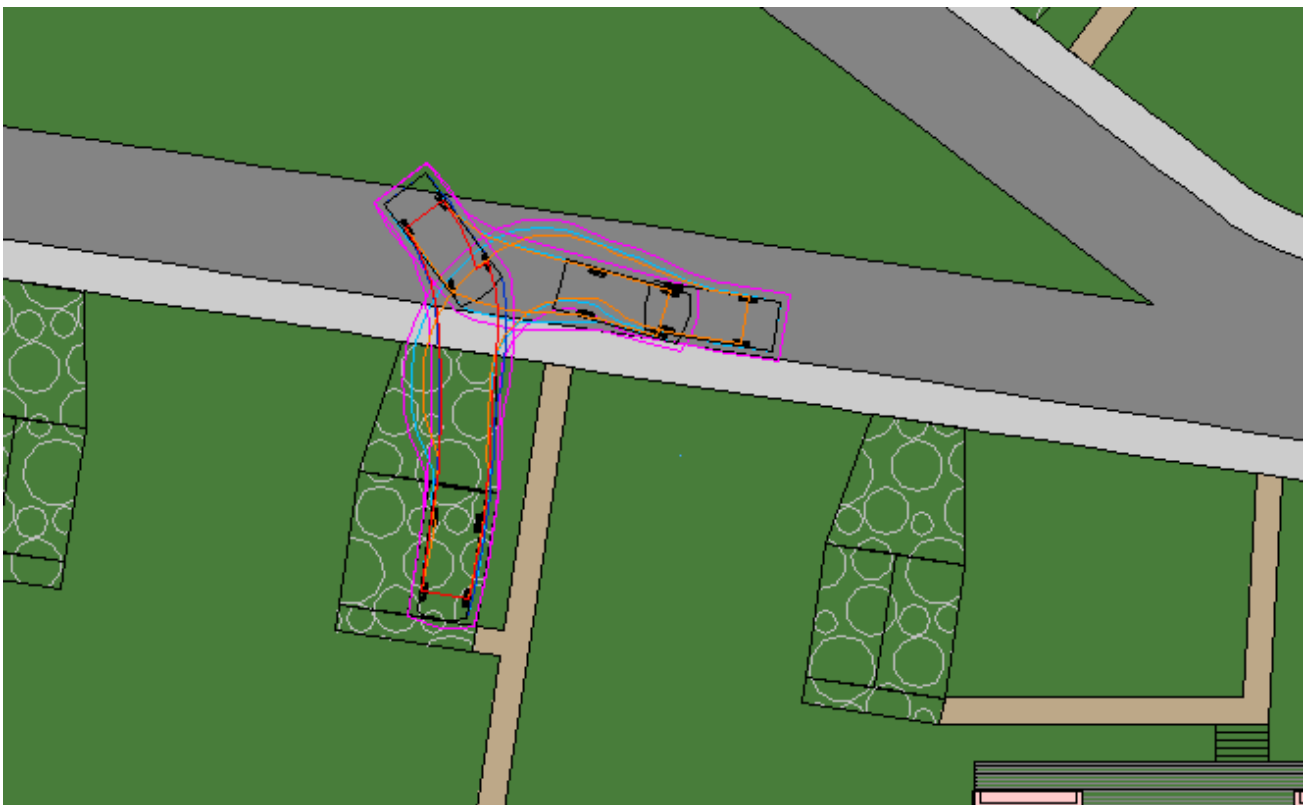


Figure 46: Road 2B- Unit 2 Parking Space 1 – 85<sup>th</sup> percentile car.

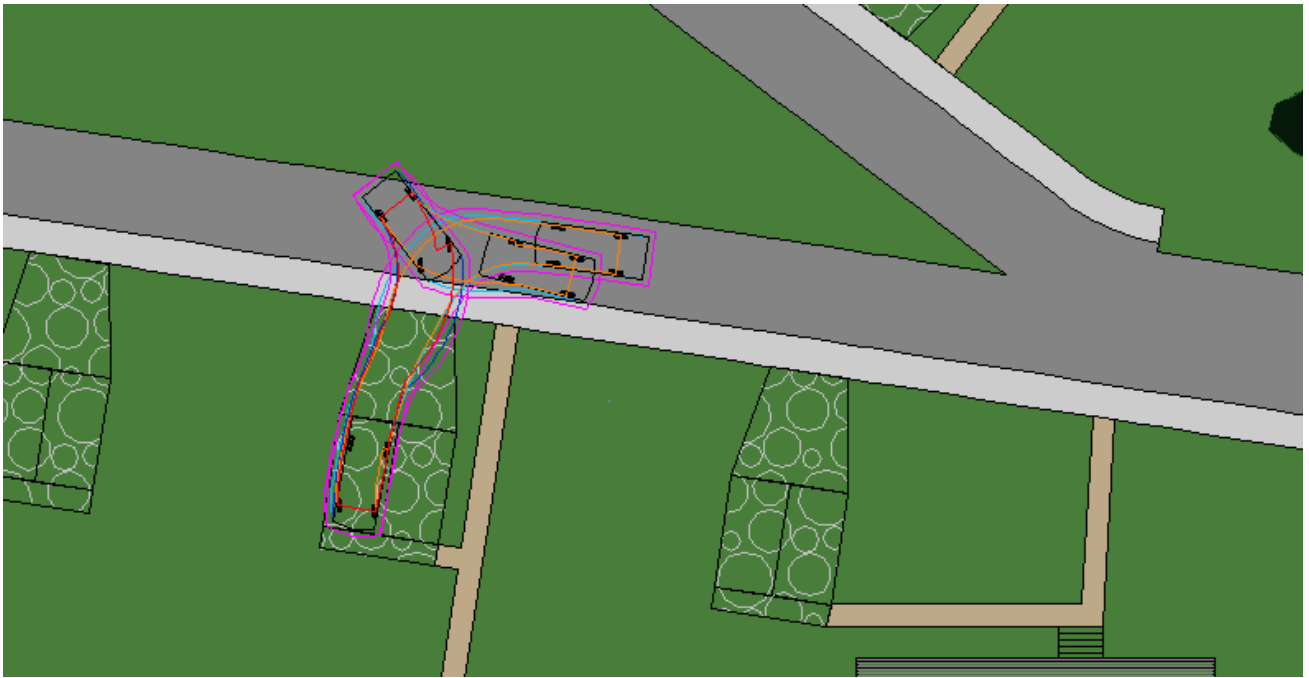


Figure 47: Road 2B - Unit 2 Parking Space 2 – 85<sup>th</sup> percentile car.

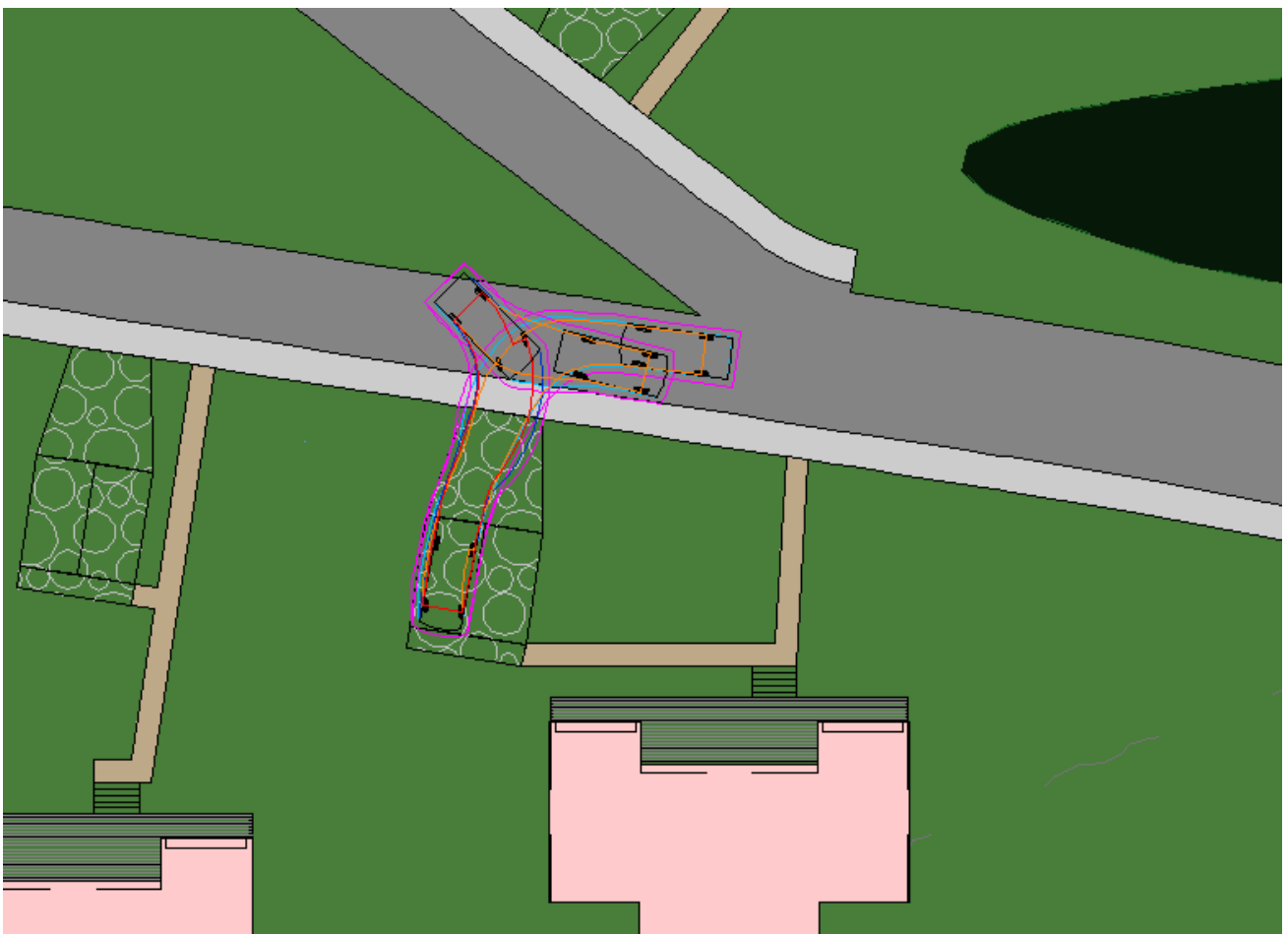


Figure 48: Road 2B- Unit 3 Parking Space 1 – 85<sup>th</sup> percentile car.



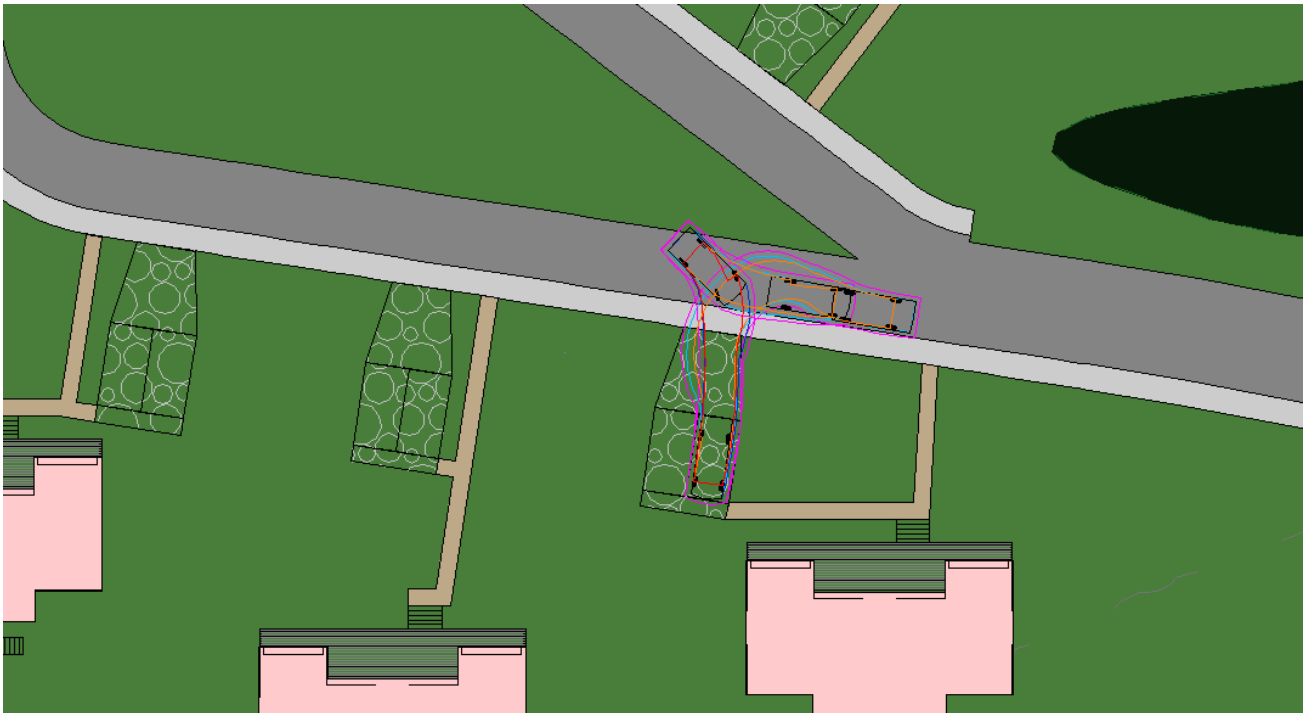


Figure 49: Road 2B - Unit 3 Residential Parking Space 2 – 85<sup>th</sup> percentile car.

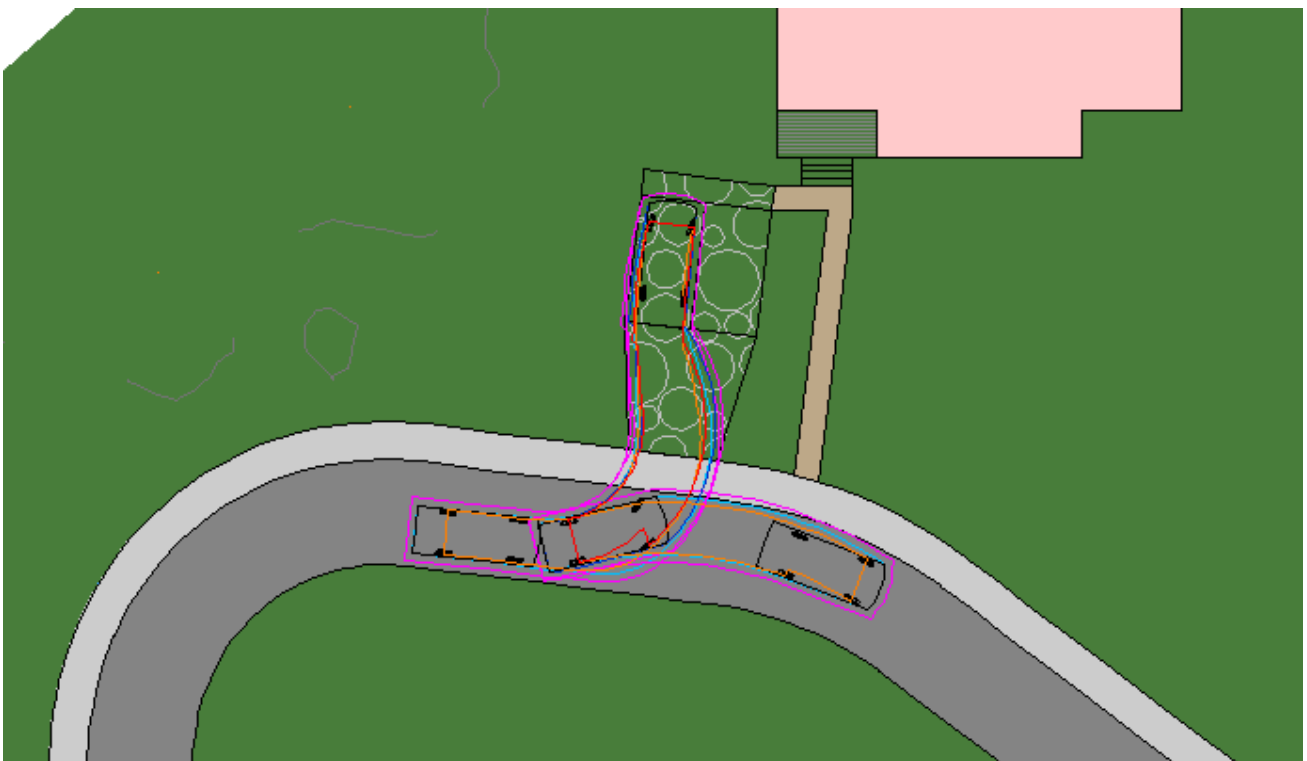


Figure 50: Road 2B - Unit 4 Parking Space 1 – 85<sup>th</sup> percentile car.

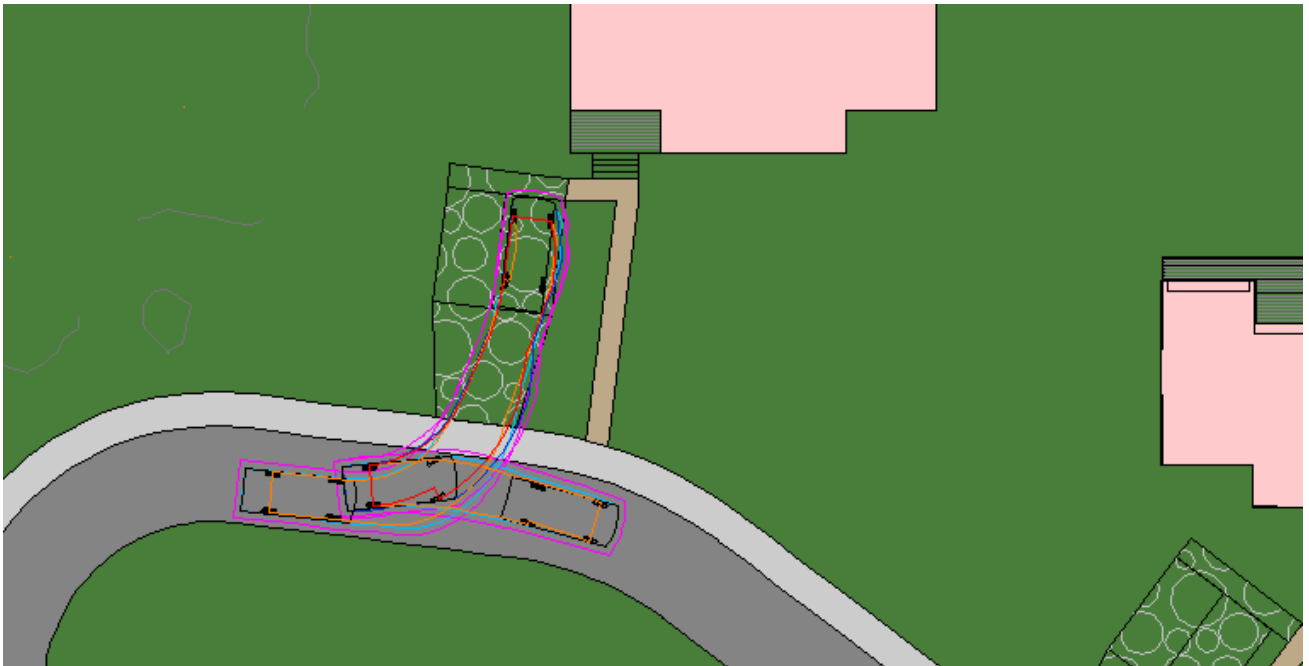


Figure 51: Road 2B - Unit 4 Parking Space 2 – 85<sup>th</sup> percentile car.

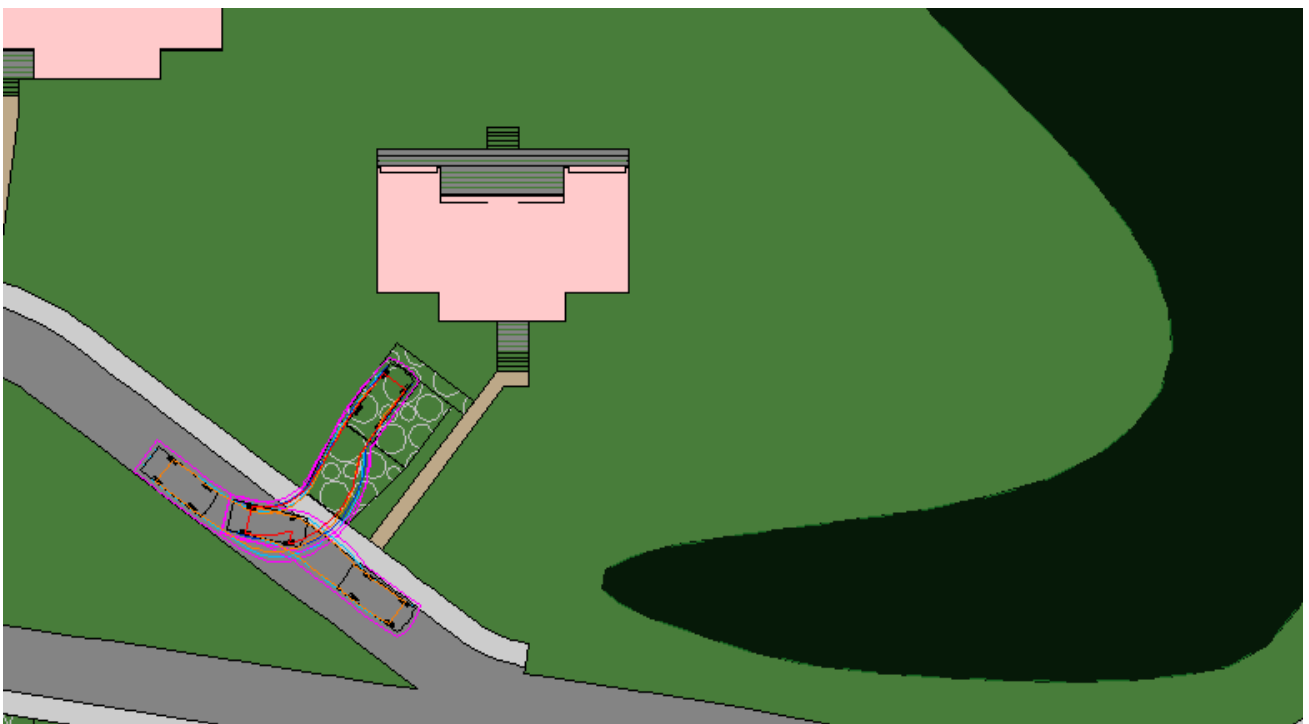


Figure 52: Road 2B - Unit 5 Parking Space 1 – 85<sup>th</sup> percentile car.

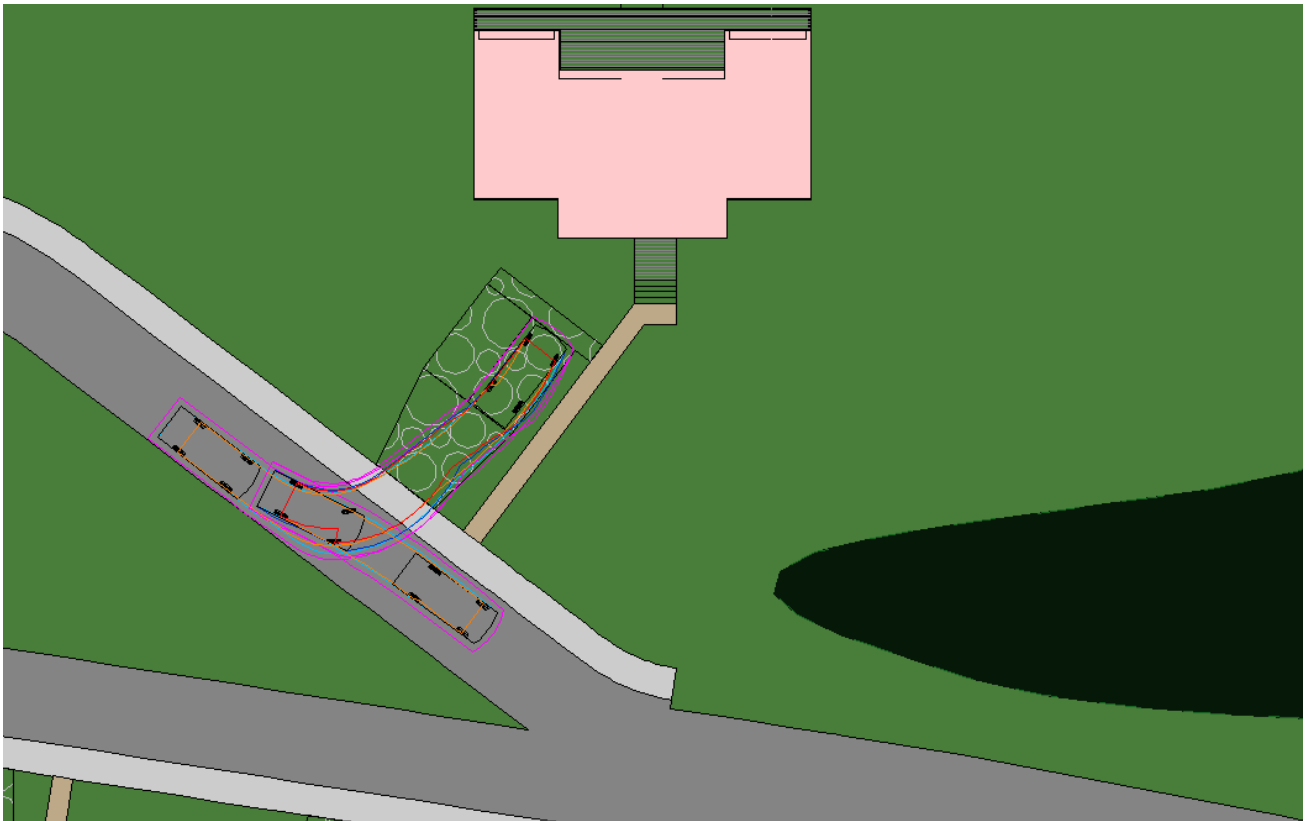


Figure 53: Road 2B- Unit 5 Parking Space 2 – 85<sup>th</sup> percentile car.

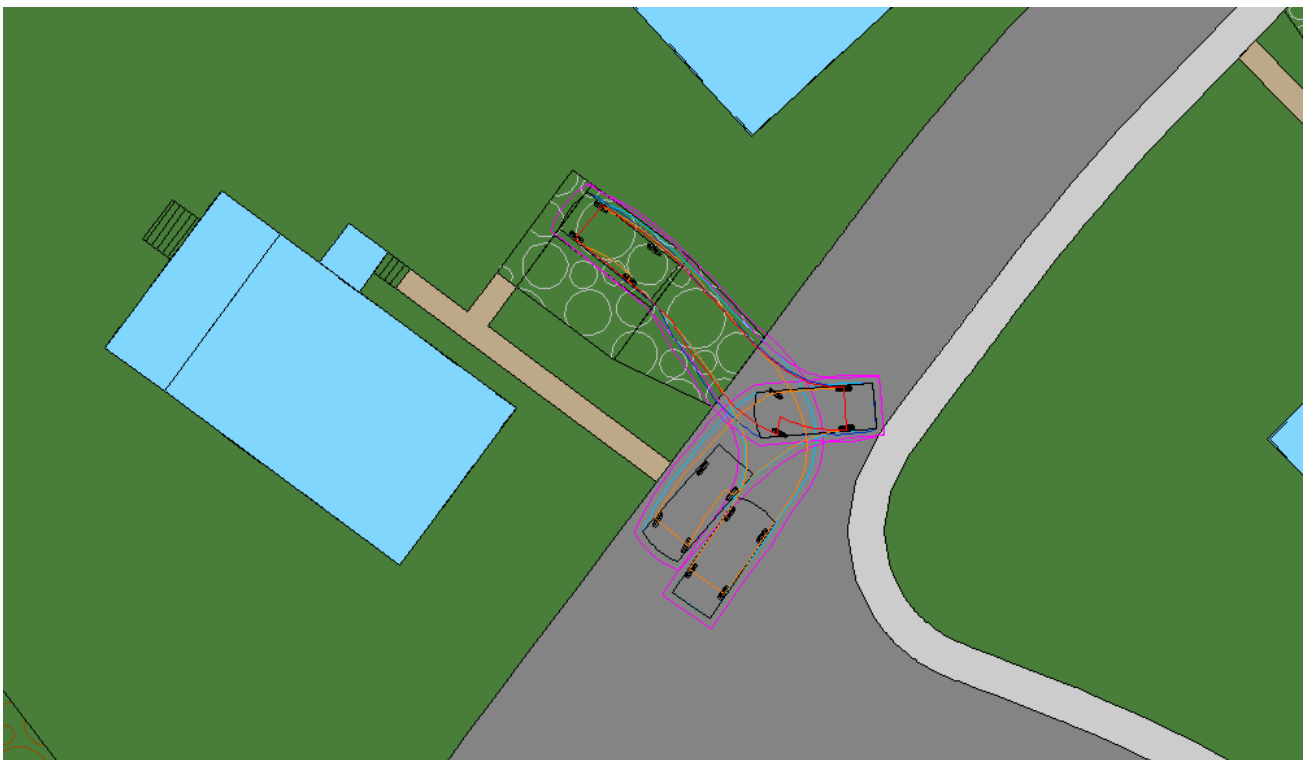


Figure 54: Road 2A- Unit 6 Parking Space 1 – 85<sup>th</sup> percentile car.

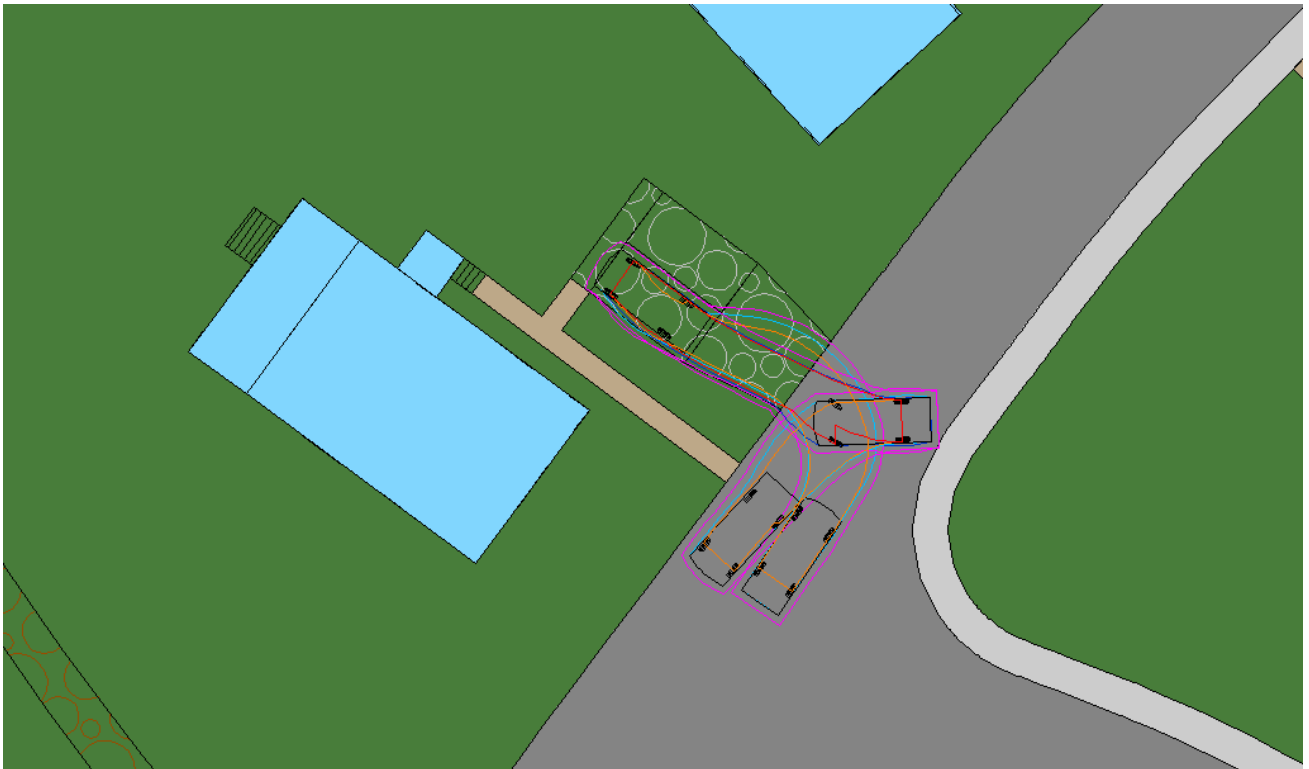


Figure 55: Road 2A- Unit 6 Parking Space 2 – 85<sup>th</sup> percentile car.



Figure 56: Road 2A- Unit 7 Parking Space 1 – 85<sup>th</sup> percentile car.

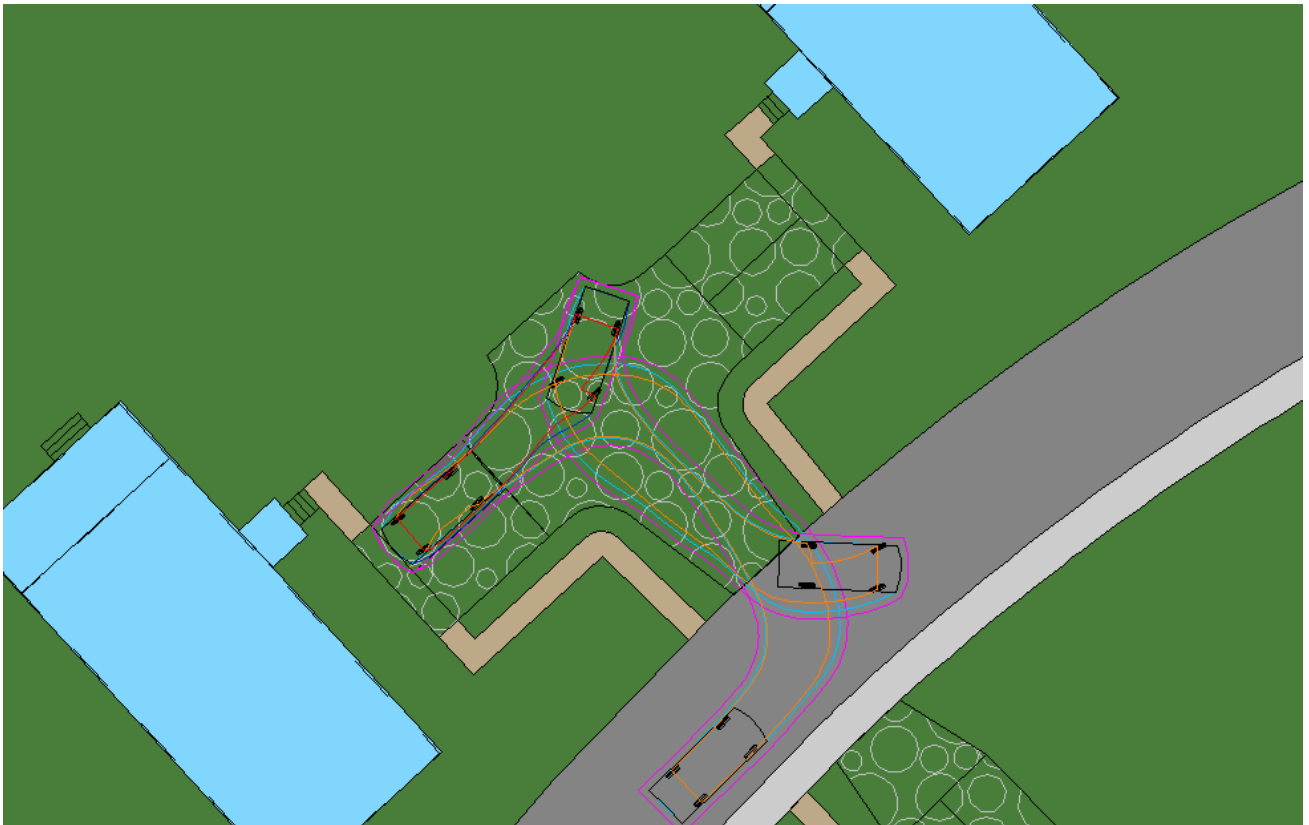


Figure 57: Road 2A- Unit 7 Parking Space 2 – 85<sup>th</sup> percentile car.

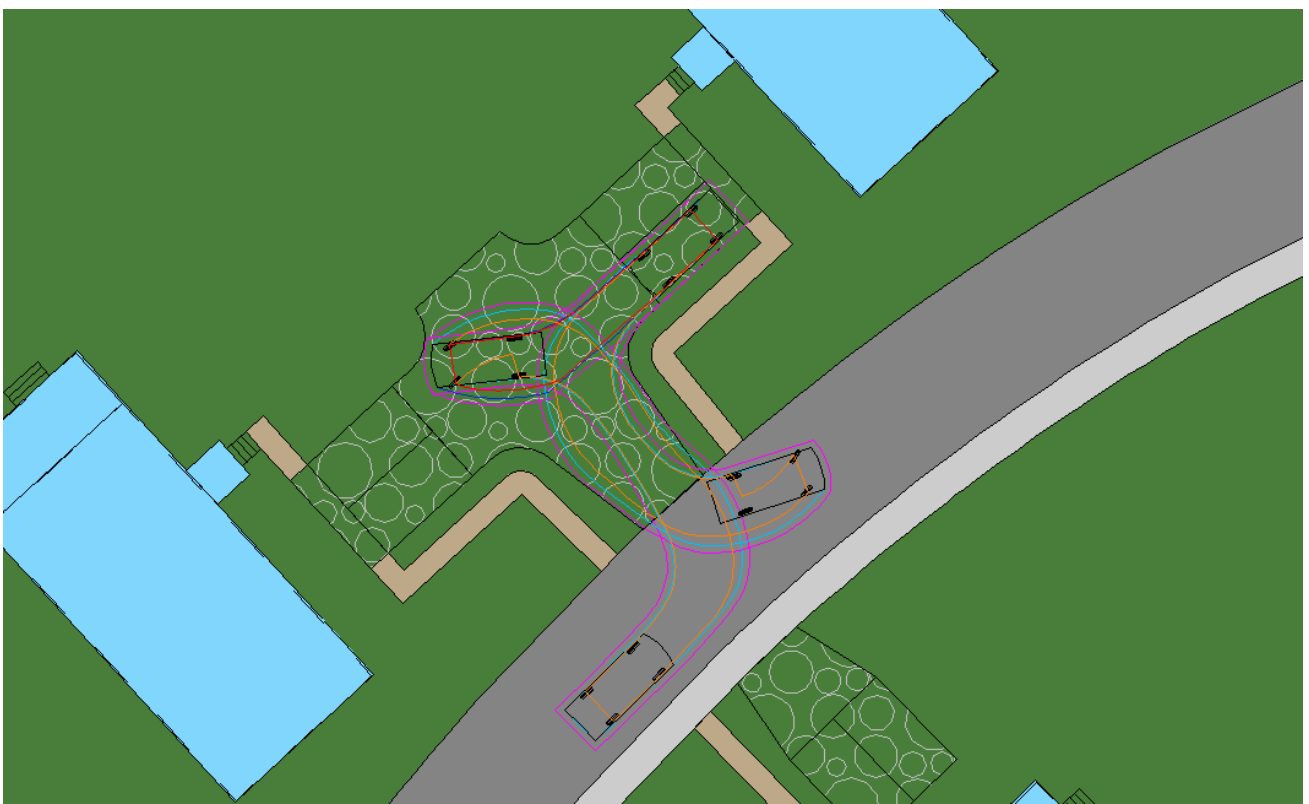


Figure 58: Road 2A- Unit 8 Parking Space 1 – 85<sup>th</sup> percentile car.

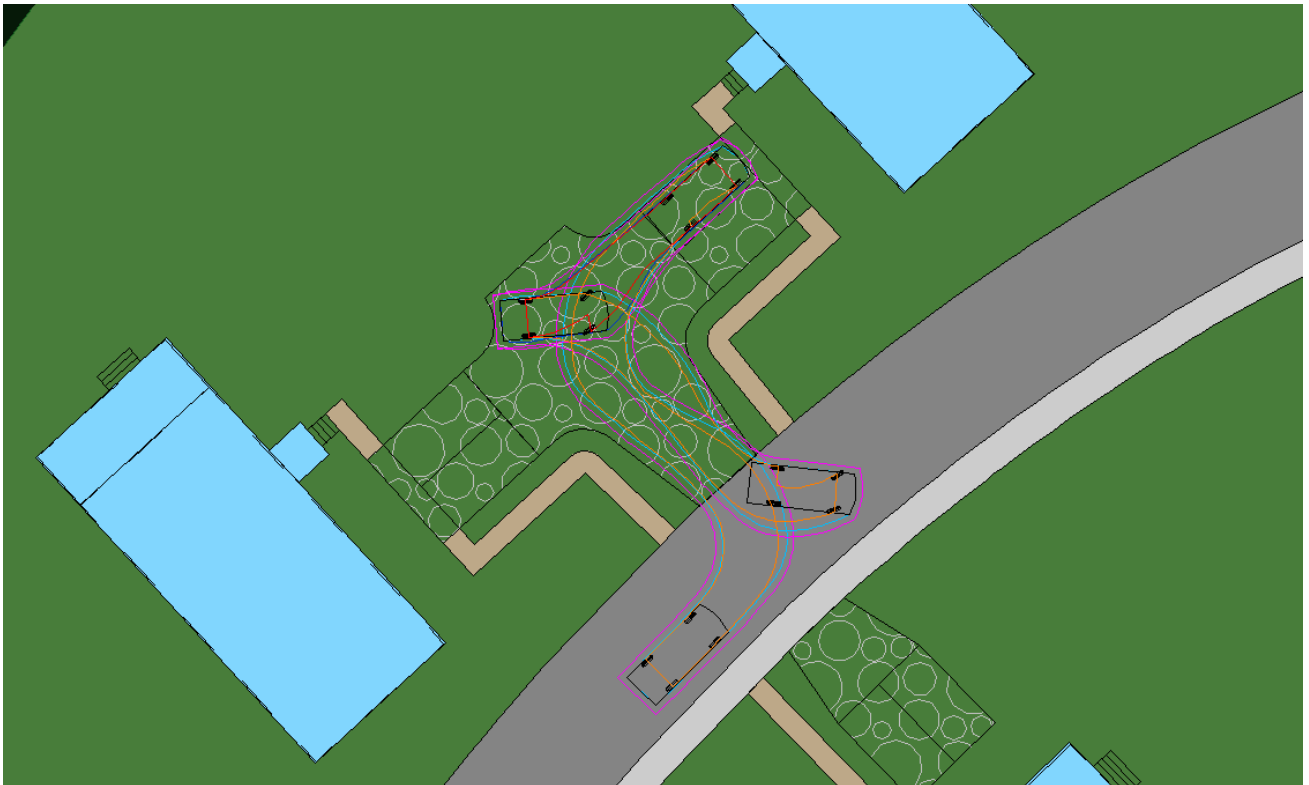


Figure 59: Road 2A- Unit 8 Parking Space 2 – 85<sup>th</sup> percentile car.



Figure 60: Road 2A- Unit 9 Parking Space 1 – 85<sup>th</sup> percentile car.



Figure 61: Road 2A- Unit 9 Parking Space 2 – 85<sup>th</sup> percentile car.

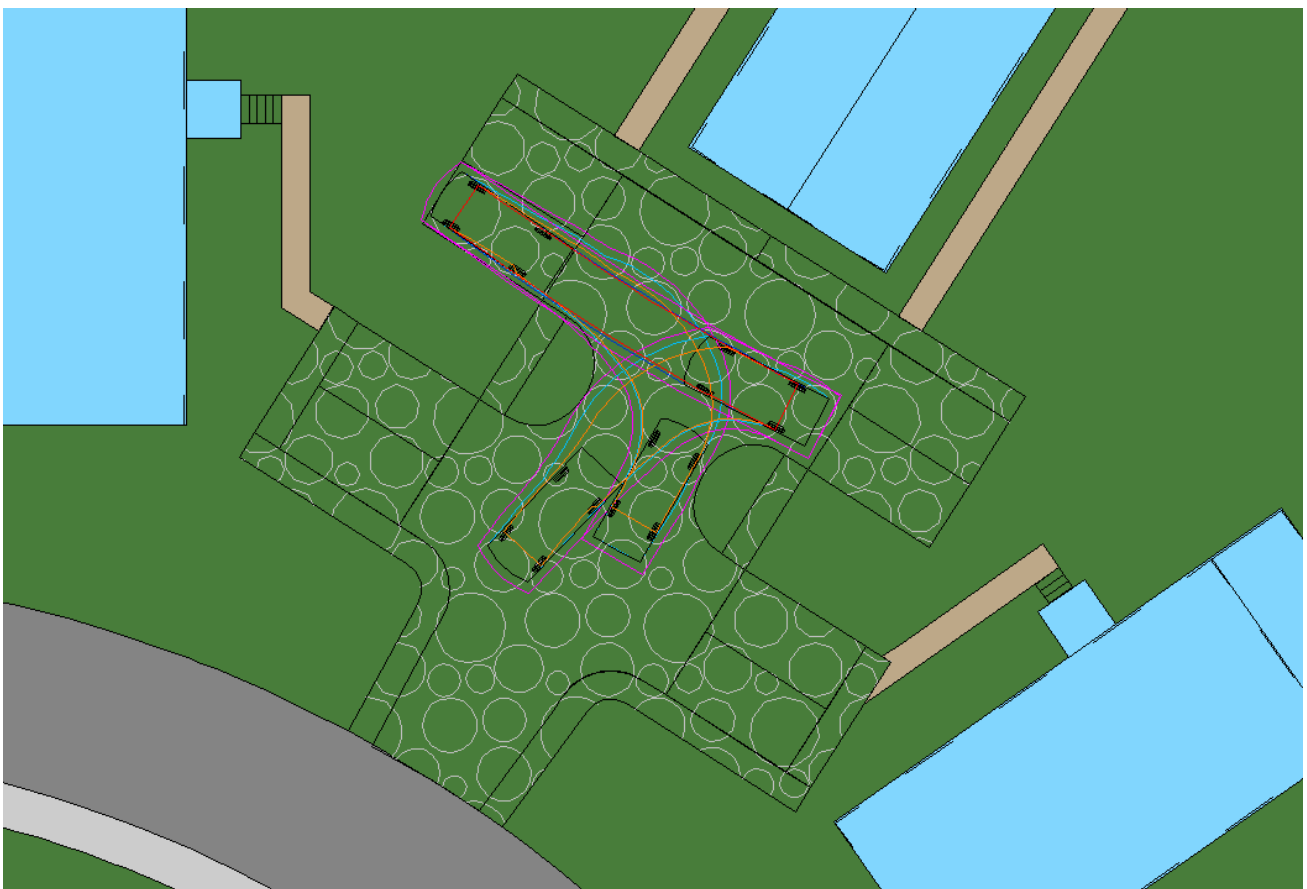


Figure 62: Road 2A- Unit 10a Parking Space 1 – 85<sup>th</sup> percentile car.



Figure 63: Road 2A- Unit 10a Parking Space 2 – 85<sup>th</sup> percentile car.



Figure 64: Road 2A- Unit 10b Parking Space 1 – 85<sup>th</sup> percentile car.



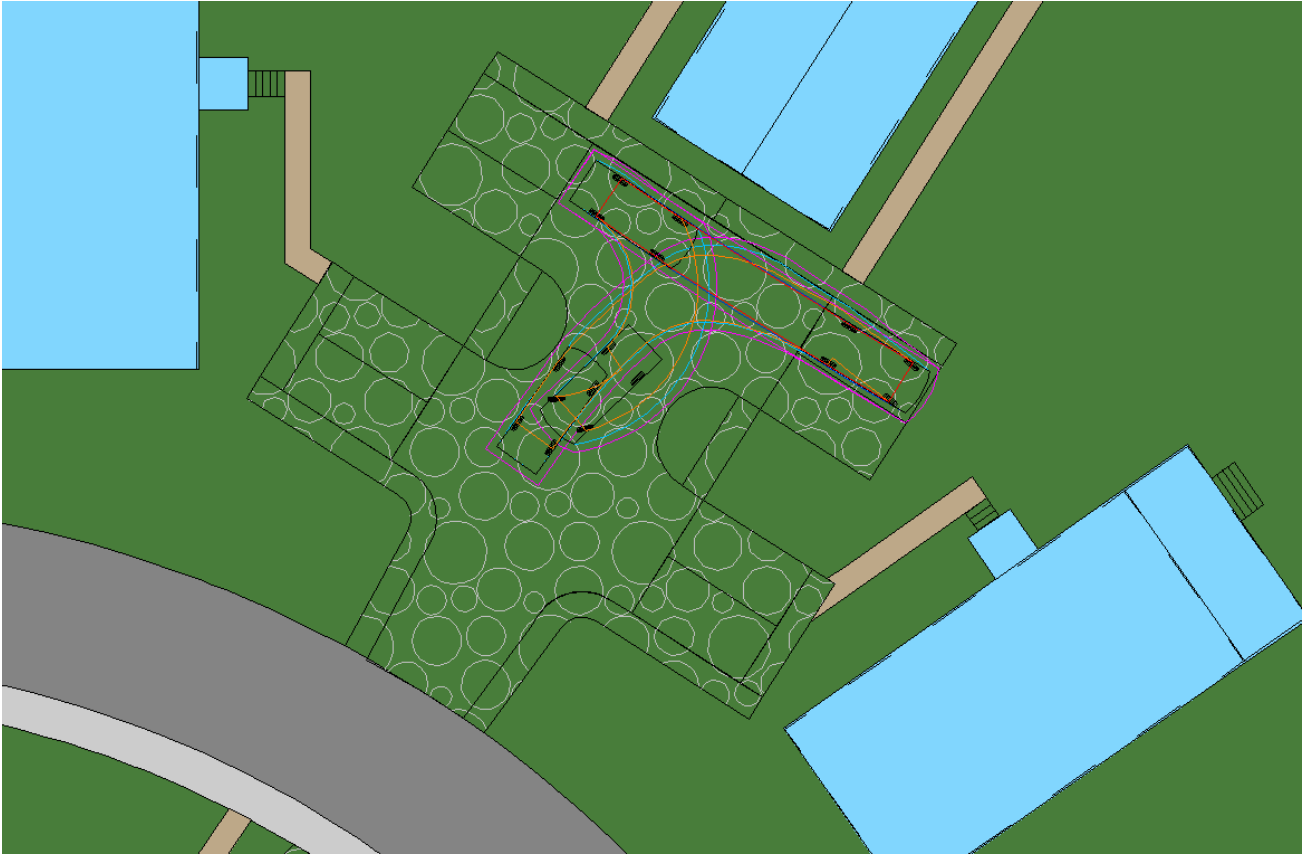


Figure 65: Road 2A- Unit 10b Parking Space 2 – 85<sup>th</sup> percentile car.

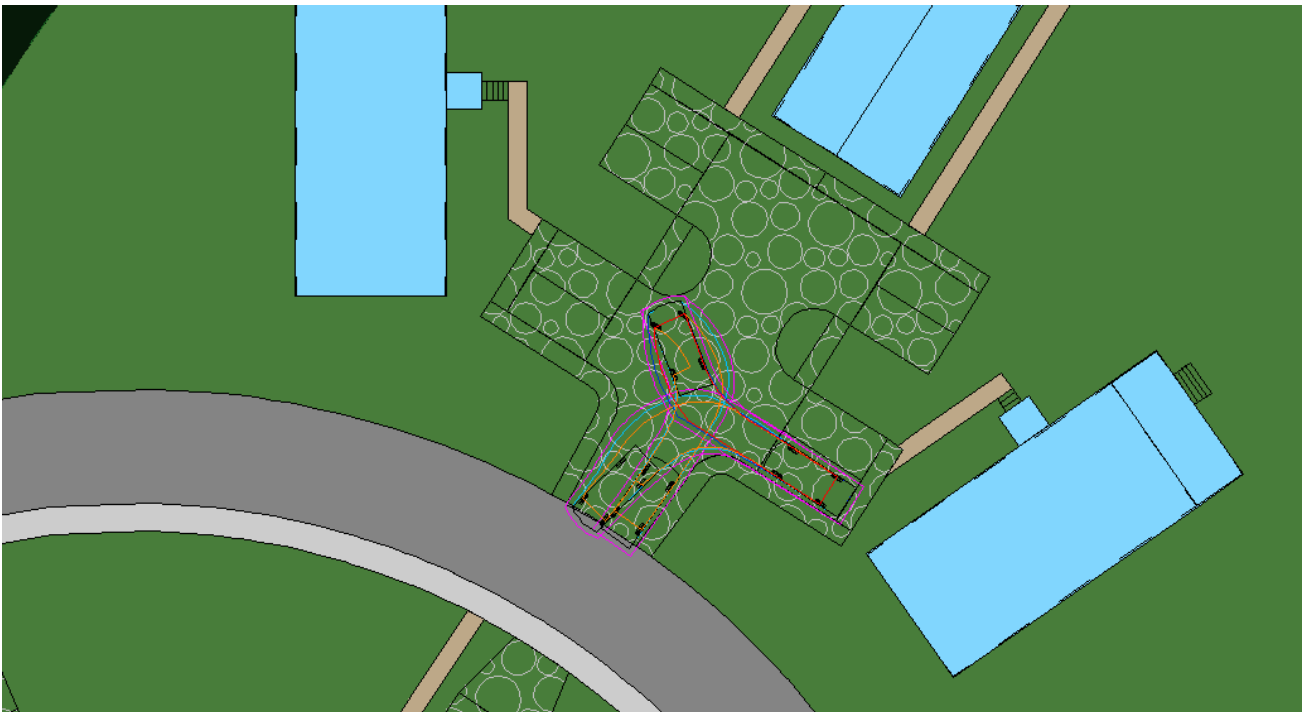


Figure 66: Road 2A- Unit 11 Parking Space 1 – 85<sup>th</sup> percentile car.

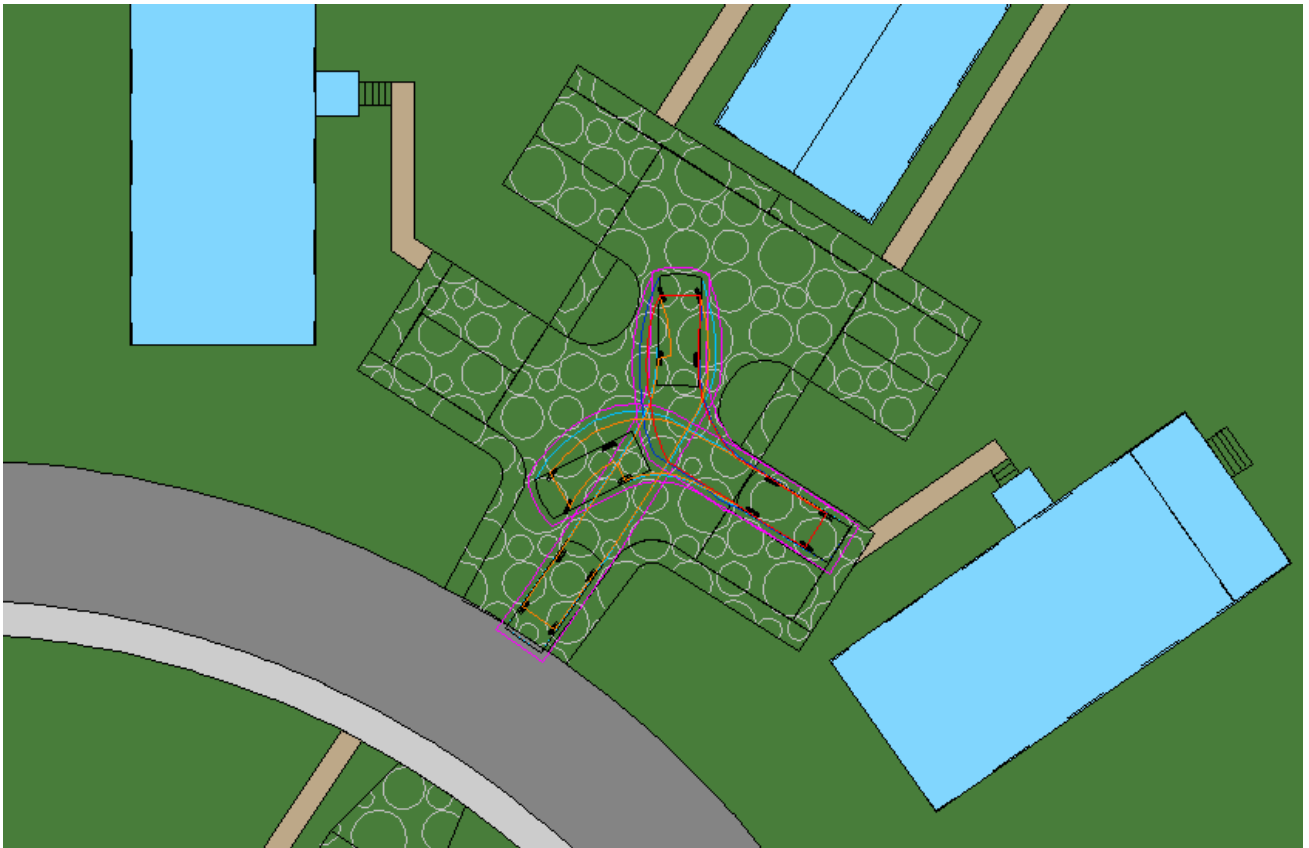


Figure 67: Road 2A- Unit 11 Parking Space 2 – 85<sup>th</sup> percentile car.

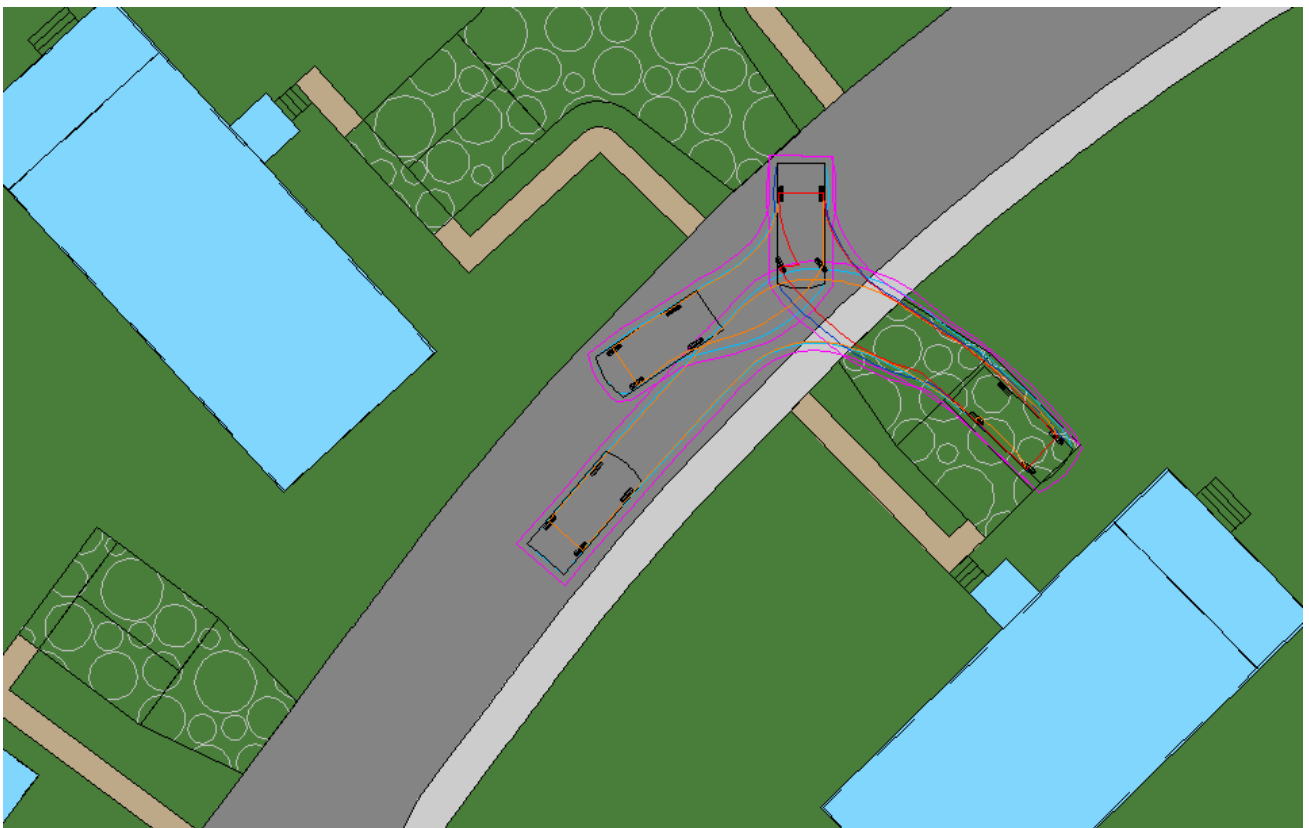


Figure 68: Road 2A- Unit 12 Parking Space 1 – 85<sup>th</sup> percentile car.

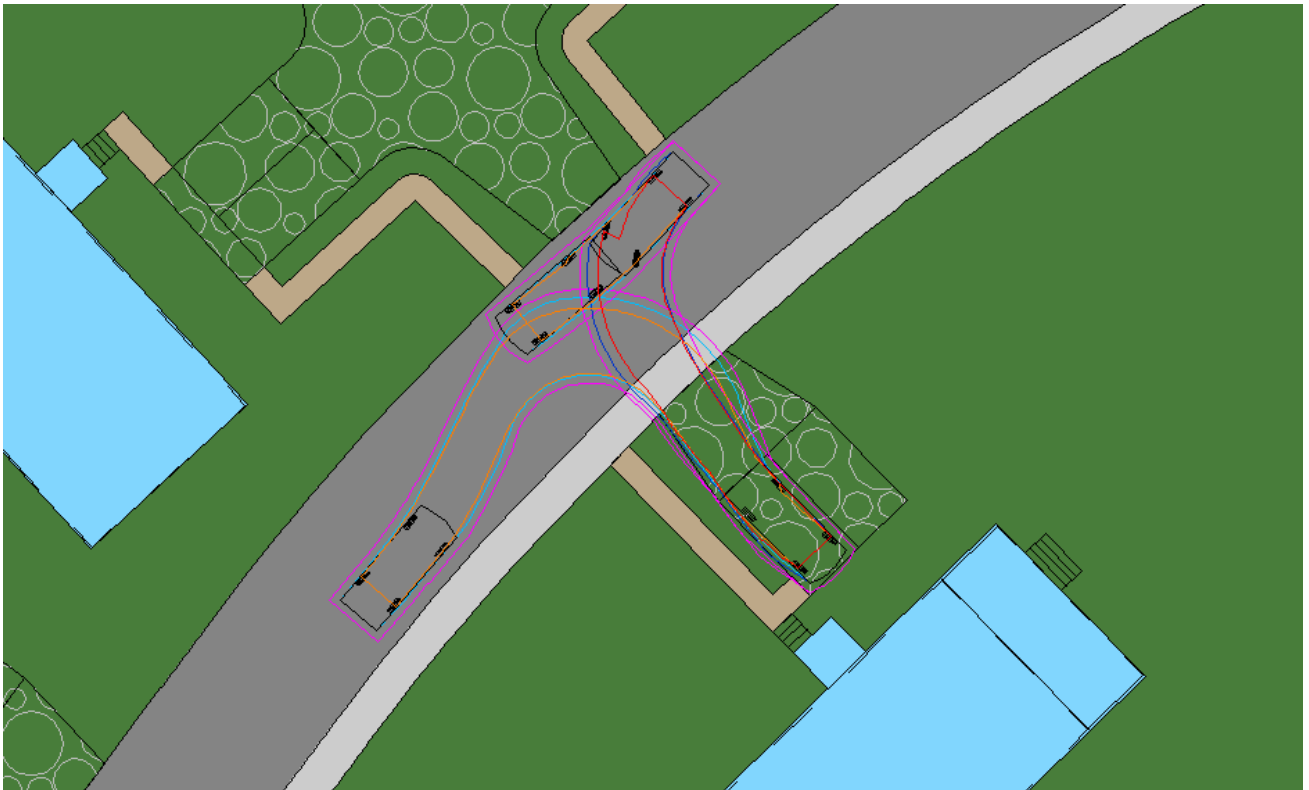


Figure 69: Road 2A- Unit 12 Parking Space 2 – 85<sup>th</sup> percentile car.

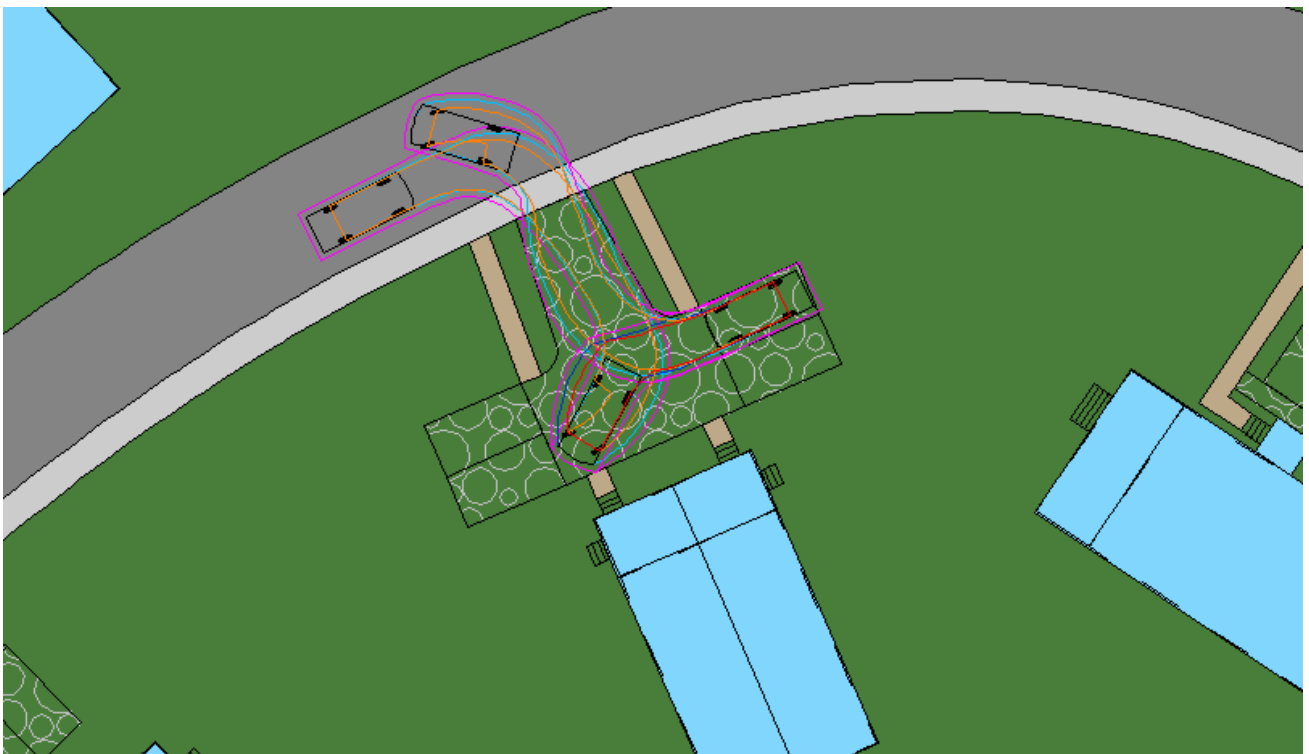


Figure 70: Road 2A- Unit 13b Parking Space 1 – 85<sup>th</sup> percentile car.

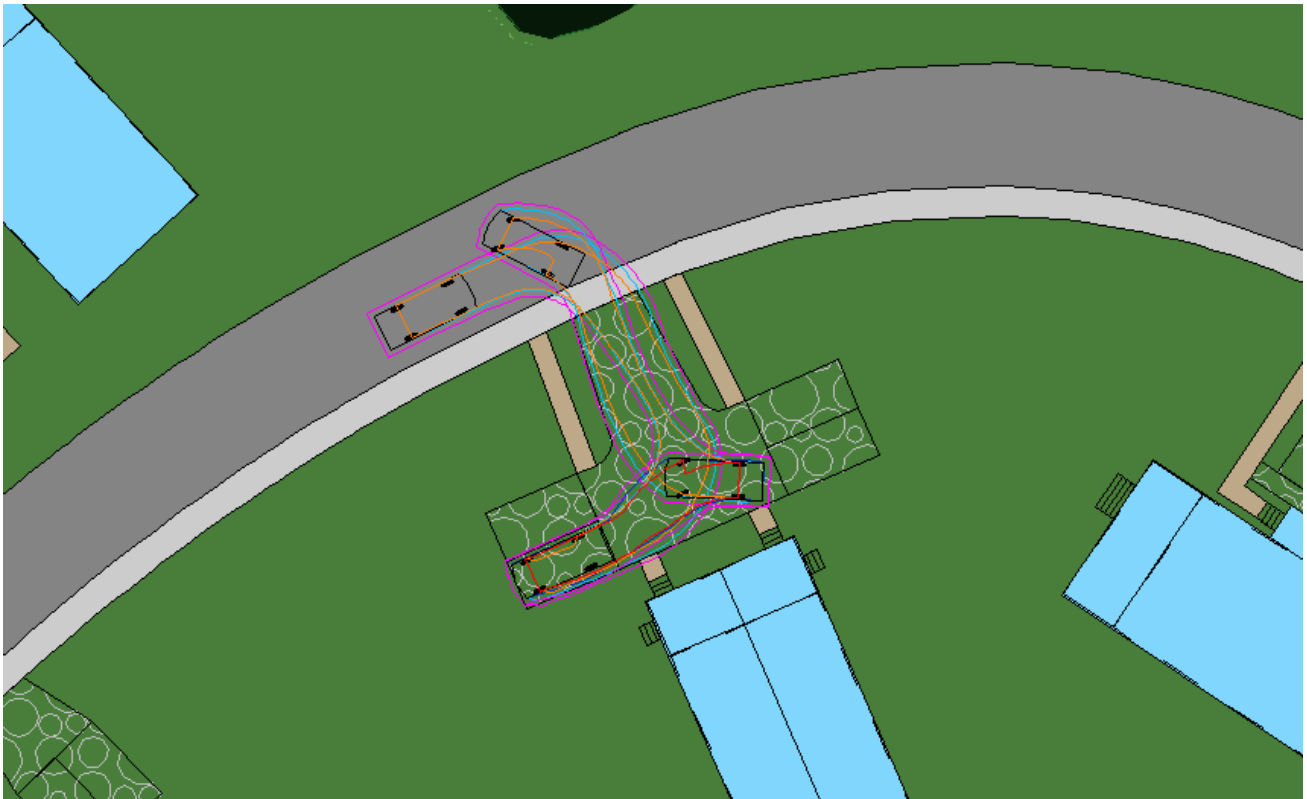


Figure 71: Road 2A- Unit 13a Parking Space 2 – 85<sup>th</sup> percentile car.

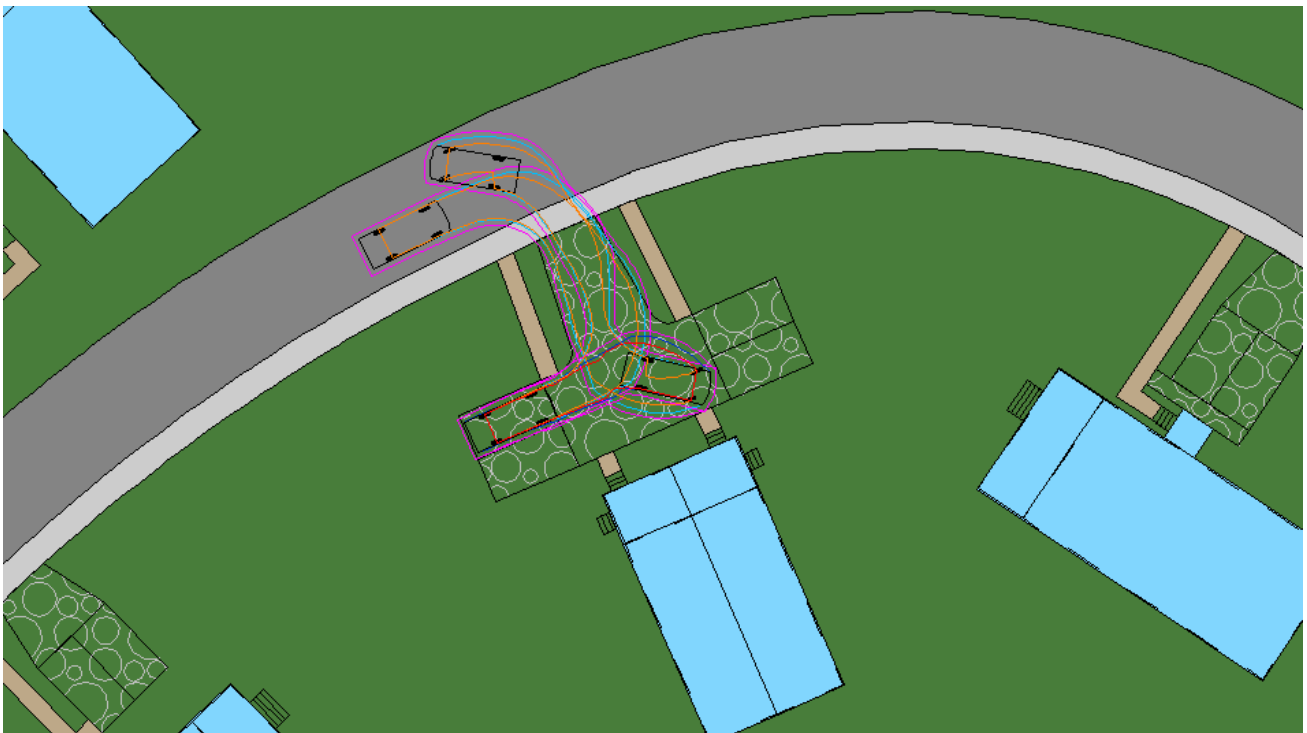


Figure 72: Road 2A- Unit 13a Parking Space 1 – 85<sup>th</sup> percentile car.

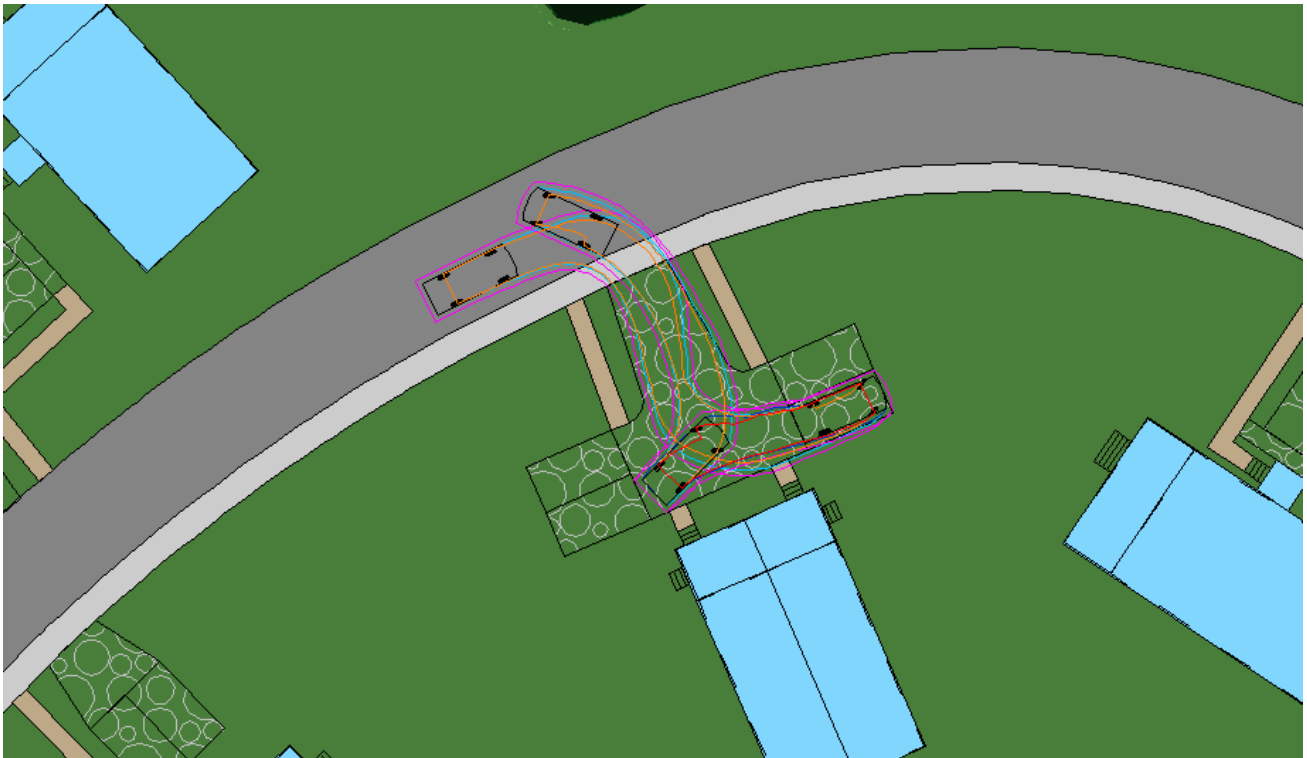


Figure 73: Road 2A - Unit 13b Parking Space 2 – 85<sup>th</sup> percentile car.



Figure 74: Road 2A- Unit 14 Parking Space 1 – 85<sup>th</sup> percentile car.

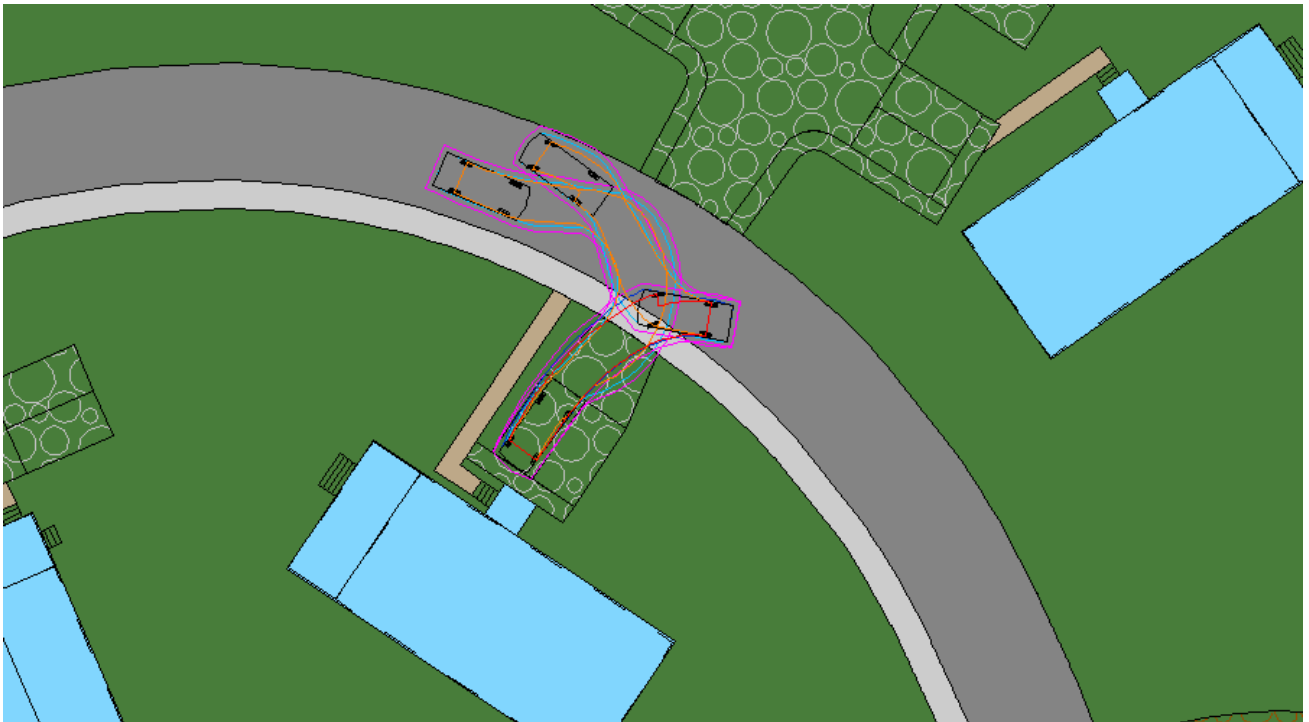


Figure 75: Road 2A- Unit 14 Parking Space 2 – 85<sup>th</sup> percentile car.

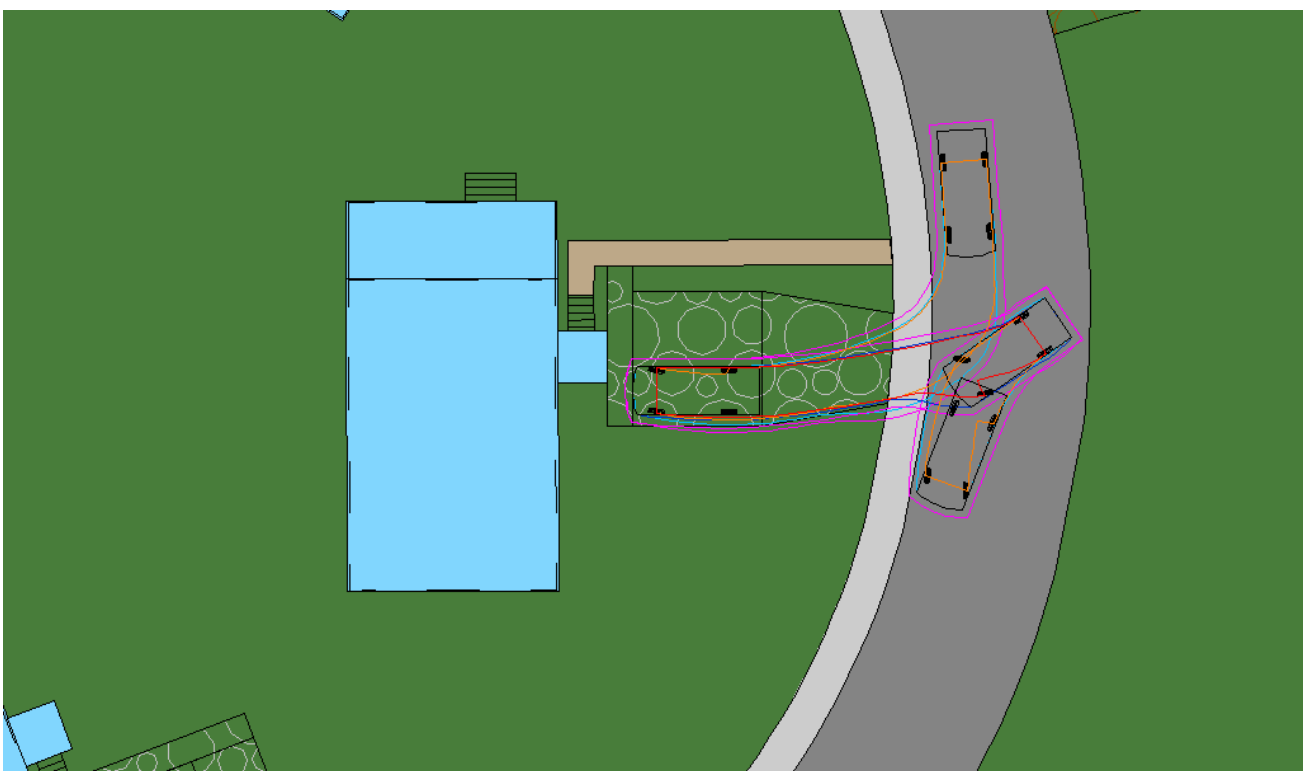


Figure 76: Road 2A- Unit 15 Parking Space 1 – 85<sup>th</sup> percentile car.

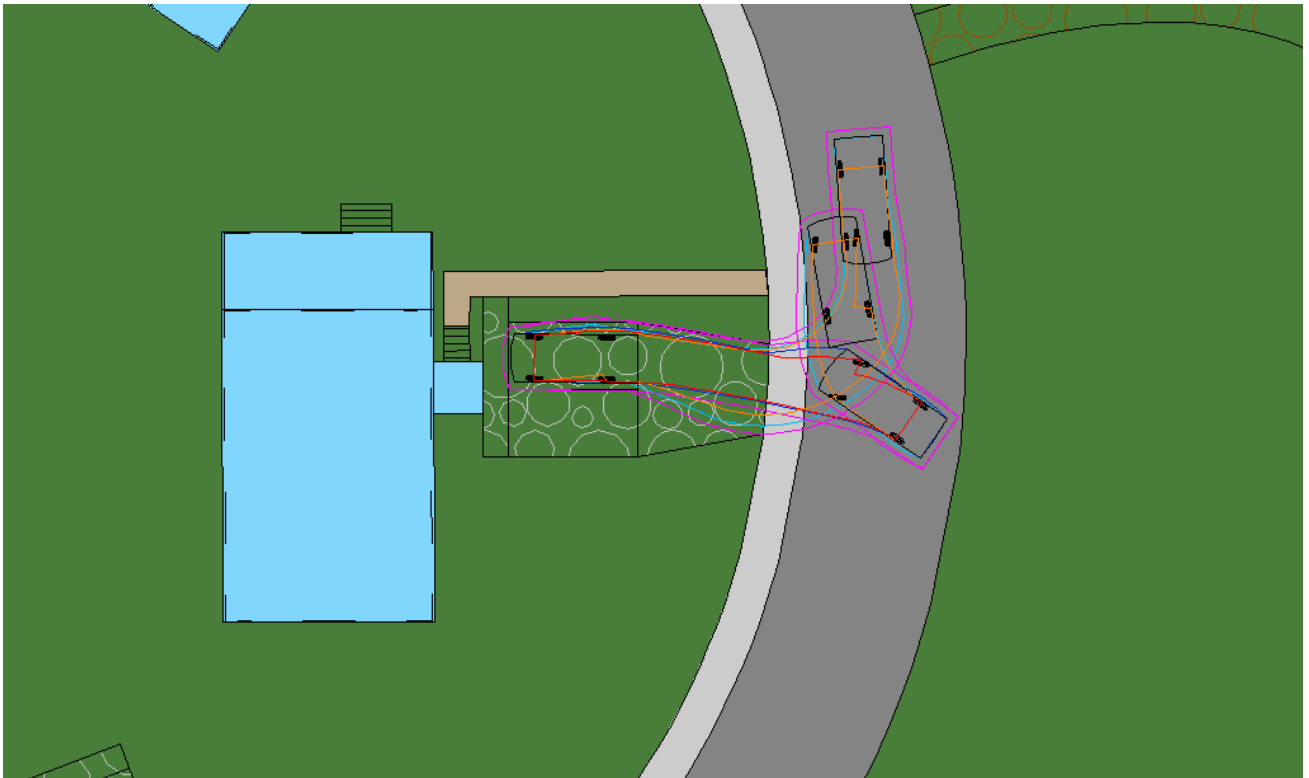


Figure 77: Road 2A- Unit 15 Parking Space 2 – 85<sup>th</sup> percentile car.

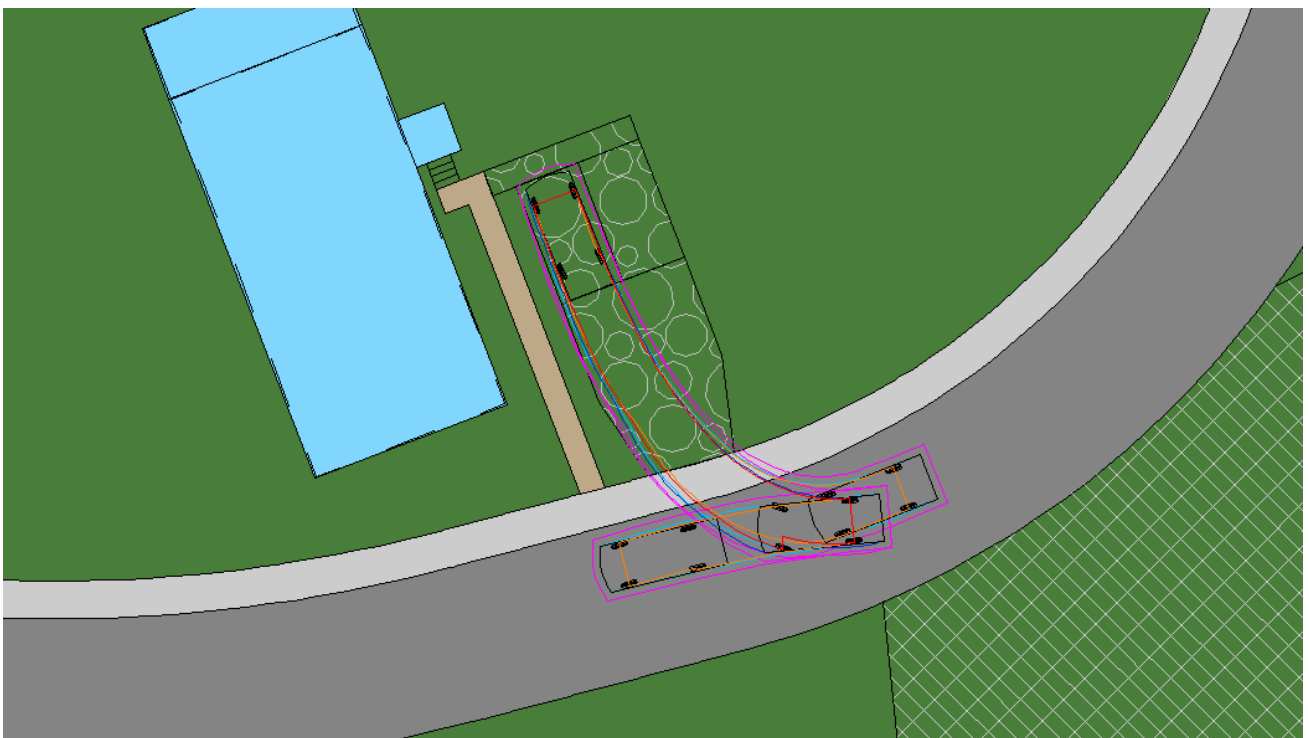


Figure 78: Road 2A- Unit 16 Parking Space 1 – 85<sup>th</sup> percentile car.

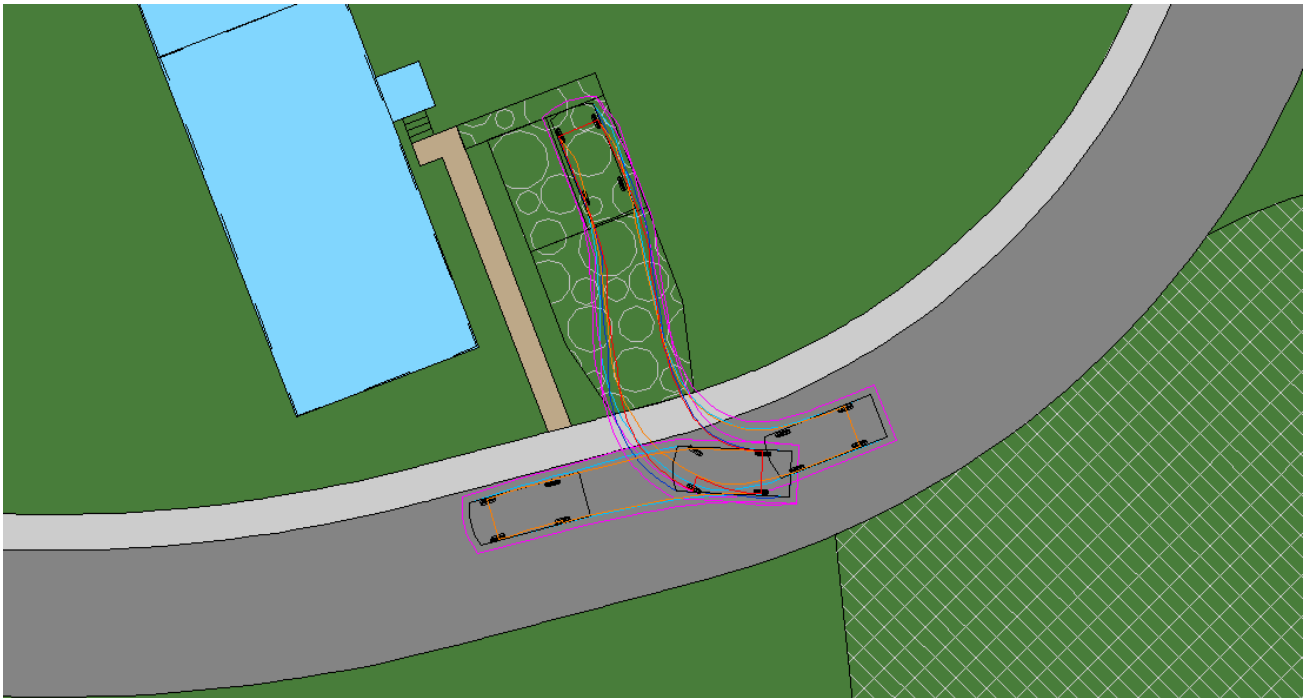


Figure 79: Road 2A - Unit 16 Parking Space 2 – 85<sup>th</sup> percentile car.

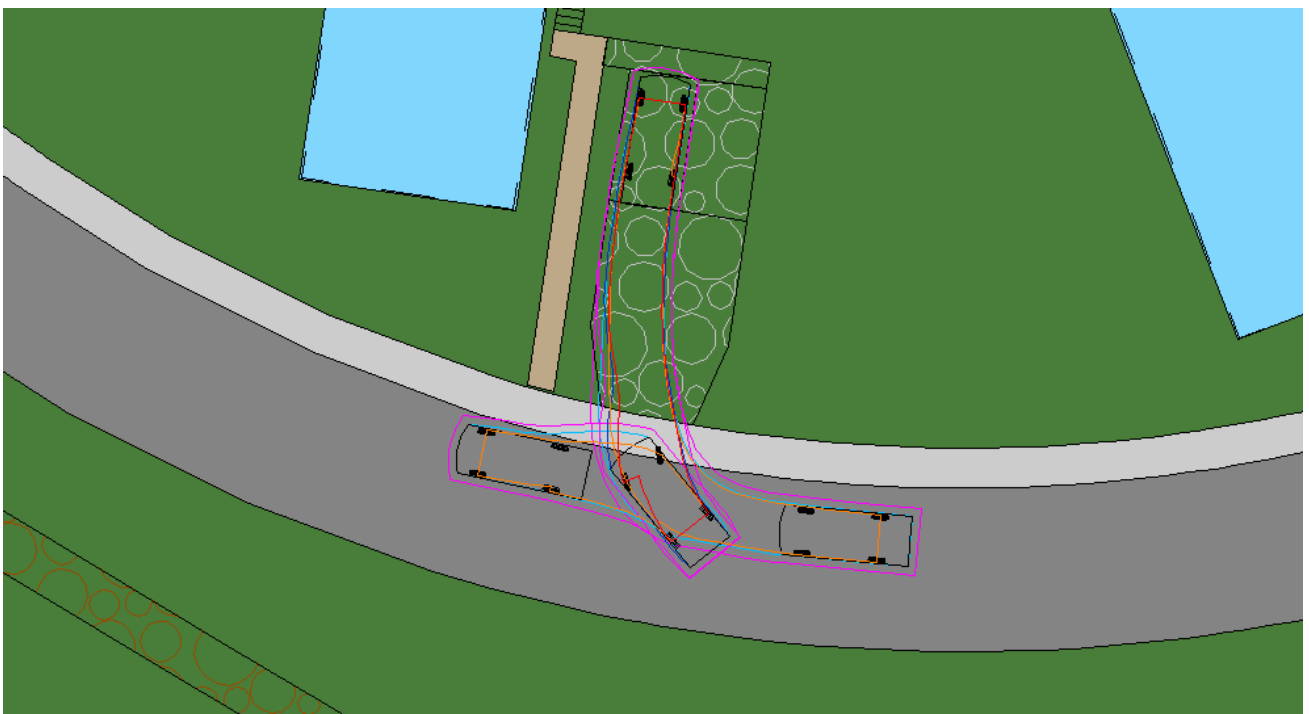


Figure 80: Road 2A- Unit 17 Parking Space 1– 85<sup>th</sup> percentile car.







Figure 83: 11.5m Large Rigid Truck – Road 1B



Figure 84: 11.5 Large Rigid Truck – Road 2A



Figure 85: 11.5 Large Rigid Truck – Road 2B

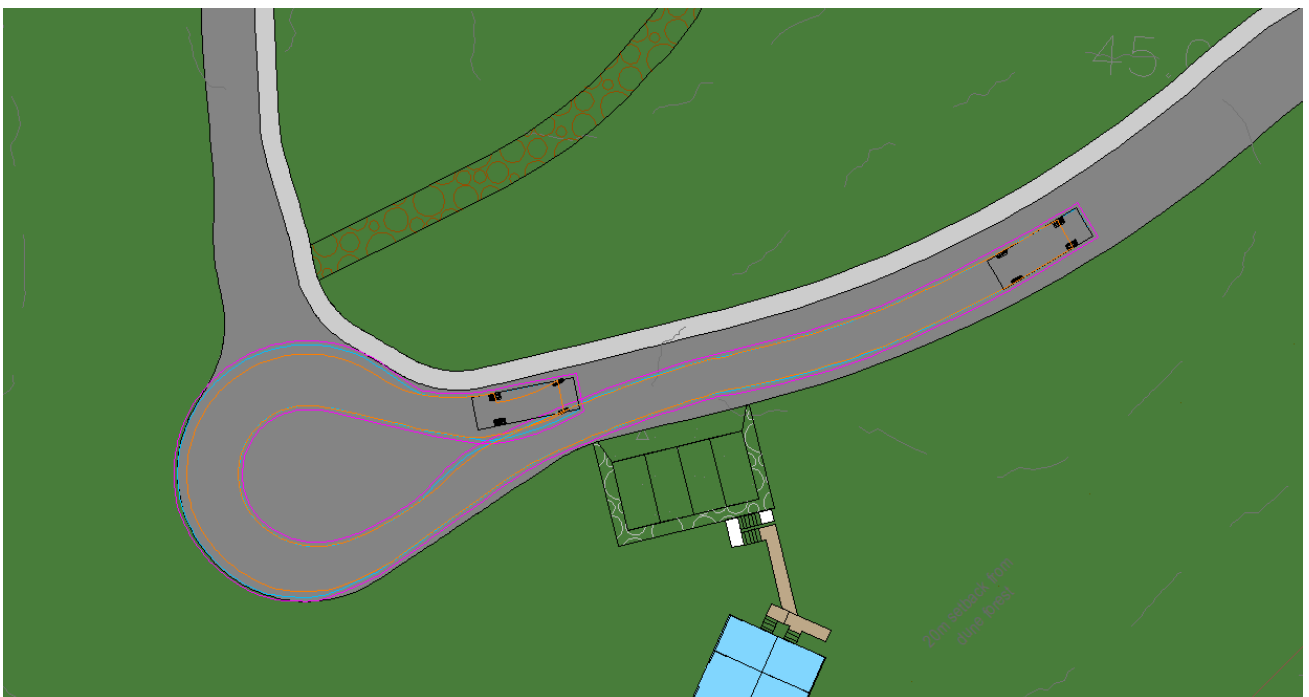


Figure 86: 8m Medium Rigid Truck – Cul de Sac.

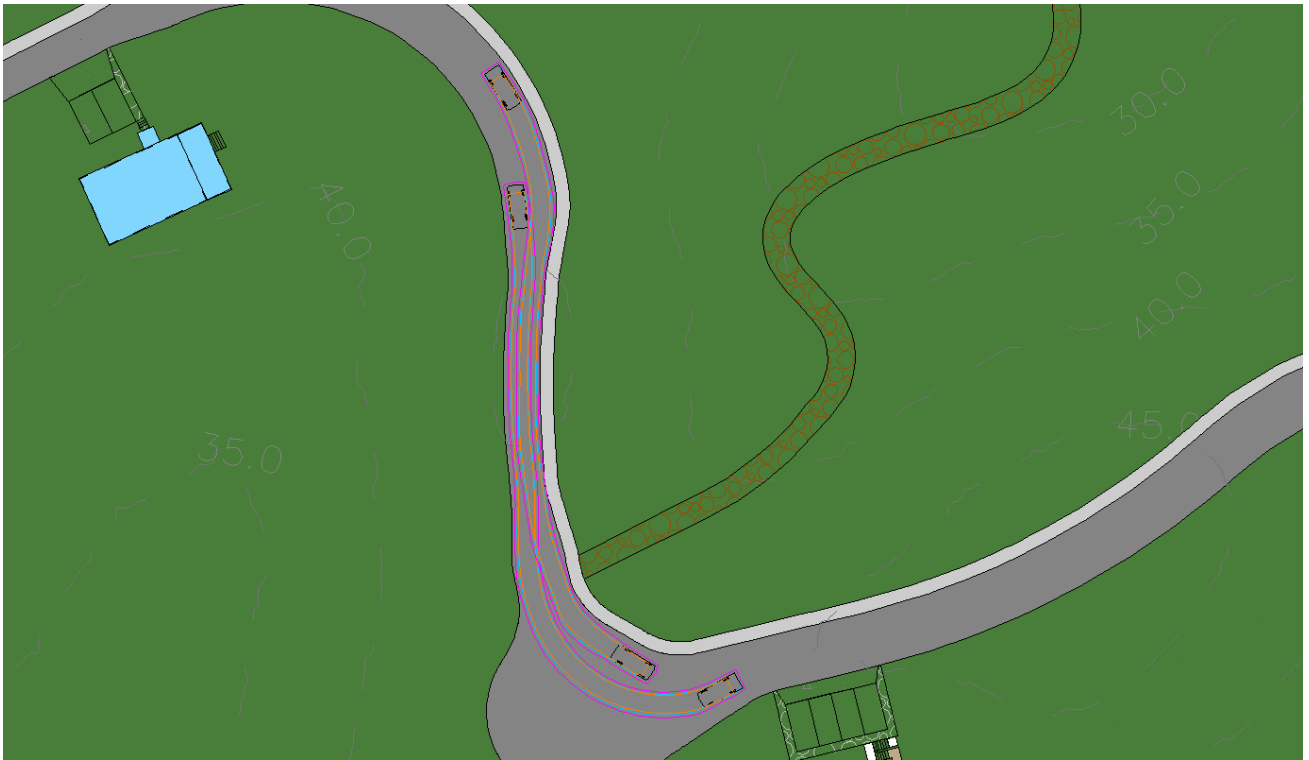


Figure 87: Road 1B Passing Bay – 85<sup>th</sup> percentile car.

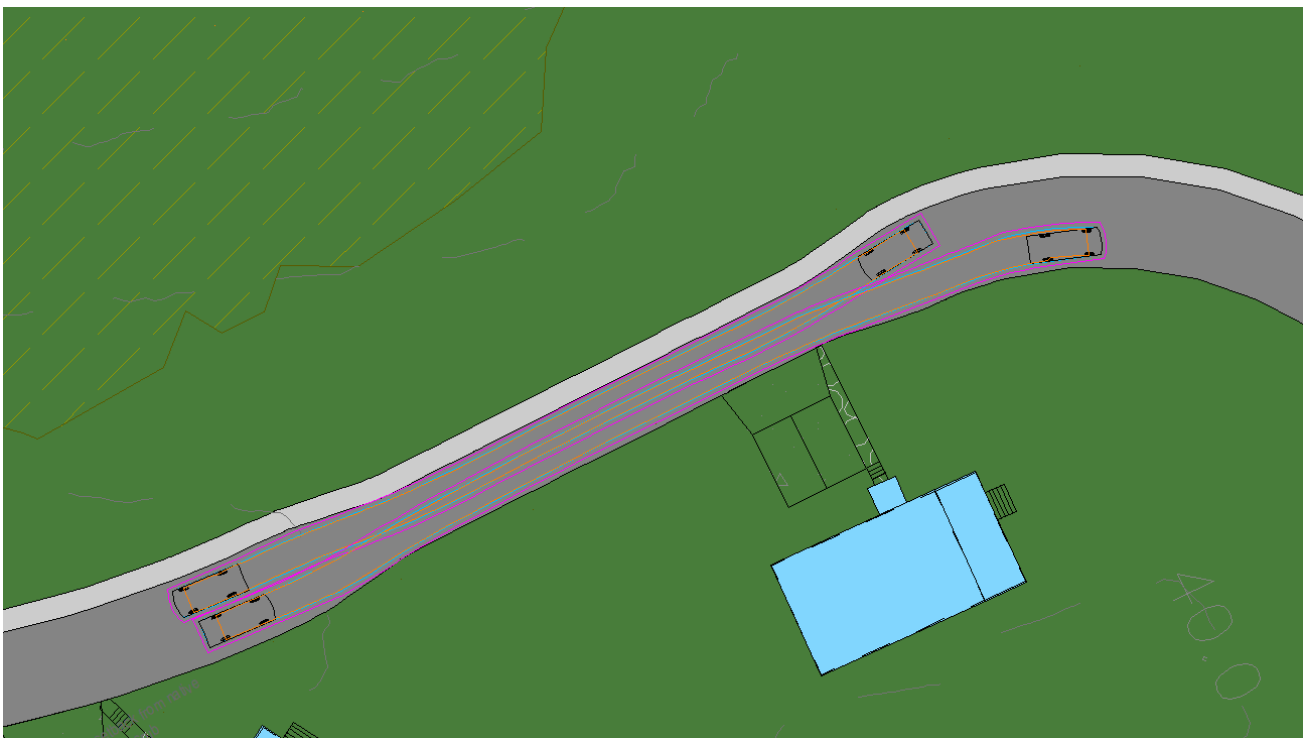


Figure 88: Road 1B Passing Bay – 85<sup>th</sup> percentile car.

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