Far North District Council

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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: BDO Pakihi Taitokerau Limited

Electronic Address for Service (E-mail): [redacted]

Phone Numbers:

Postal Address: (*or* alternative method of service under section 352 of the Act)

_____ Post Code: _____

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

Name/s: Steven Sanson - Sanson & Associates Limited

Electronic Address for Service (E-mail): steve@sansons.co.nz

Phone Numbers: W[redacted] Home: _____

Postal Address: (*or* alternative method of service under section 352 of the Act) Po Box 318, Paihia, 0247

_____ Post Code: _____

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: Refer to Appendix 1

Property Address/: Location: 0 State Highway 12, Waima

7. Application Site Details:

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

Site Address/ Location: 0 State Highway 12, Waima

Legal Description: Part Waima D 19 Block

Certificate of Title: NA19D/549

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.

3 x cabins in the Rural Production Zone

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):

O Building Consent (BC ref # if known)

O Regional Council Consent (ref # if known)

O National Environmental Standard consent

O 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)

O yes Ø no O 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).

O yes Ø no O don't know

O Subdividing land

O Changing the use of a piece of land

O Disturbing, removing or sampling soil

O 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) BDO Pakihi Taitokerau Limited

Email: [redacted]

Postal Address: [redacted]

Phone Numbers: [redacted]

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

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

Nam[redacted] (please print)

Sign[redacted] (signature of bill payer – **mandatory**) Date: 16 November 2023

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. 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:_____(please print)

Signature:_____(signature) Date: _____

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

Checklist (please tick if information is provided)

- ○ Payment (cheques payable to Far North District Council)
- ○ A current Certificate of Title (Search Copy not more than 6 months old)
- ○ 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**

SANSON & ASSOCIATES LTD

Planners & Resource Consent Specialists

Assessment of Environmental Effects

Application for Resource Consent:

Proposal for 3 x Cabins – Cyclone Gabrielle Relief

Prepared for: BDO Pakihi Limited

Prepared by: Steven Sanson | Consultant Planner
Date: June 2024

1.0 APPLICANT & PROPERTY DETAILS

Applicant	BDO Pakihi Limited
Address for Service	Sanson & Associates Limited PO Box 318 PAIHIA 0247 C/O - Steven Sanson steve@sansons.co.nz 021-160-6035
Legal Description	Part Waima D 19 Block
Record Of Title	NA19D/549
Physical Address	0 State Highway 12, Waima
Site Area	9,606m^2
Owner of the Site	Various – Refer CT in Appendix 1.
District Plan Zone	Rural Production (ODP) Maori Purpose (PDP)
District Plan Features	Nil
Archaeology	Nil
NRC Overlays	Flooding
Soils	3w1
Protected Natural Area	Nil
HAIL	Nil

Schedule 1

2.0 SUMMARY OF PROPOSAL

Proposal	The proposal seeks to add three cabins to the site in support of cyclone relief. The cabins are all 30m^2 in size each. The three cabins are connected by shared decking and an area for access, parking and manouvring. The site gains access from State Highway 12. Earthworks are required to provide for the development but these are minimal and within permitted standards.
Reason for Application	The proposal breaches: • 8.6.5.2.1 – Residential Intensity; • 15.1.6B.1.1 – Car Parking; • 15.1.6C.1.1[e][i] Private Accessway in All Zones Overall, the proposal is a *Discretionary Activity* under the ODP. No consents are required under the PDP.
Appendices	Appendix 1 – Record of Title & Instruments Appendix 2 – Architectural Drawings [Laminata] Appendix 3 – Geotech Report [PK Engineering] Appendix 4 – Wastewater Report [Water Flow]
Consultation	Nil
Pre Application Consultation	Nil
Relevant Applications	Nil

3.0 INTRODUCTION & PROPOSAL

3.1 Report Requirements

This report has been prepared for BDO Pakihi Limited in support of a land use consent application at the site on State Highway 12, Waima.

The application has been prepared in accordance with the provisions of Section 88 and the Fourth Schedule of the Resource Management Act 1991. This report serves as the Assessment of Environmental Effects required under both provisions.

The report also includes an analysis of the relevant provisions of the Far North District Plan, relevant National Policy Statements and Environmental Standards, as well as Part 2 of the Resource Management Act 1991.

3.2 Proposal & Background

Application Site: A range of details regarding the site are outlined in Schedule 1 of this report.

These details are supplemented by the Record of Title and relevant instruments located in Appendix 1. The Record of Title confirms that the site is Maori Freehold Land.

A broader description of the site is provided in Section 4 of this Report.

Land Use Consent: The proposal seeks to add three cabins ['residential units'] to the site. The cabins are 30m^2 in size and are connected by a shared deck.

The proposal is supported by a shared access, manouvring and parking area off State Highway 12. Whilst earthworks are required to provide for the development these are minimal and will not breach permitted standards.

These proposal items are shown on the architectural drawings provided in Appendix 2.

Land stability and flooding matters are considered in Appendix 3. In particular, the Report recommends a minimum floor level of RL 41.5m OTP.

A new wastewater system is proposed as detailed in Appendix 4. The Wastewater Report considers that the proposal is permitted in terms of associated Northland Regional Council rules.

Background: An Order in Council – Severe Weather Emergency Recovery (Temporary Accommodation) Order 2023 was made effective from June 1 2023. This approach allows exemptions from the Resource Management Act 1991 for temporary accommodation until August 9 2026 or until such a time that resource consent was granted for the activity.

Whilst the provisions of the Order in Council are enabling (to a certain extent) all Marae to be situated within the Far North District that are part of the HUD Cabins Project are seeking permanent residence of these cabins, as opposed to the temporary accommodation relief that the provisions provide. This, alongside breaches to District Wide Rules of the Operative District Plan, requires a resource consent to be sought.

Therefore, full consent for permanent occupancy of the cabins is sought under this consent. Rural areas such as Waima very rarely receive opportunities such as this and as such this consent seeks to make use of available government funding to support accommodation in rural areas.

Activity Status: The proposal is a Discretionary Activity.

4.0 SITE & SURROUNDING ENVIRONMENT

4.1 Zoning & Resource Features

The proposed activity is located in the Rural Production Zone under the Operative District Plan. The site is located in the Maoru Purpose Zone under the Proposed District Plan.

The zoning is outlined in Figure 1 & Figure 2. There are no resource features of relevance.

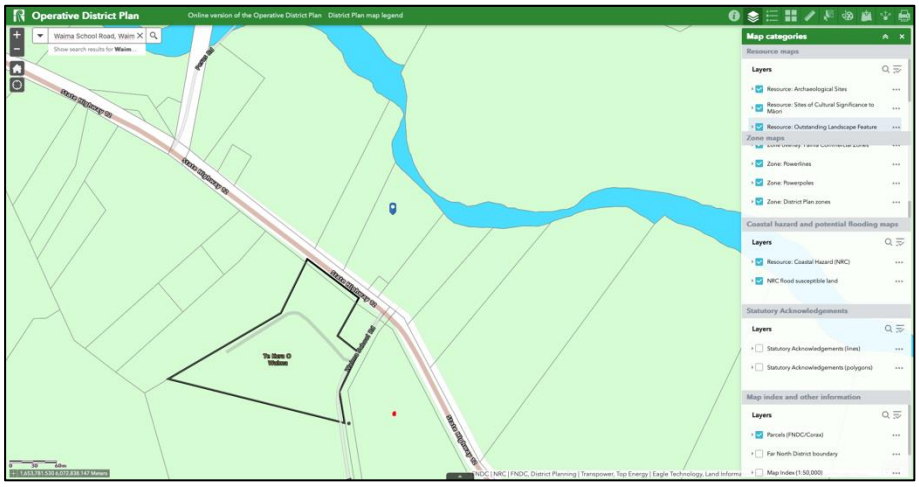


Figure 1 – Operative Plan - Zone Maps (Source: Far North Maps)

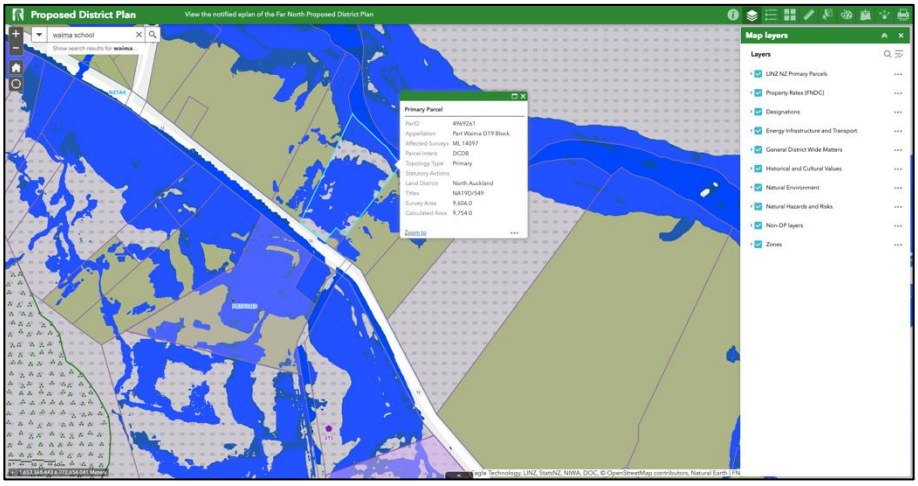


Figure 2 – Proposed Plan - Zone Maps (Source: Far North Maps)

The site has areas covered by flooding hazards. The site is not implicated by HAIL, or any known wetlands.

4.2 Topography & Natural Features

The site is relatively flat where the proposed cabins will be located. There are no unique or significant natural features on the site. The soils for the site are considered to be Class 3.

Figure 3 – Aerial Map (Source: Far North Maps)

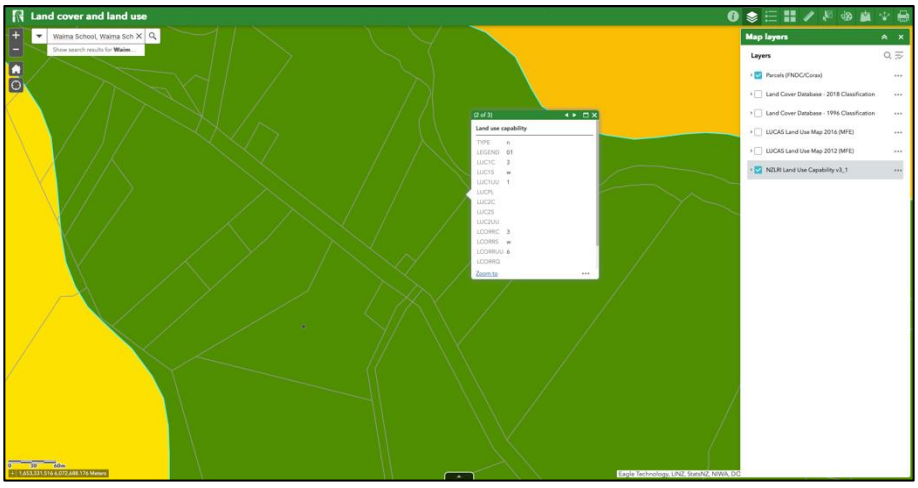


Figure 4 – Soils Map (Source: Far North Maps)

4.4 Built Form & Access

The site plan, within the architectural drawings (see Appendix 2), outlines the existing built development on this site. The site gains access from State Highway 12.

4.5 Surrounding Environment

The site is predominantly rural in nature. There are dispersed residential units located in the surrounds. There is a local school in the surrounds and low intensity development is located near this social infrastructure. Otherwise, the surrounds are largely in pasture.

5.0 ASSESSMENT OF RELEVANT RULES

5.1 Assessment Summary

An assessment of the relevant rules of the Far North District Plan has been undertaken and this is provided in Table 1-3 below. Those rules breached are highlighted for ease of reference.

Table 1 - Rural Production Zone Rules

Rural Production Zone Standards		
Rule	Standards	Performance/Comments
Residential Intensity	Permitted – One unit per 12ha of land Restricted Discretionary - One unit per 4ha of land Discretionary – One unit per 2ha of land • In all cases the land shall be developed in such a way that each unit shall have at least 2,000m² for its exclusive use surrounding the unit plus a minimum of 1.8ha elsewhere on the property.	The proposal is for 3 x cabins on a 9,606m^2 site. Discretionary Activity (Under the Integrated Management Rule)
Sunlight	Permitted - 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 Restricted Discretionary – if permitted standard breached	The proposal does not breach sunlight rules. Complies
Stormwater Management	Permitted - The maximum proportion of the gross site area covered by buildings and other impermeable surfaces shall be 15%. Controlled - The maximum proportion of the gross site area covered by buildings and other impermeable surfaces shall be 20%.	The proposal does not breach the 15% limit for the large site which allows for 1,440m$_2$ of coverage. Complies
Setback from Boundaries	Permitted - No building shall be erected within 10m of any site boundary; Restricted Discretionary – if permitted standard breached	The proposed cabins will be located outside of the 10m setback from site boundaries.

		Complies
Keeping of Animals		N/A. Complies
Noise		Not relevant Complies
Building Height	Permitted - The maximum height of any building shall be 12m. Restricted Discretionary - The maximum height of any building shall be 15m.	The proposal cabins are all less than 12m in height. Complies
Helicopter Landing Area		N/A. Complies
Building Coverage	Permitted - Any new building or alteration/addition to an existing building is a permitted activity if the total Building Coverage of a site does not exceed 12.5% of the gross site area. Controlled - Any new building or alteration/addition to an existing building is a controlled activity if the total Building Coverage of a site does not exceed 15% of the gross site area.	The proposal does not breach the 12.5% limit for the large site which allows for 1,200.75m^2. Complies
Scale of Activities		Residential activities are exempt from the requirements of this rule. Complies
Temporary Events		N/A Complies

Table 2 - District Wide Standards

District Wide Standards		
Rule	Standard	Performance/Comments
Natural and Physical Resources		

District Wide Standards		
Rule	Standard	Performance/Comments
12.1 Landscape & Natural Features	12.1.6.1.1 Protection of Outstanding Landscape Features 12.1.6.1.2 Indigenous Vegetation Clearance in Outstanding landscapes 12.1.6.1.3 Tree Planting in Outstanding Landscapes 12.1.6.1.4 Excavation and/or filling within an outstanding landscape 12.1.6.1.5 Buildings within outstanding landscapes 12.1.6.1.6 Utility Services in Outstanding Landscapes	N/A – None of these features apply to the site.
12.2 Indigenous Flora and Fauna	12.2.6.1.1 Indigenous Vegetation Clearance Permitted Throughout the District 12.2.6.1.2 Indigenous Vegetation Clearance in the rural Production and Minerals Zones 12.2.6.1.3 Indigenous Vegetation Clearance in the General Coastal Zone 12.2.6.1.4 Indigenous Vegetation Clearance in Other Zones	N\A – No vegetation clearance is required.
12.3 Earthworks	12.3.6.1.1 Excavation and/or filling, excluding mining and quarrying, in the Rural Production Zone or Kauri Cliffs Zone Permitted – Maximum of 5,000m3 within a 12-month period and cannot be higher than 1.5m cut or fill.	Total earthworks associated with the proposal will meet permitted standards. Complies
12.4 Natural Hazards	12.4.6.1.1 Coastal Hazard 2 Area 12.4.6.1.2 Fire Risk to Residential Units	The proposed cabins are not within 20m of natural vegetation.

District Wide Standards		
Rule	Standard	Performance/Comments
12.5 Heritage	12.5.6.1.1 Notable Trees 12.5.6.1.2 Alterations to/and maintenance of historic sites, buildings and objects 12.5.6.1.3 Registered Archaeological Sites 12.5.6.2.2 Activities which could affect sites of cultural significance to maori	The site is not implicated by these features. Complies
12.5A Heritage Precincts	There are no Heritage Precincts that apply to the site.	N/A - None of these features apply to the site. Complies
12.6 Air	Not applicable	N/A
12.7 Lakes, Rivers, Wetlands and the Coastline	12.7.6.1.1 Setback from lakes, rivers and the coastal marine area 12.7.6.1.2 Setback from smaller lakes, rivers and wetlands Permitted = for rivers minimum setback of 10 x the average width of the river where it passes through or past the site provided that the minimum setback is 10m and the maximum is no more than minimum required by Rule 12.7.6.1.1 12.7.6.1.4 Land Use Activities involving the Discharges of Human Sewage Effluent 12.7.6.1.5 Motorised Craft 12.7.6.1.6 Noise	N/A – None of these rules except are implicated by the proposal. Complies
12.8 Hazardous Substances		N/A Complies
12.9 Renewable Energy and Energy Efficiency		N/A Complies
13 Subdivision		N/A – No subdivision proposed.

District Wide Standards		
Rule	Standard	Performance/Comments
14 Financial Contributions		N/A – No financial contributions required.
15 Traffic, Parking and Access	Traffic Movements Other Buildings used for Social, Cultural or Recreational purposes (including Grandstands) = 2 traffic movement per every person the facility is designed for. House on Papakinga = 5 traffic movements per unit	Three cabins proposed. 3 x 5 = 15 (house on Papakainga) Total traffic movements = 15 Complies The proposed cabins can accommodate 1 carpark each. Restricted Discretionary Activity Access is required off the State Highway. Discretionary Activity
16 Signs & Lighting		N/A – No signage is proposed.

Table 3 - PDP Rules

Proposed District Plan				
Matter	Rule/Std Ref	Relevance	Compliance	Evidence
Hazardous Substances Majority of rules relates to development within a site that has heritage or cultural items scheduled and mapped however Rule	Rule HS-R2 has immediate legal effect but only for a new significant hazardous facility located within a scheduled site and area of significance to Māori, significant natural area or a scheduled heritage resource	N/A	Yes	Not proposed.

HS-R6 applies to any development within an SNA – which is not mapped	HS-R5, HS-R6, HS-R9			
Heritage Area Overlays (Property specific) This chapter applies only to properties within identified heritage area overlays (e.g. in the operative plan they are called precincts for example)	All rules have immediate legal effect (HA-R1 to HA-R14) All standards have immediate legal effect (HA-S1 to HA-S3)	N/A	Yes	Not indicated on Far North Proposed District Plan
Historic Heritage (Property specific and applies to adjoining sites (if the boundary is within 20m of an identified heritage item)). Rule HH-R5 Earthworks within 20m of a scheduled heritage resource. Heritage resources are shown as a	All rules have immediate legal effect (HH-R1 to HH-R10) Schedule 2 has immediate legal effect	N/A	Yes	Not indicated on Far North Proposed District Plan

historic item on the maps) This chapter applies to scheduled heritage resources – which are called heritage items in the map legend				
Notable Trees (Property specific) Applied when a property is showing a scheduled notable tree in the map	All rules have immediate legal effect (NT-R1 to NT-R9) All standards have legal effect (NT-S1 to NT-S2) Schedule 1 has immediate legal effect	N/A	Yes	Not indicated on Far North Proposed District Plan
Sites and Areas of Significance to Māori (Property specific) Applied when a property is showing a site / area of significance to Maori in the map or within the Te Oneroa-a Tohe Beach Management Area (in the operative plan they are called site of cultural	All rules have immediate legal effect (SASM-R1 to SASM-R7) Schedule 3 has immediate legal effect	Yes	Yes	Not relevant.

significance to Maori)				
Ecosystems and Indigenous Biodiversity SNA are not mapped – will need to determine if indigenous vegetation on the site for example	All rules have immediate legal effect (IB-R1 to IB-R5)	N/A	Yes	Not indicated on Far North Proposed District Plan
Activities on the Surface of Water	All rules have immediate legal effect (ASW-R1 to ASW-R4)	N/A	Yes	Not indicated on Far North Proposed District Plan
Earthworks all earthworks (refer to new definition) need to comply with this	The following rules have immediate legal effect: EW-R12, EW-R13 The following standards have immediate legal effect: EW-S3, EW-S5	Yes	Yes	With respect of EW-R12, this requires that the proposed earthworks comply with EW-S3. In effect, EW-S3 triggers the need for an ADP to be applied. It is confirmed that the proposed earthworks will comply with an ADP, and this is volunteered as a condition of consent. EW-R13 links to EW-S5. EW-S5 requires earthworks to be controlled in accordance with GD-05. It is confirmed here that the earthworks will be undertaken in accordance with GD-05.

Signs (Property specific) as rules only relate to situations where a sign is on a scheduled heritage resource (heritage item), or within the Kororareka Russell or Kerikeri Heritage Areas	The following rules have immediate legal effect: SIGN-R9, SIGN-R10 All standards have immediate legal effect but only for signs on or attached to a scheduled heritage resource or heritage area	N/A	Yes	Not indicated on Far North Proposed District Plan
Orongo Bay Zone (Property specific as rule relates to a zone only)	Rule OBZ-R14 has partial immediate legal effect because RD-1(5) relates to water	N/A	Yes	Not indicated on Far North Proposed District Plan
Comments:				
No consents are required under the PDP.				

Clause 2(1)(d) of Schedule 4 of the RMA requires applicants to identify other activities of the proposal with the intention of capturing activities which need permission or licensing under other enactments.

Section 9.4 provides a more considered assessment of relevant NPS's and NES's and in summary, no consents are required under these higher order documents.

6.0 NOTIFICATION ASSESSMENT

6.1 Public Notification

The table below outlines the steps associated with public notification insofar as it relates to s95 of the Act.

Table 4 – Notification Process

Step 1	Mandatory public notification in certain circumstances	
S95A(3)(a)	Has the applicant requested that the application be publicly notified?	No
S95A(3)(b)	Is public notification required under section 95C?(after a request for further information)	TBC
S95A(3)(c)	Has the application been made jointly with an application to exchange recreation reserve land under section 15AA of the Reserves Act 1977.	No
Step 2	if not required by step 1, public notification precluded in certain circumstances	
S95A(5)(a)	Is the application for a resource consent for 1 or more activities and each activity is subject to a rule or national environmental standard that precludes public notification?	No
S95A(5)(b)	Is the application for a resource consent for 1 or more of the following, but no other, activities; (i) a controlled activity; (iii) a restricted discretionary, discretionary, or non-complying activity, but only if the activity is a boundary activity;	No

The proposed development does not meet the tests for mandatory public notification, nor does it meet the tests for precluding public notification.

Therefore, an assessment of the proposals effects on the environment is required to ascertain the effects of the development and whether public notification is required. The section below provides this assessment.

7.0 EFFECTS ON THE ENVIRONMENT

7.1 Effects that May be Disregarded

Effects on persons who are owners and occupiers of the land in, on, or over which the application relates, or of adjacent land must be disregarded when considering effects on the environment (s 95D(a)). Those adjoining properties are shown below in Figure 5.

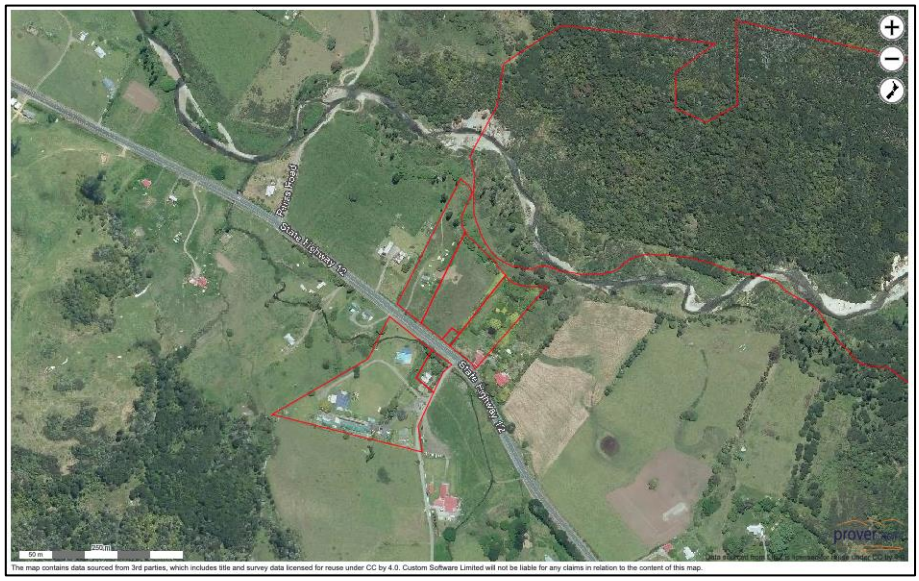


Figure 5 – Adjoining Persons (Source: Prover Maps)

Download CSV

Address	Suburb	Town	Capital Value	Owners	Last Sale Date	Last Sale Price	Land Area	Floor Area
0 State Highway 12	Waima	Far North	170000	Geoffrey Keith Adams,Lena Polly Adams	22 Oct 2013	46000	7,714 m²	81 m²
2461 State Highway 12	Waima	Far North	400000	William Derek Toia	21 Apr 2024	100000	7,916 m²	180 m²
2458 State Highway 12	Waima	Far North	330000	Charmaine Tata Hohepa	19 Sep 2013	90000	1,948 m²	110 m²
0 State Highway 12	Waima	Far North	1265000		01 Jan 1900	485000	2.1858 ha	730 m²
0 State Highway 12	Waima	Far North	192000	Harry Baker,Richard Baker	01 Jan 1900	56500	29.9467 ha	

The permitted baseline may be taken into account should the Council deem it relevant.

7.2 Written Approvals

No written approvals are considered necessary.

7.3 Effects Assessment

The following assessment has been prepared in accordance with Section 88 and Schedule 4 of the Act which specifies that the assessment of effects provided should correspond with the scale and significance of the proposal.

In terms of localised effects or Effects to People, this assessment is undertaken in Section 8 of this Report.

Table 5 – Effects Assessment

Item & Assessment Criteria	Comments
Positive Effects	• The proposal will provide for additional accommodation and upgraded facilities for tangata whenua. • The proposal, from application through to development, employs a number of service providers and sellers of goods. • The proposal seeks to minimise the effects from earthworks , wastewater, and flooding by considered design and mitigation measures.
Integrated Development (Derived from 8.6.5.4.2)	• A plan showing the location of all matters is found in Appendix 2. • A description of the proposal and rule breaches are found above. No staging is proposed. • There are no heritage features on the property. • Sewage disposal is as per the Wastewater Report in Appendix 4. Geotechnical matters are confirmed via Appendix 3. Flooding matters are also mitigated by way of confirmed minimum floor levels for the proposal. These can be conditioned.

	• Open space remains the predominant form of use / activity on the site. Energy efficiency matters have been considered in terms of the design and location of the buildings.
Parking and Access Derived from Chapter 15	• The proposal provides for 1 x car park for each unit as opposed to the required 2. The shortfall is not considered to result in adverse effects given the size and scale of the cabins and the likely use by single or couples given the 1 x bdr layout. • In terms of access, whilst there is an existing access point from the State Highway this will likely require upgrades. It is proposed to upgrade this to a Diagram C crossing for the use of the cabins.
Effects Conclusion	Considering the assessment above and the mitigation measures proposed it is considered that the proposal results in effects which are less than minor.

8.0 EFFECTS TO PEOPLE

The table below outlines the steps associated with limited notification insofar as it relates to s95 of the Act.

Table 6 – Limited Notification Process

Step 1	certain affected groups and affected persons must be notified	
S95B(2)(a)	Are there any affected protected customary rights groups?	No
S95B(2)(b)	Are there any affected customary marine title groups (in the case of an application for a resource consent for an accommodated activity)?	No
S95B(3)(a)	Is the proposed activity on or adjacent to, or may affect, land that is the subject of a statutory acknowledgement made in accordance with an Act specified in Schedule 11?	No
S95B(3)(b)	Is the person to whom the statutory acknowledgement is made is an affected person under section 95E?	No
Step 2	if not required by step 1, limited notification precluded in certain circumstances	
S95B(6)(a)	the application is for a resource consent for 1 or more activities, and each activity is subject to a rule or national environmental standard that precludes limited notification:	No
S95B(6)(b)	the application is for a controlled activity (but no other activities) that requires a resource consent under a district plan (other than a subdivision of land)	No

8.1 Affected Person Determination

As the proposed activity does not trigger mandatory limited notification, nor is it precluded, an assessment of potential affected persons must be undertaken.

The consent authority has discretion to determine whether a person is an affected person. A person is affected if an activity's adverse effects are minor or more than minor to them. The effects of the proposal on adjacent landowners have been undertaken below.

8.2 Localised Effects Assessment (Effects to Persons)

Section 7 of this report provides a graphic and table of the relevant adjacent properties that this assessment relates. The relevant persons associated with the assessment are found in Figure 5 in Section 7 of this report.

For the following reasons, those parties and persons above not considered to be adversely affected by the proposal to a minor or more than minor level:

- All proposed works are situated within the confines of the site. All effects can be managed on site and subject to condition of consents result in less than minor effects.
- The assessment found in Section 7 of this report details that there are no effects to localized person in terms of the identified breaches.

8.3 Effect to Persons Conclusion

Having considered the effects above, there are no adversely affected persons resulting from the proposal.

9.0 STATUTORY CONTEXT

9.1 Operative Far North District Plan

An assessment of the relevant objectives and policies associated with the Operative Far North District Plan has been undertaken below.

This application is subject to the provisions of the Operative Far North District Plan. The site is zoned Rural Production and is to be assessed in terms of the objectives and policies for the zone and the district-wide subdivision and environment provisions.

The proposal would achieve the purpose of the Rural Production zone which is to ensure its' ongoing rural productive purpose that encompasses a wide-range of compatible land use activities, including limited rural lifestyle and residential opportunities in a manner that avoids, remedies or mitigates adverse effects.

It is anticipated that the size and form of the proposal (which is in general accordance with Council standards) would:

- Promote the sustainable management of natural and physical resources in the RPZ (Obj 8.6.3.1);
- Enable the efficient use and development of the RPZ in a way that enables people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety (Obj 8.6.3.2);
- Promote the maintenance of amenity values of the RPZ to a level that is consistent with the productive intent of the zone (Obj 8.6.3.3);
- Avoid, remedy or mitigate the actual or potential conflicts between new land use activities and existing lawfully established activities (reverse sensitivity) within the RPZ (Obj 8.6.3.6);
- Avoid, remedy or mitigate the adverse effects of incompatible use or development on natural and physical resources (Obj 8.6.3.8);

Of prime importance is that the cabins projects allows for the community to enhance their cultural and social wellbeing by providing housing on their maori land for cyclone relief.

Having considered these sections of the Plan, it is concluded that the proposal is not inconsistent with the relevant objectives and policies of the Far North District Plan.

9.2 Proposed Far North District Plan

The Far North District Council have released their Proposed District Plan.

Section 88A(2) provides that "any plan or proposed plan which exists when the application is considered must be had regard to in accordance with section 104(1)(b)." This requires applications to be assessed under both the operative and proposed objective and policy frameworks from the date of notification of the proposed district plan.

In the event of differing directives between objective and policy frameworks, it is well established by case law that the weight to be given to a proposed district plan depends on what stage the relevant provisions have reached, the weight generally being greater as a proposed plan move through the notification and hearing process. In Keystone Ridge Ltd v Auckland City Council, the High Court held that the extent to which the provisions of a proposed plan are relevant should be considered on a case by case basis and might include:

- The extent (if any) to which the proposed measure might have been exposed to testing and independent decision making;
- Circumstances of injustice; and
- The extent to which a new measure, or the absence of one, might implement a coherent pattern of objectives and policies in a plan.

In my view the PDP has not gone through the sufficient process to allow a considered view of the objectives and policies for the Maori Purpose Zone however this has still been provided below.

The proposal directly relates to the maori purpose zone by enabling housing on maori freehold land in an efficient manner that allows for the continued use of the land in the future for other uses.

The only relevant factors impacting the development is the provision of a safe access and consideration of the flooding hazard, both of which can be addressed through conditions of consent. Therefore, the proposal is consistent with the intent of the Maori Purpose Zone.

9.3 Regional Policy Statement for Northland (RPS)

An assessment of the relevant objectives and policies associated with the RPS for Northland has been undertaken and is found in Table 7 below. The RPS sets region wide objectives and policies for the environment.

Table 7 – NRC RPS Review

Objective / Policy	Comment
Integrated Catchment Management	Not relevant
Region Wide Water Quality	Not relevant
Ecological Flows and Water Quality	Not relevant
Indigenous Ecosystems & Biodiversity	There are no SNA's on the site.
Enabling Economic Wellbeing	The proposal allows for various goods/services in the land development sector in Waima.
Economic Activities – Reverse Sensitivity And Sterilization	The proposal does not result in any reverse sensitivity or sterilization effects given the design and scale of the proposal.
Regionally Significant Infrastructure	The proposal does not impact any regionally significant infrastructure.
Efficient and Effective Infrastructure	The proposal seeks to use existing infrastructure i.e FNDC / NZTA roads. The proposal also seeks to upgrade on site infrastructure for future generations.
Security of Energy Supply	Power is provided to the site.
Use and Allocation of Common Resources	Not relevant.

Regional Form	The proposal does not result in any reverse sensitivity effects, or a change in character or sense of place. Versatile soils are impacted by the proposed development, however there are allowances for development to trump soils on maori land.
Tangata Whenua Role in Decision Making	FNDC may send this to intested maori parties.
Natural Hazard Risk	Nil affecting the location of the proposed cabins.
Natural Character, Outstanding Natural Features, Outstanding Natural Landscapes And Historic Heritage	Not relevant.

Having considered the relevant components of the RPS, it is concluded that the proposal is not inconsistent with the relevant objectives and policies.

9.4 National Policy Statements and Plans

With respect to the National Environmental Standard – Soil Contamination, the property file has been reviewed which shows no known activities that are on the HAIL.

In terms of the NES – Freshwater Management, there are no wetlands located on the site. The NES is not considered relevant.

In terms of the NPS for Highly Productive Land. The proposed development is located on a site that contains Class 1-3 soils. The actual soil classification is questionable given the site is flood prone. Notwithstanding this, the NPS-HPL contains allowances for development on maori land. These allowances are considered appropriate in the context of providing development on maori land for cyclone and housing relief.

The site is not located in the Coastal Environment. The NZCPS is not considered relevant. There are no relevant policy statements or plans to assess.

10.0 PART 2 ASSESSMENT

10.1 Section 5 - Purpose of the Act

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

It is considered that proposal represents Part 2, Section 5 of the Act.

10.2 Section 6 - Matters of National Importance

In achieving the purpose of the Act, a range of matters are required to be recognised and provided for. This includes:

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

f) the protection of historic heritage from inappropriate subdivision, use, and development:
g) the protection of protected customary rights:
h) the management of significant risks from natural hazards.

In context, the relevant items to the proposal and have been recognised and provided for. Section 6(e) is directly relevant to the proposal.

10.3 Section 7 - Other Matters

In achieving the purpose of the Act, a range of matters are to be given particular regard. This includes:

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

These matters have been given particular regard through the design of the proposal.

10.4 Section 8 - Treaty of Waitangi

The Far North District Council is required to take into account the principles of the Treaty of Waitangi when processing this consent. This consent application may be sent to local iwi and hapū who may have an interest in this application. We doubt any persons would have a cultural issue with the proposal.

10.5 Part 2 Conclusion

Given the above, it is considered that the proposal meets the purpose of the Act.

11.0 CONCLUSION

Discretionary Activity resource consent is sought from the Far North District Council to carry out the proposed development.

The proposal is considered to result in less than minor effects on the environment and through assessment, there are considered to be no affected persons.

The proposal is consistent with the objectives and policies of the Far North District Plans, the Regional Policy Statement for Northland, and achieves the purpose of the Act. Relevant NPS' and NES' have been considered with the proposal finding consistency with their general aims and intent.

Given the assessment carried out in this report, it is considered that this proposal can be determined non-notified under the RMA 1991.

We appreciate draft conditions to be supplied to us prior to decision being made.

Regards,

Steven Sanson BPlan (Hons)

Consultant Planner

NZPI Member No 4230

RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD

Search Copy

R.W. Muir
Registrar-General
of Land

Identifier **NA19D/549**

Land Registration District **North Auckland**

Date Issued 16 November 1970

Prior References
NAPR19D/548

Estate Fee Simple

Area 9606 square metres more or less

Legal Description Part Waima D 19 Block

Registered Owners

Ngati Kawa Aramiha Taituha, Peter Samuel Makiha, Sophie Te Paea Makiha, Te Awherangi Reece Munro, Gerrard Shane Makiha, Joanna Makiha and Tony Robert Makiha as responsible trustees jointly, no survivorship

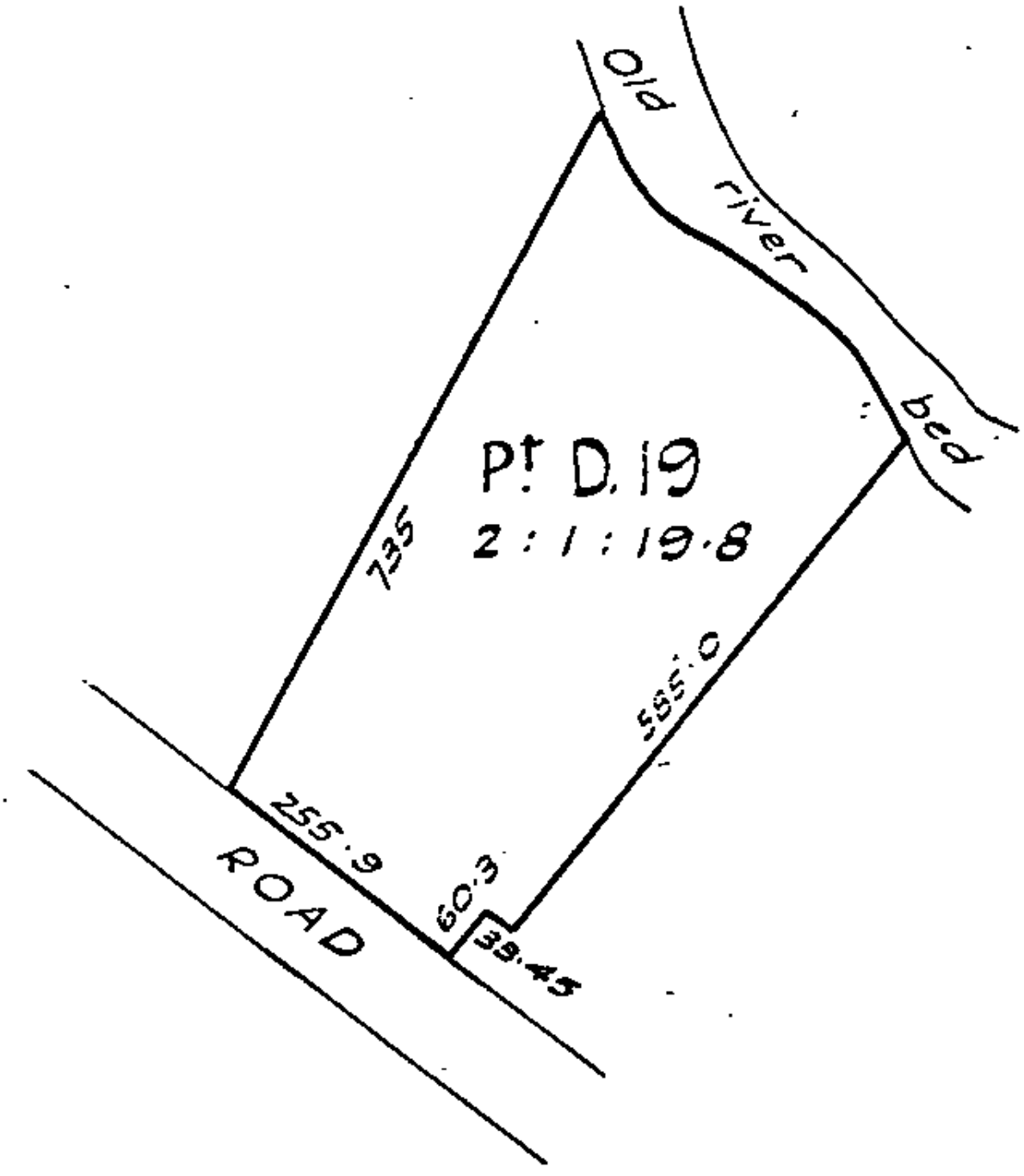
---

Interests

Subject to Section 10 Maori Affairs Amendment Act 1967

9120333.1 Status Order determining the status of the within land to be Maori Freehold Land - 10.7.2012 at 7:00 am

VII Waoku S. D.

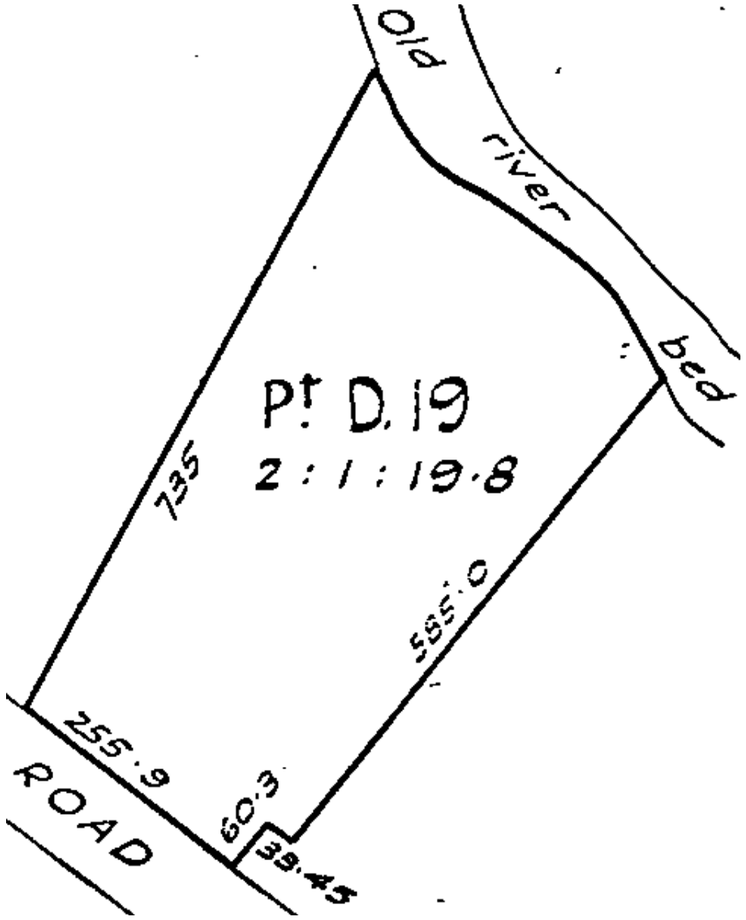


Report on Maori Land details for the following Record(s) of Title

Record(s) of Title

NA19D/549	Identified as potentially Maori Freehold Land

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



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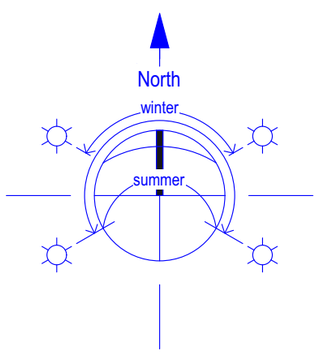
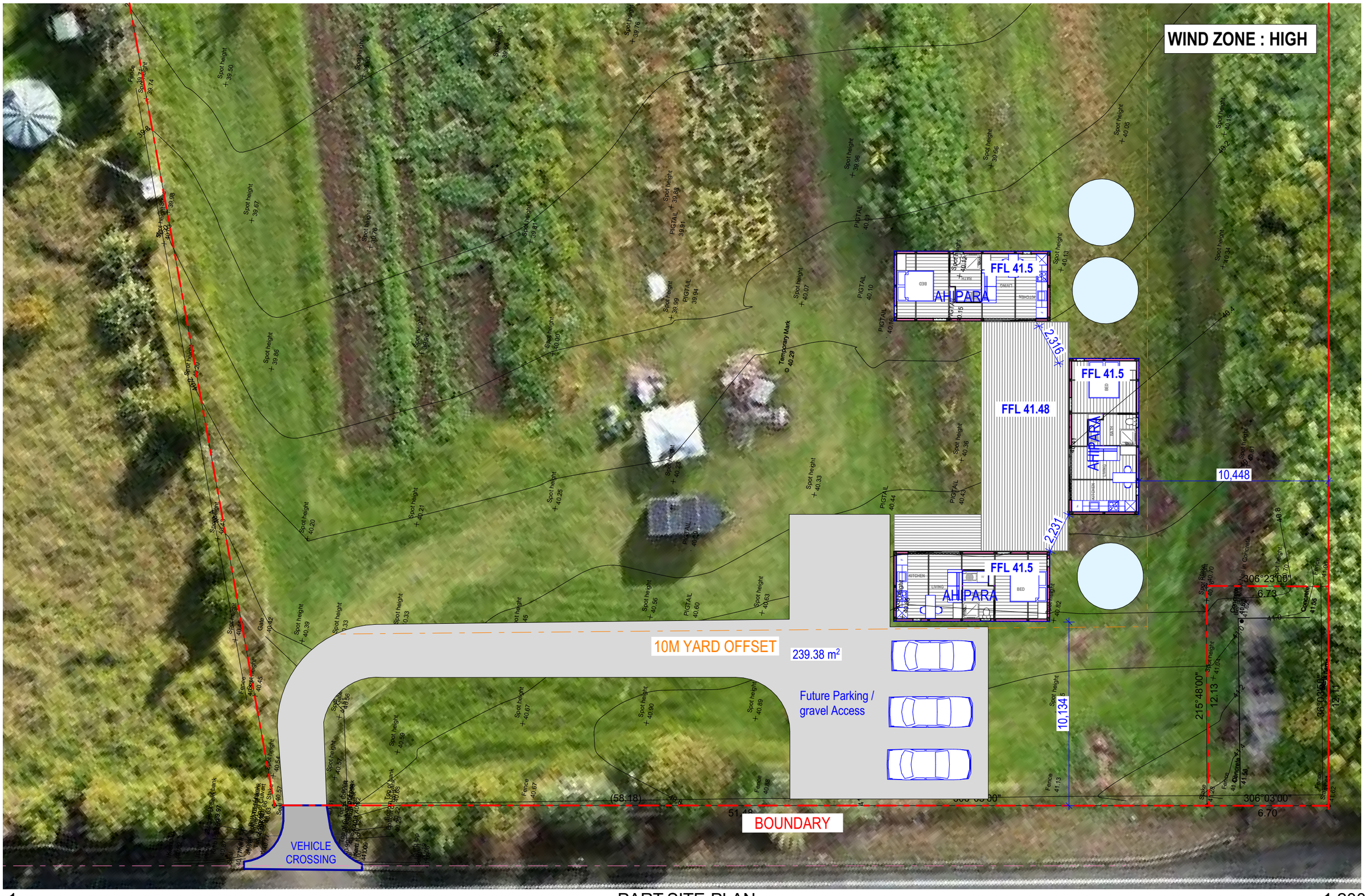


2 EXISTING SITE 1:600

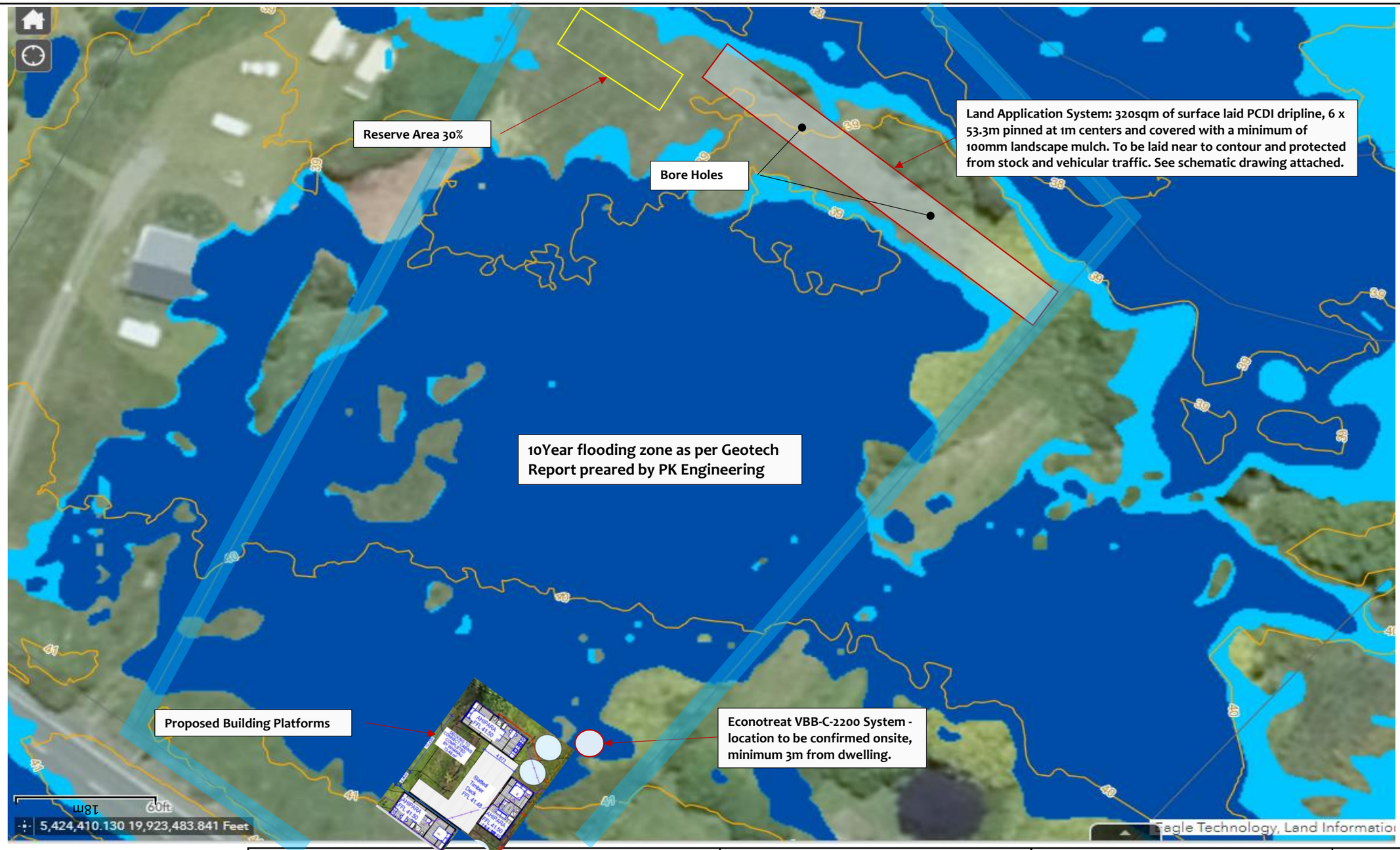
WIND ZONE : HIGH

PROJECT No. BDO. SITE D	High-Performance Durable Construction Systems MiniCLT	nik@mtpokaka.co.nz MT. POKAKA TIMBER PRODUCTS Ltd	PROJECT NAME + ADDRESS PART WAIMA D19 BLOCK	SHEET TITLE EXISTING SITE PT WAIMA D19	STATUS CONSENT	DESIGN: -- DRAWN: -- CHECKED: -- APPROVED: --	SCALE: Shown@A3 DATE: 15/05/2024	SHEET NUMBER A.1.1	REVISION



1 PART SITE PLAN 1:200

PROJECT No. BDO. SITE D	High-Performance Durable Construction Systems MiniCLT	nik@mtpokaka.co.nz MT POKAKA TIMBER PRODUCTS Ltd	PROJECT NAME + ADDRESS PART WAIMA D19 BLOCK	SHEET TITLE PART SITE	STATUS CONSENT	DESIGN: -- DRAWN: -- CHECKED: -- APPROVED: --	SCALE: Shown@A3 DATE: 15/05/2024	SHEET NUMBER A.1.2	REVISION



N

WaterFlow
Bringing Clarity to Wastewater

DATE DRAW: 2/05/2024
PREPARED BY: Alexandra Sabath
REVISED: Matt Riddell

SITE LAYOUT PLAN:

TE MAHUREHURE
351 Puha Road
Waimā
Lot Part waima D19 DP Block
0HA

SCALE:
1 : 493
@ A3

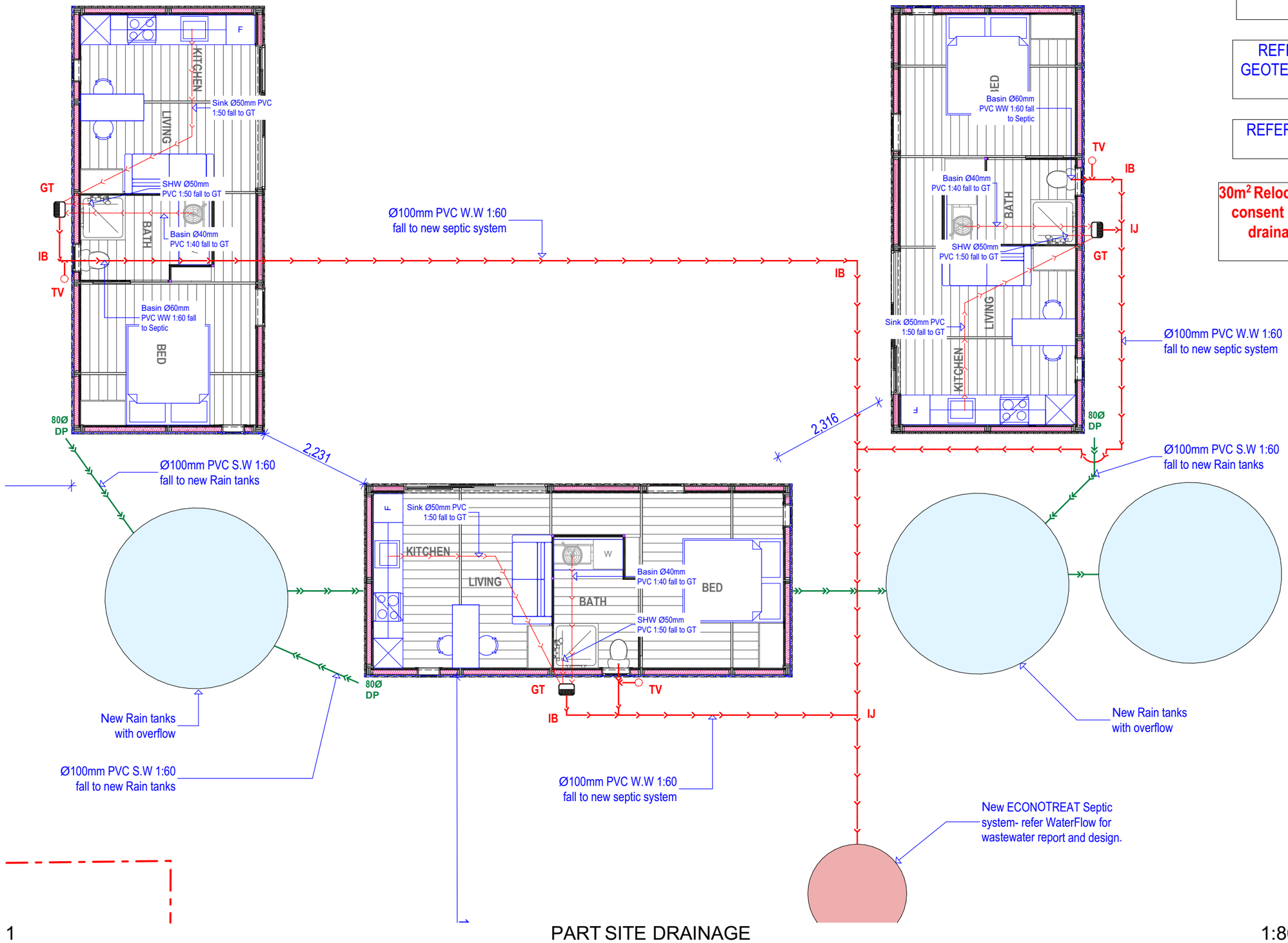
PROJECT No.			PROJECT NAME + ADDRESS	SHEET TITLE	STATUS			SHEET NUMBER	REVISION
BDO. SITE D	High-Performance Durable Construction Systems MiniCLT	nik@mtpokaka.co.nz MT POKAKA TIMBER PRODUCTS Ltd	PART WAIMA D19 BLOCK	WASTE WATER	CONSENT	DESIGN: -- DRAWN: -- CHECKED: -- APPROVED: --	SCALE: Shown@A3 DATE: 15/05/2024	A.1.3	

ALL CONNECTIONS TO BE CAPPED UPON COMPLETION

REFER PK ENGINEERING FOR GEOTECH REPORT & FOUNDATION DESIGN / PS1

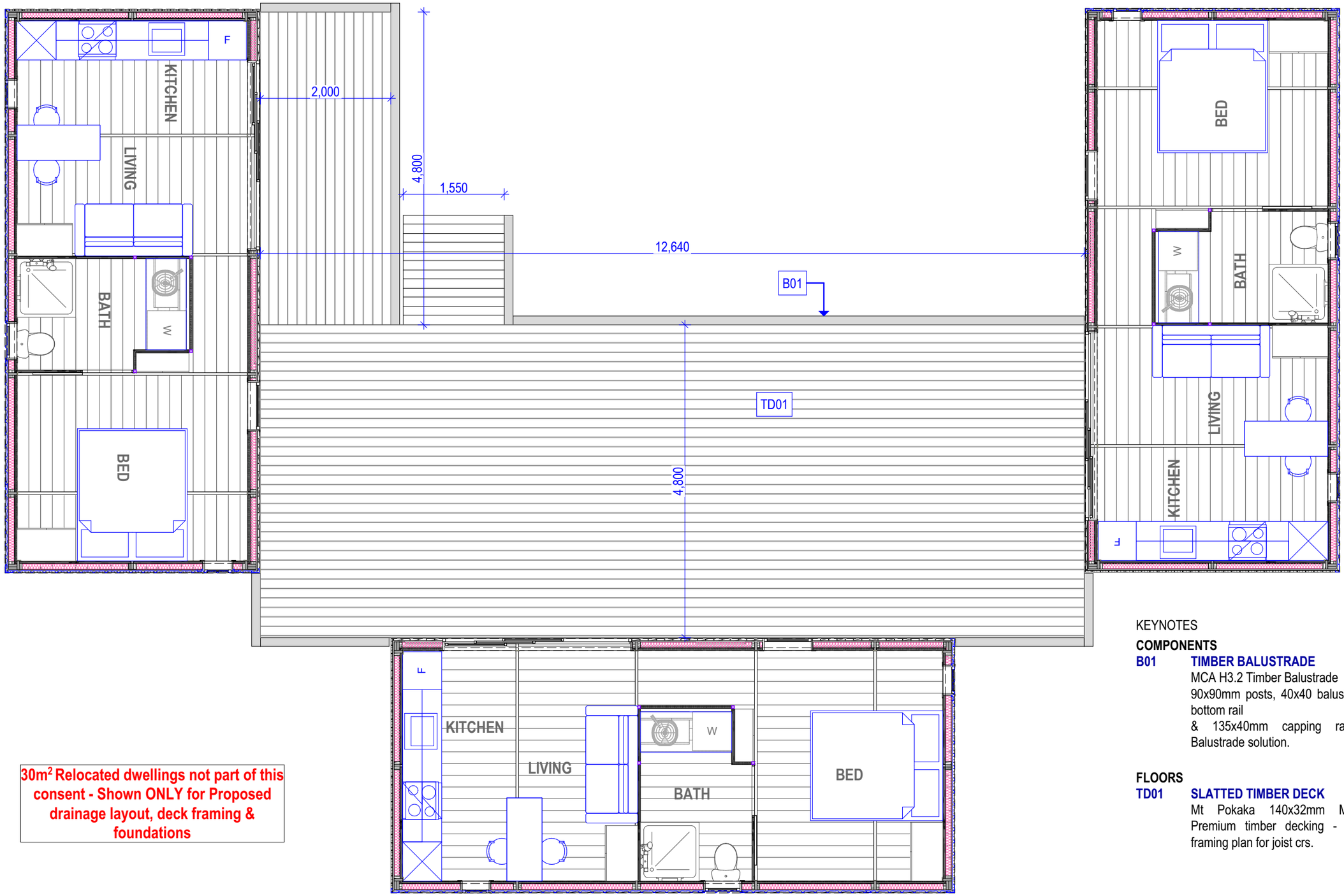
REFER WATERFLOW FOR WASTE WATER REPORT

30m² Relocated dwellings not part of this consent - Shown ONLY for Proposed drainage layout, deck framing & foundations



1 PART SITE DRAINAGE 1:80

PROJECT No. BDO. SITE D	High-Performance Durable Construction Systems MiniCLT	nik@mtpokaka.co.nz MT. POKAKA TIMBER PRODUCTS Ltd	PROJECT NAME + ADDRESS PART WAIMA D19 BLOCK	SHEET TITLE PART SITE DRAINAGE PLAN	STATUS CONSENT	DESIGN: -- DRAWN: -- CHECKED: -- APPROVED: --	SCALE: Shown@A3 DATE: 15/05/2024	SHEET NUMBER A.1.4 REVISION



30m² Relocated dwellings not part of this consent - Shown ONLY for Proposed drainage layout, deck framing & foundations

KEYNOTES

COMPONENTS

B01 TIMBER BALUSTRADE

MCA H3.2 Timber Balustrade - 90x90mm posts, 40x40 balusters, 90x40 bottom rail & 135x40mm capping rail. MITEK Balustrade solution.

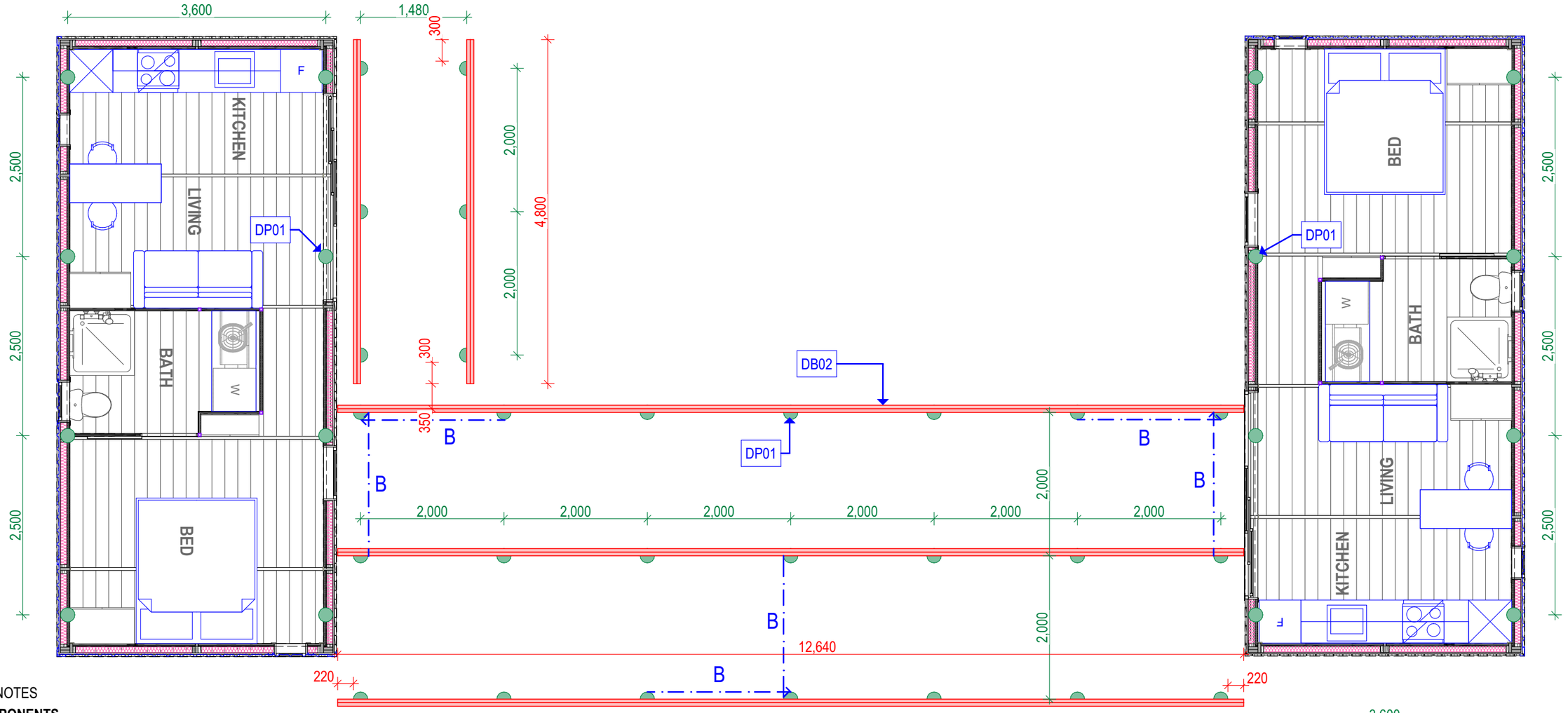
FLOORS

TD01 SLATTED TIMBER DECK

Mt Pokaka 140x32mm MCA H3.2 Premium timber decking - refer deck framing plan for joist crs.

1 DECK LAYOUT PLAN 1:60

PROJECT No. BDO. SITE D	High-Performance Durable Construction Systems MiniCLT	nik@mtpokaka.co.nz MT POKAKA TIMBER PRODUCTS Ltd	PROJECT NAME + ADDRESS PART WAIMA D19 BLOCK	SHEET TITLE DECKING LAYOUT PLAN	STATUS CONSENT	DESIGN: -- DRAWN: -- CHECKED: -- APPROVED: --	SCALE: Shown@A3 DATE: 15/05/2024	SHEET NUMBER A.1.5 REVISION



KEYNOTES

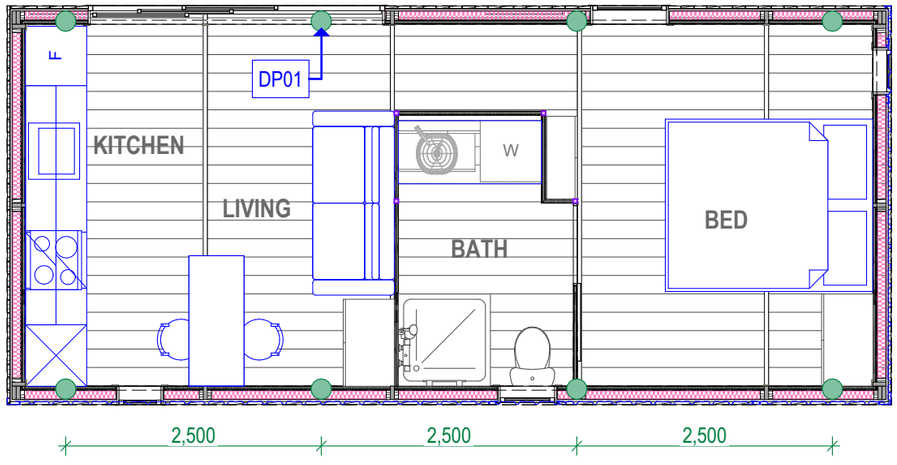
COMPONENTS

DB02 **DECK BEARER**
2/200x50mm VSG8 H3.2 Timber deck bearer

DP01 **200SED Pile**
200mm dia.. H5 pile to meet ground conditions - refer PK Engineering for Type 4 foundation design.

30m² Relocated dwellings not part of this consent - Shown ONLY for Proposed drainage layout, deck framing & foundations

REFER PK ENGINEERING FOR GEOTECH REPORT & FOUNDATION DESIGN / PS1



SUBFLOOR BRACING.

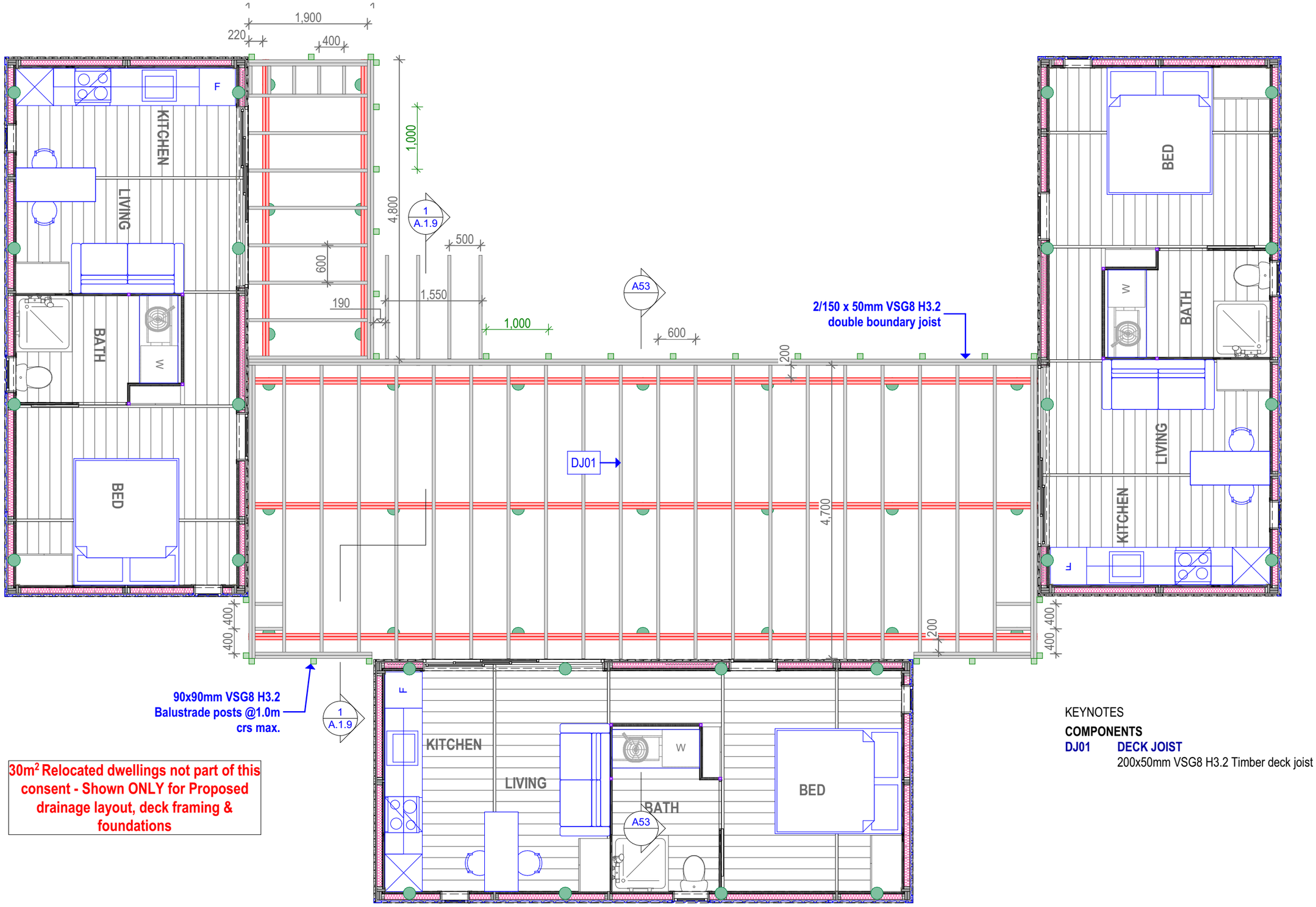
Demand = 7.5BU/ m2

Total Required = 450BU

Total Achieved = 720BU

1 FOUNDATION PLAN 1:60

PROJECT No. BDO. SITE D	High-Performance Durable Construction Systems MiniCLT	nik@mtpokaka.co.nz MT. POKAKA TIMBER PRODUCTS Ltd	PROJECT NAME + ADDRESS PART WAIMA D19 BLOCK	SHEET TITLE PILE LAYOUT & DECK BEARER PLAN	STATUS CONSENT	DESIGN: -- DRAWN: -- CHECKED: -- APPROVED: --	SCALE: Shown@A3 DATE: 15/05/2024	SHEET NUMBER A.1.6 REVISION



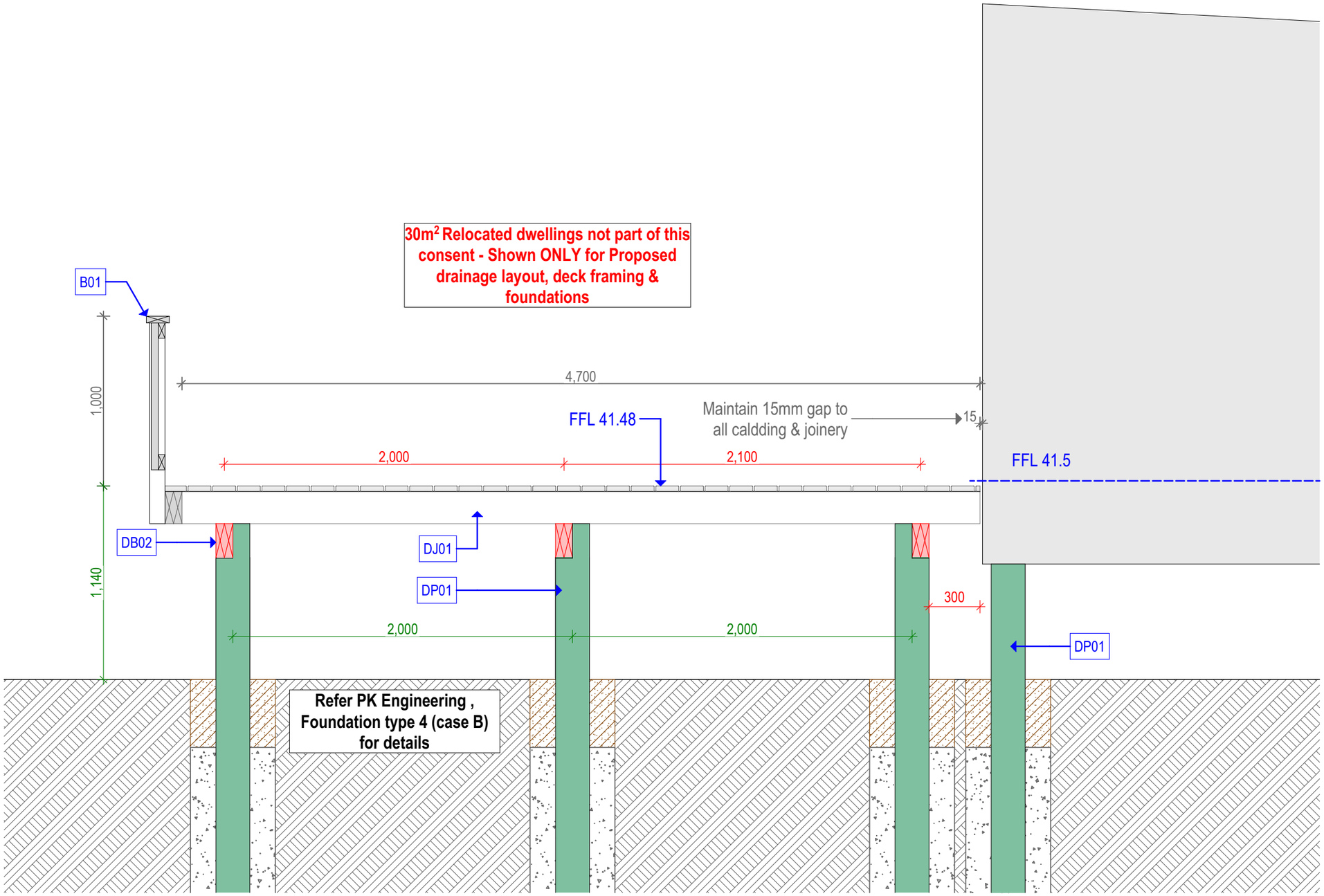
KEYNOTES

COMPONENTS

DJ01 **DECK JOIST**
200x50mm VSG8 H3.2 Timber deck joist

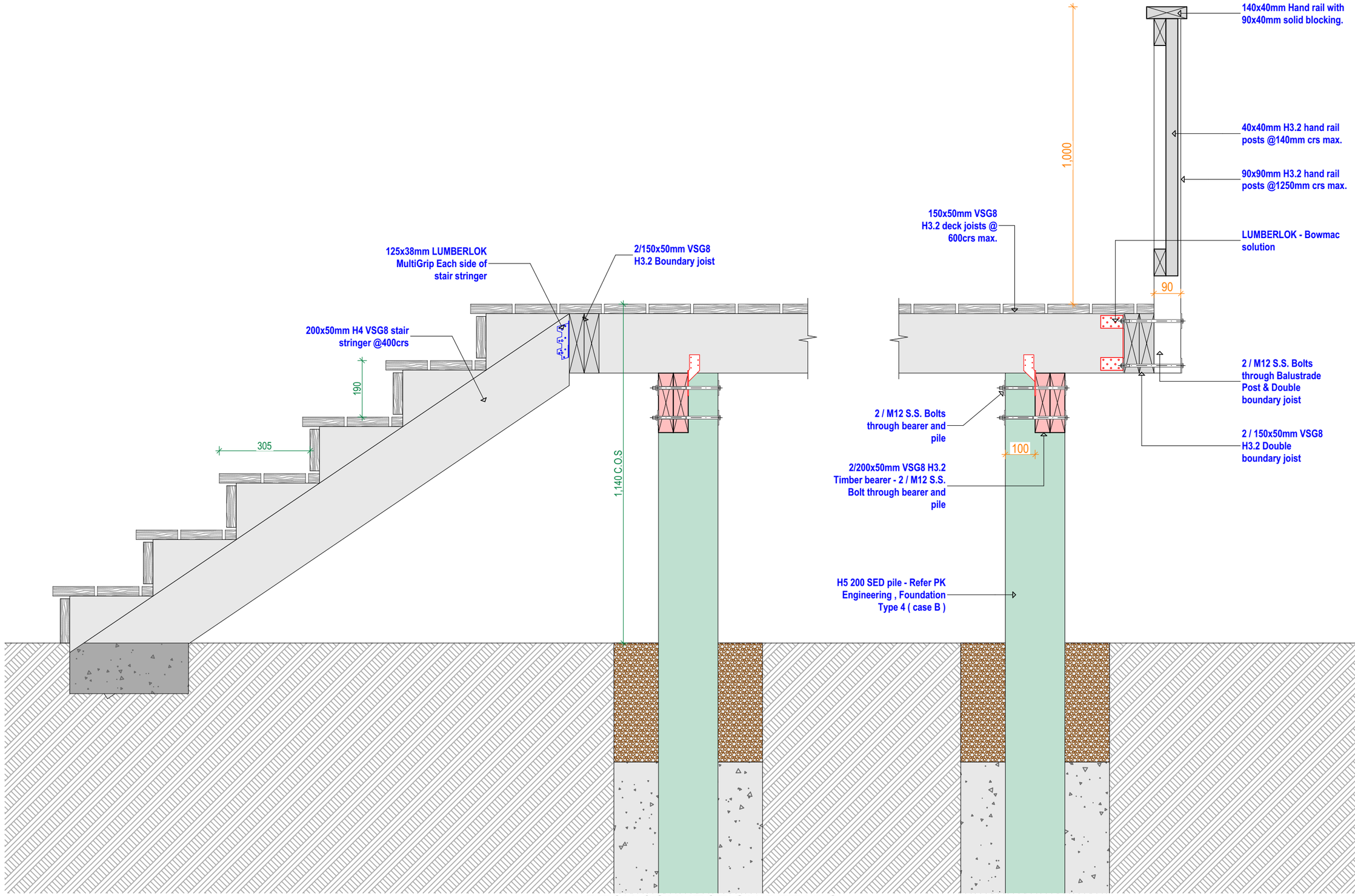
1 DECK FRAMING PLAN 1:60

PROJECT No. BDO. SITE D	High-Performance Durable Construction Systems MiniCLT	nik@mtpokaka.co.nz MT POKAKA TIMBER PRODUCTS Ltd	PROJECT NAME + ADDRESS PART WAIMA D19 BLOCK	SHEET TITLE DECK FRAMING PLAN	STATUS CONSENT	DESIGN: -- DRAWN: -- CHECKED: -- APPROVED: --	SCALE: Shown@A3 DATE: 15/05/2024	SHEET NUMBER A.1.7	REVISION



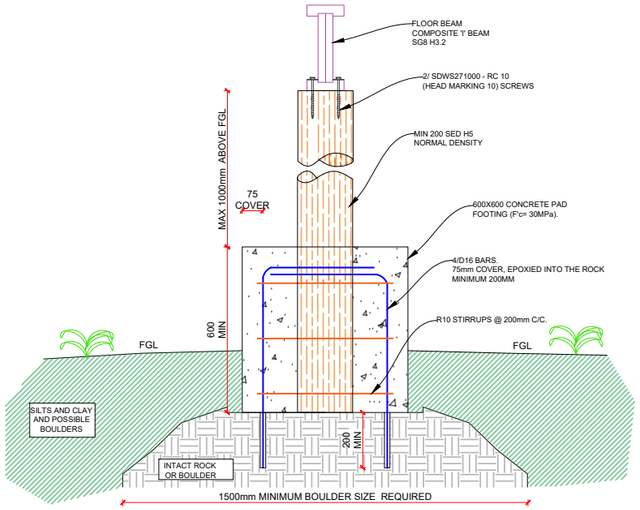
1 SECTION 1:25

PROJECT No. BDO. SITE D	High-Performance Durable Construction Systems MiniCLT	nik@mtpokaka.co.nz MT POKAKA TIMBER PRODUCTS Ltd	PROJECT NAME + ADDRESS PART WAIMA D19 BLOCK	SHEET TITLE DECK SECTION	STATUS CONSENT	DESIGN: -- DRAWN: -- CHECKED: -- APPROVED: --	SCALE: Shown@A3 DATE: 15/05/2024	SHEET NUMBER A.1.8	REVISION



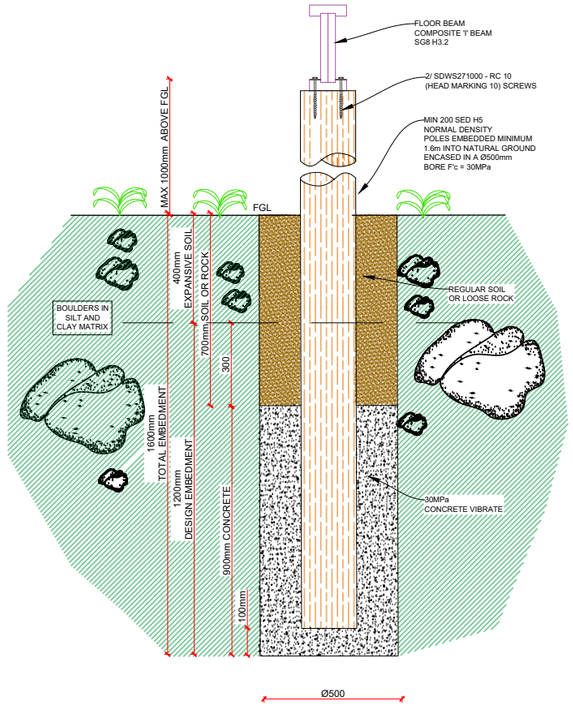
DECK CONNECTION DETAILS

PROJECT No. BDO. SITE D	High-Performance Durable Construction Systems MiniCLT	nik@mtpokaka.co.nz MT POKAKA TIMBER PRODUCTS Ltd	PROJECT NAME + ADDRESS PART WAIMA D19 BLOCK	SHEET TITLE DECKING CONECTION DETAILS	STATUS CONSENT	DESIGN: -- DRAWN: -- CHECKED: -- APPROVED: --	SCALE: Shown@A3 DATE: 15/05/2024	SHEET NUMBER A.1.9 REVISION



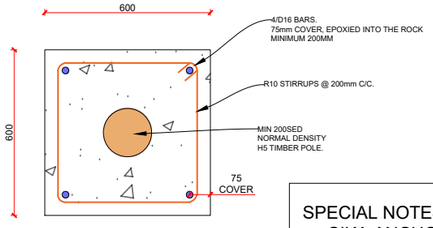
TYPE 4 FOUNDATION DETAIL (CASE A)

SCALE 1:20



TYPE 4 FOUNDATION DETAIL (CASE B)

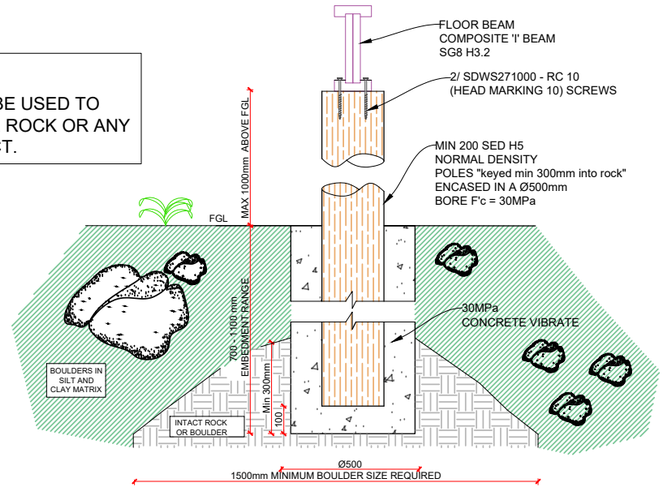
SCALE 1:20



CASE A PLAN VIEW

SCALE 1:20

SPECIAL NOTES:
- SIKA ANCHORFIX - 1 TO BE USED TO ANCHOR BARS INTO THE ROCK OR ANY OTHER SIMILAR PRODUCT.



TYPE 4 FOUNDATION DETAIL (CASE C)

SCALE 1:20

Notes:

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3. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECT'S, SERVICES, CIVIL AND OTHER PROJECT DRAWINGS AND SPECIFICATIONS. ANY DISCREPANCIES SHALL BE REFEREED TO THE ENGINEER FOR RESOLUTION.
4. IN THE EVENT THAT THERE IS ANY CONFLICT BETWEEN THE DRAWINGS AND SPECIFICATION THEN THE REQUIREMENTS OF THE DRAWINGS SHALL TAKE PRECEDENCE, WITH THE DETAIL DRAWINGS TAKING PRECEDENCE OVER THE GENERAL NOTES.

SPECIAL NOTES:

1. SITES WITH EXPANSIVE SOILS REQUIRE DEEPER POLE EMBEDMENT AND MINIMUM 70KPa GROUND BEARING CAPACITY: THE GROUND BEARING MUST BE CHECKED BY A SUITABLY QUALIFIED ENGINEER BEFORE CONCRETE CAN BE POURED.
2. CONSTRUCTION DURING WINTER MAY BE AFFECTED BY HIGH GROUNDWATER TABLES- THIS MAY MAKE THE BOREHOLES TOO SATURATED FOR CONCRETE - IN THAT CASE USE 35MPa CONCRETE TO MAKE DISPLACEMENT OF THE WATER POSSIBLE.

PK ENGINEERING LIMITED
DATE: 31 1 2024
CHECKED BY:
PRADEEP KUMAR
CHARTERED PROFESSIONAL ENGINEER
(STRUCTURAL, GEOTECHNICAL)
IntPE, CPEng, MIPENZ No. 203058

REV:	DESCRIPTION:	BY:	DATE:

STATUS: ISSUED TO CLIENT

PK ENGINEERING
CHARTERED PROFESSIONAL ENGINEERS
LEVEL 1, ANZ BANK
90 KERIKERI ROAD, KERIKERI
PO BOX 464, KERIKERI
Phone Number: 09 407 3255
Email: teampk@pkengin.co.nz

CLIENT: LAMINATA HOMES LTD.

SITE: MHUD & CYCLONE RELIEF SITE
NORTHLAND REGION

TITLE: RELOCATABLE STUDIOS
FOUNDATION TYPE 4

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
1:20	31/01/2024	JW	PK

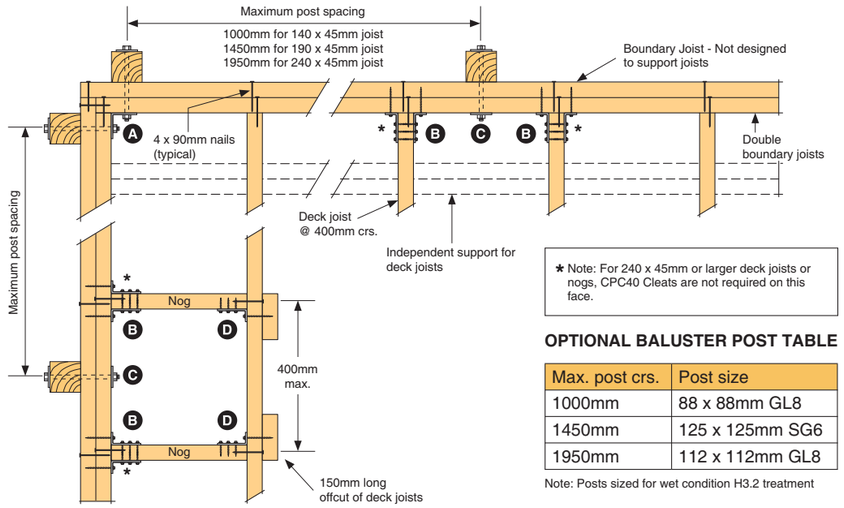
PROJECT NO:	DRAWING NO:	REVISION:
23-060	D3	0

PROJECT No.			PROJECT NAME + ADDRESS	SHEET TITLE	STATUS			SHEET NUMBER	REVISION
BDO. SITE D	High-Performance Durable Construction Systems MiniCLT	nik@mtpokaka.co.nz MT. POKAKA TIMBER PRODUCTS Ltd	PART WAIMA D19 BLOCK	PILE FOUNDATION TYPE 4	CONSENT	DESIGN: -- DRAWN: -- CHECKED: -- APPROVED: --	SCALE: Shown@A3 DATE: 15/05/2024	A.1.10	

FACE FIXED BALUSTER POSTS

LUMBERLOK® TIMBER CONNECTORS

- Complies with Table 3.3 AS/NZS 1170.1:2002 for horizontal load of 0.75kN/m on handrail
- All fixings are designed to provide adequate rotational stability to the handrail system to resist the horizontal load at top of baluster post
- Assumes an approved post and balustrade system is used

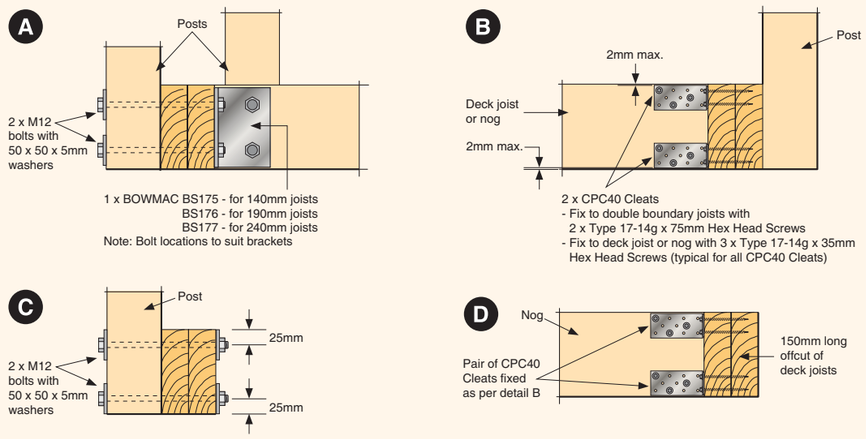


★ Note: For 240 x 45mm or larger deck joists or nogs, CPC40 Cleats are not required on this face.

OPTIONAL BALUSTER POST TABLE

Max. post crs.	Post size
1000mm	88 x 88mm GL8
1450mm	125 x 125mm SG6
1950mm	112 x 112mm GL8

Note: Posts sized for wet condition H3.2 treatment



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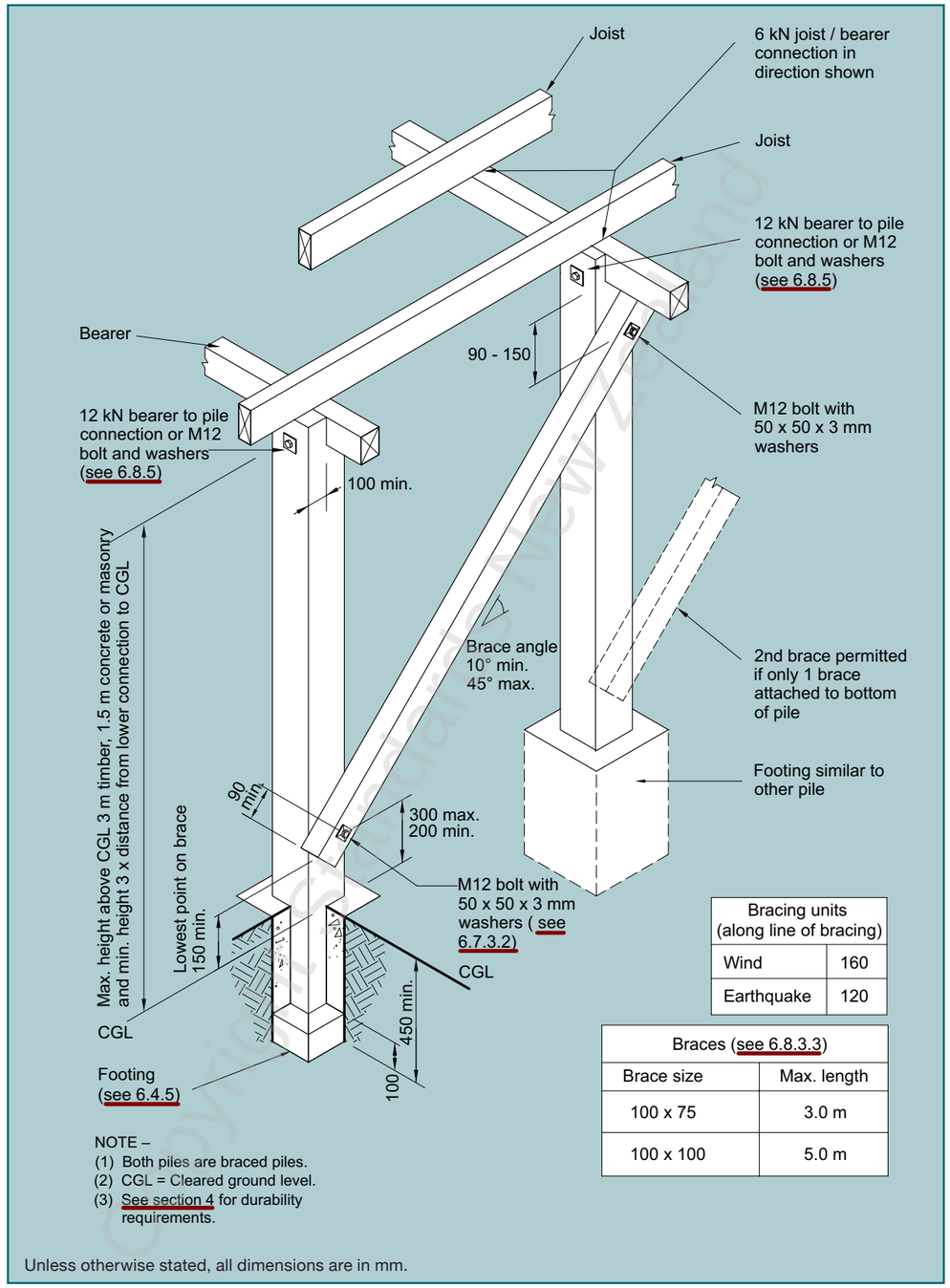

Bracing units (along line of bracing)	
Wind	160
Earthquake	120

Braces (see 6.8.3.3)	
Brace size	Max. length
100 x 75	3.0 m
100 x 100	5.0 m

NOTE –
(1) Both piles are braced piles.
(2) CGL = Cleared ground level.
(3) See section 4 for durability requirements.

Unless otherwise stated, all dimensions are in mm.

Figure 6.6 – Braced pile system – Brace connected to pile (see 6.8)

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PROJECT No.			PROJECT NAME + ADDRESS	SHEET TITLE	STATUS		SCALE:	SHEET NUMBER	REVISION
BDO. SITE D	High-Performance Durable Construction Systems MiniCLT™	nik@mtpokaka.co.nz MT. POKAKA TIMBER PRODUCTS Ltd	PART WAIMA D19 BLOCK	DETAILS	CONSENT	DESIGN: -- DRAWN: -- CHECKED: -- APPROVED: --	Shown@A3 DATE: 15/05/2024	A.1.11	

GEOTECHNICAL REPORT

FOR

STAGED DEVELOPMENT TO ALLOW FOR FUTURE ACCOMMODATION

UNITS TE MAHUREHURE

AT

PT WAIMA D19

STATE HIGHWAY 12

FOR

LAMINATA HOMES LTD

Job No: 23-060D NEW SITE
Date: April 2024

Level 1 ANZ Bank Building 90 Kerikeri Road, Kerikeri, New Zealand

Telephone: 09 407 3255 Email: teampk@pkengin.co.nz

Contents

PK ENGINEERING
CHARTERED PROFESSIONAL ENGINEERS

1. INTRODUCTION

This report was requested by Laminata Homes Ltd and has been prepared to assess the suitability of Part Waima D19 Block, state highway 12, Waima for future development.
This report addresses land stability and flood levels only and has been prepared for the sole use of the client. It shall not be used, reproduced, or copied in any manner or form without the permission of PK Engineering Limited.

2. GENERAL SITE DESCRIPTION

The total area of the Block is approximately 9,606m^2. The area for the future development is relatively flat and lies within the Far North District Council Rural Production Zone. Refer Fig. 1. The lot is currently predominantly planted as community gardens with mature trees on the northern boundary. Refer Figures 1 and 2 below.

The location of all features discussed in this report are from information supplied by Laminata Homes Ltd. and tape measurements made on site.

The subsurface conditions discussed in this report have been determined at very specific locations and will not identify any variations in ground strength or composition at other locations on the site. During construction should ground conditions be found to vary significantly from those described in this report PK Engineering is to be notified immediately.

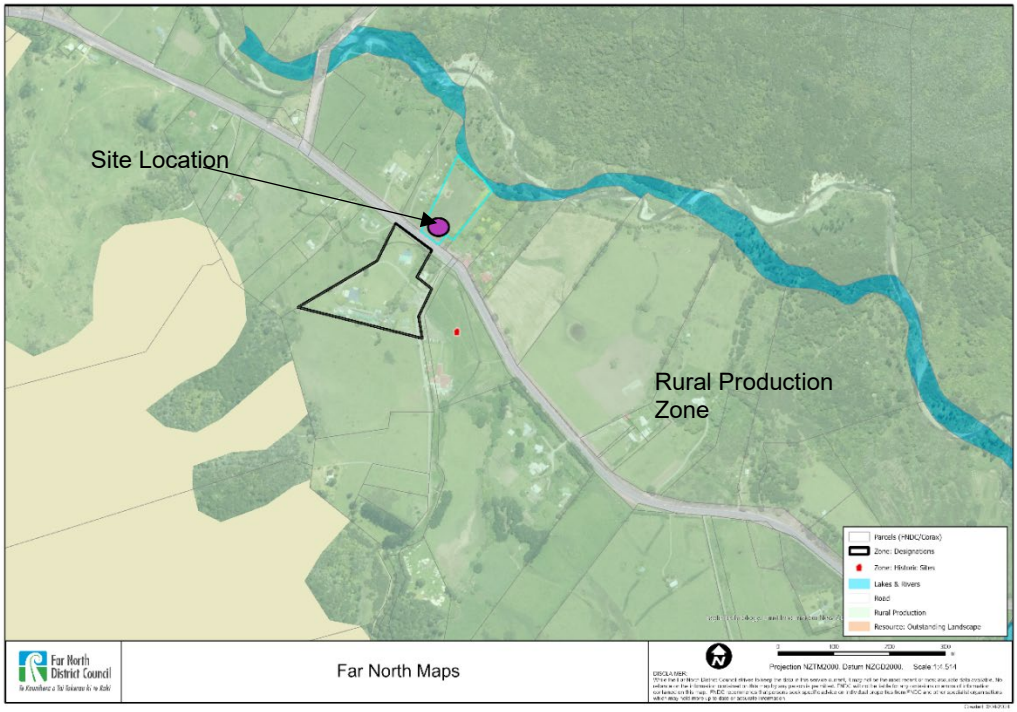

Figure 1 FNDC District Plan Rural Production Zone

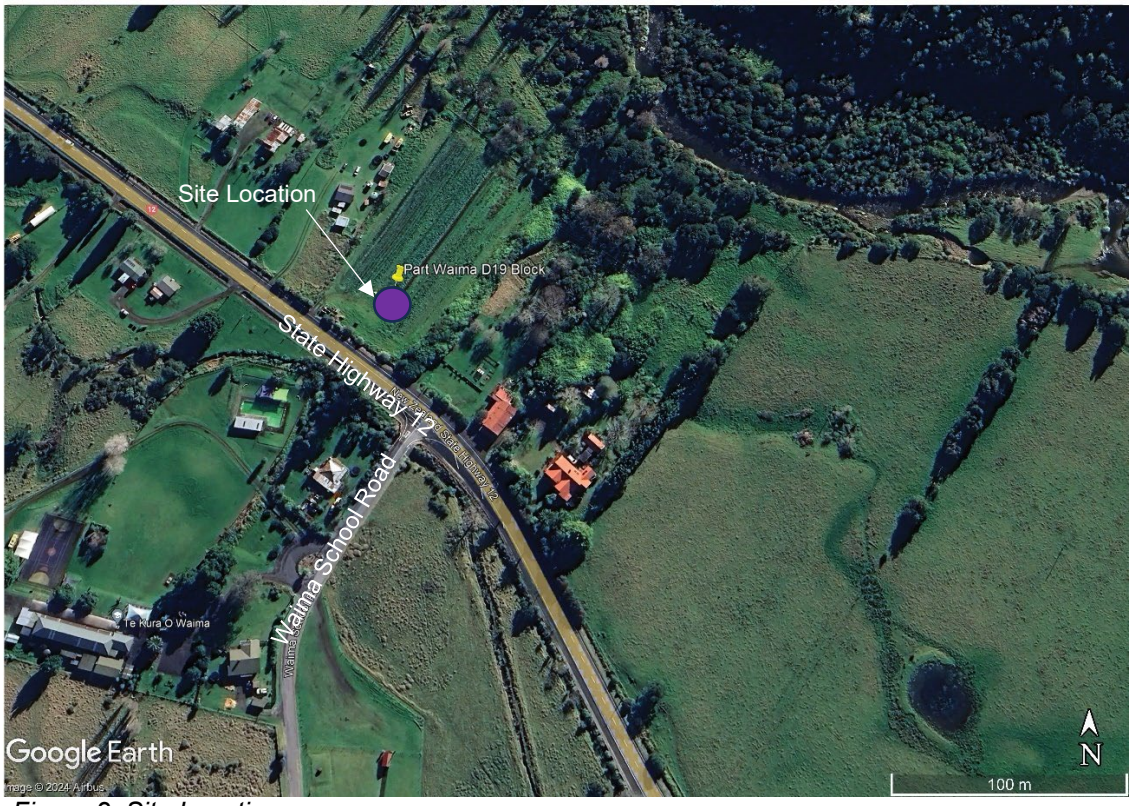

Figure 2: Site Location

3. NATURAL HAZARDS

The proposed area for development lies within the Northland Regional Council,River Flood Hazard Zone – Priority Rivers (10 year extent) and Priority Rivers 100 year +CC extent. See Figure 3 below.

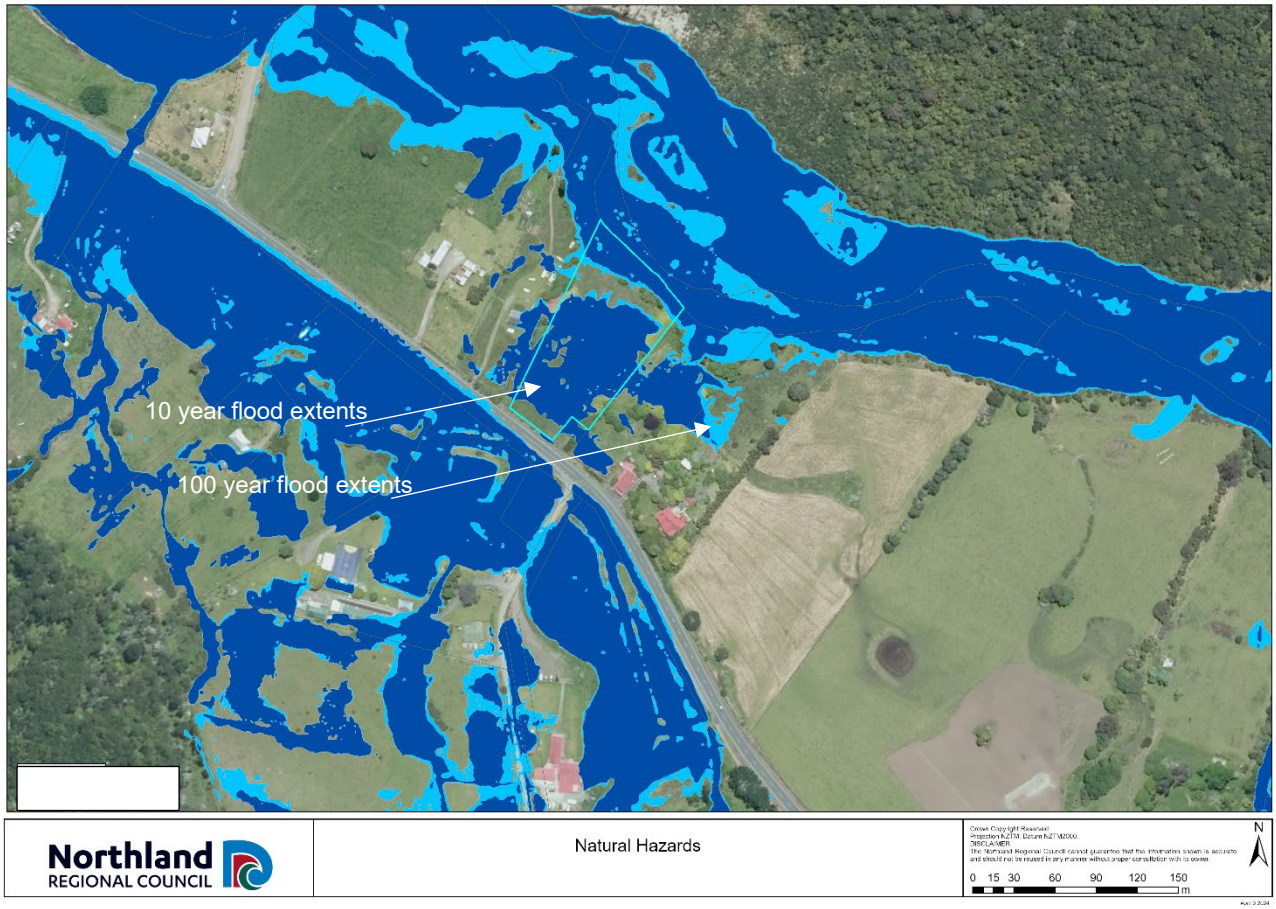

Figure 3.Modelled river flood extents 10yr and 100yr + CC. Priority Rivers

4. GEOLOGY

Soil type –*"Mangakahia silt loam and clay loam."* overlying *"Alluvium, mud, sand and gravel with minor peat, forming river beds and flood plain deposits. Unconsolidated to very soft, unweathered",* overlying "*micaceous sandstone ……*"
NZMS 290, Sheet O06/07 soil and rock maps. Figures 5 and 6 below.

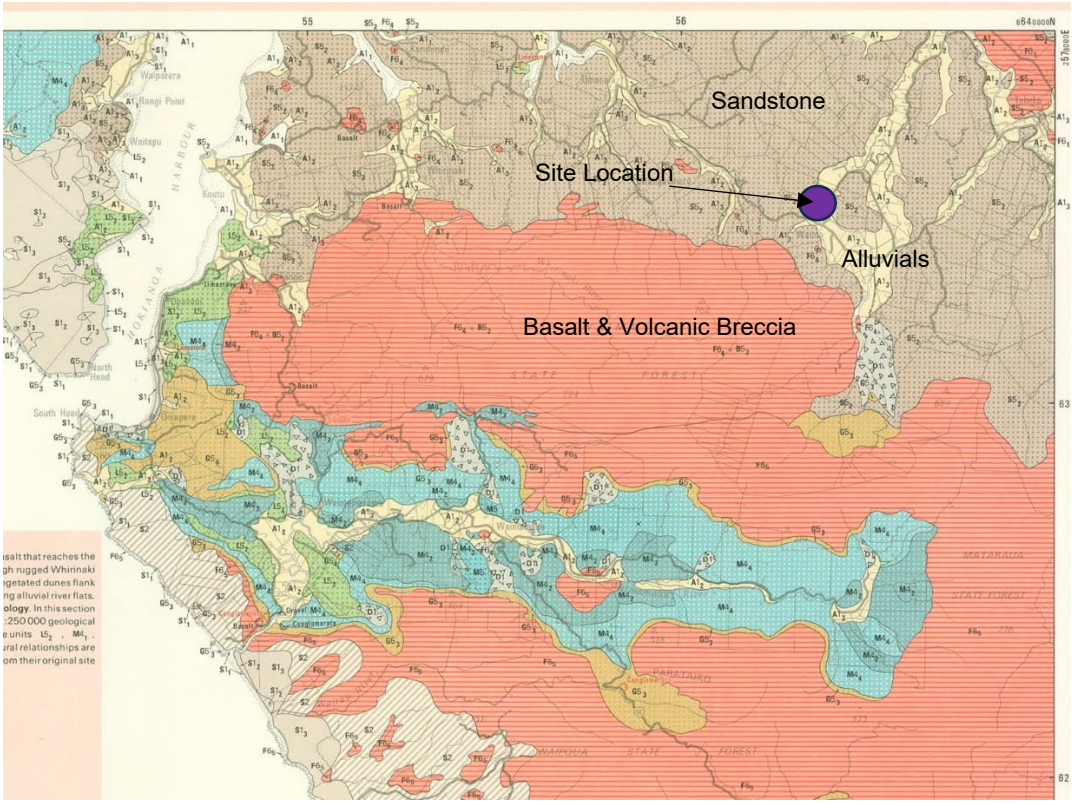

Figure 5: Extract from NZMS 290 Sheet O06/07 Rock Maps

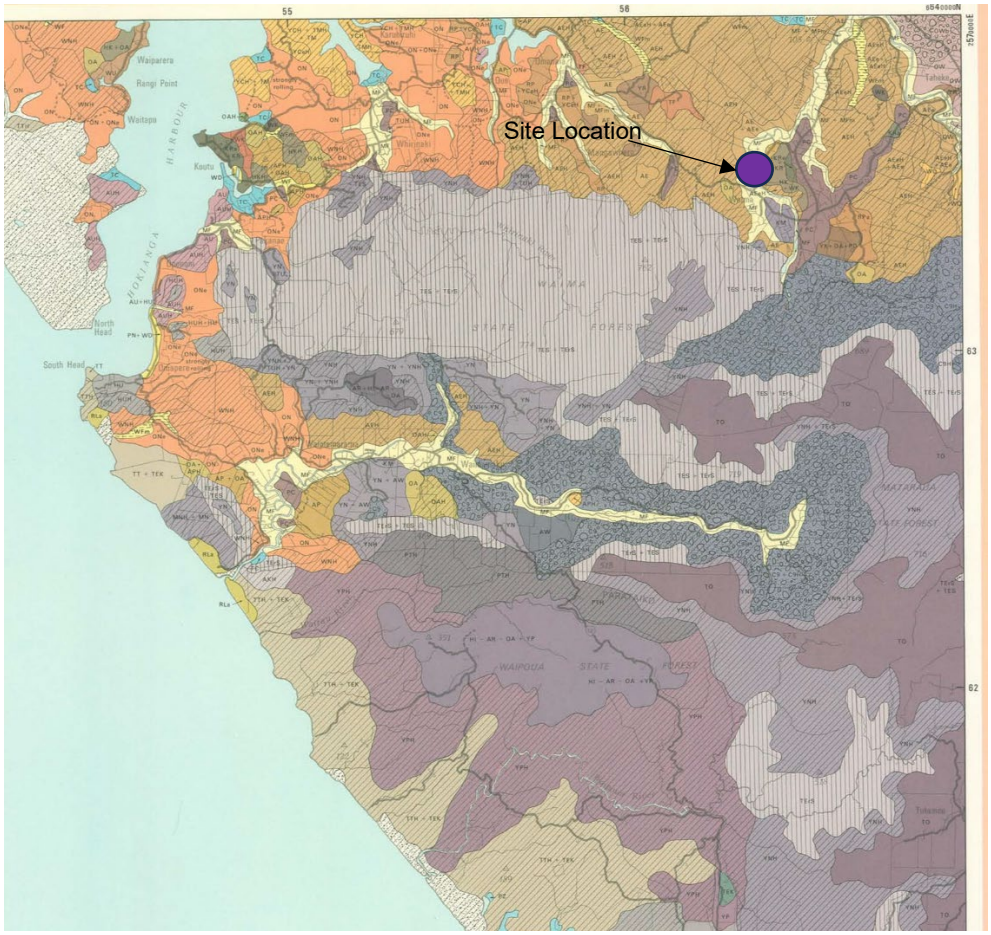

Figure 6 Extract from NZMS 290 Sheet O06/07 Soil Maps

5. SITE INVESTIGATIONS

5.1 VISUAL INSPECTION

A thorough walkover of the site was undertaken and geotechnical features relating to site stability were noted.

5.2 SUBSURFACE INVESTIGATIONS

Two subsurface exploratory auger holes were drilled in the area for future development referred to as AH1 and AH2. For AH1 In situ undrained shear strength readings were taken at 300mm intervals. Both AH1 and AH2 were drilled, using a 50mm hand auger, to refusal at 0.5m depth below existing ground level (EGL) respectively. Scala penetrometer tests PT1 and PT2 were conducted from the base of AH1 and AH2. Scala penetrometer test PT3 was driven from surface to 0.85m below existing ground level. PT4 was driven from surface to 0.85m below existing ground level adjacent to AH1. Refer Table 1 below for a data summary.

Table 1 Data Summary

	Auger Depth (m)	Rock Intercept (m)	Scala Depth (m)	GWL
AH1/PT1	0.4	0.65	0.65	-
AH2/PT2	0.55	0.9	0.9	-
PT3	-	0.85	0.85	-
PT4	-	0.85	0.85	-

Auger hole AH1 and AH2 intercepted ground with shear strength in excess of 100kPa. All Scala penetrometer tests PT1-PT4 intercepted impenetrable ground, inferred to be boulders at shallow depth and were terminated on the inferred boulders. Scala tests PT1, PT2 and PT4 intercepted ground with good resistance to penetration. Scala Test PT3 intercepted ground with poor resistance to penetration between 0.35 to 0.55m below existing ground level. All scala tests were terminated on impenetrable ground inferred to be boulders.

The logs of the auger holes and scala penetrometer tests are given in Appendix A. The location of auger holes and scala penetrometer tests is illustrated in Figure 6 below.

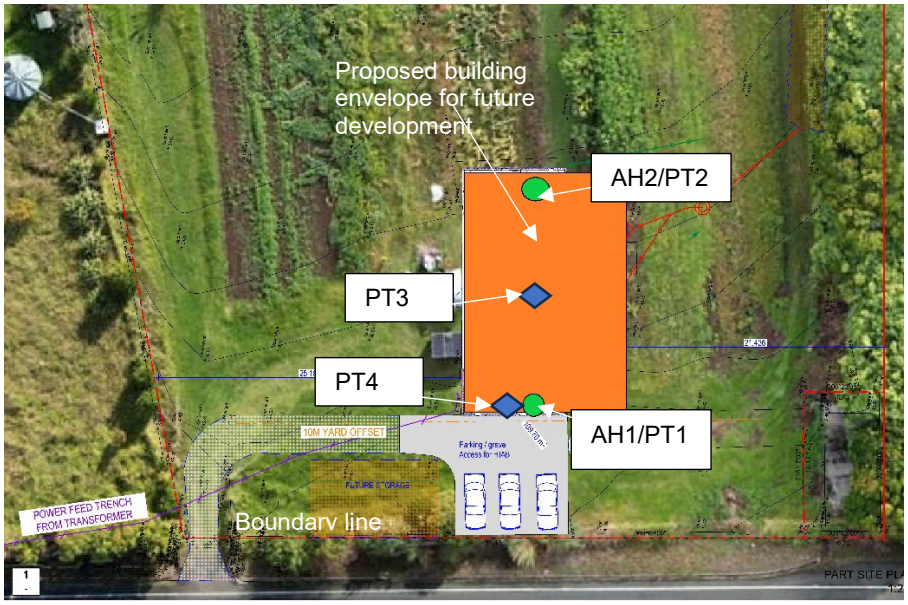

Figure 6: Auger Hole Locations

6. SITE STABILITY

6.1 GENERAL

The silty, bouldery sub soils on this site exhibit predominantly moderate engineering qualities. Care will need to be taken in foundation design to take account of any weak layers/lenses. Future development on this site will require a specific engineered design conducted by a Chartered Professional Engineer.

6.2 BUILDING FOUNDATIONS

The following parameters should be utilized for the design of footings and piled foundations:

IN STIFF CLAY :

Bulk Density	= 18 kN/m^3
Ultimate Bearing Capacity	= 300kPa
Allowable Bearing Capacity (F.O.S = 3)	= 100kPa
Dependable Bearing Capacity (ϕ = 0.5)	= 150kPa

IN WEAK CLAY:

Bulk Density	= 18 kN/m^3
Ultimate Bearing Capacity	= 150kPa
Allowable Bearing Capacity (F.O.S = 3)	= 50kPa
Dependable Bearing Capacity (ϕ = 0.5)	= 75k

IN SEMI-WEATHERED ROCK:

Bulk Density	= 25 kN/m^3
Ultimate Bearing Capacity	= 6MPa
Allowable Bearing Capacity (F.O.S = 3)	= 2MPa
Dependable Bearing Capacity (ϕ = 0.5)	= 3MPa

Due to the presence of the weak layer/lens intercepted in scala penetrometer test PT3 any future footing or pile foundation must be founded a minimum of 0.65m below existing ground level.
Future development on this site will require a specific engineered foundation design conducted by a suitably experienced Chartered Professional Engineer. Refer cross section A – A. Appendix A, Sheet SG1 for the inferred subsoil profile.

7. LIQUEFACTION

The site has a moderate risk of liquefaction due to the presence of weak unconsolidated silty/sandy layers present. Most likely cyclic dynamic loading will result in an increase of soil pore pressure which can lead to liquefaction in areas of low density.

8. EROSION

Care must be taken to ensure maximum ground cover and limit exposure to any cut surfaces during construction. The soils are highly erodible and prone to deep ruts under concentrated stormwater runoff.

9. FLOOD HAZARD

The river flood hazard levels for a 1:100year storm event (1% AEP) modelled by the Northland Regional Council indicate the site is likely to be inundated to a height of RL 41m OTP.
The floor level of any proposed dwelling on this site must be set at a minimum of 0.5m above the 100year flood level. Therefore, Finished Floor Level is to be a minimum of RL 41.5m OTP for any dwellings on this site.

10. STORMWATER

The careful management of stormwater runoff is vital to ensure stability of any future development. All stormwater flows to be directed away from the building envelope.

11. RECOMMENDATIONS

I recommend that:

- Foundation design must be conducted by a suitably experienced Chartered Professional Engineer
- This site be considered suitable for future light weight accommodation units
- FFL (finished floor level) of any future dwelling to be set at a minimum level of RL41.5mm OTP
- Any ground retaining required over 1.0m retained height or subject to surcharge loading (buildings, driveways or backslope exceeding 15 degrees) to be designed by a suitably experienced Chartered Professional Engineer.

- All earthworks are to be inspected and approved by an engineer. All hardfill over 600mm depth is to be inspected, tested, and approved by an engineer.

13. CONCLUSION

This site is suitable for the construction of future lightweight accommodation units provided that the recommendations in this report are followed diligently.

All Earthworks will need to be inspected and approved by a Chartered Professional Engineer.

Pradeep Kumar.
B.E hons, NZCE, MIPENZ,
IntPE, CP Eng. No. 203058
(Structural, Geotechnical)
Chartered Professional Engineer.

APPENDIX A

- AUGER HOLE LOGS
- SCALA PENETROMETER RESULTS
- CROSS SECTION A – A SHEET ‘SG1’
- NRC RIVER FLOOD LEVELS 100YR SHEET ‘SG2’
- NRC RIVER FLOOD LEVELS 10YR SHEET ‘SG3’

BOREHOLE LOG NO - AH1/PT1

Project: PT Waima D19 Block (Te Mahurehure)
Client: Laminata Homes Ltd
Job No: 23-060D

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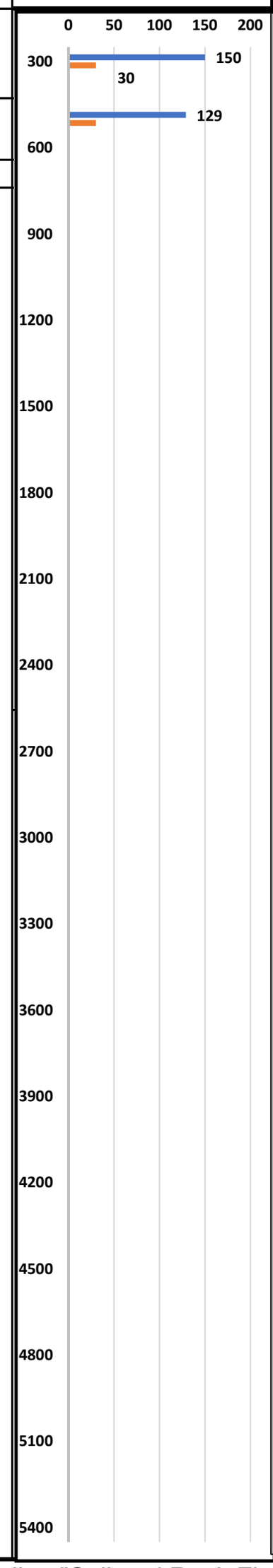
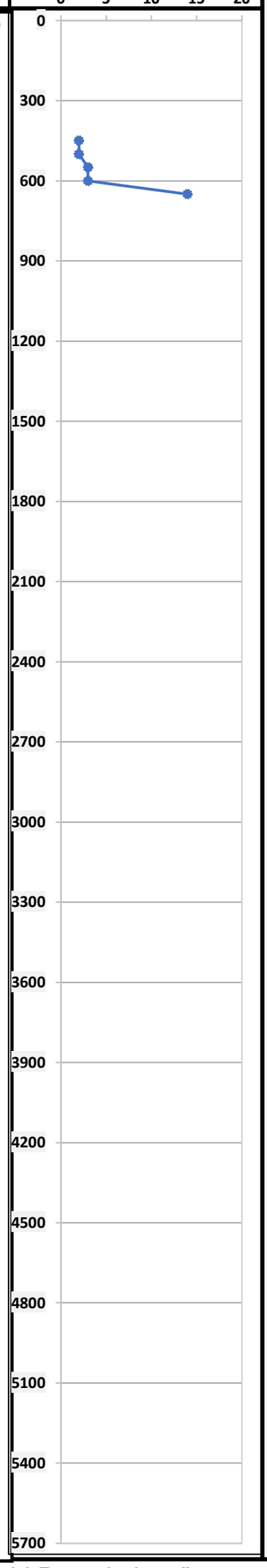
Graphic Symbol	FILL	CLAY	SILT	SAND	ROCK	TOPSOIL

In situ shear vane reading
Remoulded shear vane reading
Scale Penetrometer

Depth (mm)	Soil /Rock Graphical Log	GWL	Field Description	Undrained Shear Strength (kPa)	Scale Penetrometer (blows/50mm)
300	Mangakahia silt loam	Ground water level not intercepted	**TOPSOIL**		
600			SILT, brown, moist, very minor clay.		
900			UTP @ 0.5m. End of bore		
1200					
1500					
1800					
2100					
2400					
2700					
3000					
3300					
3600					
3900					
4200					
4500					
4800					
5100					





Drill Methods	50-100 mm hand auger	**Note:** All field logging made as per NZGS Guideline "Soil and Rock Field Descriptions"
Test Location	Refer to site plan	1. The subsurface data described above has been determined at a specific borehole location. The data
Test Date	21/03/2024	will not identify any variations away from the location.
Inspector	RD	2. UTP - Unable to penetrate.

Level 1 ANZ Bank Building 90 Kerikeri Road, Kerikeri New Zealand
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BOREHOLE LOG NO - AH2/PT2

Project: PT Waima D19 Block (Te Mahurehure)
Client: Laminata Homes Ltd
Job No: 23-060D

CHARTERED PROFESSIONAL ENGINEERS

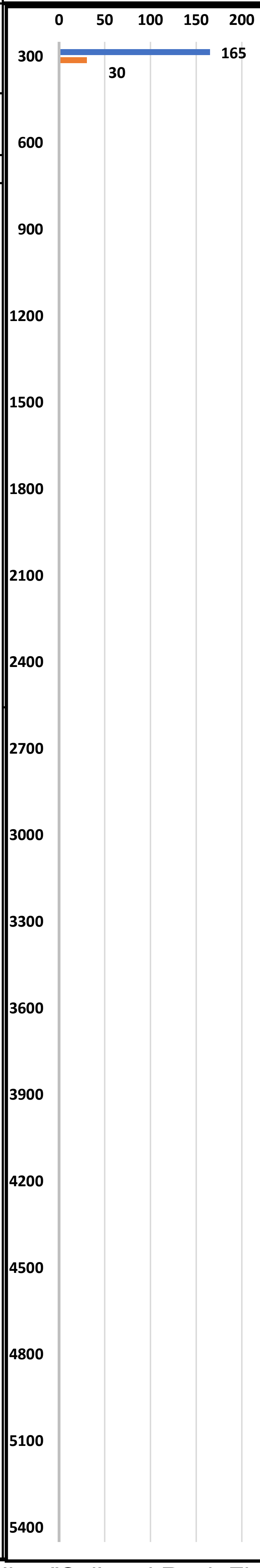
Graphic Symbol	@@@@@	#####	%%%%	ØØØØØ	(grey)	‡‡‡‡‡‡
	FILL	CLAY	SILT	SAND	ROCK	TOPSOIL

In situ shear vane reading
Remoulded shear vane reading
Scale Penetrometer

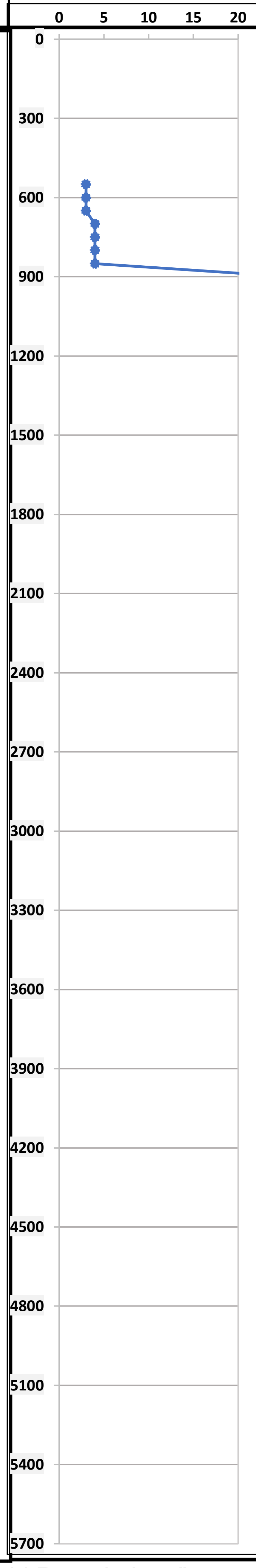
Depth (mm)	Soil /Rock Graphical Log	GWL	Field Description
	‡‡‡‡‡‡	Ground water level not intercepted	
	‡‡‡‡‡‡		
300	‡‡‡‡‡‡		**TOPSOIL, sandy**
	ØØØØØ		silty SAND, with minor pebbles & cobbles
	ØØØØØ		
600			UTP @ 0.5m. End of bore
900			
1200			
1500			
1800			
2100			
2400			
2700			
3000			
3300			
3600			
3900			
4200			
4500			
4800			
5100			

Mangakahia silt loam

Undrained Shear Strength (kPa)



Scale Penetrometer (blows/50mm)



Drill Methods	50-100 mm hand auger	**Note:** All field logging made as per NZGS Guideline "Soil and Rock Field Descriptions"
Test Location	Refer to site plan	1. The subsurface data described above has been determined at a specific borehole location. The data
Test Date	21/03/2024	will not identify any variations away from the location.
Inspector	RD	2. UTP - Unable to penetrate.

Level 1 ANZ Bank Building 90 Kerikeri Road, Kerikeri New Zealand
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P K ENGINEERING LIMITED

PENETROMETER HOLE No.

90 KERIKERI RD **Phone (09) 4073255** **EMAIL pk.engin@pkengin.co.n**

SHT. 1 of 1

Location: PT Waima D19 **Job No.**

Driven by: RD **Date:** 21/03/2024

R.L at Ground Level: n/a **GWL:** Not intercepted

Depth	PT1	PT2	PT3	PT4	Depth	PT1	PT2	PT3	PT4	Depth	PT1	PT2	PT3	PT4	Depth	PT1	PT2	PT3	PT4
50			2	2	2550					5050					7550				
100			3	2	2600					5100					7600				
150			3	3	2650					5150					7650				
200			2	3	2700					5200					7700				
250			2	4	2750					5250					7750				
300			2	4	2800					5300					7800				
350			1	4	2850					5350					7850				
400			2	4	2900					5400					7900				
450	2		1	3	2950					5450					7950				
500	2		1	3	3000					5500					8000				
550	3	3	1	2	3050					5550					8050				
600	3	3	2	2	3100					5600					8100				
650	14+	3	2	3	3150					5650					8150				
700		4	2	3	3200					5700					8200				
750		4	3	6	3250					5750					8250				
800		4	3	6	3300					5800					8300				
850		4	30+	30+	3350					5850					8350				
900		26+			3400					5900					8400				
950					3450					5950					8450				
1000					3500					6000					8500				
1050					3550					6050					8550				
1100					3600					6100					8600				
1150					3650					6150					8650				
1200					3700					6200					8700				
1250					3750					6250					8750				
1300					3800					6300					8800				
1350					3850					6350					8850				
1400					3900					6400					8900				
1450					3950					6450					8950				
1500					4000					6500					9000				
1550					4050					6550					9050				
1600					4100					6600					9100				
1650					4150					6650					9150				
1700					4200					6700					9200				
1750					4250					6750					9250				
1800					4300					6800					9300				
1850					4350					6850					9350				
1900					4400					6900					9400				
1950					4450					6950					9450				
2000					4500					7000					9500				
2050					4550					7050					9550				
2100					4600					7100					9600				
2150					4650					7150					9650				
2200					4700					7200					9700				
2250					4750					7250					9750				
2300					4800					7300					9800				
2350					4850					7350					9850				
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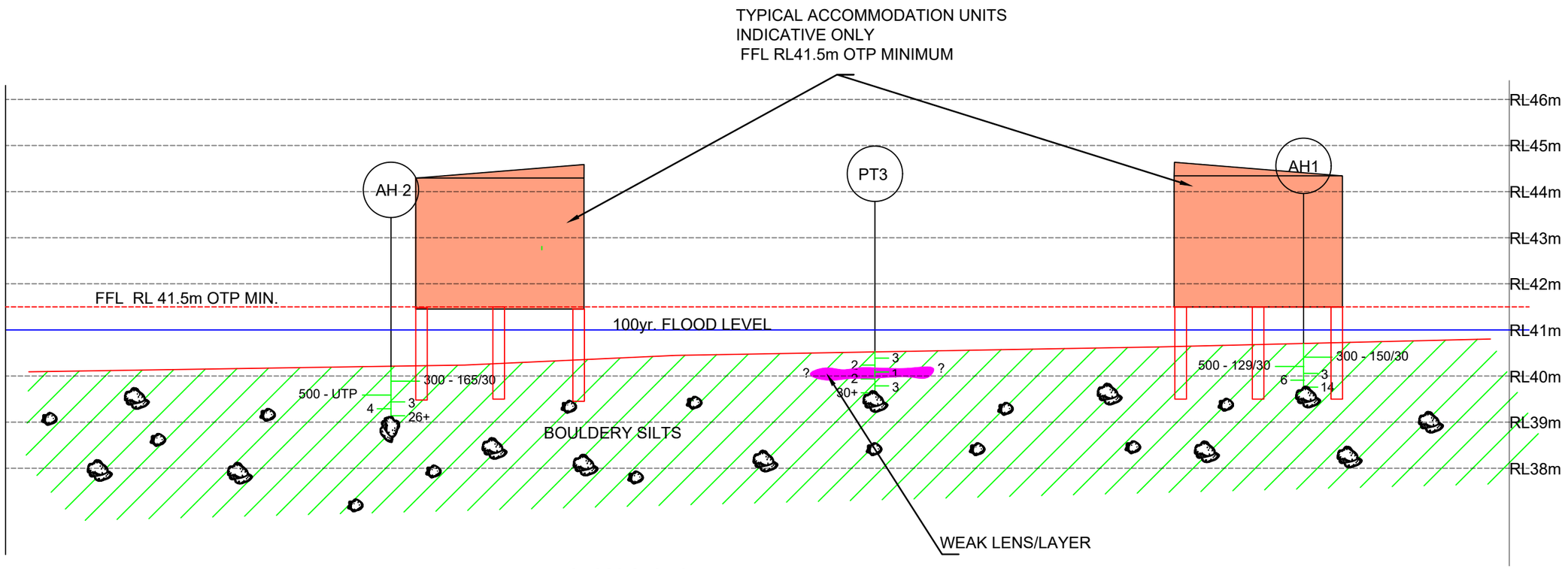
2450					4950					7450					9950				
2500					5000					7500					10000				



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CHECKED BY:
PRADEEP KUMAR
CHARTERED PROFESSIONAL ENGINEER
(STRUCTURAL, GEOTECHNICAL)
IntPE. CPEng. MIPENZ No. 203058

REV:	DESCRIPTION:	BY:	DATE:
STATUS:	ISSUED TO CLIENT		

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PO BOX 464, KERIKERI
Phone Number: 09 407 3255
Email: teampk@pkengin.co.nz

CLIENT: LAMINATA HOMES LTD
MOUNT POKAKA
KERIKERI

SITE: PT WAIMA D19
STATE HIGHWAY 12

TITLE: CROSS SECTION A - A

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
1:100 AT A3	APRIL 2024	RD	PK
PROJECT NO:	DRAWING NO:		REVISION:
23-060D	A3/SG1		0

PROPOSED AREA FOR
FUTURE DEVELOPMENT

100YR. FLOOD LEVEL OF 41m OTP
USED TO ESTABLISH FLOOR LEVEL

SH12

2449

Legend

100yr+CC Flood Levels
m OTP

37.05 - 37.2	37.21 - 37.4	37.41 - 37.6	37.61 - 37.8	37.81 - 38	38.01 - 38.2	38.21 - 38.4	38.41 - 38.6	38.61 - 38.8	38.81 - 39	39.01 - 39.2	39.21 - 39.4	39.41 - 39.6	39.61 - 39.8	39.81 - 40	40.01 - 40.2	40.21 - 40.4	40.41 - 40.6	40.61 - 40.8	40.81 - 41	41.01 - 41.2	41.21 - 41.4	41.41 - 41.6	41.61 - 41.8	41.81 - 42

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(STRUCTURAL, GEOTECHNICAL)
IntPE, CPEng, MIPENZ No. 203058

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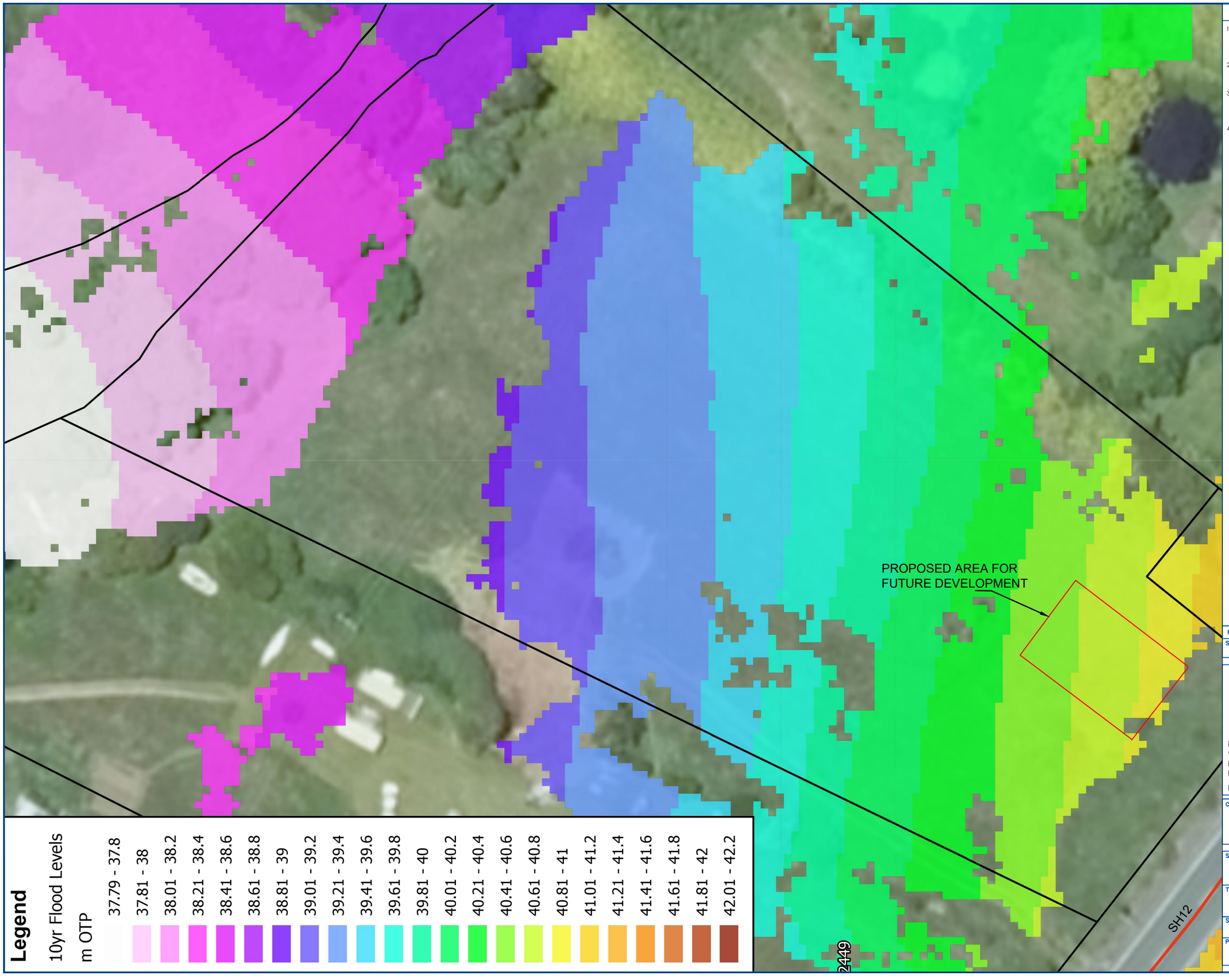
CLIENT: LAMINATA HOMES LTD
MOUNT POKAKA
KERIKERI

SITE: PT WAIMA D19
STATE HIGHWAY 12

TITLE: NRC FLOOD LEVELS 100YR

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	APRIL 2024	RD	PK
PROJECT NO:	DRAWING NO:		REVISION:
23-060D	A3/SG2		0



Notes:

1. THE COPYRIGHT OF THIS DRAWING IS VESTED IN PK ENGINEERING AND IT MAY NOT BE REPRODUCED IN WHOLE OR PART OR USED FOR THE MANUFACTURE OF ANY ARTICLE WITHOUT THE EXPRESS PERMISSION OF THE COPYRIGHT HOLDERS.
2. VERIFY ALL DIMENSIONS AND LEVELS ON SITE BEFORE COMMENCING WORK. USE WRITTEN DIMENSIONS IN PREFERENCE TO SCALING THESE DRAWINGS.
3. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECT'S, SERVICES, CIVIL AND OTHER PROJECT DRAWINGS AND SPECIFICATIONS. ANY DISCREPANCIES SHALL BE REFEREED TO THE ENGINEER FOR RESOLUTION.
4. IN THE EVENT THAT THERE IS ANY CONFLICT BETWEEN THE DRAWINGS AND SPECIFICATION THEN THE REQUIREMENTS OF THE DRAWINGS SHALL TAKE PRECEDENCE, WITH THE DETAIL DRAWINGS TAKING PRECEDENCE OVER THE GENERAL NOTES.

PK ENGINEERING LIMITED
DATE: 16/04/2024
CHECKED BY:
PRADEEP KUMAR
CHARTERED PROFESSIONAL ENGINEER
(STRUCTURAL, GEOTECHNICAL)
IntPE, CPEng, MIPENZ No. 203058

REV:	DESCRIPTION:	BY:	DATE:
STATUS:	ISSUED TO CLIENT		

PK ENGINEERING
CHARTERED PROFESSIONAL ENGINEERS
LEVEL 1, ANZ BANK
90 KERIKERI ROAD, KERIKERI
PO BOX 464, KERIKERI
Phone Number: 09 407 3255
Email: teampk@pkengin.co.nz

CLIENT: LAMINATA HOMES LTD
MOUNT POKAKA
KERIKERI

SITE: PT WAIMA D19
STATE HIGHWAY 12

TITLE: NRC FLOOD LEVELS 10YR

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	APRIL 2024	RD	PK
PROJECT NO:	DRAWING NO:		REVISION:
23-060D	A3/SG3		0

STATEMENT OF DESIGN - PS1

Issued by: Matt Riddell
To: TE MAHUREHURE
Copy to be supplied to: Far North District Council
In Respect of: Econotreat Domestic Onsite Wastewater and Sewage System Design
At: 351 Puha Road, Waimā
Legal Description: Lot Part waima D19 DP Block

Waterflow NZ Ltd has been engaged by TE MAHUREHURE to provide the technical design services and details in respect of the requirements of G13/VM4 and B2 Durability of the Building Code 2004, for an Onsite Wastewater and Sewage System for their building at the above location.

The Design has been carried out in accordance with Auckland Council TP-58 Guidelines and Clause B2, G13 and G14 of the Building Regulations 2004.

The proposed building work covered by this producer statement is described on the drawings titled: TE MAHUREHURE Onsite Wastewater Design Report, and numbered 1-42 together with the specification, and other documents set out in the schedule attached to this statement.

On behalf of the Design Firm, and subject to:
(i) Site verification of the following design assumptions: correct installation of the system and drainage fields
(ii) All proprietary products meeting their performance specification requirements;

As an independent design professional covered by a current policy for Professional Indemnity Insurance, no less than $200,000*, I **believe on reasonable grounds** the building, if constructed in accordance with the drawings, specifications, and other documents provided or listed in the attached schedule, will comply with the relevant provisions of the Building Code.

Signed by: Matt Riddell - PS Author ‘2384’ Auckland Council, Approved Designer

Date: 02/05/2024

Signature: 

Waterflow NZ Ltd
4/525 Great South Road
Penrose, Auckland 1061

Note: This statement shall only be relied upon by the Building Consent Authority named above. Liability under this statement accrues to the Design Firm only. The total maximum amount of damages payable arising from this statement and all other statements provided to the Building Consent Authority in relation to this building work, whether in contract, tort or otherwise (including negligence), is limited to the sum of $200,000.*

WaterFlow
Bringing Clarity to Wastewater

2024

Waterflow NZ Ltd

Certified Designer

TE MAHUREHURE
351 Puha Road
Waimā
Lot Part waima D19 DP

Reference Number: WF11638R1

Issued 02/05/2024

ONSITE WASTEWATER DESIGN REPORT

Onsite Wastewater Design Report by Waterflow NZ Ltd – Copyright 2014

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Bringing Clarity to Wastewater

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Attachments

- **PS1**
- **Land Application System Schematics**
- **Pump Specification**
- **Electrical Diagram**
- **Assessment of Environmental Effects**
- **System & Installation Specifications**
- **System & Installation Specifications**
- **Home Owners Care Guide**

PART A: CONTACT AND PROPERTY DETAILS

A 1. Consultant / Evaluator

Name:	Alexandra Sabath
Company/Agency:	Waterflow New Zealand Ltd
Address:	1160 State Highway 12, Maungaturoto 0520
Phone:	09 431 0042
Fax:	
Email Address:	sandra@waterflow.co.nz

A 2: Applicant Details

Applicant Name:	TE MAHUREHURE
Company Name:	
Property Owner:	TE MAHUREHURE
Owner Address:	351 Puha Road, Waimā
Phone:	
Mobile:	027 472 5597 - Cambell
Email Address:	solomon.dalton@bdo.co.nz

A 3: Site Information

Sited Visited by:	Caleb Pirini		**Date:**	Thursday, 2 May 2024			
Physical Address:	351 Puha Road, Waimā						
Territorial Authority:	Far North District Council						
Regional Council:	Northland Regional Council						
Regional Rule	C.6.1.3						
Legal Status of Activity:	**Permitted:**	**x**	**Controlled:**		**Discretionary:**		
Total Property Area (m^2):	m^2						
Map Grid Reference:							
Legal Description of Land (as on Certificate of Title):							
Lot No:	Part waima D19						
DP No:	Block						
CT No:							

A 4: Are there any previous existing discharge consents relating to this proposal or other waste discharge/disposal on the site?

Yes:		**No:**	x

If yes, give reference No's and description:

A 5: Dwelling(s) for which on-site wastewater service is to be provided

Status of dwelling(s) to be serviced:	**New**	x	**Existing**		**Multiple**	
How many dwellings on the property?	3					
Capacity of dwellings:	**Dwelling 1**	1				
(or number of bedrooms)	**Dwelling 2**	1				
	Dwelling 3	1				
	Other:					
Notes:						

PART B: SITE ASSESSMENT - SURFACE EVALUATION

B 1: Site Characteristics

Performance of adjacent systems:	**(Unknown)**			
Estimated annual rainfall (mm):	1000 - 1250 **(as per NIWA statistics)**			
Seasonal variation (mm):	300-400mm			
Vegetation cover:	Grass			
Slope shape:	Flat			
Slope angle:	<3 °			
Surface water drainage characteristics:	Broad overland to dustant overland flow path			
Flooding potential?	**Yes:**		**No:**	**x**
If Yes, specify relevant flood levels relative to disposal area:				
Site characteristics:	**Puha Road, an irregular communal shaped property. Property is generally covered with pasture grass. A creek is running along the Northern Boundary, Puha Road to the South and other like properties on all other boundaries.**			

B 2: Slope Stability

Has a slope stability assessment been carried out on the site?

Yes:	**x**	**No:**	

If no, why not?

Low slope:		**No signs of instability:**		**Other:**

If yes, give brief details of report:

Details:	Geotechnical Report
Author:	Pradeep Kumar
Company/Agency:	PK Engineering
Date of report:	16/04/24

B 3: Site Geology

As per: Geotechnical Report by PK Engineering

B 4: Slope Direction

What aspect does the proposed disposal system face?

North		West	
North-West		South-West	
North-East	x	South-East	
East		South	

B 5: Site Clearances if applicable (also on site plan)

	Treatment Separation Distance (m)	Disposal Field Separation Distance (m)
Boundaries:	>1.5	>1.5
Surface Water:	>15	>15
Ground Water:	>1.2	>1.2
Stands of Trees / Shrubs:	n/a	n/a
Wells/Water Bores:	>20	>20
Embankments / Retaining Walls:	>3	>3
Buildings:	>3	>3
Other:		

B 6: Please identify any site constraints applicable for this property, and indicate how the design process is to deal with these.

Constraints	Explain how constraints are being dealt with
1 Site constraints: (a) (b)	n/a

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PART C: SITE ASSESSMENT - SOIL INVESTIGATION

C 1: Soil Profile Determination Method

Test pit:		Depth (mm):		No. of Test pits:	
Bore hole:	x	Depth (mm):	1200	No. of Bore holes	2
Other:					

C 2: Fill Material

Was fill material intercepted during the subsoil investigation?

Yes:		No:	x

If yes, please specify the effect of the fill on wastewater disposal:

C 3: Permeability Testing

Has constant head Permeability Testing (Ksat) been carried out?

Yes:		No:	x

If yes, please indicate the details (test procedure, number of tests):

Test report attached?

Yes:		No:	x

C 4: SURFACE WATER CUT OFF DRAINS

Are surface water interception/diversion drains required?

Yes:		No:	x

C 5: DEPTH OF SEASONAL WATER TABLE:

Winter (m):	>1.2
Summer (m):	>1.2

Was this:

Measured:	✓ no sign of ground water or mottling in bore holes
Estimated:	

C 6: SHORT CIRCUITS

Are there any potential short circuit paths?

Yes:		No:	x

If yes, how have these been addressed?

C 7: SOIL CATEGORY

Is topsoil present?

Yes:	x	**No:**	

If yes, what is the topsoil depth & soil description?

200mm topsoil over silty clay

Indicate the disposal field soil category (as per AC TP-58, Table 5.1)

Category	Description	Drainage	(x)
1	Gravel, coarse sand	Rapid draining	
2	Coarse to medium sand	Free draining	
3	Medium-fine & loamy sand	Good draining	
4	Sandy loam, loam & silt loam	Moderate draining	
5	Sandy clay-loam, clay loam & silty clay-loam	Moderate to slow draining	
6	Sandy clay, non-swelling clay & silty clay	Slow draining	x
7	Swelling clay, grey clay & hardpan	Poorly or non-draining	

Reason for placing in stated category:

Result of bore hole/test pit sample	x
Profile from excavation	
Geotech report	
Other:	

C 8: SOIL STRUCTURE

Based on results of the in-situ soil profile investigation above (C7) please indicate the disposal (land application) field soil structure:

Massive	
Single grained	
Weak	
Moderate	x
Strong	

C 9: As necessary, provide qualifying notes on the relationship of Soil Category (C7) to Soil Structure (C8) and the effect this relationship will have on design loading rate selection:

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PART D: DISCHARGE DETAILS

D 1: Water supply source for the property:

Rain water (roof collection)	x
Bore/well	
Public supply	

D 2: Are water reduction fixtures being used?

Yes:		No:	x	(according to our knowledge at time of design report)

If 'yes' Please state:

Standard Fixtures include dual flush 11/5.5 or 6.3 litre toilet cisterns, and includes standard automatic washing machine, but a low water use dishwasher, no garbage grinder.

D 3: Daily volume of wastewater to be discharged:

No. of bedrooms/people:	1:	1 Bedroom
	2:	1 Bedroom
	3:	1 Bedroom
Design occupance (people):	1:	2 People
(as per AC TP-58, Table 6.1)	2:	2 People
	3:	2 People
		Black / Grey water
Per capita wastewater production (litres/person/day):	1:	160 L/day
(as per ARC TP-58, Table 6.2)	2:	160 L/day
	3:	160 L/day
Total daily wastewater production (litres per day):		960 L/day

D 4: Is daily wastewater discharge volume more than 2000 litres?

Yes:		No:	x

D 5: Gross lot area to discharge ratio:

Gross lot area:	0 m²
Total daily wastewater production (litres/day):	960 L
Lot area to discharge ratio:	0.00

D 6: Net Lot Area

Area of lot available for installation of the disposal (land application) field and reserve area:

Net lot area (m²):	-1000 m²	
Reserve area (m²):	30%	96m²

PART E: LAND DISPOSAL METHOD

E 1: Indicate the proposed loading method:

	Black / Grey Water
Gravity Dose:	
Dosing Siphon:	
Pump:	Davey D42A-B

E 2: If a pump is being used please provide following information:

Total Design Head (m):	32
Pump Chamber Volume (litres):	1600
Emergency Storage Volume (litres):	2120

Is a high water level alarm being installed in pump chambers?

Yes:	**x**	**No:**	

E 3: Identify the type(s) of Land Disposal method proposed for this site:

	Black / Grey Water
P.C.D.I. Dripper Irrigation:	PCDI surface laid and mulched
L.P.E.D. System:	
Evapo-Transpiration Beds:	
Other:	
	(as per Schematics attached)

E 4: Identify the Loading Rate proposed for option selected in E3:

as per ARC TP-58, Table 9.2 & Table 10.3	**Black / Grey Water**
Loading Rate (litres/m²/day):	3
Disposal Area Basal (m²):	
Areal (m²):	320

E 6: Details and dimensions of the disposal (land application) field:

Length (m):	53.3	**No. Lines:**	6	**Hole Size:**	N/A
Width (m):	6.0	**Spacing (m):**	1.0	**Hole Spacing:**	N/A

Notes:	**320sqm of Surface laid PCDI dripline pinned at 1m centers and covered with a minimum covering of 100mm mulch. See schematic drawing attached.**

PART F: PROPOSED WASTEWATER TREATMENT SYSTEM

A Econotreat Econotreat VBB-C-2200 System, fed through surface laid PCDI dripline is suitable for this site. The Econotreat VBB-C-2200 System has enough capacity to accommodate 2200ltr per day, so will be well within its capacity. The land application system is designed to discharge a maximum volume of 960ltrs per day and if this is exceeded it could cause failure resulting in environmental and public harm.

PART G: OPERATION AND MAINTENANCE OF SYSTEM

The operation of this complete system will be explained verbally to the owner by the Installer or Agent on Completion of Installation; also provided with Waterflow's Home Owner's Manual.

Waterflow NZ Ltd encourages the Home Owner to monitor and care for your Econotreat system yourself, with our backing and support, and by doing so you will learn how your system works and operates and how to keep it in top working order.

It is also recommended that a Maintenance Program contract is in place at all times to ensure this system is maintained at top performance at all times.

All on site wastewater systems require regular maintenance; in this case once annually is suffice and may be specified within the consent process by the Building Department of Far North District Council. This Maintenance will be recorded on hard copy and supplied to both the Owner and Far North District Council Compliance Officer if requested.

NOTE TO OWNER: All written records pertaining to the wastewater system should be retained in a safe place. When a change of ownership occurs, a full and complete history is able to be passed to the new owners.

Animals are to be physically excluded from the installed effluent field to avoid damage, and to reduce the risk of soil compaction in the vicinity of the bed.

Planting within this area is encouraged to assist with evapotranspiration by plants.

PART H: SOIL LOG PROFILE

200mm topsoil over silty clayClass 6, (as per AC TP-58, Table 5.1)

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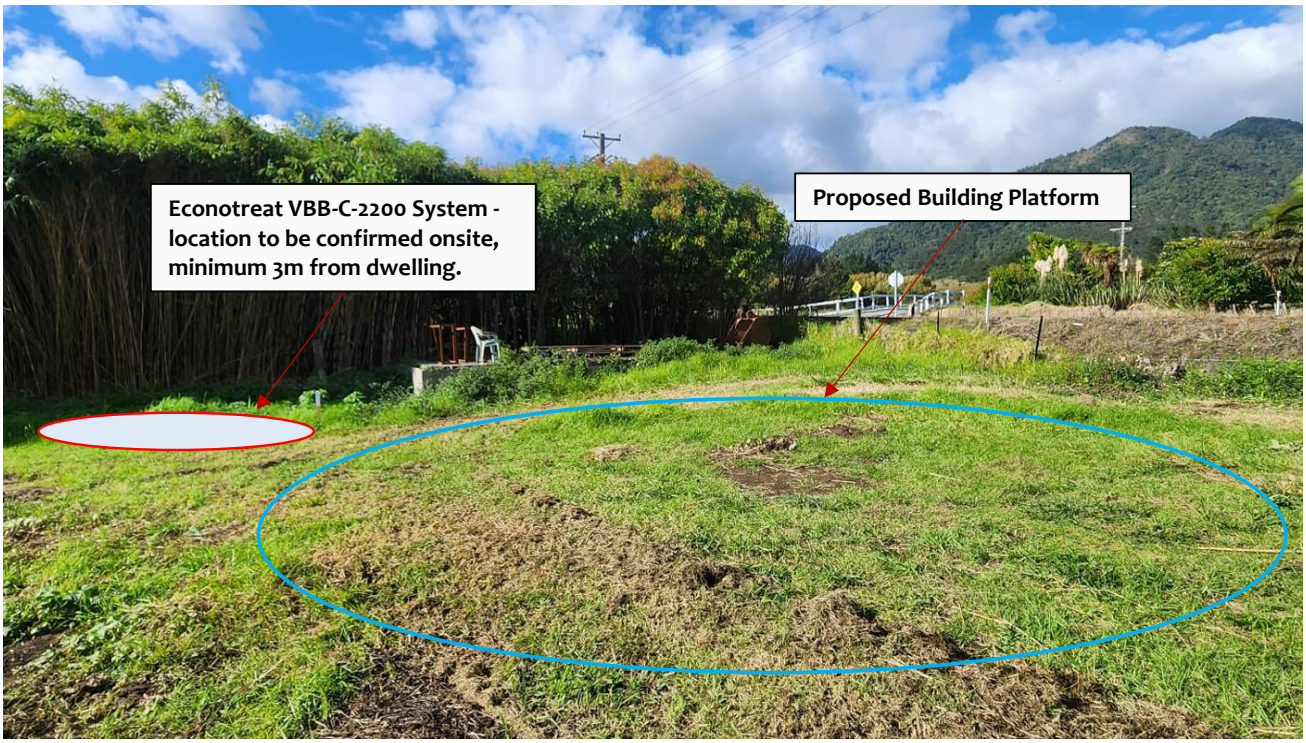
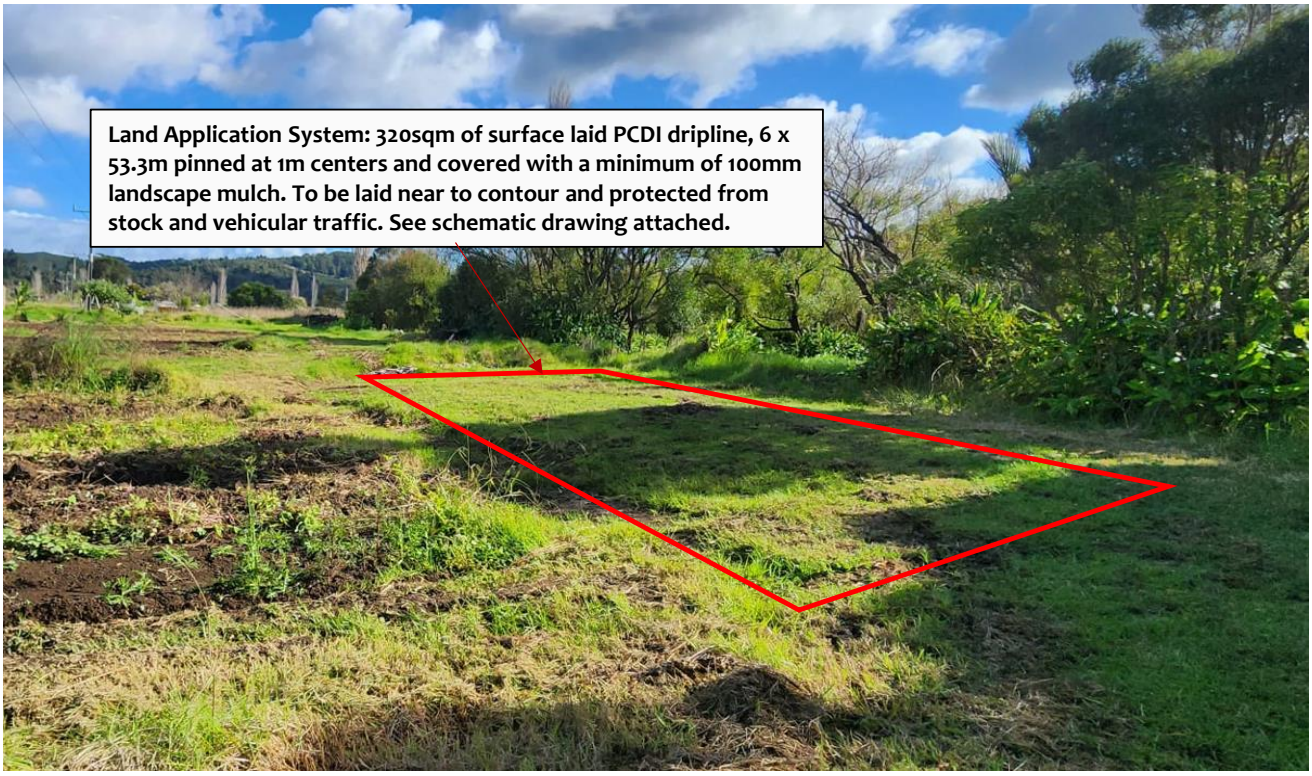
PART I: SITE IMAGES





DECLARATION

I, hereby certify that, to the best of my knowledge and belief, the information given in this application is true and complete.

Prepared By:	
Name:	**Alexandra Sabath - Approved Designer**
Signature:	[redacted]
Date:	2/05/2024

Reviewed By:	
Name:	**Matt Riddell - PS Author '2384' Auckland Council, Approved Designer**
Signature:	[redacted]
Date:	2/05/2024

NOTE: The Waterflow Systems are to be installed by a registered drainlayer to the designs supplied by Waterflow NZ Ltd. All work to comply with Regional Council Water and Soil Plans.

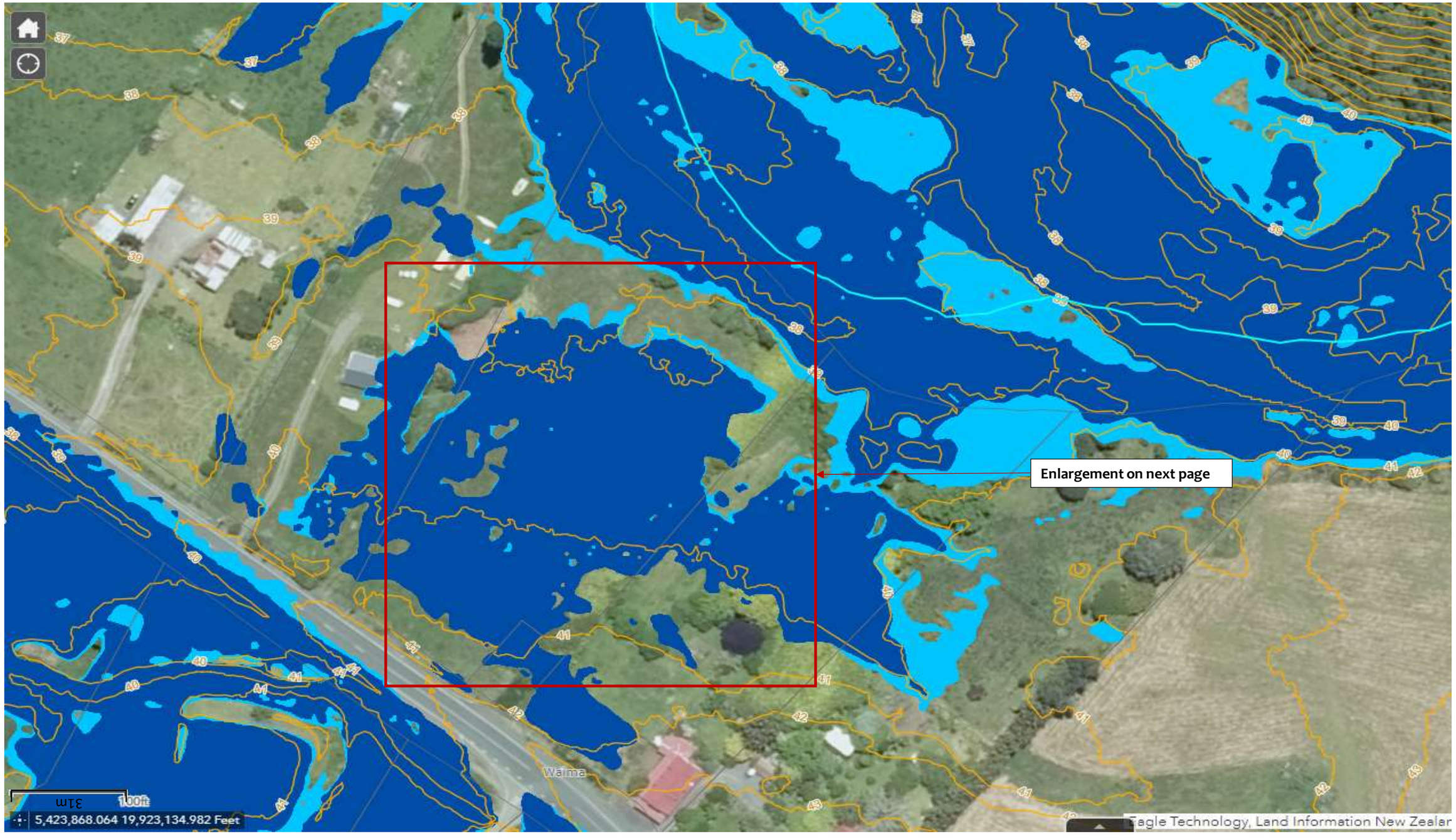
Comments/Summary:

The disposal field will need to be protected from traffic and animal grazing. Planting this area is recommended to increase Evapotranspiration.

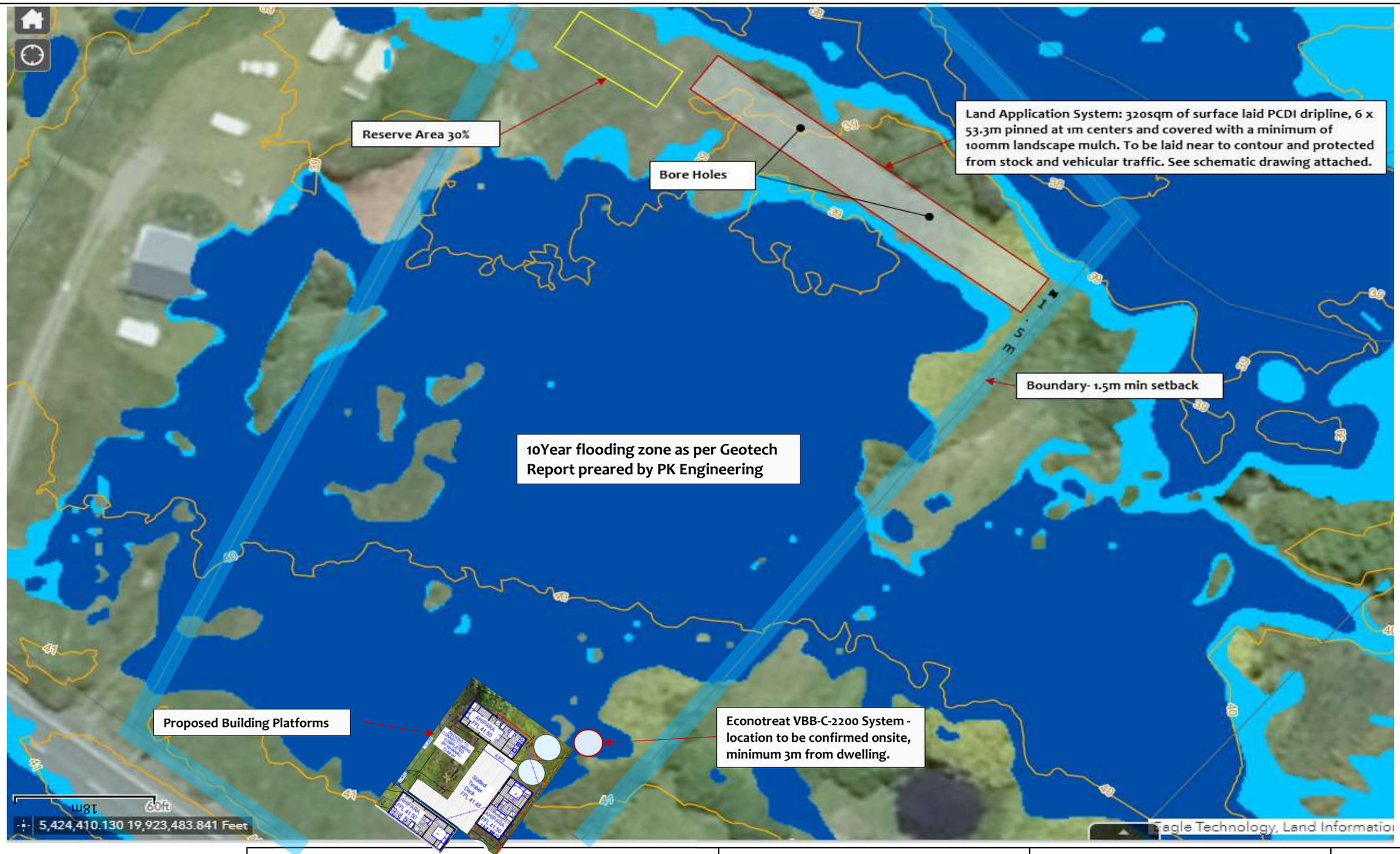
Suitable plants for the disposal field can be found on our website www.naturalflow.co.nz

Waterflow Treatment systems to be installed by accredited installer unless other arrangements have been made by Waterflow NZ Ltd

For more information do not hesitate to contact the team at Waterflow NZ Ltd on 0800 628 356



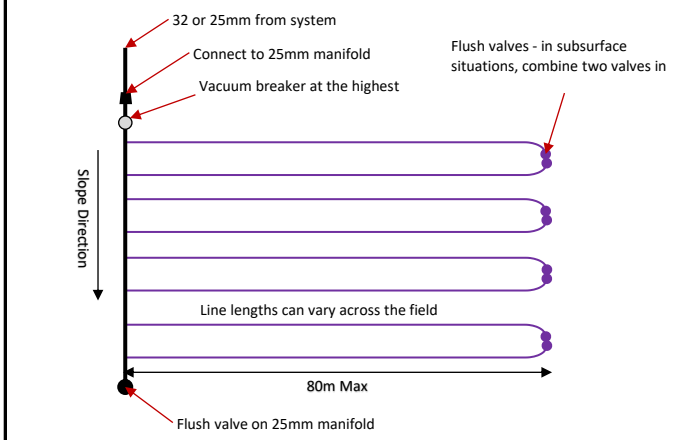
	SITE LOCATION PLAN: TE MAHUREHURE 351 Puha Road Waimā Lot Part waima D19DP Block 0HA	**SCALE:** 1 : 1105 @ A3



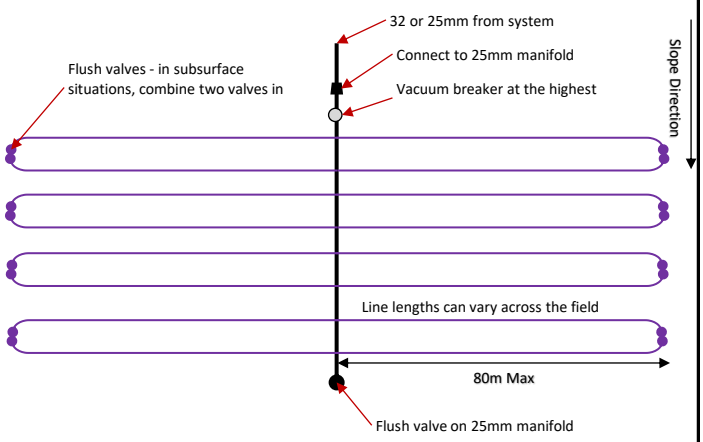
WaterFlow Bringing Clarity to Wastewater	**DATE DRAW:** 2/05/2024 **PREPARED BY:** Alexandra Sabath **REVISED:** Matt Riddell	**SITE LAYOUT PLAN:** **TE MAHUREHURE** **351 Puha Road** **Waimā** **Lot Part waima D19 DP Block** **0HA**	**SCALE:** **1 : 493** **@ A3**

Common PCDI Layouts

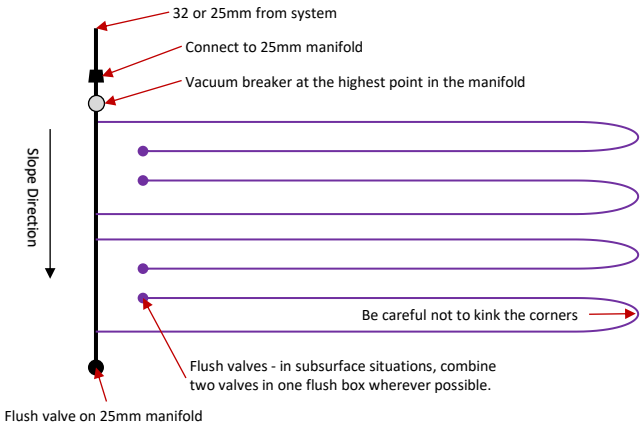
Single Side Manifold - straight



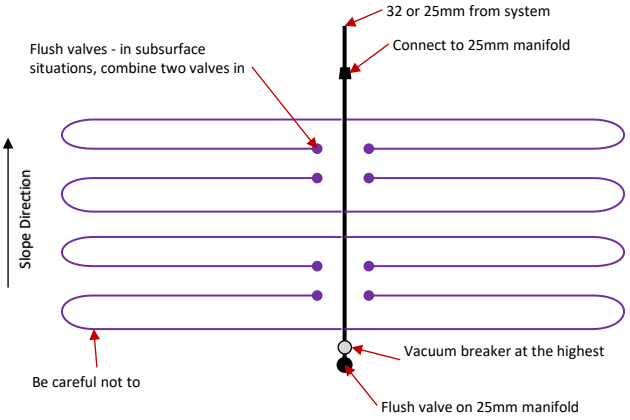
Single Center Manifold - straight



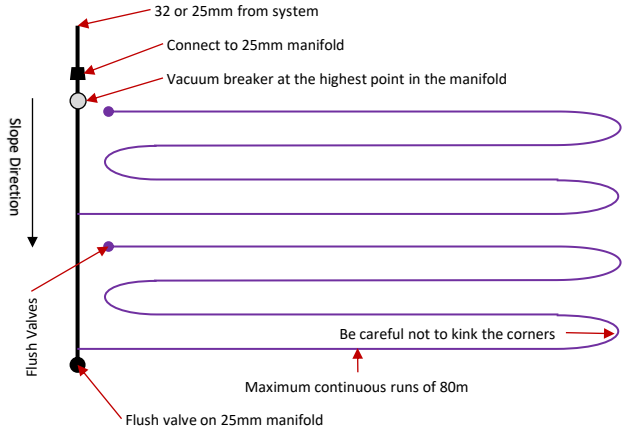
Single Side Manifold - curled



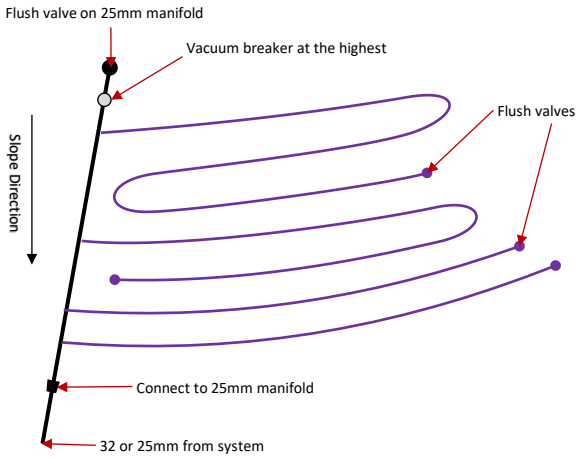
Single Center Manifold - curled



Long Single Runs



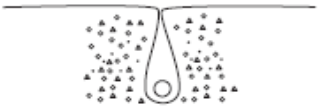
Custom Layout



Cross Sections of PCDi installation

150mm Mulch or Leaf Litter

Subsoil Buried @ 100-150mm

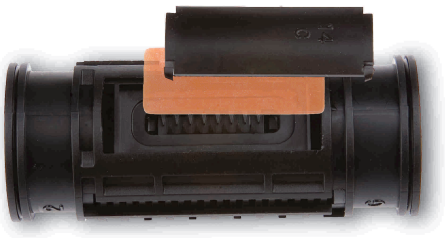


METZERPLAS

ADI

Cylindrical PC (Pressure Compensated) dripper.

- Cylindrical PC dripper, with unique regulating labyrinth with self-flushing operation at the beginning and the end of each irrigation cycle.
- Triple inlet filter with filtering area 10 times larger than any other dripper.
- High clog resistance.
- Suitable for poor quality and effluent water.
- Large pressure compensation range up to 4.3 bars.
- Dripline diameter: 16, 18 and 20 mm.
- Dripper flow rate: 1.6, 2.2 and 3.5 l/h.
- *Rootguard*® configuration available for extra root protection in SDI (Subsurface Drip Irrigation).



ADI Dripline Technical Data:

Model	Inside Diameter (mm)	Wall Thickness (mm)	Min. Working Pressure (bars)	Max. Working Pressure (bars)	KD
ADI 16	13.8	0.9	0.8	3.5	1.12
		1.15	0.8	4.3	0.95
ADI 18	15.8	1.2	0.8	4.3	0.95
ADI 20	17.4	1.0	0.8	3.5	0.85
		1.25	0.8	4.3	0.6

METZERPLAS IRRIGATION SYSTEMS

Kibbutz Metzer M.P. Heffer 38820 ISRAEL Tel: 972-4-6387001 Fax: 972-4-6385385
info@metzerplas.com • www.metzerplas.com

METZERPLAS

ADI

Cylindrical PC (Pressure Compensated) dripper.

ADI 16 mm. Maximum lateral length (I.D. 13.8 mm, W.T 0.9 mm, Inlet pressure 2.5 bars):

Nom. Flow Rate (l/h)	Spacing Between Drippers (m)						
	0.20	0.30	0.40	0.50	0.60	0.75	1.00
1.6	86	122	156	188	218	260	324
2.2	72	103	131	157	182	216	269
3.5	51	73	94	113	131	156	195

ADI 18 mm. Maximum lateral length (I.D. 15.8 mm, W.T 1.2 mm, Inlet pressure 2.5 bars):

Nom. Flow Rate (l/h)	Spacing Between Drippers (m)						
	0.20	0.30	0.40	0.50	0.60	0.75	1.00
2.0	93	134	171	205	238	284	355
3.5	65	92	118	142	166	198	247

ADI 20 mm. Maximum Lateral length (I.D. 17.4 mm, W.T 1.0 mm, Inlet pressure 2.5 bars):

Nom. Flow Rate (l/h)	Spacing Between Drippers (m)						
	0.20	0.30	0.40	0.50	0.60	0.75	1.00
1.6	128	182	234	281	325	388	484
2.2	113	159	202	242	279	331	409
3.5	76	109	140	168	196	233	291

For additional tables and data please contact Metzerplas Technical Department or visit our website: www.metzerplas.com

Packaging Data

Model	Roll Length (m)	Quantity Per Container (Rolls)		
		20	40	40 h
ADI 16	400	150	300	350
ADI 18	300	150	300	333
ADI 20	300	133	266	300

METZERPLAS IRRIGATION SYSTEMS

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Assessment of Environmental Effects

TE MAHUREHURE of 351 Puha Road, Waimā
Lot Part waima D19 DP Block

1.1 Description of Proposal

The owners of this site propose the construction of a new 1 bedroom dwelling & 1 bedroom dwelling & 1 bedroom dwelling.

1.2 Site Description

This site, located at 351 Puha Road, is a an irregular communal shaped property. Property is generally covered with pasture grass. A creek is running along the Northern Boundary, Puha Road to the South and other like properties on all other boundaries.

1.3 Wastewater Volume

In calculating the wastewater flows we have allowed for a maximum occupancy of 6 persons, based on the proposed 1 bedroom dwelling, 1 bedroom dwelling and 1 bedroom dwelling(as per AC TP-58, Table 6.1). Total wastewater production is based on an allowance of 160 litres per person per day (as per ARC TP-58, Table 6.2), which is conservative given that water supply is roof collected rain water and standard water fixtures will be used throughout the house.

1.4 Wastewater Volume

The Econotreat VBB-C-2200 system that is proposed will treat the wastewater to a high standard prior to dispersal using a PCDI drip line, into a purpose-designed disposal field, where the removal of nutrient will continue, both in the receiving soils and by plant uptake.

The system will be capable of producing reductions in Biochemical Oxygen Demand, Total Suspended Solids, Nitrogen, and Coliforms to a standard that meets the requirements (see details below). The system will cater for the wastewater requirements of the private dwellings (domestic wastewater) and will not service any commercial or trade waste sources. Risk Minor to Nil.

1.5 Proposed Treatment System

The objective of the treatment system is to reduce and remove much of the contaminants from the wastewater prior to discharge into the receiving soil. This will improve the long-term performance of the disposal field as well as reducing the risk to the receiving environment. The system will consist of:

- Septic Tank Module
- EconoTreat VBB-C-2200

- Land Application System

The system is constructed using concrete tanks. The system produces treated effluent with BOD <20mg/l, Suspended solids <20mg/l.

1.6 Land Application System

The proposed irrigation system uses pressure-compensating dripper lines ensuring an even delivery of moisture over the entire irrigation field and a conservative DLR of 3mm. We propose the use of Metzerplas unibioline ADI16/2.2 @ 0.6m/c with the Dripline laid out at 1m centres. This Dripline will then be covered by 100mm landscape mulch. Densely planting this area will greatly enhance evapo-transpiration and be very beneficial especially in the wetter months of the year. This irrigation can be installed in conjunction with existing or proposed landscaping.

1.7 Surface & Ground Water

It is proposed to treat the water to a high standard prior to discharge and the proposed irrigation system will introduce the water into the topsoil horizon using PCDI irrigation. A low application rate of treated effluent into the topsoil will significantly reduce the likelihood of, any breakout or runoff or any risk of surface water contamination. With the ground water levels being >1.2m this conservative DLR also means the risk of ground water contamination is virtually nil. A majority of the undeveloped areas of this site are suitable for a PCDI disposal field when the necessary setbacks are observed. Risk Minor to Nil.

1.8 Air Quality

The proposed Econotreat VBB-C-2200 system will produce no noticeable odour when functioning correctly. Any odour will be contained within the tanks. The PCDI irrigation system will load the soil at a rate that should not cause ponding, spraying or aerosol of the effluent that could potentially cause odours. Risk Minor to Nil.

1.9 Visual Impact

The tanks are installed wholly below ground level with only the lids being visible. The lids will protrude approximately 100mm to prevent egress of storm water into the system. The disposal field will be located in a purpose designed mulched and intensively planted disposal area. Warning signs may be installed to indicate the presence of the disposal area, although probably not necessary in a domestic situation, also the area may be fenced to restrict access.

1.10 Environmental Risks

Risks are associated with this proposal are minor. The treatment system will be automated, and the Home Owner will be given a 'Home Owners Care Guide' which explains the necessary visual checks to ensure no issues arise with the system, specifically – solids build-up - high water level – discharge failure – filter blockage.

Peak flow into the system are not expected to be significant and the system includes a large emergency storage volume.

1.11 Maintenance Requirements

The maintenance requirement of this system is minimal, with the system fully automated. The system requires little input from the operator apart from the regular cleaning of the outlet filter between the treatment system and the Dripline field. All other maintenance interventions must be carried out by service persons familiar with the operation of the system and approved by the manufacturer. Maintenance may include checking of the dissolved oxygen levels, cleaning of effluent outlet filter, removal of excess sludge volume, checking of control panel function, etc.…

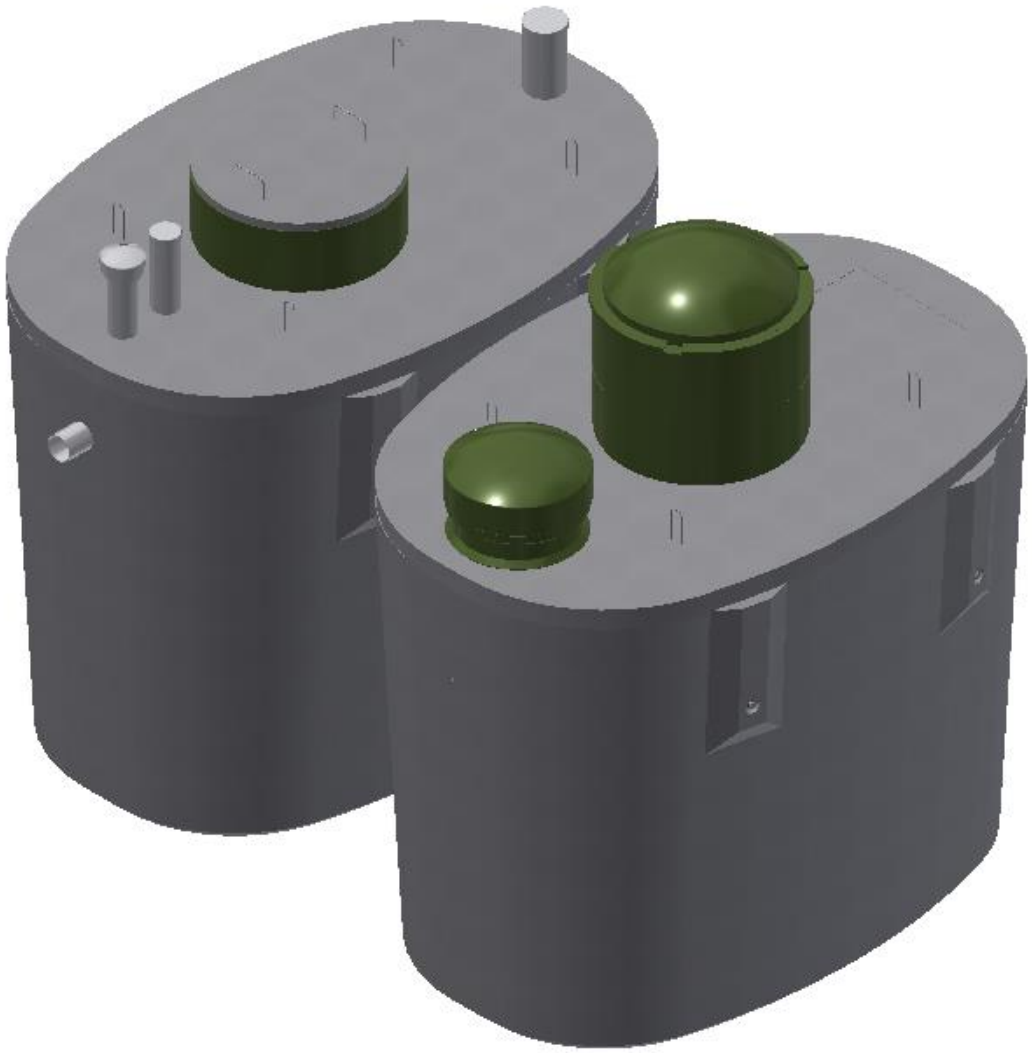
The disposal field is quite possibly the most important and sensitive part of the treatment system and requires a reasonable amount of maintenance to keep it functioning well. Any leaking or damaged Dripline must be fixed quickly using the appropriate materials, the planting must be maintained, weeds removed and grass kept cut. The Dripline should be kept covered with a suitable bark, mulch, or topsoil.

Warning signs such as ponding, odours, and signs of excessive growth act as an indicator to possible problems. A disk filter s fitted to help prevent blockage of the drippers and to protect the Dripline. This filter will require cleaning during servicing of the system.The owners will be verbally informed at the commissioning of this system of all maintenance requirements and strongly advised to have a service contract in place prior to final sign off of the system installation.

econo-treat

Econotreat VBB-C-2200 Treatment System

System Specifications & Installation Instructions



The Treatment Process

Primary Chamber / Tank

Influent enters the chamber via the source whereby scum and solids capable of settling are separated from the raw influent. Primary treated effluent flows through a transfer port to the aeration tank. This primary tank will also act as a storage chamber for sludge returned from the Clarification Chamber.

After primary settling, the sewage passes through a Reln outlet filter.

Aeration Chamber

Water enters from the Primary Chamber. Air is introduced into this chamber via an air blower to create an environment for aerobic bacteria and other helpful organisms to consume the organic matter present. The aeration tank is designed in a manner to help prevent short circuiting of the wastewater to ensure extended aeration. Media is present in the tank to support the growth of bacteria.

Clarification Chamber

The Clarification chamber is essentially a quiescent zone where suspended particles/solids are settled out of the water. These particles are returned to the Primary chambers via a sludge return which aids in further biological reduction, denitrification and providing a constant food supply rich in microbes supporting the system through periods of limited flows.

System Performance

The Econotreat VBB-C-2200 system is capable of treating up to 2200L per day peak flow to an advanced secondary standard. The effluent is suitable for UV disinfection where required.

Benchmark Ratings
The **Waipapa Tanks Econo-Treat® VBB C-2200-2** system **achieved** the following effluent quality ratings:

Indicator Parameters	Median	Std Dev.	Rating	Rating System				
				A+	A	B	C	D
BOD (g/m^3)	*3.4*	*1.5*	A+	*<5*	*<10*	*<20*	*<30*	*≥30*
TSS (g/m^3)	*4.98*	*3.49*	A+	*<5*	*<10*	*<20*	*<30*	*≥30*
Total nitrogen TN (g/m^3)	*13.6*	*1.3*	A	*<5*	*<15*	*<25*	*<30*	*≥30*
Ammonia Nitrogen NH4-N (g/m^3)	*1.1*	*1.8*	A	*<1*	*<5*	*<10*	*<20*	*≥20*
Total phosphorus TP (g/m^3)	*4.2*	*0.5*	B	*<1*	*<2*	*<5*	*<7*	*≥7*
Faecal Coliforms FC (cfu/100mL)	*11,200*	*50,196*	B-	*<10*	*<200*	*<10,000*	*<100,000*	*≥100,000*
Energy (kWh/d) (mean)	*1.8*	-	B	*0*	*<1*	*<2*	*<5*	*≥5*

ECONOTREAT VBB-C-2200

System Specification & Installation Instructions

New Zealand's Leaders in Advanced Secondary Treatment Systems

Compliance Requirements

All Econotreat Treatment Systems meet the requirements of the NZ Building Code G13-VM4.

Section 9 of AS/NZS 1546.1:2008 state that tanks constructed to these Standards will meet the requirements of the Code for Clauses B1 and B2, structure and durability.

Compliance with Section 9 of AS/NZS 1546.1:2008 and also Clauses G13.3.4 relating to on-site treatment and disposal systems and G14.3.1 and 14.3.2 relating to the control of foul water as an industrial waste.

Tank Specifications

Tanks are made of 50mpa Fiber Reinforced Concrete, which is suitable material for wastewater treatment containment meeting all the requirements of Section 4.3.3 of AS/NZS 1547:2012. These tanks have an expected lifespan of 50 years.

Dual Chamber Septic Tank
5200L Nominal Capacity
2500mm Long
1700mm Wide
1975mm High
- 3100kg

Aeration Tank
5200L Nominal Capacity
2500mm Long
1700mm Wide
1975mm High
- 2900kg

System Information
500L Pump Chamber
2120L Emergency Storage

Installation Location and Certification

These tanks are not designed for vehicle loads and shall be located no closer than 2m to a driveway, road frontage or a building. If for any reason the tank is located where vehicle traffic may drive over the tank or approach closer than 2m, or where it may be trampled on by farm stock then the tank should be protected by a concrete slab designed to support these loads. Surface water must also be diverted from flowing into the installation.

Installation must be certified to AS/NZS 1547:2012, the certificate to be issued and held by the regulatory authority.

High Water Table Installations

All tanks have been engineered and designed for maximum strength, in accordance with the NZC 3604. Clauses B1 and B2 for structure and durability, to withstand any hydraulic pressures, both lateral and uplift, created by high water table conditions.

In high water table installations, it is important to fill the tanks with water. This removes the hydraulic uplift and simplifies the installation. In extremely high-water tables, a concrete foot can be added to the tank during manufacture. Waterflow must be made aware of this early on in vies of supplying a tank that is fit for purpose.

Plumbing Pipes and Fittings

All internal plumbing is done with PVC pipes with appropriate connections according to AS/NZS 1260 and AS/NZS 4130.

Backfill and Bedding

Place and bed to NZBC G13/AS2, using compacted granular metal, in layers not exceeding 100mm.

Electrical

Where a pump is required on a flat site electrical connection must be installed according to AS/NZS 3000 and the control and alarm system must be in a weatherproof housing located in a readily visible position.

Warranty

WATERFLOW NZ LTD warrants that the Econotreat System will be free from defects in material and workmanship for the following periods of time from the date of installation as set out in the following conditions:

1. Concrete Tank 15yrs
2. Roto-Molded Tanks 15yrs
3. Nitto Blower 3yrs
4. Irrigation Pumps 2yrs
5. Warranty of Operation covers the performance of the Econotreat System as connected to the effluent inflow for which they are designed, and has been installed to the criteria as set out in the relative installation instructions and procedures, and has an assigned Service/Maintenance contract in place with Waterflow NZ Ltd or it's appointed agent/s.

Warranty excludes defects due to:

A) Failure to use the system in accordance with owner's manual.

B) A force majeure event outside the reasonable control of WATERFLOW NZ LTD such as (but not limited to) earthquake, fire, flood, soil subsidence, ground water table variations or plumbing fault.

C) Modifications to surrounding landscape contour after installation

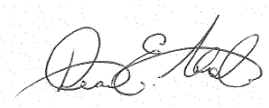
D) The actions of a third party

E) The system required to bear loads (either hydraulic or biological) greater than that for which it was designed

F) Any modifications or repairs undertaken without the consent of WATERFLOW NZ LTD

G) Failure, where applicable, to fence and plant disposal field.

1st June 2014
Dean Hoyle
Managing Director



ECONOTREAT VBB-C-2200

System Specification & Installation Instructions

Econotreat VBB-C-2200 Installation Instructions

The Econotreat system is to be installed or signed off by a registered Drain layer to the design specified by Waterflow NZ Ltd.

The following installation instructions and procedures followed correctly will ensure System performance is not compromised in any way.

1. Excavate two 3m x 2m level platforms at an appropriate depth to ensure adequate fall for inlet pipe from the source. This has to be installed on virgin ground. The two platforms are ideally on the same level and next to each other, either side-by-side or end-on-end.
2. Lay 100mm of bedding metal on platform and place the Septic and Aeration tanks next to each other. As close as practically possible to minimize the connection distance between the tanks.
3. Connect the two tanks with 100mm PVC. If the tanks are side-by-side the connection will need supporting. This is done by tying it back to the wire on the lids with a length of rope supplied. The rope can be found in the top of the treatment tank.

4. Next connect the sludge return. This is a 25mm PVC pipe that come out of the central riser on the treatment tank. This must be plumbed back to the second 100mm PVC at the start of the septic tank. It is important that this pipe is falling slightly or at minimum flat.
5. Trench from Dose Chamber outlet to disposal field and lay the 25mm alkathene feed line.
6. Take a minimum of 3 photos at this point to showing connections and back fill, to ensure correct installation for sign off.
7. Back fill around tanks. Using spoil from the excavation is fine, be aware that this will settle over time though.

Caution: System must be protected from excessive super imposed loads both lateral and top loads. E.g. loads from vehicular traffic. There needs to be at least 2m of clearance maintained around system.

Econotreat VBB-C-2200 Schematic Drawings

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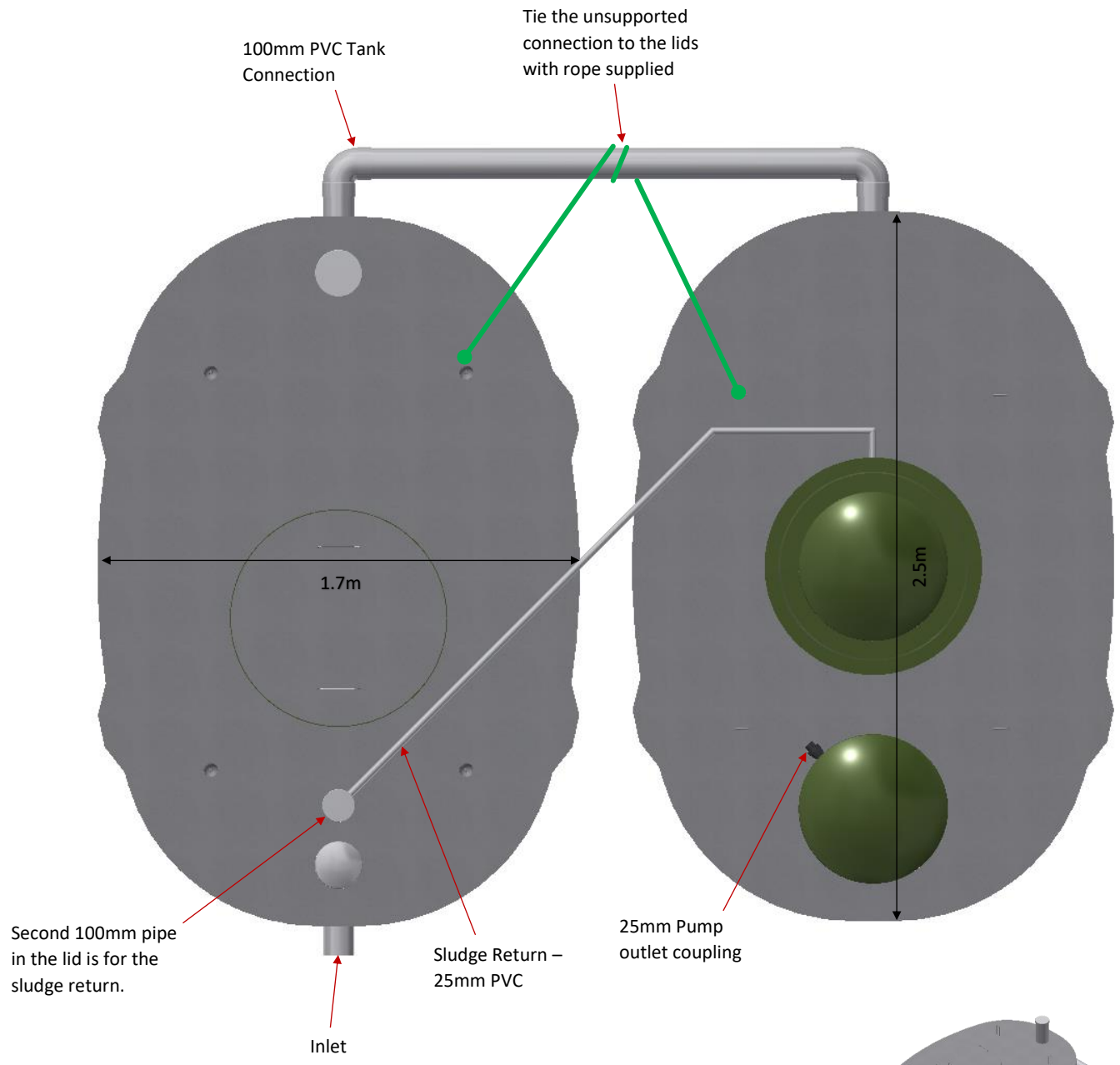
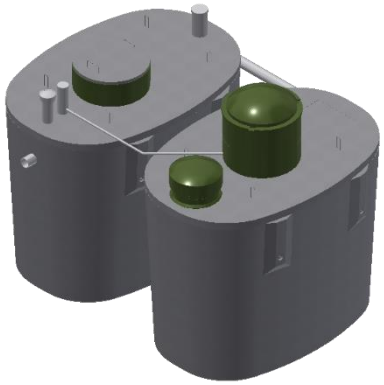
Econotreat VBB-C-2200 Schematic Drawings

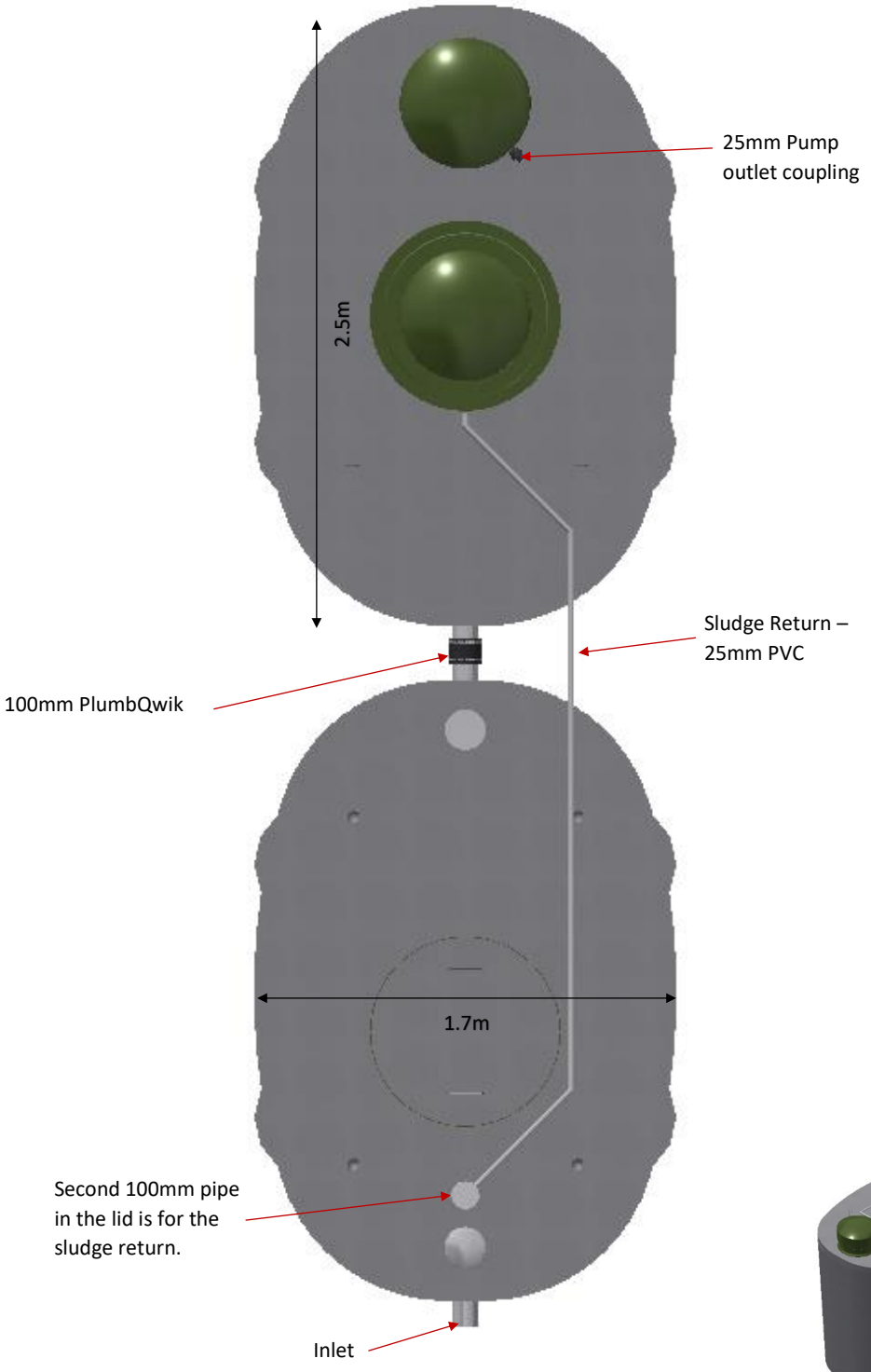
Side by Side Installation





Econotreat VBB-C-2200 Schematic Drawings

End on End Installation



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econo-treat

Advanced Secondary Treatment

Econotreat Aerated Wastewater Systems

Home Owners Guide

Contents

To the Home Owner

Thank you for choosing an Econotreat System to treat and care for your on-site sewage and wastewater.

Your Econotreat System is fully automatic in operation and requires little owner intervention to ensure years of service. It is useful that the owner/operator of the system understand some of the broad concepts of the system operation. This manual has been written to provide this simple explanation and to serve as a future reference so that you can ensure that the system is operating effectively at all times.

We would encourage you to monitor and care for your Econotreat system with our backing and support and by doing so you will learn how your system works and operates and how to keep it in top working order. Waterflow promises consistent results year after year.

Kind regards,
The Waterflow Team

Warranty

WATERFLOW NZ LTD warrants that the Econotreat System will be free from defects in material and workmanship for the following periods of time from the date of installation as set out in the following conditions:

1. Concrete Tank 15yrs
2. Roto-Molded Tanks 15yrs
3. Nitto Blower 2yrs
4. Irrigation Pumps 2yrs
5. Warranty of Operation covers the performance of the NaturalFlow System as connected to the effluent inflow for which they are designed, and has been installed to the criteria as set out in the relative installation instructions and procedures, and has an assigned Service/Maintenance contract in place with Waterflow NZ Ltd or it's appointed agent/s.

Warranty excludes defects due to:

A) Failure to use the system in accordance with owner's manual.

B) A force majeure event outside the reasonable control of WATERFLOW NZ LTD such as (but not limited to) earthquake, fire, flood, soil subsidence, ground water table variations or plumbing fault.

C) Modifications to surrounding landscape contour after installation

D) The actions of a third party

E) The system required to bear loads (either hydraulic or biological) greater than that for which it was designed

F) Any modifications or repairs undertaken without the consent of WATERFLOW NZ LTD

G) Failure, where applicable, to fence and plant disposal field.

How it Works

Primary Chamber / Tank

Influent enters the chamber via the source whereby scum and solids capable of settling are separated from the raw influent. Primary treated effluent flows through a transfer port to the aeration tank. This tank will also act as a storage chamber for sludge returned via the Clarification Chamber.

Aeration Chamber

Water enters via the Primary Chamber. Air is introduced into this chamber via an air blower to create an environment for aerobic bacteria and other helpful organisms to consume the organic matter present. The aeration tank is designed in a manner to help prevent short circuiting of the wastewater to ensure extended aeration. Media is also present in the tank to support the growth of bacteria.

Clarification Chamber

The Clarification chamber is essentially a quiescent zone where suspended particles/solids are settled out of the water. These particles are returned to the Primary chambers via a sludge return which aids in further biological reduction, denitrification and providing a constant food supply rich in microbes supporting the system through periods of limited flows.

Servicing

Your Econotreat System requires annual service and maintenance inspections (this can vary depending on local council regulations). This will need to be done by our trained technicians. We will phone to arrange a suitable time to attend to your servicing needs.

A record sheet (in triplicate) will be completed by our technician at the time of service. One copy is for you the customer and available upon payment, another is sent off to Council and the third copy will be retained for our records.

Please call our office on the number listed at the back of this manual for the cost of servicing after the initial 12-month period.

1. A general inspection of tank area, irrigation and drainage.

2. Inspection of electrical equipment including timer, Low powered Blower, irrigation pump, warning lights and connections.

3. Inspection of Pump-out Chamber and septic tank, checking air lines, adjusting air supply (if necessary), operating de-sludging unit, resetting air control, operating submersible switch, checking bio-mass growth, checking sludge level.

4. Inspection of irrigation including lines, jets and outlets. Between 4 - 9 years the tank will need to be de-sludged (pumped out) as with any septic tank. We will notify you of this requirement, as the service technicians will be monitoring sludge depth annually.

Holiday Precautions

There are no precautions to take. Your Econotreat can be left to function automatically for 6 to 12 months. However, if you are likely to be away from home for more than six months you may like to contact our office, so we can make a routine check.

Responsibility

As the owner of the system, you are responsible for the correct operation and maintenance and to conform to Council's requirements.

Slowly remove irrigation cap (unscrew anti- clockwise). It is important to unscrew slowly to allow any built-up pressure to be relieved. Watch out for the O-ring inside the cap, be careful not to drop this in the tank.

Problem Solving

To ensure the most effective operation of your Econotreat System you should familiarize yourself with the contents of this manual. The Econotreat has been designed to include additional safety margins and minor mishaps and normal household usage will not usually affect the operation of the system.

However, if the alarm sounds or strong odors persist Please call your service agent.

Area of Concern	Potential Cause	Remedial Action
Alarm sounds	Irrigation pump not working Air supply not working No power at the tank	Check water levels Listen for the air compressor Check power supply source
Water around tank	Irrigation pump not working Irrigation lines blocked or kinked	Check water levels Check irrigation lines and clear sprinklers
Excessive foaming	Too much laundry detergent Too many washes	Use recommended quantities Spread wash loads over different days
Persistent odors	Too much water usage Excessive chemicals in use	Add biologic starter pack Install water saving devices System will recover
Irrigation system not working	Pump failure Irrigation lines blocked	Check water level Clear irrigation lines
Water ponding on irrigation field	Irrigation line blocked Excessive water use Broken irrigation pipe	Installation should comply with original approval Install water saving devices Repair irrigation pipe

Do not flush baby wipes down toilets

Caring for Your Wastewater System

Components of Your Complete Wastewater Septic System

A typical wastewater septic system has two main components: a Wastewater Treatment System and a Land Application System (or disposal field). This is simply treatment then discharge.

Efficient Water Use – 'it does make a difference'

Average indoor water use in the typical single-family home is approximately 180ltrs per person per day. The more water a household conserves, the less water enters the septic system. Efficient water use can improve the operation of the wastewater system and reduce any risk of disposal field overload.

High-efficiency toilets

Toilet use accounts for 25 to 30 percent of household water use.

Do you know how many liters of water your toilet uses to flush? Most older homes have toilets with 11+ liter reservoirs, while newer high-efficiency dual flush toilets use 6.3/5.5ltrs or down to 4.5/3ltrs of water per flush. N.B. Did you know leaky toilets can waste as much as 700ltrs each day.

Consider reducing the volume of water in the toilet tank with a volume displacer (fancy name for a brick, stone etc!) if you don't have a high-efficiency model or replacing your existing toilets with high efficiency models.

Check to make sure your toilet's reservoir isn't leaking into the bowl. Add five drops of liquid food coloring to the reservoir before bed. If the dye is in the bowl the next morning, the reservoir is leaking, and repairs are needed.

Water fixtures

A small drip from a faucet may add many liters of unnecessary water to your system every day. To see how much a leak adds to your water usage, place a cup under the drip for 10 minutes. Multiply the amount of water in the cup by 144 (the number of minutes in 24 hours, divided by 10). This is the total amount of clean water travelling to your septic system each day from that little leak.

Faucet aerators and high efficiency showerheads

Faucet aerators help reduce water use and the volume of water entering your septic system. High-efficiency showerheads also reduce water use.

Washing machines

By selecting the proper load size, you'll reduce wastewater. Washing small loads of laundry on the large-load cycle wastes precious water and energy. If you can't select load size, run only full loads of laundry. N.B. A new Energy Star washing machine uses 35 percent less energy and 50 percent less water than a standard model.

Watch your drains!

What goes down the drain can have a major impact on how well your wastewater system works.

What shouldn't you flush down your toilet?

Dental floss, feminine hygiene products, diapers, cotton swabs, cigarette butts, cat litter, and other kitchen and bathroom items that can clog and potentially damage septic system components if they become trapped. Flushing household chemicals, gasoline, oil, pesticides, antifreeze, and paint can also stress or destroy the biological treatment taking place in the system or might contaminate surface or ground waters.

Care for your Land Application System

Your land application system is an important part of your wastewater system. Here are a few things you should do to maintain it:

- Flush driplines regularly – every 3 months recommended
- Plant only recommended wetland plants over and near your wastewater system. Roots from nearby trees or shrubs might clog and damage the drain field
- Don't drive or park vehicles on any part of your wastewater system. Doing so can compact the soil
- in your drain field or damage the pipes, tank, or other septic system components
- Do not build any structures over it or seal it with concrete, asphalt etc.
- Keep roof drains, basement sump pump drains, and other rainwater or surface water drainage systems away from the drain field. Flooding the drain field with excessive water slows down or stops treatment processes and can cause plumbing fixtures to back up
- Trees with very aggressive roots, such as willows, should be kept well away from the disposal system, see page 11 for list of recommended planting
- A soggy drain field won't absorb and neutralize liquid waste. Plan landscaping, roof gutters and foundation drains so that excess water is diverted away from the Land Application System

Household Cleaning Chemicals

Effects on Wastewater and Disposal System Receiving Environments

Use of many cleaning chemicals in facilities served by on-site disposal systems, can result in high concentrations of the constituents in those cleaning agents being discharged into the receiving soils. These chemicals and constituents can have a massive impact on the quality and condition of the receiving soils over time.

Many of the chemicals can disrupt soil structure and decrease hydraulic conductivity while others can act as bactericides, destroying the essential micro-organisms required to achieve the high level of biodegradation in the treatment and disposal systems.

The following matters need to be considered when using cleaning agents in a domestic situation:

- Laundry powders are often extremely high in sodium which will destroy the salt balance in the soils. Check the labels for low sodium and phosphorous contents.

- Wastewater flow from dishwashing machines can have an impact on wastewater treatment systems, in terms of the strong cleaning chemicals used, so check labels for low sodium products

- Highly corrosive cleaners (such as toilet and drain cleaners) that have precautionary labels warning users to minimize direct contact, are an indication that they can adversely affect the wastewater treatment system. Up to 1 cup of bactericides such as bleach can be sufficient to impact on all the microorganisms/bugs in a septic system.

Recommended Cleaning Brands:

eco STORE

earthwise
caring for your world

Cleaning Substitutes

Substitutes for Household Cleaning Chemicals (Ref TP58)

Use of the following readily biodegradable substitutes for common potentially harmful household cleaning chemicals will reduce the stress on any wastewater system, significantly enhance the performance of the whole system and increase the life of the land application system, while reducing the potential effects of the receiving soils.

General Cleaners

Use soft soap cleaners and bio-degradable cleaners and those low in chlorine levels.

Ammonia-Based Cleaners

Instead sprinkle baking soda on a damp sponge.

Disinfectants

In preference use Borax (sold in most Bin Inn stores): ½ cup in 4-litres of water.

Drain De-Cloggers

Avoid using de-clogging chemicals. Instead use a plunger or metal snake or remove and clean trap.

Scouring Cleaners and Powders

Instead sprinkle baking soda on a damp sponge or add 4-Tbs baking soda to 1-Litre warm water. It's cheaper and won't scratch.

Toilet Cleaners

Sprinkle on baking soda, then scrub with toilet brush.

Laundry Detergent

Choose one with a zero-phosphate content and low in alkaline salts (in particular, a low sodium level) and no chlorine.

Oven Cleaners

Sprinkle salt on drips, then scrub. Use baking soda and scouring pads on older spills.

In a Nutshell

Because your system is fully automatic there is no need for the owner to be concerned. However, there are some simple precautions to observe:

DO

- Avoid using strong acids, alkalis, oils and chemicals in your toilet, bathroom, laundry and kitchen (too much can kill off the working “bugs”).
- Limit the use of water in the dwelling.
- Try to spread wash loads over different days.
- Try to avoid using the washing machine and shower at the same time.
- Front loader washing machines reduce water usage.
- If your system requires power supply make sure this remains on continuously, unless system is being serviced.
- Check faucets and toilets for leaks; make repairs if necessary.
- Use low flush toilets where possible.
- Use a ‘displacer’ to reduce the amount of water needed to flush older toilets.
- Use aerators on faucets and flow reducer nozzles on showers to help lower water consumption.
- Reduce water levels for small loads of laundry.
- Wait until the dishwasher is full to run it.
- Densely plant your field to maximize transpiration.
- Perform regular monthly visual checks of your system and field.
- Grass should be mowed or trimmed regularly to optimize growth and prevent the grass from becoming rank.
- Use signs, fences and/or plantings to prevent any vehicle or stock access.
- Keep records of all maintenance undertaken on the wastewater systems.
- Monitor and care for your Wastewater System as per instructions in the home owner’s manual.

DON’T

- Switch off power unless servicing
- Use chlorine-based disinfectant & cleaning products in the toilets or kitchen sink (Cleaners high in chlorine, phosphorous or ammonia must not be used)
- Over use heavy cleaners that kill beneficial bacteria in the septic system
- Pour any toxic/strong chemicals (paint, oil, grease, paint thinners or pesticides) down any drains
- Flush down your toilet – Dental floss, feminine hygiene products, diapers, cotton swabs, cigarette butts, cat litter, and other kitchen and bathroom items
- Discard any drugs down the sink or toilet
- Alter or add any part of your system without Waterflow NZ LTD’s approval
- Never turn the system off, even when away on holidays.

Plants Suitable for Onsite Wastewater Disposal Systems

Plantings that will soon have your field looking magnificent!

Below are some of the most common of native and other plant species that are tolerant or fond of moist conditions, such as those associated with wastewater disposal fields.

Cordyline australis

Apodasia similis

Alocasis nigrescens

Carexx secta

- Alocasia nigrescens (Black Taro)
- Apodasmia similis (Oioi)
- Arthropodium Matapouri Bay
- (Rengarenga Lily)
- Carex dispacea
- Carex dissita
- Carex maorica
- Carex secta
- Carex tenuiculmis
- Carex virgata
- Cordyline australis (Cabbage Tree)
- Cordyline Midnight Star
- Leptospermum Burgundy Queen
- (Flowering Ti Tree)
- Lomandra Tanika
- Phomium Surfer

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