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

Office Use Only
Application Number:

Application for resource consent or fast-track resource consent

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

1. Pre-Lodgement Meeting

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

2. Type of Consent being applied for

(more than one circle can be ticked):

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

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

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

◯ **Yes** ✔ **No**

4. Consultation

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

If yes, which groups have you consulted with?	
Who else have you consulted with?	

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

5. Applicant Details

Name/s: Treston Elliott Laybourn

Email: tr[redacted]

Phone number: [redacted]

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

[redacted]

Postcode 0494

6. Address for Correspondence

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

Name/s: Treston Elliott Laybourn

Email: [redacted]

Phone number: [redacted]

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

[redacted]

Postcode 0494

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

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

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

Name/s: Treston Elliott Laybourn

Property Address/ Location: [redacted]

Postcode 0494

8. Application Site Details

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

Name/s:

Site Address/ Location: [redacted]

Postcode 0494

Legal Description: [redacted] **Val Number:** 00121-03704

Certificate of title:

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.

N/A

9. Description of the Proposal:

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

Construction of a retaining wall within 5.43m of the road boundary, breaching the 10m setback requirement under Rule 8.6.5.1.4 of the Operative District Plan.

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

10. Would you like to request Public Notification?

◯ **Yes** ✔ **No**

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

(more than one circle can be ticked):

- [x] **Building Consent** EBC-2026-203/0ere (if known)
- [ ] **Regional Council Consent (ref # if known)** Ref # here (if known)
- [ ] **National Environmental Standard consent** Consent here (if known)
- [ ] **Other (please specify)** Specify 'other' here

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

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

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

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

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

13. Assessment of Environmental Effects:

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

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

13. Draft Conditions:

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

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

14. Billing Details:

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

Name/s: (please write in full) Treston Elliott Laybourn

Email: [redacted]

Phone number:

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

Postcode 0494

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

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

Name: (please write in full) Tresron Elliott Laybourn

Signature:
(signature of bill payer [redacted]

MANDATORY

15. Important Information:

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

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

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

15. Important information continued...

Declaration

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

Name: (please write in full) Treston Elliott Laybourn

Signature: [redacted]

Checklist (please tick if information is provided)

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

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

8 RURAL ENVIRONMENT

CONTEXT

The majority of the land in the Far North is, and will remain, rural, where rural production is the main activity but there are distinct differences in rural character and amenity across the various rural areas. There is also a greater sense of nature and of open space in the rural environment than in the more densely settled areas.

Much of the rural environment is also coastal. The Act places particular responsibilities on councils to preserve the natural character of the coastal environment and for this reason it is differentiated from that part of the rural environment that does not have a significant coastal character.

Because of the lower density of development in the rural area and generally larger site sizes, there is a perception that the likelihood of adverse effects occurring from activities is less than it may be in more densely settled areas, or at least that adverse effects are more easily "absorbed" within the site.

The consequence is that controls on activities in the rural environment generally enable a wide range of complementary rural activities to occur whilst avoiding, remedying, or mitigating any adverse effects on the environment. The various zone provisions supported by other controls in ***Part 3 of the Plan – District Wide Provisions*** are designed to protect the natural and physical resources of the rural environment.

However, the rural land resource is also sometimes preferred by developers as an alternative location to establish industrial and commercial activities, especially on approach roads, relatively close to existing urban settlements. This can result in cumulative effects and impact on the efficient delivery of infrastructure. Zone provisions are designed to allow for activities that do not detract from the amenity values associated with the rural environment's attributes and character and that further contribute to the efficient use of the District's physical resources such as infrastructure.

The character of the rural environment is constantly changing. These changes are largely in response to economic imperatives. They take the form of changes in farming and forestry practices and the type of productive activities that take place on the land, hence the zone name "Rural Production". They also result in the expansion of rural residential living on relatively small rural lots in some areas. Conflicts between land uses can arise due to these changes. For example, where countryside living occurs, the effects of odour, spraydrift and noise on residents becomes an issue. The Plan is designed to take account of the likely pressures for and consequences of change in the rural environment including settlement patterns for rural villages.

8.1 ISSUES

8.1.1 The subdivision, use and development of rural land can have adverse effects on the environment.

8.1.2 The requirement of the Plan to be effects-based places emphasis on the need to define effects and the minimum standards to be applied to those effects.

8.1.3 The loss of areas of significant indigenous vegetation and significant habitats of indigenous fauna as a result of land use activities in the rural environment.

8.1.4 The effects of activities within the rural environment and between the rural and urban environments are not always compatible. The management of the effects of the change in activities which occur within the rural environment and on the rural-urban fringe as a result of the expansion of urban areas onto rural land is an issue.

8.1.5 The requirement to sustainably manage rural resources has implications both for the use of land and for its subdivision.

8.1.6 The effects of inappropriate subdivision, use and development on outstanding natural features and landscapes.

8.1.7 There is a risk that adverse environmental effects can result from incompatible activities located close together, including cumulative effects in near urban areas.

8.1.8 Inappropriate subdivision, use and development can adversely impact on the amenity values of the rural environment

8.1.9 Activities and services that have a functional relationship with rural production may be more efficient and appropriate to establish within the rural environment rather than more densely settled areas.

8.1.10 Inappropriate use and development along approach roads to town centres and domestic airports can adversely impact on prevailing character and amenity values.

8.1.11 Loss of rural production land due to development pressure from non-rural activities.

8.2 ENVIRONMENTAL OUTCOMES EXPECTED

8.2.1 A rural environment where natural and physical resources are managed sustainably.

8.2.2 A rural environment in which a wide variety of activities is enabled, consistent with safeguarding the life supporting capacity of air, water, soil and ecosystems.

8.2.3 A dynamic rural environment which is constantly changing to meet the social and economic needs of the District's communities through the sustainable management of natural and physical resources.

8.2.4 The maintenance of areas of significant indigenous vegetation and significant habitats of indigenous fauna including aquatic habitats, and an increase in such areas that are formally protected.

8.2.5 Adverse effects arising from potentially incompatible activities are avoided, remedied or mitigated.

8.2.6 The maintenance of values associated with outstanding natural features and landscapes in the rural environment.

8.2.7 A rural environment where change is acknowledged whilst amenity values are maintained and enhanced to a level that is consistent with the productive intent of the zone

8.3 OBJECTIVES

8.3.1 To promote the sustainable management of natural and physical resources of the rural environment.

8.3.2 To ensure that the life supporting capacity of soils is not compromised by inappropriate subdivision, use or development.

8.3.3 To avoid, remedy or mitigate the adverse and cumulative effects of activities on the rural environment.

8.3.4 To protect areas of significant indigenous vegetation and significant habitats of indigenous fauna.

8.3.5 To protect outstanding natural features and landscapes.

8.3.6 To avoid actual and potential conflicts between land use activities in the rural environment.

8.3.7 To promote the maintenance and enhancement of amenity values of the rural environment to a level that is consistent with the productive intent of the zone.

8.3.8 To facilitate the sustainable management of natural and physical resources in an integrated way to achieve superior outcomes to more traditional forms of subdivision, use and development through management plans and integrated development.

8.3.9 To enable rural production activities to be undertaken in the rural environment.

8.3.10 To enable the activities compatible with the amenity values of rural areas and rural production activities to establish in the rural environment.

8.4 POLICIES

8.4.1 That activities which will contribute to the sustainable management of the natural and physical resources of the rural environment are enabled to locate in that environment.

8.4.2 That activities be allowed to establish within the rural environment to the extent that any adverse effects of these activities are able to be avoided, remedied or mitigated and as a result the life supporting capacity of soils and ecosystems is safeguarded and rural productive activities are able to continue.

8.4.3 That any new infrastructure for development in rural areas be designed and operated in a way that safeguards the life supporting capacity of air, water, soil and ecosystems while protecting areas of significant indigenous vegetation and significant habitats of indigenous fauna, outstanding natural features and landscapes.

8.4.4 That development which will maintain or enhance the amenity value of the rural environment and outstanding natural features and outstanding landscapes be enabled to locate in the rural environment.

8.4.5 That plan provisions encourage the avoidance of adverse effects from incompatible land uses, particularly new developments adversely affecting existing land-uses (including by constraining the existing land-uses on account of sensitivity by the new use to adverse affects from the existing use – i.e. reverse sensitivity).

8.4.6 That areas of significant indigenous vegetation and significant habitats of indigenous fauna habitat be protected as an integral part of managing the use, development and protection of the natural and physical resources of the rural environment.

8.4.7 That Plan provisions encourage the efficient use and development of natural and physical resources, including consideration of demands upon infrastructure.

8.4.8 That, when considering subdivision, use and development in the rural environment, the Council will have particular regard to ensuring that its intensity, scale and type is controlled to ensure that adverse effects on habitats (including freshwater habitats), outstanding natural features and landscapes on the amenity value of the rural environment, and where appropriate on natural character of the coastal environment, are avoided, remedied or mitigated. Consideration will further be given to the functional need for the activity to be within rural environment and the potential cumulative effects of non-farming activities.

8.5 METHODS OF IMPLEMENTATION

DISTRICT PLAN METHODS

8.5.1 Policies will be implemented through the pattern of zoning and zone rules and through the rules relating to subdivision (***Chapter 13***).

8.5.2 Integrated development is provided for in the rules to promote innovative land uses, and to enable tangata whenua to utilise ancestral land.

8.5.3 Financial contributions (refer ***Chapter 14***) towards provision of car parking associated with non-residential activities and esplanade areas may be required. The amount of contribution will take account of the need for such services.

8.5.4 Protection and enhancement of indigenous flora and fauna is provided for in ***Section 12.2***.

8.5.5 Protection and enhancement of outstanding natural features and landscapes is provided for in ***Section 12.1***.

OTHER METHODS

8.5.6 Non regulatory methods including education, publicity and incentives that encourage activities that are compatible with the surrounding environment.

8.5.7 Education is an important method. The Council will provide information to landowners and the public generally about sustainable management of the rural environment.

8.5.8 Liaison with the Northland Regional Council concerning education, co-ordination of work programmes, policy development and plan administration.

8.5.9 Incentives will be made available to assist landowners to protect areas of significant indigenous vegetation and habitats of indigenous fauna.

8.5.10 In conjunction with the Northland Regional Council, explore the feasibility of setting up a register of contractors who are specially trained in good environmental practices and licensed to carry out their work in accordance with approved codes of practice. Work undertaken by a licensed contractor that complies with the relevant Code of Practice would not require a property-specific resource consent.

8.5.11 The Council will promote the use of Low Impact Design principles to reduce site impermeability and provide education material to increase awareness.

COMMENTARY

The objectives, policies and methods of the rural environment are intended to give effect to the purpose of the Act. They also take account of the particular nature of the rural environment of the district. Accordingly emphasis is placed on enabling a wide range of activities to take place, limited only by the need to ensure that environmental quality is maintained.

Impermeable surfaces are inevitable as development continues to occur in the Far North District. Impermeable surfaces generate stormwater run-off that can contribute to flooding, erosion and the release of contaminants into waterways. The use of Low Impact Design principles can reduce the run-off volume and velocity, and filter contaminants. People and communities need to be considerate of the benefits of development that uses Low Impact Design principles.

8.6 RURAL PRODUCTION ZONE

CONTEXT

The Rural Production Zone applies over the majority of the rural part of the District other than those areas defined as Coastal, Rural Living or set aside for Recreation, Conservation or Minerals. The zone is predominantly a working productive rural zone, hence its name.

The zone contains environmental and amenity standards which will enable the continuation of the wide range of existing and future activities, compatible with normal farming and forestry activities, and with rural lifestyle and residential uses, while ensuring that the natural and physical resources of the rural area are managed sustainably. Activities that are ancillary to farming or forestry may also have a functional need to be within the rural environment, however, such rural processing and servicing activities may be less compatible in more intensively settled locations. The standards in the Rural Production Zone are also aimed at enabling farming and activities ancillary to rural production whilst maintaining and enhancing amenity values associated with the rural environment, and at minimising the likelihood and risk of incompatible land uses establishing in proximity to each other.

The provisions of the Rural Production Zone are complemented by the subdivision rules and the general rules relating to protection of environmental matters such as landscapes and indigenous flora and fauna, and having regard to amenity values.

The zone contains specific amenity standards designed to protect the special amenity values of the frontage to Kerikeri Road between SH10 and the urban edge of Kerikeri.

8.6.1 ISSUES

These issues supplement those set out in ***Section 8.1***.

8.6.1.1 People who are dependant on the use of land in the Rural Production Zone for their livelihood can be adversely affected by controls designed to ensure sustainable management of natural and physical resources.

8.6.1.2 The sustainable management of natural and physical resources in the Rural Production Zone could be under threat in the absence of controls designed to avoid, remedy or mitigate the adverse effects of activities, including cumulative effects.

8.6.1.3 The use of land for rural production activities can be adversely affected by the establishment of incompatible activities.

8.6.1.4 Inappropriate subdivision, land use and development in the Rural Production Zone can lead to adverse cumulative effects, the degradation of amenity values, as well as increase conflict with existing activities (reverse sensitivity).

8.6.1.5 Some activities and services have a functional need to be located in rural environments so as to enable rural productivity and contribute to the well-being of individuals and communities.

8.6.2 ENVIRONMENTAL OUTCOMES EXPECTED

These outcomes supplement those set out in ***Section 8.2***.

8.6.2.1 A Rural Production Zone where a wide variety of activities take place in a manner that is consistent with the sustainable management of natural and physical resources and compatible with the productive intent of the zone.

8.6.2.2 A Rural Production Zone which enables the social, economic and cultural well-being of people and communities, and their health and safety, while safeguarding the life supporting capacity of the environment and avoiding, remedying or mitigating adverse effects on it.

8.6.2.3 A Rural Production Zone where the adverse cumulative effects of activities are managed and amenity values are maintained and enhanced.

8.6.2.4 A Rural Production Zone where the adverse effects of incompatible activities are avoided, remedied or mitigated.

8.6.3 OBJECTIVES

These objectives supplement those set out in ***Section 8.3***.

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

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

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

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

8.6.3.5 To protect and enhance the special amenity values of the frontage to Kerikeri Road between its intersection with SH10 and the urban edge of Kerikeri.

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

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

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

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

8.6.4 POLICIES

These policies supplement those set out in ***Section 8.4***.

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

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

8.6.4.3 That land management practices that avoid, remedy or mitigate adverse effects on natural and physical resources be encouraged.

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

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

8.6.4.6 That the built form of development allowed on sites with frontage to Kerikeri Road between its intersection with SH10 and Cannon Drive be maintained as small in scale, set back from the road, relatively inconspicuous and in harmony with landscape plantings and shelter belts.

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

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

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

COMMENTARY

The objectives and policies of the Rural Production Zone are a subset of those for the rural environment. As such they are aimed at a particular zone within the rural environment and the particular constraints and opportunities inherent in the environment of that zone. They are intended to be as flexible, permissive and enabling as possible in order to ensure that rural productivity is not stifled and that other activities can

establish where their significant adverse effects are avoided remedied or mitigated on rural production or the natural and physical environment, including its people.

There is an emphasis on non-regulatory methods including education, incentives and publicity. This is because regulation has a negative connotation whereas non-regulatory methods are more positive.

The provision for integrated development clearly indicates that thinking "outside the square", and development that is innovative but provides for the protection of the environment, is to be encouraged.

The entrance to the township of Kerikeri along Kerikeri Road from SH10 is an important part of the town's identity for local residents and visitors alike. The road side stalls, tourist orientated enterprises, extensive landscape planting and shelter belts, add to the character of the entrance to Kerikeri, which is one of a mature landscape in which built form is well integrated with the surrounding vegetation. Specific requirements for building setbacks, landscape planting, vehicle parking and vehicle access will ensure that these special amenity values are recognised and protected.

There are roads within the District that have comparatively high levels of vehicle use. These require particular consideration in terms of the management of traffic effects.

8.6.5 ZONE RULES

Activities in the Rural Production Zone must comply not only with the zone rules but also with the relevant rules in ***Part 3 of the Plan - District Wide Provisions***. An activity may be permitted by the zone rules but may require a resource consent because it does not comply with one or more of the rules in **Part 3**.

Particular attention is drawn to:

(a) ***Chapter 12 Natural and Physical Resources*** (and the ***District Plan Maps***);

(b) ***Chapter 13 Subdivision***;

(c) ***Chapter 14 Financial Contributions***;

(d) ***Chapter 15 Transportation***;

(e) ***Chapter 16 Signs and Lighting***;

(f) ***Chapter 17 Designations and Utility Services*** (and the ***Zone Maps***).

Attention is also drawn to ***Section 18.3 Waimate North Zone*** (and ***Zone Maps***). This special zone replaces the general zone for an area of land centred on Showgrounds Rd, Waimate North.

Particular attention is also drawn to ***Rules 15.2.5.1.1 & 15.2.5.1.2*** in ***Chapter 15.2 Airports*** which may result in an activity that is a permitted activity under ***Rule 8.6.5.1*** below no longer being permitted because of its proximity to the airport protection surfaces and runways of the Kaitaia, Kerikeri and Kaikohe Airports.

8.6.5.1 PERMITTED ACTIVITIES

An activity is a permitted activity in the Rural Production Zone if:

(a) it complies with the standards for permitted activities set out in ***Rules 8.6.5.1.1*** to ***8.6.5.1.12*** below; and

(b) unless otherwise specified in the rule it complies with the relevant standards for permitted activities set out in ***Part 3 of the Plan - District Wide Provisions***.

8.6.5.1.1 RESIDENTIAL INTENSITY

Residential development shall be limited to one unit per 12ha of land. In all cases the land shall be developed in such a way that each unit shall have at least 3,000m² for its exclusive use surrounding the unit plus a minimum of 11.7ha elsewhere on the property.

Except that this rule shall not limit the use of an existing site, or a site created pursuant to ***Rule 13.7.2.1 (Table 13.7.2.1)*** for a single residential unit for a single household, provided that all other standards for permitted activities are complied with.

Note: There is a separate residential intensity rule applying to Papakainga Housing (refer to ***Rule 8.6.5.2.2***).

8.6.5.1.2 SUNLIGHT

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 (refer to definition of Recession Plane in ***Chapter 3 - Definitions***), except where a site boundary adjoins a legally established entrance strip, private way, access lot, or access way serving a rear site, the

measurement shall be taken from the farthest boundary of the entrance strip, private way, access lot, or access way.

Exemptions: crop protection structures not exceeding 6m in height.

8.6.5.1.3 STORMWATER MANAGEMENT

The maximum proportion of the gross site area covered by buildings and other impermeable surfaces shall be 15%.

8.6.5.1.4 SETBACK FROM BOUNDARIES

No building shall be erected within 10m of any site boundary; with the following exceptions;

(a) no accessory building shall be erected within 3m of boundaries other than road boundaries, on sites less than 5000m^2;

(b) no crop protection structures shall be located within 3m of boundaries;

(c) no building shall be erected within 12m of any road boundary with Kerikeri Road on properties with a road frontage with Kerikeri Road between its intersection with SH10 and Cannon Drive;

(d) no building for residential purposes shall be erected closer than 100m from any zone boundary with the Minerals Zone;

(e) no building shall be erected within the building line restriction area as marked in ***Appendix 6C***, located immediately north of the Te Waimate Heritage Precinct. Any proposed building to be erected within this building line restriction area shall be deemed a discretionary activity and the Heritage New Zealand Pouhere Taonga will be considered an affected party to any such application made under this rule.

Note: This rule does not apply to the below ground components of wastewater disposal systems. However, provisions in ***Chapter 12.7 – Lakes Rivers Wetlands and the Coastline*** still apply to below ground components of wastewater treatment systems.

Attention is also drawn to the *TP58 On-site Wastewater Systems: Design and Management Manual and the* Regional Water and Soil Plan for Northland, as consent may be required.

8.6.5.1.5 TRANSPORTATION

Refer to ***Chapter 15 – Transportation*** for Traffic, Parking and Access rules

8.6.5.1.6 KEEPING OF ANIMALS

(a) Any building, compound or part of a site used for factory farming or a cattery, shall be located no closer than 50m from any site boundary, except for a boundary which adjoins a Residential, Coastal Residential or Russell Township Zone, where the distance shall be a minimum of 600m.

(b) Any building, compound or part of a site used for a boarding kennel shall be located no closer than 300 metres from any site boundary except for a boundary which adjoins a Residential, Coastal Residential or Russell Township Zone, where the distance shall be a minimum of 600m.

8.6.5.1.7 NOISE

(a) All activities except Temporary Military Training Activities shall be so conducted as to ensure that noise from the site shall not exceed the following noise limits as measured at or within the boundary of any other site in this zone, or at any site in the Residential, Coastal Residential or Russell Township Zones, or at or within the notional boundary of any dwelling in any other rural or coastal zone:

0700 to 2200 hours	65 dBA L_{10}
2200 to 0700 hours	45 dBA L_{10} and
	70 dBA L_{max}

Exemptions: The foregoing noise limits shall not apply to airport operations at Kaitaia, Kerikeri and Kaikohe including aircraft being operated during or immediately before or after flight. For the purposes of this exemption aircraft operations shall include all aircraft activity from start up to shut down of engines. The noise limits shall also not apply to activities periodically required by normal farming and plantation forestry activities and the use of aircraft, provided that the activity shall comply with the requirements of s.16 of the Act.

Noise Measurement and Assessment:

Sound levels shall be measured in accordance with NZS 6801:1991 “Measurement of Sound” and assessed in accordance with NZS 6802:1991 “Assessment of Environmental Sound”.

The notional boundary is defined in NZS 6802:1991 “Assessment of Environmental Sound” as a line 20m from any part of any dwelling, or the legal boundary where this is closer to the dwelling.

Construction Noise:

Construction noise shall meet the limits recommended in, and shall be measured and assessed in accordance with, *NZS 6803P:1984 “The Measurement and Assessment of Noise from Construction, Maintenance and Demolition Work”*.

(b) Noise limits for Temporary Military Training Activities are as follows:

Time	**Limits (dBA)**		
(Any Day)	L_{10}	L_{95}	L_{max}
0630 to 0730	60	45	70
0730 to 1800	75	60	90
1800 to 2000	70	55	85
2000 to 0630	55		

Impulse noise resulting from the use of explosives, explosives simulators or small arms shall not exceed 122 dBC.

Temporary Military Training Activities shall be conducted so as to ensure the following noise limits are not exceeded at any point within the notional boundary of any dwelling, or residential institution, or educational facility within the district.

8.6.5.1.8 BUILDING HEIGHT

The maximum height of any building shall be 12m.

8.6.5.1.9 HELICOPTER LANDING AREA

A helicopter landing area shall be at least 200m from the nearest boundary of any of the Residential, Coastal Residential, Russell Township or Point Veronica Zones.

8.6.5.1.10 BUILDING COVERAGE

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.

8.6.5.1.11 SCALE OF ACTIVITIES

For activities other than those provided for in the exemptions below, the total number of people engaged at any one period of time in activities on a site, including employees and persons making use of any facilities, but excluding people who normally reside on the site or are members of the household shall not exceed

i. For activities ancillary to farming or plantation forestry activities, 8 persons per site or 2 person per 1 hectare of net site area, whichever is the greater
ii. For all other activities, 4 persons per site or 1 person per 1 hectare of net site area, whichever is the greater.

Provided that:

(a) this number may be exceeded for a period totalling not more than 60 days in any 12 month period where the increased number of persons is a direct result of activities ancillary to the primary activity on the site; or

(b) this number may be exceeded where persons are engaged in constructing or establishing an activity (including environmental enhancement) on the site; or

(c) this number may be exceeded where persons are visiting marae.

In determining the total number of people engaged at any one period of time, the Council will consider the maximum capacity of the facility (for instance, the number of beds in visitors accommodation, the number of seats in a restaurant or theatre), the number of staff needed to cater for the maximum number of guests, and the number and nature of the vehicles that are to be accommodated on site to cater for those engaged in the activity.

Exemptions: the foregoing limits shall not apply to farming and forestry or Temporary Military Training activities. All other activities shall comply with the requirements of s16 of the Act.

Note: a definition of Activities Ancillary to Farming or Forestry, is contained in Chapter 3 and reads as follows:

Processing and packaging facilities for farming, forestry, and any rural industry that is dependent primarily on the direct handling of raw produce, or that primarily supplies services to farming, horticulture, or forestry. Includes premises used for the manufacture of dairy products, abattoirs, timber processing, stock yards and sale yards, cool stores and pack houses and rural contractor depots.

8.6.5.1.12 TEMPORARY EVENTS

Temporary events are a permitted activity in the zone, provided that:

(a) the activity does not have a duration of more than two days**;**

(b) the activity does not operate outside the hours of 6.30am to 10pm on each day;

(c) the activity does not involve the assembly of more than 500 persons on each day;

(d) the activity complies with excavation and/or filling rules as contained in Chapter 12.3 of Part 3 of the District Plan (and/or any necessary Earthworks Permit has been obtained);

(e) prior to the event, a Traffic Management Plan (including parking) has been approved by the Council's Roading Engineer, or by NZTA representatives where access is off State Highway, or where traffic to and from the event will impact on State Highways in the vicinity. The approved plan is to be lodged with Council's Resource Consents Manager or other duly delegated officer at least 20 days prior to the event taking place ,and be complied with for the duration of the event.

Note 1: A temporary event need not comply with the Zone rules nor the Traffic Parking and Access provisions of Chapter 15.1. A temporary event must otherwise comply with the District Wide rules and those matters specified within the rule itself.

Exemptions: The foregoing limits shall not apply to temporary military training activities and temporary structures associated with the temporary event.

Note: a definition of Temporary Events is contained in Chapter 3 and reads as follows:

A temporary event is an infrequent event held outside a dedicated venue such as a showground or sports field which occurs no more frequently than once in any twelve month period on a particular site . It can encompass entertainment, cultural, educational and sporting events. It includes temporary removable structures associated with the event but does not include permanently licensed premises or Temporary Military Training Activities.

8.6.5.2 CONTROLLED ACTIVITIES

An activity is a controlled activity in the Rural Production Zone if:

(a) it complies with all of the standards for permitted activities except for any one of the following ***Rules 8.6.5.1.3 Stormwater Management***; ***8.6.5.1.7(b) Noise Limits for Temporary Military Training*** above and/or ***8.6.5.1.10 Building Coverage*** above; and;

(b) it complies with ***Rules 8.6.5.2.1 Stormwater Management***; ***8.6.5.2.2 Papakainga Housing***; ***8.6.5.2.3 Minor Residential*** *Unit and/or* ***8.6.5.2.4 Noise Limits for Temporary Military Training*** and/or ***8.6.5.2.5 Building Coverage*** below; and

(c) it complies with the relevant standards for permitted or controlled activities set out in ***Part 3 of the Plan - District Wide Provisions***.

The Council must approve an application for a land use consent for a controlled activity but it may impose conditions on that consent.

8.6.5.2.1 STORMWATER MANAGEMENT

The maximum proportion of the gross site area covered by buildings and other impermeable surfaces shall be 20%.

In considering an application under this provision the Council will restrict the exercise of its control to:

(a) the extent to which building site coverage and impermeable surfaces contribute to total catchment impermeability and the provisions of any catchment or drainage plan for that catchment;

(b) the extent to which Low Impact Design principles have been used to reduce site impermeability;

(c) any cumulative effects on total catchment impermeability;

(c) the extent to which building site coverage and impermeable surfaces will alter the natural contour or drainage of the site or disturb the ground and alter its ability to absorb water;

(e) the physical qualities of the soil type;

(f) the availability of land for the disposal of effluent and stormwater on the site without adverse effects on the water quantity and water quality of water bodies (including groundwater and aquifers) or on adjacent sites;

(g) the extent to which paved, impermeable surfaces are necessary for the proposed activity;

(h) the extent to which landscaping and vegetation may reduce adverse effects of run-off;

(i) the means and effectiveness of mitigating stormwater runoff to that expected by permitted activity threshold.

8.6.5.2.2 PAPAKAINGA HOUSING

Papakainga housing is a controlled activity in the Rural Production Zone provided that:

(a) it complies with all the standards for permitted activities in this zone and in ***Part 3 - District Wide Provisions***, except for the standards for residential intensity; and

(b) each residential unit has at least 3,000m² surrounding the unit for its exclusive use;

provided that the amount of land elsewhere on the site, in addition to the 3,000m² surrounding the unit, is not less than that required for the discretionary activity residential intensity standard (refer to ***Rule 8.6.5.4.1***).

In considering an application under this provision, the Council will restrict the exercise of its control to the following matters:

(i) the number and location of dwellings;

(ii) the location and standard of access;

(iii) screening and planting.

8.6.5.2.3 MINOR RESIDENTIAL UNIT

Minor residential units are a controlled activity in the zone provided that:

(a) there is no more than one minor residential unit per site;

(b) the site has a minimum net site area of 5000m^2

(c) the minor residential unit shares vehicle access with the principal dwelling;

(d) the separation distance of the minor residential unit is no greater than 30m from the principal dwelling.

In considering an application under this provision, the Council will restrict the exercise of its control to the following matters:

(i) the extent of the separation between the principal dwelling and the minor residential unit;

(ii) the degree to which design is compatible with the principal dwelling;

(iii) the extent that services can be shared;

(iv) the ability to mitigate any adverse effects by way of provision of landscaping and screening;

(v) the location of the unit.

Note: a definition of Minor Residential unit is contained in Chapter 3 and reads as follows**:**

Means a residential unit that:

(i) is not more than 65m^2 GFA, plus an attached garage or carport with GFA not exceeding 18m^2 (for the purpose of vehicle storage, general storage and laundry facilities). The garage area shall not be used for living accommodation;

(ii) is subsidiary to the principal dwelling on the site; and,

(iii) is located and retained within the same Certificate of Title as the principal dwelling on the site.

8.6.5.2.4 NOISE LIMITS FOR TEMPORARY MILITARY TRAINING

In considering a controlled activity application resulting from a breach of ***Rule 8.6.5.1.7(b) Noise Limits for Temporary Military Training*** the Council will restrict the exercise of its control to:

(a) the location, duration and frequency of any noise emissions.

8.6.5.2.5 BUILDING COVERAGE

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.

In assessing an application under this provision the Council will restrict the exercise of its discretion to:

(a) the ability to provide adequate landscaping for all activities associated with the site;

(b) the extent to which building(s) are consistent with the character and scale of the existing buildings in the surrounding environment;

(c) the scale and bulk of the building in relation to the site;

(d) the extent to which private open space can be provided for future uses;

(e) the extent to which the cumulative visual effects of all the buildings impact on landscapes, adjacent sites and the surrounding environment;

(f) the extent to which the siting, setback and design of building(s) avoid visual dominance on landscapes, adjacent sites and the surrounding environment;

(g) the extent to which landscaping and other visual mitigation measures may reduce adverse effects;

(h) the extent to which non-compliance affects the privacy, outlook and enjoyment of private open spaces on adjacent sites.

8.6.5.3 RESTRICTED DISCRETIONARY ACTIVITIES

An activity is a restricted discretionary activity in the Rural Production Zone if:

(a) it does not comply with any one of the following ***Rules 8.6.5.1.1 Residential Intensity, 8.6.5.1.2 Sunlight***; ***8.6.5.1.4 Setback from Boundaries***; ***8.6.5.1.5 Transportation***; ***8.6.5.1.7 Noise*** and ***8.6.5.1.8 Building Height;*** *and* ***8.6.5.1.11(i) Scale of Activities,*** as set out above; but

(b) it complies with all of the other rules for permitted and controlled activities under ***Rules 8.6.5.1*** and ***8.6.5.2***; and

(c) it complies with ***Rules 8.6.5.3.1 Transportation***; ***8.6.5.3.2 Building Height***; ***8.6.5.3.3 Sunlight***; ***8.6.5.3.4 Setback from Boundaries, 8.6.5.3.5 Noise*** and ***8.6.5.3.6 Residential Intensity;*** *and* ***8.6.5.3.7 Scale of Activities*** below; and

(d) it complies with the relevant standards for permitted, controlled or restricted discretionary activities set out in ***Part 3 of the Plan - District Wide Provisions***.

The Council may approve or refuse an application for a restricted discretionary activity, and it may impose conditions on any consent.

In assessing an application for a restricted discretionary activity, the Council will restrict the exercise of its discretion to the specific matters listed for each rule below, or where there is no rule, to the specific matters listed below under the appropriate heading.

8.6.5.3.1 TRANSPORTATION

Refer to ***Chapter 15 – Transportation*** for Traffic, Parking and Access rules

8.6.5.3.2 BUILDING HEIGHT

The maximum height of any building shall be 15m.

In assessing application under this provision the Council will restrict the exercise of its discretion to:

(a) the extent to which adjacent properties will be adversely affected in terms of visual domination, overshadowing, loss of privacy and loss of access to sunlight and daylight;

(b) the ability to mitigate any adverse effects by way of increased separation distances between buildings or the provision of landscaping and screening.

8.6.5.3.3 SUNLIGHT

In assessing an application resulting from a breach of ***Rule 8.6.5.1.2 Sunlight*** the matters to which the Council will restrict its discretion are:

(a) the extent to which adjacent properties will be adversely affected in terms of visual domination, overshadowing, loss of privacy and loss of access to sunlight and daylight;

(b) the location and proximity of adjacent residential units, and the outdoor space used by those units;

(c) the ability to mitigate any adverse effects of loss of sunlight.

8.6.5.3.4 SETBACK FROM BOUNDARIES

In assessing an application resulting from a breach of ***Rule 8.6.5.1.4 Setback from Boundaries*** the matters to which the Council will restrict its discretion are:

(a) the extent to which the building(s) reduces outlook and privacy of adjacent properties;

(b) the extent to which the buildings restrict visibility for access and egress of vehicles;

(c) the ability to mitigate any adverse effects on the surrounding environment, for example by way of planting;

(d) for sites having a frontage with Kerikeri Road (between its intersection with SH10 and Cannon Drive:

  (i) the scale of the buildings;

  (ii) the extent of set back from Kerikeri Road;

  (iii) the visual appearance of the site from the Kerikeri Road frontage;

  (iv) the extent to which the building(s) are in harmony with landscape plantings and shelter belts;

(e) for residential buildings located within 100m of Minerals Zone:

  (i) the position of the building platform(s) in relation to the mine or quarry;

  (ii) the likelihood of the mine or quarry causing environmental effects, especially noise and loss of amenity values, that will impact adversely on the occupiers of the proposed residential building;

  (iii) the effectiveness of any mitigation measures proposed;

  Where an application is required under this rule, the owner and/or operator of any mine or quarry within the adjacent Minerals Zone shall be considered an affected party. Where the written approval of the owner and the mine or quarry operator has been obtained, the application will be non-notified.

(f) the extent to which the buildings and their use will impact on the public use and enjoyment of adjoining esplanade reserves and strips and adjacent coastal marine areas.

8.6.5.3.5 NOISE

In assessing an application resulting from a breach of ***Rule 8.6.5.1.7 Noise*** the matters to which the Council will restrict its discretion are:

(a) the character, level and duration of noise from any activity as received at the boundary, or notional boundary of another site;

(b) the hours of operation in relation to the surrounding environment;

(c) the effectiveness of any noise mitigation measures proposed.

8.6.5.3.6 RESIDENTIAL INTENSITY

Excluding a Minor Residential Unit, which is covered in **Rule 8.6.5.2.3**, residential development shall be limited to one unit per 4ha of land. In all cases the land shall be developed in such a way that each unit shall have at least 3,000m^2 for its exclusive use surrounding the unit plus a minimum of 3.7ha elsewhere on the property.

Except that this rule shall not limit the use of an existing site, or a site created pursuant to ***Rule 13.7.2.1 (Table 13.7.2.1)*** for a single residential unit for a single household, provided that all other standards for permitted, controlled and restricted discretionary activities are complied with.

Note: There is a separate residential intensity rule applying to Papakainga Housing (refer to ***Rule 8.6.5.2.2***).

When considering an application under this provision the Council will restrict the exercise of its discretion to matters relating to:

(a) effects on the natural character of the coastal environment for proposed residential units which are in the coastal environment;

(b) for residential units within 500m of land administered by the Department of Conservation, effects upon the ability of the Department to manage and administer its land;

(c) effects on areas of significant indigenous flora and significant habitats of indigenous fauna;

(d) the mitigation of fire hazards for health and safety of residents.

(e) the character and appearance of building(s) and the extent to which the effects they generate can be avoided, remedied or mitigated;

(f) the siting of the building(s), decks and outdoor areas relative to adjacent dwellings and properties (including the road boundary) in order to avoid visual domination and loss of privacy and sunlight to those adjacent dwellings and properties;

(g) the size, location and design of open space associated with each residential unit, and the extent to which trees and garden plantings are utilised for mitigating adverse effects;

(h) the ability of the immediate environment to cope with the effects of additional vehicular and pedestrian traffic;

(i) any servicing requirements and/or constraints of the site;

(j) the ability to provide adequate opportunity for landscaping and buildings and for all outdoor activities associated with the residential unit(s);

(k) the extent of visual and aural privacy between residential units on the site and their associated outdoor spaces;

(l) The extent to which the location of the building could create reverse sensitivity effects on adjacent rural production activities.

For the purposes of this rule the upstream boundary of the coastal environment in the upper reaches of the harbours is to be established by multiplying the width of the river mouth by five.

8.6.5.3.7 SCALE OF ACTIVITIES

Activities ancillary to farming or forestry that breach ***Rule 8.6.5.1.11(i) Scale of Activities*** are a Restricted Discretionary Activity. The matters to which the Council will restrict its discretion when assessing an application resulting from a breach are:

(a) the effects of the proposed activity on the continued operation, or future expansion, of the existing activities in the surrounding area.

(b) the extent to which the activity has a functional need to be located in the rural environment so as to support rural productivity;

(c) the siting of the building(s), decks and outdoor areas relative to adjacent properties and the road frontage in order to avoid visual domination and loss of privacy and sunlight;

(d) the size, location and design of open space and the extent to which trees and plantings are utilised for mitigating adverse effects

(e) the location and design of vehicular traffic and pedestrian access, on-site vehicle manoeuvring and parking areas and the ability of those to mitigate the adverse effects of additional traffic;

(f) the location in respect of the roading hierarchy – the activity should be assessed with regard to an appropriate balance between providing access and the function of the road;

(g) the extent to which hours of operation are appropriate in terms of the surrounding environment;

(h) noise generation and the extent to which reduction measures are used;

(i) any servicing requirement and/or constraints of the site – whether the site has adequate water supply and provision for disposal of waste products and stormwater;

(j) where a property is adjacent to a public reserve, the potential impacts on the public use and enjoyment of that reserve.

Note: Activities on a site, other than activities ancillary to farming or forestry that do not comply with ***Rule 8.6.5.1.11(ii)*** are a discretionary activity. Refer to ***Rule 8.6.5.4.4.***

8.6.5.4 DISCRETIONARY ACTIVITIES

An activity is a discretionary activity in the Rural Production Zone if:

(a) it complies with ***Rules 8.6.5.4.1 Residential Intensity***; ***8.6.5.4.2 Integrated Development***; ***8.6.5.4.3 Helicopter Landing Area*** and/or ***8.6.5.4.4 Scale of Activities*** below; and

(b) it complies with the relevant standards for permitted, controlled, restricted discretionary or discretionary activities set out in ***Part 3 of the Plan - District Wide Provisions*** unless it is an Integrated Development pursuant to ***Rule 8.6.5.4.2*** below; but

(c) it does not comply with one or more of the other standards for permitted, controlled or restricted discretionary activities in this zone as set out under ***Rules 8.6.5.1***; ***8.6.5.2*** and ***8.6.5.3*** above.

The Council may impose conditions of consent on a discretionary activity or it may refuse consent to the application. When considering a discretionary activity application, the Council will have regard to the assessment criteria set out under ***Chapter 11***.

If an activity does not comply with the standards for a discretionary activity, it will be a non-complying activity in this zone.

8.6.5.4.1 RESIDENTIAL INTENSITY

Excluding a Minor Residential Unit, which is covered in **Rule 8.6.5.2.3, r**esidential development shall be limited to 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.

Except that this rule shall not limit the use of an existing site, or a site created pursuant to ***Rule 13.7.2.1 (Table 13.7.2.1)*** for a single residential unit for a single household, provided that all other standards for discretionary activities are complied with.

8.6.5.4.2 INTEGRATED DEVELOPMENT

Notwithstanding the rules in this zone relating to the management of the effects of activities, an application for integrated development of activities only on Maori freehold land and Maori customary land and Crown land reserved for Maori (as defined in Te Ture Whenua Act 1993) may be made where the proposed development does not comply with one or more of the rules.

This rule applies to Maori customary land, Maori freehold land and Crown land reserved for Maori for activities including papakainga housing and marae and associated buildings.

Integrated development plans will be considered in the context of other whanau and hapu lands in the vicinity, including an acknowledgement of areas of open space, reserve, natural vegetation and other amenities already provided by the land owning groups concerned.

A management plan for integrated development under this rule shall include information on the following where relevant and necessary for a sufficient understanding of the proposal:

(a) a plan showing the location of the property (including property boundaries), topography, adjoining uses, location of the activities proposed in the application, existing vegetation (type and location), drainage patterns, existing and proposed access road/s, location of any outstanding landscapes or natural features, location of any covenanted or otherwise protected areas;

(b) a description of the purpose of the application and the activities which are proposed;

(c) a description of the degree (if any) to which the proposed development will exceed the standards set for permitted, controlled, restricted discretionary and discretionary activities in the zone;

(d) details of the staging (if any) which is proposed;

(e) a description of any heritage resources on the property;

(f) other information which is relevant to any assessment of the effects of the application, is as follows:

  (i) details of provisions made for sewage and stormwater disposal and the proposals for avoiding, remedying or mitigating any adverse effects on receiving environments of stormwater flows;

  (ii) details of any earthworks;

  (iii) details of the geotechnical aspects of the property;

  (iv) details of any natural hazard areas and the measures which will be taken to avoid any adverse effects;

  (v) details of the measures (if any) to protect indigenous vegetation and habitats, outstanding landscapes and natural features, heritage resources and riparian margins;

  (vi) the extent to which areas of open space, reserves, natural vegetation and other amenities are already provided by the land owning group on other whanau and hapu lands in the vicinity.

(g) The extent to which the application promotes energy efficiency and renewable energy development and use as provided for in Policy 13.4.15 through incorporating the following initiatives:

  (i) development of energy efficient buildings (e.g. by providing a north-facing site with the ability to place a building on an east/west axis);

  (ii) reduced travel distances and car usage by designing a layout with as many links to adjacent sites and surrounding roads as practicable;

  (iii) encouragement of pedestrian and cycle use by designing a layout that allows easy direct access to and from, shops, schools, work places, reserves and other amenities;

  (iv) access to alternative transport facilities;

(v) domestic scale renewable energy and/or community renewable energy development;

(vi) solar street lighting.

In assessing an application under this rule the Council will have regard to the following matters:

(i) the objectives and policies of the Plan;

(ii) the degree to which the application exceeds the standards for the zone;

(iii) the degree to which the potential effects of the application have been avoided, remedied or mitigated;

(iv) any other matter which it determines to be relevant to the application.

Note: Attention is drawn to ***Rule 13.9.2 Management Plans*** which provides for a once-off opportunity for integrated development which results in superior outcomes to more traditional forms of use and development for land which is not either Maori freehold land, Maori customary land or Crown land reserved for Maori (as defined in Te Ture Whenua Act 1993).

8.6.5.4.3 HELICOPTER LANDING AREA

A helicopter landing area within 200m of the nearest boundary of any of the Residential, Coastal Residential, Russell Township or Point Veronica Zones.

8.6.5.4.4 SCALE OF ACTIVITIES

When the total number of people engaged at one period of time in activities on a site, other than activities ancillary to farming or forestry, including employees and persons making use of facilities, but excluding people who normally reside on a site or are members of the household, does not comply with ***Rule 8.6.5.1.11(ii),*** it is a discretionary activity.

In determining the total number of people engaged at any one period of time, the Council will consider the maximum capacity of the facility (for instance, the number of beds in visitor accommodation, the number of seats in a restaurant or a theatre), the number of staff need to cater for the maximum number of guests, and the number and the nature of the vehicles that are to be accommodated on site to cater for those engaged in the activity.

13 SUBDIVISION

CONTEXT

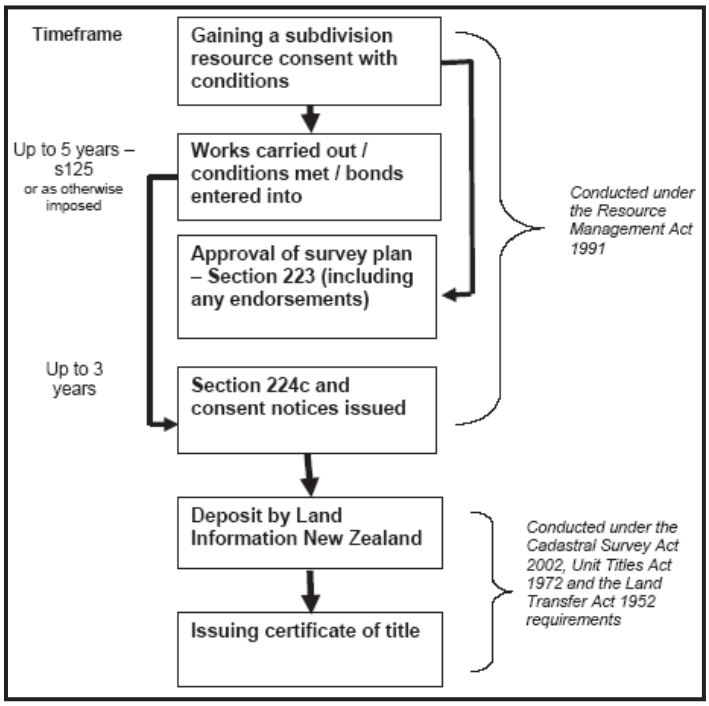
The Far North District Council is responsible for issuing two types of resource consents – land use consents and subdivision consents. In many cases both types of consents must be obtained before a development can proceed. Consents may also be needed from the Northland Regional Council. This chapter deals with subdivision.

Subdivision is essentially a process of dividing a parcel of land or a building into one or more further parcels, or changing an existing boundary location. Land subdivision creates separate and saleable certificates of title, which can define an existing interest in land (including buildings) and impose limitations on landowners or occupiers for how the land can be used or developed, through conditions and consent notices imposed under sections 108, 220 and 221 of the Resource Management Act 1991. Subdivision also provides the opportunity for Council to require land to be vested, and reserve and other financial contributions to be taken to provide necessary infrastructure.

Figure 1 below shows the subdivision process. [Ministry for the Environment Quality Planning website]

Note that Council does not have control of the whole process.

FIGURE 1: PROCESS OF SUBDIVISION



Land subdivision under the RMA includes:

- the creation of separate fee-simple allotments with new certificates of title (freehold);
- the lease of land or buildings or both for 35 years or longer (leasehold);
- the creation of a unit title, company lease, or cross-lease.

Freehold subdivisions occur where new allotments (usually referred to as lots) are created under the Land Transfer Act and ownership is held in an estate in fee simple. Fee simple means that the ownership of the land and the buildings on it is held solely by those persons listed on the certificate of title. Freehold is the most common form of subdivision. The boundaries are pegged by licensed cadastral surveyors and a 'guaranteed ' title is issued.

Leasehold subdivisions: land or buildings or both that are leased for a period exceeding 35 years is defined in the RMA as a subdivision. A leasehold estate is most commonly defined as an estate or interest in land held for a fixed term of years. **Cross-lease subdivisions** (occasionally called composite leasehold and share titles) occur where buildings or dwellings are leased. The cross-lease plan shows the dwellings as 'flats ' and is often called a 'flats-plan '. The term 'cross-lease ' is used to describe the method whereby the purchaser of a dwelling / flat obtains a lease of that dwelling, generally for a term of 999 years, together with an undivided share in the underlying fee-simple estate. Cross-lease titles usually involve common-use areas (eg, shared driveways) and exclusive or restrictive covenant areas (eg, backyards). The owners agree to use certain areas for their own use without infringing on the areas of the other owners. For any changes to be made to a cross-lease site or building the leaseholder must have regard to the cross-lease documents that may require the consent of all other cross-leasing owners (eg, to erect a garage or add a new room)

Unit title subdivisions (or strata titles) generally occur where more than one dwelling or building is built on a single title and separate ownership is required. This includes multi-storey developments and the unit title allows for ownership to be defined in three dimensions. A unit title provides single ownership of a 'principal unit ' (the dwelling) and one or more 'accessory units ' (eg, garages or outdoor spaces). Each principal and each accessory unit will usually be defined spatially, so that the dwelling and any other buildings or outdoor spaces are contained in compartments of space, which are owned rather than leased. There are usually common areas that provide access for all unit title owners (eg, driveways, lifts and stairwells).

A unit title is made up of two components:

(a) ownership in the particular unit

(b) an undivided share in the ownership of the common property.

[quoted from Ministry for the Environment Quality Planning website]

All subdivision requires resource consent except for:

(a) lots for utility services under the Public Works Act;

(b) those other situations set out in Section 11 of the Act. The exemptions in s11 anticipate (among other things) the creation of separate titles for natural and historic conservation purposes.

Boundary adjustments are a controlled activity throughout the District, subject to meeting specific criteria. Section 13.7.2, which includes Table 13.7.2.1, sets out the activity status, allotment sizes and dimensions for all other subdivisions throughout the District. The matters, or topics, which the Council will consider in any application for a resource consent for subdivision, and the rules that apply to any such application are set out in section 13.7.3 of this chapter. The rules will ensure that appropriate consideration is given to the relevant elements of subdivision, and that conditions of consent are directed towards those elements.

Attention is drawn to the fact that rules in parts of the Plan other than this chapter may have a bearing on subdivision applications. For example, a subdivision may result in an existing land use activity failing to comply with the relevant zone rules or District-wide rules. The provisions of the relevant zone rules and District-wide rules will be relevant for land use activities, which may be associated with subdivisions and which would allow the subdivision to proceed.

Chapter 2 of this Plan describes in general terms the role of the Maori Land Court in regulating the partition, amalgamation, aggregation and exchange of Maori land. Subdivision of ancestral land does not occur in the ordinary course of events and so there is no special provision in this Plan for it. However, the Council recognises the need to provide for the development of ancestral land and this is included in ***Part 2 of the Plan - Environment Provisions***.

For the context of the management plan rule refer to ***Rule 13.9.2***.

13.1 ISSUES

13.1.1 Because the type and scale of activities that can occur in the District are often linked to the size of a lot, the effect of subdividing land is reflected in the subsequent development of that land.

13.1.2 While subdivision is essentially a mechanistic process, integrated management of resources can be assisted by the imposition of appropriate controls on the way in which subdivision is carried out.

13.1.3 The subdivision of land can result in development that has significant effects on natural character.

13.1.4 Subdivision of properties containing scheduled heritage resources (as listed in ***Appendices 1D***, ***1E***, ***1F*** and ***1G***) can result in the alienation of a heritage resource from land closely associated with it and the consequent loss/degradation/diminution of its heritage values.

13.1.5 Subdivisions may lead to an increased demand for water in a District where there are summer shortfalls.

13.1.6 Subdivision may lead to an increased demand for energy in the District where there is a limited reticulated supply and a reliance on electricity generated outside the District. The adoption of energy efficiency and renewable energy initiatives and technologies will need to be considered in all new subdivisions and related development.

13.1.7 The subdivision of land can result in development that has an adverse effect on the sustainable functioning of infrastructure, particularly roads.

13.1.8 Inappropriate subdivision, use and development can cause reverse sensitivity effects on the National Grid, compromising its safe and efficient operation, development, maintenance and upgrading.

Note: Attention is also drawn to the provisions of ***Section 12.9***. This section includes an Issue, Objective and Policy with respect to potential reverse sensitivity effects arising from subdivision, use and development adjacent to consented or existing lawfully established renewable energy projects, including associated transmission activities.

13.2 ENVIRONMENTAL OUTCOMES EXPECTED

13.2.1 A subdivision pattern that is consistent with:

(a) existing land uses;

(b) the preservation of the natural character of the coastal environment and the restoration or enhancement of areas which may have been compromised by past land management practices;

(c) the protection, restoration and/or enhancement of outstanding natural features and landscapes;

(d) the protection, restoration and/or enhancement of areas of significant indigenous vegetation and significant habitats of indigenous fauna;

(e) the maintenance and enhancement of public access to and along the coast and lakes and rivers;

(f) the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu and other taonga;

(g) the type of management of natural and physical resources that is provided for in the ***Environmental Provisions*** (refer to ***Part 2***) and elsewhere in the ***District Wide Provisions*** (refer to ***Part 3***) of this Plan;

(h) the retention of heritage values of heritage resources (as listed in ***Appendices 1D***, ***1E***, ***1F*** and ***1G***) through conservation of its immediate context.

13.2.2 Sufficient water storage is provided to meet the present and likely future needs of the Community.

13.2.3 Subdivisions, land use and development which respond in a sustainable way to the site specific environmental conditions, values and enhancement opportunities, through the use of management plans.

13.2.4 A sufficient and secure energy supply is available to meet the present and likely future needs of the District.

13.2.5 13.2.5 Where the safe and efficient operation, maintenance, development and upgrading of the existing National Grid operations are protected from the reverse sensitivity effects of other activities.

13.3 OBJECTIVES

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

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

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

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

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

13.3.6 To encourage innovative development and integrated management of effects between subdivision and land use which results in superior outcomes to more traditional forms of subdivision, use and development, for example the protection, enhancement and restoration of areas and features which have particular value or may have been compromised by past land management practices.

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

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

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

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

13.3.11 To ensure that the operation, maintenance, development and upgrading of the existing National Grid is not compromised by incompatible subdivision and land use activities

13.4 POLICIES

13.4.1 That the sizes, dimensions and distribution of allotments created through the subdivision process be determined with regard to the potential effects including cumulative effects, of the use of those allotments on:

(a) natural character, particularly of the coastal environment;

(b) ecological values;

(c) landscape values;

(d) amenity values;

(e) cultural values;

(f) heritage values; and

(g) existing land uses.

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

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

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

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

13.4.6 That any subdivision proposal provides for the protection, restoration and enhancement of heritage resources, areas of significant indigenous vegetation and significant habitats of indigenous fauna, threatened species, the natural character of the coastal environment and riparian margins, and outstanding landscapes and natural features where appropriate.

13.4.7 That the need for a financial contribution be considered only where the subdivision would:

(a) result in increased demands on car parking associated with non-residential activities; or

(b) result in increased demand for esplanade areas; or

(c) involve adverse effects on riparian areas; or

(d) depend on the assimilative capacity of the environment external to the site.

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

13.4.9 That bonus development donor and recipient areas be provided for so as to minimise the adverse effects of subdivision on Outstanding Landscapes and areas of significant indigenous flora and significant habitats of fauna.

13.4.10 The Council will recognise that subdivision within the Conservation Zone that results in a net conservation gain is generally appropriate.

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

13.4.12 That more intensive, innovative development and subdivision which recognises specific site characteristics is provided for through the management plan rule where this will result in superior environmental outcomes.

13.4.13 Subdivision, use and development shall preserve and where possible enhance, restore and rehabilitate the character of the applicable zone in regards to s6 matters. In addition subdivision, use and development shall avoid adverse effects as far as practicable by using techniques including:

(a) clustering or grouping development within areas where there is the least impact on natural character and its elements such as indigenous vegetation, landforms, rivers, streams and wetlands, and coherent natural patterns;

(b) minimising the visual impact of buildings, development, and associated vegetation clearance and earthworks, particularly as seen from public land and the coastal marine area;

(c) providing for, through siting of buildings and development and design of subdivisions, legal public right of access to and use of the foreshore and any esplanade areas;

(d) through siting of buildings and development, design of subdivisions, and provision of access that recognise and provide for the relationship of Maori with their culture, traditions and taonga including concepts of mauri, tapu, mana, wehi and karakia and the important contribution Maori culture makes to the character of the District (refer ***Chapter 2*** and in particular ***Section 2.5*** and Council's *"Tangata Whenua Values and Perspectives" (2004)*;

(e) providing planting of indigenous vegetation in a way that links existing habitats of indigenous fauna and provides the opportunity for the extension, enhancement or creation of habitats for indigenous fauna, including mechanisms to exclude pests;

(f) protecting historic heritage through the siting of buildings and development and design of subdivisions.

(g) achieving hydraulic neutrality and ensuring that natural hazards will not be exacerbated or induced through the siting and design of buildings and development.

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

13.4.15 That conditions be imposed upon the design of subdivision of land to require that the layout and orientation of all new lots and building platforms created include, as appropriate, provisions for achieving the following:

(a) development of energy efficient buildings and structures;

(b) reduced travel distances and private car usage;

(c) encouragement of pedestrian and cycle use;

(d) access to alternative transport facilities;

(e) domestic or community renewable electricity generation and renewable energy use.

13.4.16 When considering proposals for subdivision and development within an existing National Grid Corridor the following will be taken into account:

(a) the extent to which the proposal may restrict or inhibit the operation, access, maintenance, upgrading of transmission lines or support structures;

(b) any potential cumulative effects that may restrict the operation, access, maintenance, upgrade of transmission lines or support structures; and

(c) whether the proposal involves the establishment or intensification of a sensitive activity in the vicinity of an existing National Grid line.

Note 1: Structures and activities located near transmission lines must comply with the safe distance requirements in the New Zealand Electrical Code of Practice for Electrical Safe Distances (NZECP34:2001). Compliance with this plan does not ensure compliance with NZECP34:2001.

Note 2: Vegetation to be planted within, or adjacent to, the National Grid Corridor should be selected and/or managed to ensure that it will not result in that vegetation breaching the Electricity (Hazards from Trees) Regulations 2003.

13.5 METHODS

DISTRICT PLAN METHODS

13.5.1 Rules in ***Chapter 13*** of the Plan impose controls on most forms of subdivision activity.

13.5.2 ***Chapter 13*** provides an alternative to the standard rules, through the implementation of a management plan for subdivision in the Rural Production, General Coastal, Coastal Living, South Kerikeri Inlet and Waimate North Zones.

13.5.3 Financial contributions in respect of subdivision are set out in ***Chapter 14***.

13.5.4 Matters of National Importance specified in s6 of the Act are addressed in various sections of the District Plan, including the following sections in particular:

(a) preservation of the natural character of the coastal environment, wetlands, and lakes and rivers and their margins is provided for in ***Chapter 10*** and in ***Section 12.7***;

(b) protection and enhancement of outstanding natural features and landscapes is provided for in ***Section 12.1*** and by the restriction on subdivision in the Recreational Activities and Conservation Zones;

(c) the protection of significant indigenous vegetation and significant habitats of indigenous fauna is addressed in ***Section 12.2***;

(d) the maintenance and enhancement of public access to and along the coastal marine area, lakes, and rivers is provided for in ***Chapter 10***, ***Section 12.7*** and ***Chapter 14***;

(e) the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu and other taonga are provided for throughout the District Plan but attention is drawn in particular to ***Chapter 2***; and

(f) the protection of historic heritage is addressed in ***Chapter 12.5***.

The objectives and policies relating to each of the above (where relevant) and those of the applicable zone will be taken into account in assessing applications for subdivision, including applications made under ***Rule 13.9.2***.

13.5.5 Structure Plans are included as an alternative means of providing for subdivision on a comprehensive basis (***Section 13.12***).

13.5.6 Where a subdivision (which includes a boundary adjustment) is proposed on land where a hazardous activity of industry has been, or is more likely than not to have been, or is currently operating, then the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 apply.

13.5.7 Where an application is made for an activity, breaching ***Rule 13.8.1*** Transpower New Zealand Limited shall be considered an affected party, due to the national significance of the National Grid.

OTHER METHODS

13.5.8 Non-regulatory methods, including brochures and informal contact with applicants will help to promote subdivision activities that are sensitive to the physical environment. In this respect, the Council encourages early consultation with parties who may be affected by a subdivision proposal such as neighbouring landowners, Heritage New Zealand Pouhere Taonga and tangata whenua.

13.5.9 The Council encourages applicants to take into account any provisions of any relevant planning documents prepared for the area and recognised by iwi authorities, pursuant to Sections 6(e), 6(g), 7(a) and 7(aa) of the Resource Management Act 1991

COMMENTARY

Subdivision of land can have adverse effects on the environment if the design of the subdivision is such that subsequent use and development on the subdivided land is environmentally inappropriate. While it is the

use of land, and not the subdivision pattern itself, that has the effects, the subdivision pattern enables the use. Consequently, the control of subdivision is justified because it enables the Council to minimise the risk of activities being established on lots that are too small, too steep, hazard prone, incapable of being serviced, and so on.

To this extent the control of subdivision is complementary to the control of land use activities.

The Council's approach has therefore been to ensure that the conditions of consent for subdivisions enable appropriate subsequent use and development, and the objectives and policies in this chapter reflect this approach.

The Council also recognises the desirability of responding positively to innovative subdivision proposals that, although they may not comply with the rules, offer a good resource management outcome for the development of a property. This chapter provides for such innovation.

Applicants can choose whether to apply first for a land use or a subdivision consent, or apply for both together.

13.6 GENERAL RULES

The following rules shall apply, unless specifically stated otherwise, to all applications for subdivision of land.

When preparing subdivision applications, applicants should be mindful of the relevant zoning (refer to ***Part 2 - Environment Provisions***), as well as to the provisions elsewhere in ***Part 3 - District Wide Provisions***, particularly:

(a) ***Chapter 12 Natural and Physical Resources***;

(b) ***Chapter 14 Financial Contributions***;

(c) ***Chapter 15 Transportation***;

(d) ***Chapter 18 Special Areas***.

13.6.1 DEFINITION OF SUBDIVISION OF LAND

The definition of the subdivision of land is set out in s218 of the Act, and this definition is included in a Glossary of Definitions from the Act.

13.6.2 RELEVANT SECTIONS OF ACT

All applications are subject to the requirements set out in the Act, with particular reference to s106, s219, s220, and s230 - s237G. S104 and s105 are also relevant, in respect of the assessment of applications, as is the Government Roading Powers Act 1989

13.6.3 RELEVANT SECTIONS OF THE DISTRICT PLAN

All applications will be assessed against the objectives and policies of the applicable zone(s) and those contained in ***Chapters 12***, ***14***, ***15*** and ***18*** where relevant.

13.6.4 OTHER LEGISLATION

All applications shall comply with the relevant requirements contained in other Acts and codes, with particular reference to the Building Act 2004, the Local Government Act 2002, the Local Government Act 1974, the Resource Management (National Environmental Standard for Air Quality) Regulations 2004, the Resource Management (National Environmental Standard for sources of Human Drinking water) Regulations 2007, the Resource Management (National Environmental Standard for Telecommunication Facilities) Regulations 2008, the Resource Management (National Environmental Standard for Electricity Transmission) Regulations 2010, the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 and any relevant Regional Plan for Northland.

13.6.5 LEGAL ROAD FRONTAGE

All new allotments shall be provided with frontage to a legal road, or to a road to be vested on the application, except where access by a private road or right of way is included, and approved, within the subdivision consent application or where prior consent pursuant to s348 of the Local Government Act 1974 has been obtained

13.6.6 BONDS

The Council may require bonds as a condition of a subdivision consent. The bond is repaid on the completion of some specified work or action. The purpose of a bond is to provide an incentive to resource consent holders to give effect to the conditions of consent. A bond also gives the Council the ability to arrange for the work or action required to be carried out even if the resource consent holder does not.

13.6.7 CONSENT NOTICES

Where there is any on-going condition of a subdivision consent, a consent notice pursuant to s221 of the Act shall be registered against the Certificate of Title to the allotment to which the condition applies. Examples of the matters that may be included in a consent notice could be any encumbrances on the Title and any provision for the protection of transmission lines.

13.6.8 SUBDIVISION CONSENT BEFORE WORK COMMENCES

Except where prior consent has been obtained to excavate or fill land pursuant to rules under ***Section 12.3***, or consent to vegetation clearance has been obtained pursuant to rules under ***Sections 12.1*** or ***12.2***, and/or relevant consents have been obtained from the Regional Council, no work, other than investigatory work, involving the disturbance of the land or clearance of vegetation shall be undertaken until a subdivision consent has been obtained.

When the subdivision consent is granted, provided all the necessary calculations and assessment of effects is provided with the application, the subdivision consent application shall be deemed to include consent to excavate or fill land, and clear vegetation to the extent authorised by the consent and subject to any conditions in the consent. Alternatively, an applicant may apply to add a land use consent application to the subdivision consent application, for any excavation/filling work and/or vegetation clearance. This does not exempt a consent holder from also obtaining any relevant resource consent or approvals from the Regional Council or the Heritage New Zealand Pouhere Taonga for earthworks, vegetation clearance or disturbance of an archaeological site.

13.6.9 ASSESSING RESOURCE CONSENTS

Where the rules specify that the Council shall consider certain matters in regard to granting consent or imposing conditions, in the case of controlled subdivision activities, the application will only be assessed in terms of possible conditions, and would only be declined pursuant to s106 of the Act (natural hazards and access).

13.6.10 JOINT APPLICATIONS

Any application arising from non-compliance with zone standards caused by the proposed subdivision shall be considered jointly with the subdivision consent.

13.6.11 JOINT HEARINGS

Where a subdivision activity also requires a resource consent from Northland Regional Council and both the Regional and District Council consents are subject to public notification, the Council will promote that the applications be heard jointly.

13.6.12 SUITABILITY FOR PROPOSED LAND USE

Where s106 of the Act applies to any part of the land to be subdivided, or any part of the land contains contamination, it is the applicant's responsibility to provide all information relative to the potential hazard and to show the means whereby the land shall be made suitable for the proposed land use. The Council shall have regard to any appropriate proposals before issuing the subdivision consent, or declining approval pursuant to s106 (relating to natural and other hazards such as subsidence, erosion and flooding, legal and physical access).

13.7 CONTROLLED (SUBDIVISION) ACTIVITIES

Subdivision is a controlled activity where it complies with the following standards and the standards set out in rules under ***13.7.1***, ***13.7.2*** and ***13.7.3***.

Under s106(1) the Council may refuse to grant a subdivision consent if it considers that either:

(a) any land in respect of which a consent is sought, or any structure on that land, is or is likely to be subject to material damage by erosion, falling debris, subsidence, slippage, or inundation from any source; or

(b) any subsequent use that is likely to accelerate, worsen, or result in material damage to that land, other land, or structure, by erosion, falling debris, subsidence, slippage, or inundation from any source; or

(c) sufficient provision has not been made for legal and physical access to each allotment to be created by the subdivision.

13.7.1 BOUNDARY ADJUSTMENTS: ALL ZONES EXCEPT THE RECREATIONAL ACTIVITIES AND CONSERVATION ZONES

Boundary Adjustments Performance Standards

Boundary adjustments to lots may be carried out as a controlled (subdivision) activity provided that:

(a) there is no change in the number and location of any access to the lots involved; and

(b) there is no increase in the number of certificates of title; and

(c) the area of each adjusted lot complies with the allowable minimum lot sizes specified for the relevant zone, as a controlled activity in all zones except for General Coastal or as a restricted discretionary activity in the General Coastal Zone (refer ***Table 13.7.2.1***); except that where an existing lot size is already non-complying the degree of non-compliance shall not be increased as a result of the boundary adjustment; and

(d) the area affected by the boundary adjustment is within or contiguous with the area of the original lots; and

(e) all boundary adjusted sites must be capable of complying with all relevant land use rules (e.g building setbacks, effluent disposal); and

(f) all existing on-site drainage systems (stormwater, effluent disposal, potable water) must be wholly contained within the boundary adjusted sites.

Applications under this rule will not be notified but where these conditions cannot be met the application will be considered under the relevant zone rules set out in **Rules 13.7.2 to 13.7.10.**

13.7.2 ALLOTMENT SIZES, DIMENSIONS AND OTHER STANDARDS

13.7.2.1 MINIMUM AREA FOR VACANT NEW LOTS AND NEW LOTS WHICH ALREADY ACCOMMODATE STRUCTURES

Every allotment to be created by a subdivision shall comply either with the conditions of a resource consent or with the minimum standards specified as follows in Table 13.7.2.1, and shall comply with all other relevant zone rules, except as provided for in ***Rules 13.7.2.4***, ***13.7.2.5***, ***13.7.2.6*** and ***13.7.2.7*** below.

TABLE 13.7.2.1: MINIMUM LOT SIZES

(i) RURAL PRODUCTION ZONE

Controlled Activity Status (Refer also to 13.7.3)	Restricted Discretionary Activity Status (Refer also to 13.8)	Discretionary Activity Status (Refer also to 13.9)
The minimum lot size is 20ha. **Note 1:** Reference should also be made to the minimum lot size applying to land within an Outstanding Landscape, Outstanding Landscape Feature or Outstanding Natural Feature (see below in this Table and ***Rule 13.7.2.5***). **Note 2:** Subdivision in the Pouerua Heritage Precinct (refer ***Maps 35***, ***41*** and ***HP1***), is a discretionary subdivision activity. **Note 3:** Subdivision within 100m of the boundary of the Minerals Zone is a restricted discretionary activity.	1. Subdivision that complies with the controlled activity standard, but is within 100m of the boundary of the Minerals Zone; 2. The minimum lot size is 12ha; or 3. A maximum of 3 lots in any subdivision, provided that the minimum lot size is 4,000m^2 and there is at least 1 lot in the subdivision with a minimum lot size of 4ha, and provided further that the subdivision is of sites which existed at or prior to 28 April 2000, or which are amalgamated from titles existing at or prior to 28 April 2000; or 4. A maximum of 5 lots in a subdivision (including the parent lot) where the minimum size of the lots is 2ha, and where the subdivision is created from a site that existed at or prior to 28 April 2000; 5. Rules under clauses 3 and 4 provide two alternative options for the creation of a specified number of small lots from sites existing at 28 April 2000. Where an application under one of these clauses takes up only part of the total allowance, a subsequent application to take up the remainder of that particular allowance may be considered by Council, notwithstanding that the subsequent application involves a lot which no longer meets the existing at 28 April 2000 criterion. **Note 1:** Reference should also be made to the minimum lot size applying to land within an Outstanding Landscape, Outstanding Landscape Feature or Outstanding Natural Feature (see below in this Table and ***Rule 13.7.2.5***). **Note 2:** Subdivision in the Pouerua Heritage Precinct (refer ***Maps 35***, ***41*** and ***HP1***), is a discretionary subdivision activity.	1. The minimum lot size is 4ha; or 2. A maximum of 3 lots in any subdivision, provided that the minimum lot size is 2,000m² and there is at least 1 lot in the subdivision with a minimum size of 4ha, and provided further that the subdivision is of sites which existed at or prior to 28 April 2000, or which are amalgamated from titles existing at or prior to 28 April 2000; or 3. A subdivision in terms of a management plan as per ***Rule 13.9.2*** may be approved. 4. Subdivision in the Pouerua Heritage Precinct (refer ***Maps 35***, ***41*** and ***HP1***), is a discretionary subdivision activity. **Note 1:** There is no restriction on the number of 4ha lots in a subdivision (clause 1). **Note 2:** The effect of the rule under clause 2 is that there is a once-off opportunity to subdivide a maximum of two small lots from a site existing at 28 April 2000. Subdivision of small lots which does not meet this rule is a non-complying activity unless the lots are part of a Management Plan application.

(ii) MINERALS ZONE

Controlled Activity Status (Refer also to 13.7.3)	Restricted Discretionary Activity Status (Refer also to 13.8)	Discretionary Activity Status (Refer also to 13.9)
Subdivision is not a controlled activity in this zone		Subdivision is a discretionary activity in this zone

(iii) WAIMATE NORTH ZONE

Controlled Activity Status (Refer also to 13.7.3)	Restricted Discretionary Activity Status (Refer also to 13.8)	Discretionary Activity Status (Refer also to 13.9)
A maximum of 3 lots in any subdivision, provided that the minimum lot size is 4,000m² and there is at least 1 lot in the subdivision with a minimum size of 4ha, and provided further that the subdivision is of sites which existed at or prior to 28 April 2000, or which are amalgamated from titles existing at or prior to 28 April 2000. **Note:** The effect of the above rule is that there is a once-off opportunity to subdivide a maximum of two small lots from a site existing at 28 April 2000. Subdivision of small lots which does not meet this rule is a non-complying activity unless the lots are part of a Management Plan application.		1. A maximum of 3 lots in any subdivision, provided that the minimum lot size is 2,000m² and there is at least 1 lot in the subdivision with a minimum size of 4ha, and provided further that the subdivision is of sites which existed at or prior to 28 April 2000, or which are amalgamated from titles existing at or prior to 28 April 2000; or 2. A subdivision in terms of a management plan as per ***Rule 13.9.2*** may be approved. **Note:** Any further subdivision under this alternative (Clause 1) is a Non-complying Activity.

(iv) RURAL LIVING ZONE

Controlled Activity Status (Refer also to 13.7.3)	Restricted Discretionary Activity Status (Refer also to 13.8)	Discretionary Activity Status (Refer also to 13.9)
The minimum lot size is 4,000m^2 **Note 1:** There is no restriction on the number of 4,000m^2 lots in a subdivision. **Note 2:** Reference should also be made to the minimum lot size applying to land within an Outstanding Landscape, Outstanding Landscape Feature or Outstanding Natural Feature (see below in this Table and ***Rule 13.7.2.5***).		The minimum lot size is 3,000m^2 **Note:** There is no restriction on the number of 3,000m^2 lots in a subdivision.

(v) RESIDENTIAL ZONE

Controlled Activity Status (Refer also to 13.7.3)	Restricted Discretionary Activity Status (Refer also to 13.8)	Discretionary Activity Status (Refer also to 13.9)
The minimum lot sizes are 3,000m² (unsewered) and 600m² (sewered).		The minimum lot sizes are 2,000m² (unsewered) and 300m² (sewered).

(vi) COMMERCIAL ZONE

Controlled Activity Status (Refer also to 13.7.3)	Restricted Discretionary Activity Status (Refer also to 13.8)	Discretionary Activity Status (Refer also to 13.9)
The minimum lot sizes are 3,000m² (unsewered) and 250m² (sewered).		The minimum lot size is 2,000m² (unsewered). There is no limit for sewered lots, provided that servicing of the lot (including car parking, loading etc), can be achieved.

(vii) INDUSTRIAL ZONE

Controlled Activity Status (Refer also to 13.7.3)	Restricted Discretionary Activity Status (Refer also to 13.8)	Discretionary Activity Status (Refer also to 13.9)
The minimum lot sizes are 3,000m² (unsewered) and 500m² (sewered).		The minimum lot size is 2,000m² (unsewered). There is no limit for sewered sites, provided that servicing of the site (including car parking, loading etc), can be achieved.

(viii) GENERAL COASTAL ZONE

Controlled Activity Status (Refer also to 13.7.3)	Restricted Discretionary Activity Status (Refer also to 13.8)	Discretionary Activity Status (Refer also to 13.9)
Subdivision is not a controlled activity in this zone.	The minimum lot size is 20ha. **Note 1:** There is no restriction on the number of 20ha lots in a subdivision. **Note 2**: Reference should also be made to the minimum lot size applying to land within an Outstanding Landscape, Outstanding Landscape Feature or Outstanding Natural Feature (see below in this Table and **Rule 13.7.2.5**).	A subdivision in terms of via a management plan as per **Rule 13.9.2** may be approved.

(ix) COASTAL LIVING ZONE

Controlled Activity Status (Refer also to 13.7.3)	Restricted Discretionary Activity Status (Refer also to 13.8)	Discretionary Activity Status (Refer also to 13.9)
The minimum lot size is 4ha (with provision for stormwater and wastewater disposal as a necessary part of the application). **Note 1**: Reference should also be made to the minimum lot size applying to land within an Outstanding Landscape, Outstanding Landscape Feature or Outstanding Natural Feature (see below in this Table and **Rule 13.7.2.5).** **Note 2**: Subdivision within 100m of the boundary of a Mineral Zone is a restricted discretionary activity.	1. The minimum lot size is 8,000m2 (with provision for stormwater and wastewater disposal as a necessary part of the application). 2. Subdivision that complies with the Controlled Activity Standard, but is within 100m of the boundary of the Minerals Zone.	1. The minimum lot size is 5,000m² (with provision for stormwater and wastewater disposal as a necessary part of the application); or 2. A subdivision in terms of a management plan as per **Rule 13.9.2** may be approved.

(x) COASTAL RESIDENTIAL ZONE

Controlled Activity Status (Refer also to 13.7.3)	Restricted Discretionary Activity Status (Refer also to 13.8)	Discretionary Activity Status (Refer also to 13.9)
The minimum lot sizes are 3,000m² (unsewered) and 800m² (sewered).		The minimum lot sizes are 2,000m² (unsewered) and 600m² (sewered).

(xi) RUSSELL TOWNSHIP ZONE

Controlled Activity Status (Refer also to 13.7.3)	Restricted Discretionary Activity Status (Refer also to 13.8)	Discretionary Activity Status (Refer also to 13.9)
The minimum lot sizes are 3,000m² (unsewered); and 1,000m² (sewered).		The minimum lot sizes are 2,000m² (unsewered) and 800m² (sewered).

(xii) SOUTH KERIKERI INLET ZONE

Controlled Activity Status (Refer also to 13.7.3)	Restricted Discretionary Activity Status (Refer also to 13.8)	Discretionary Activity Status (Refer also to 13.9)
Subdivision is not a controlled activity in this zone.	The minimum lot size is 4 ha in non-sensitive areas (see Map 84).	Subdivision via a management plan only as per Rule 13.9.2 may be approved.

(xiii) RECREATIONAL ACTIVITIES ZONE

Controlled Activity Status (Refer also to 13.7.3)	Restricted Discretionary Activity Status (Refer also to 13.8)	Discretionary Activity Status (Refer also to 13.9)
Nil. Subdivision is a non-complying activity in this zone.		Nil. Subdivision is a non-complying activity in this zone.

(xiv) POINT VERONICA ZONE

Controlled Activity Status (Refer also to 13.7.3)	Restricted Discretionary Activity Status (Refer also to 13.8)	Discretionary Activity Status (Refer also to 13.9)
As in accordance with the approved development plan (refer ***Appendix 6D***)		Any subdivision not provided for by way of a controlled activity shall be non-complying.

(xv) CARRINGTON ESTATE ZONE

Controlled Activity Status (Refer also to 13.7.3)	Restricted Discretionary Activity Status (Refer also to 13.8)	Discretionary Activity Status (Refer also to 13.9)
Unit title subdivision of the accommodation units and lodge/golf club complex within the Carrington Estate Zone, as identified in the Carrington Estate Development Plan and Schedule (***Appendix 6E*** in ***Part 4*** of the Plan), and as further detailed in Maps Sub 1-9 submitted within the consent applications, and in accordance with the conditions of **RC 1990480/A.**		Any subdivision not provided for by way of a controlled activity shall be non-complying.

(xvi) HORTICULTURAL PROCESSING ZONE

Controlled Activity Status (Refer also to 13.7.3)	Restricted Discretionary Activity Status (Refer also to 13.8)	Discretionary Activity Status (Refer also to 13.9)
Minimum lot size of 4,000m2, maximum of 3 lots; for horticultural processing activities (as described in **Rule 18.4.6.1**).		Minimum lot size of 2,000m2, maximum of 3 lots; for horticultural processing activities (as described in **Rule 18.4.6.1**); or for any other activity.

(xvii) CONSERVATION ZONE

Controlled Activity Status (Refer also to 13.7.3)	Restricted Discretionary Activity Status (Refer also to 13.8)	Discretionary Activity Status (Refer also to 13.9)
Nil. Subdivision is a non-complying activity in this zone.		Nil. Subdivision is a non-complying activity in this zone.

(xviii) ORONGO BAY SPECIAL ZONE

Controlled Activity Status (Refer also to 13.7.3)	Restricted Discretionary Activity Status (Refer also to 13.8)	Discretionary Activity Status (Refer also to 13.9)
The minimum lot sizes are 3,000m2 (unsewered) and 1,000m2 (sewered) provided the subdivision is part of an approved Comprehensive Development Plan in accordance with **Rule 18.8.6.1** and **Rule 18.8.6.3.3** and provided that the maximum number of separate titles created shall not exceed seven in the zone.		The minimum lot sizes are 2,000m2 (unsewered) provided that the subdivision is part of an approved Comprehensive Development Plan in accordance with **Rule 18.8.6.1** and **Rule 18.8.6.3.3** and provided that the maximum number of separate titles created shall not exceed seven in the zone.

(xix) OUTSTANDING LANDSCAPE, OUTSTANDING LANDSCAPE FEATURES AND OUTSTANDING NATURAL FEATURES, AS SHOWN ON THE RESOURCE MAPS - REFER ALSO TO RULE 13.7.2.5

Controlled Activity Status (Refer also to 13.7.3)	Restricted Discretionary Activity Status (Refer also to 13.8)	Discretionary Activity Status (Refer also to 13.9)
The minimum lot size is 20ha except in the General Coastal Zone. **Note:** This standard applies to any part of a lot that is included in an Outstanding Landscape, Outstanding Landscape Feature or Outstanding Natural Feature, as listed in Appendices 1A and 1B and as shown on the Resource Maps. Where a new boundary line passes through the Outstanding Natural Feature (Appendix 1A) or Outstanding Landscape Feature (Appendix 1B) or a lot is created which results in the only building site and/or access to it being located in the feature unless it is for creation of a reserve under the Reserves Act 1977 subdivision is a non-complying activity (this does not apply within the Pouerua Heritage Precinct).	The minimum lot size is 20ha in the General Coastal Zone.	1. For the Rural Production, General Coastal and Coastal Living Zones subdivision via a management plan as per **Rule 13.9.2**; 2. For all other zones, the minimum lot size for a discretionary activity in an Outstanding Landscape, Outstanding Landscape Feature or Outstanding Natural Feature, as listed in **Appendices 1A and 1B** and as shown on the Resource Maps is the same as the discretionary standard that applies to the zone in which the site is located. Where a new boundary line passes through the Outstanding Natural Feature (**Appendix 1A**) or Outstanding Landscape Feature (**Appendix 1B**) or a lot is created which results in the only building site and/or access to it being located in the feature unless it is for creation of a reserve under the Reserves Act 1977 subdivision is a non-complying activity (this does not apply within the **Pouerua Heritage**

		Precinct).

(xx) GOLF LIVING SUB-ZONE OF KAURI CLIFFS ZONE

Controlled Activity Status (Refer also to 13.7.3)	**Restricted Discretionary Activity Status (Refer also to 13.8)**	**Discretionary Activity Status (Refer also to 13.9)**
	Subdivision of up to 60 new lots for residential (golf living) purposes, provided that: (a) no lot is less than 4,000m^2 in area; (b) the subdivision is otherwise undertaken in accordance with ***Rules 13.7*** to ***13.11*** (***Chapter 13 Subdivision***), but excluding ***Rule 13.7.2.1***. (c) on-site treatment and disposal of wastewater is provided for; and (d) the building footprints are specified on an approved plan of subdivision. The provisions of ***Rule 13.10*** shall apply when assessing any proposed subdivision within the Golf living sub-zone. Applications for restricted discretionary activities within the Golf living sub-zone will be treated as non notified applications provided the written approval of owners of land adjoining the lots to be subdivided has been obtained, and will be assessed having regard to: (i) the extent to which the activity may impact adversely on the unique character of the Kauri Cliffs Zone; (ii) the extent to which any adverse effects on areas of indigenous vegetation and habitat are avoided, remedied or mitigated; (iii) the effect on adjoining activities.	Subdivision that does not comply with the Restricted Discretionary Activity Standard.

Provided that any existing development on any new lot in the subdivision must comply with all of the relevant zone rules and the rules in ***Part 3 of the Plan - District Wide Provisions*** for permitted or controlled activities.

13.7.2.2 ALLOTMENT DIMENSIONS

Any allotment created in terms of these rules must be able to accommodate a square building envelope of the minimum dimensions specified below; which does not encroach into the permitted activity boundary setbacks for the relevant zones:

Zone	**Minimum Dimension**
Residential, Coastal Residential, Russell Township	14m x 14m
Rural Production, Minerals, General Coastal, Coastal Living, South Kerikeri Inlet, Rural Living, Waimate North, Point Veronica and Carrington Estate	30m x 30m

Any allotment created in terms of these rules shall comprise one contiguous parcel of land, except that in the case of land subdivided under the Unit Titles Act 2010, the principal unit and any accessory units shall be deemed to be a contiguous area if they are contained within the same site.

13.7.2.3 AMALGAMATION OF LAND IN A RURAL ZONE WITH LAND IN AN URBAN OR COASTAL ZONE

Notwithstanding the provisions of ***Rule 13.7.2.1*** and ***Table 13.7.2.1***, an allotment in a rural zone may be amalgamated into one certificate of title with an adjoining (contiguous) allotment in any urban or coastal zone, but only where that part of the title in the urban or coastal zone meets all the requirements for a separate controlled activity allotment in that zone, as set out in ***Table 13.7.2.1*** and ***Rule 13.7.2.2***, except that in the General Coastal Zone such subdivision will be assessed as a restricted-discretionary activity.

13.7.2.4 LOTS DIVIDED BY ZONE BOUNDARIES

Where an allotment is shown on the ***Zone Maps*** as having two or more zones applicable, a subdivision along a zone boundary shall be a controlled (subdivision) activity, provided that the resulting lot complies with the minimum controlled activity lot size applicable in that zone except in the General Coastal Zone where subdivision will be assessed as a restricted-discretionary activity and provided that any subdivision of a lot divided by a boundary between the Minerals Zone and any other zone is a restricted discretionary activity (refer to ***Rule 13.7.2.1*** and ***Table 13.7.2.1***).

13.7.2.5 SITES DIVIDED BY AN OUTSTANDING LANDSCAPE, OUTSTANDING LANDSCAPE FEATURE OR OUTSTANDING NATURAL FEATURE

The subdivision rules relating to the size of allotments in areas covered by an Outstanding Landscape, Outstanding Landscape Feature or Outstanding Natural Feature, as shown on the Resource Maps, take precedence over the comparable rules for zones.

Where a site contains, or is divided by the boundary of an Outstanding Landscape, Outstanding Landscape Feature or Outstanding Natural Feature, for those parts of the site not covered by the landscape or feature, rules relating to allotment size for the particular zone apply as if the legal boundary of the site was located along the boundary of the landscape or feature.

Where a site contains, or is divided by the boundary of an Outstanding Landscape, Outstanding Landscape Feature or Outstanding Natural Feature, minimum lot sizes for that part of the site within the landscape or feature is specified within ***Rule 13.7.2.1(xix)*** of ***Table 13.7.2.1***.

Where a site contains, or is divided by the boundary of an Outstanding Landscape, Outstanding Landscape Feature or Outstanding Natural Feature, and the area within the landscape or feature is smaller than the lot sizes provided for in ***Rule 13.7.2.1(xix)*** of ***Table 13.7.2.1***, the whole of the site must be taken as Outstanding Landscape, Outstanding Landscape Feature or Outstanding Natural Feature and ***Rule 13.7.2.1(xix)*** applies over the entire site.

13.7.2.6 ACCESS, UTILITIES, ROADS, RESERVES

Notwithstanding the standards for minimum net area, there shall be no minimum allotment areas in any zone for allotments created for access, utilities, roads and reserves. Within areas covered by a structure plan, appropriate provision shall be made for access, utilities, roads and reserves in terms of those structure plans.

A consent notice may be registered on the Certificate of Title, pursuant to ***Rule 13.6.7***, in respect of any lot occupied by a utility, requiring enforcement of a condition that, in the event of the utility being removed, the lot be amalgamated with an adjoining allotment unless it is a fully complying allotment for the respective zone.

13.7.2.7 SAVINGS AS TO PREVIOUS APPROVALS

Notwithstanding the standards for minimum net area in ***Rule 13.7.2.1*** and ***Table 13.7.2.1***, there are no minimum allotment areas in any zone for unit titles where a proposed unit development plan has been granted subdivision consent. This rule applies only to allotments approved by Council prior to 28 April 2000. All relevant rules applicable within the zone must be complied with by the building/s erected, or to be erected, on allotments in terms of this rule.

13.7.2.8 PROXIMITY TO TOP ENERGY TRANSMISSION LINES

Where an electricity transmission line (of 110 kV or more) crosses land subject to a proposed subdivision, the application shall clearly show those lines and all proposed building sites in relation to those lines. No activity (including earthworks) or proposed building sites shall be located within 20m of any support structure and no building platform shall be located within a corridor measured 20m from the centre line of the transmission lines.

13.7.2.9 PROXIMITY TO THE NATIONAL GRID

Where an electricity transmission line identified on the zone maps as part of the National Grid crosses or adjoins land subject to a proposed subdivision, the application shall clearly show those lines and all proposed building sites in relation to that infrastructure.

Note: Attention is also drawn to the provisions of Part 3 of the Plan – District Wide Provisions, which reference the rules relating to development occurring within the National Grid Yard.

13.7.3 CONTROLLED (SUBDIVISION) ACTIVITIES: OTHER MATTERS TO BE TAKEN INTO ACCOUNT

Any application for a controlled (subdivision) activity resource consent must also make provision (where relevant) for the matters listed under ***Rules 13.7.3.1*** to ***13.7.3.12*** (inclusive), and the Council shall take account of these matters in reaching a decision on the application.

13.7.3.1 PROPERTY ACCESS (see ***Chapter 15 Transportation***)

A controlled (subdivision) activity application must comply with rules for property access in ***Chapter 15***, namely ***Rules 15.1.6C.1.1*** - ***15.1.6C.1.11*** (inclusive).

13.7.3.2 NATURAL AND OTHER HAZARDS

Any proposed subdivision shall avoid, remedy or mitigate any adverse effects of natural hazards.

In considering a controlled (subdivision) activity application under ***Rule 13.7.3.2*** the Council will restrict the exercise of its control to the following matters and shall have regard to section 106 of the Resource Management Act 1991:

(a) the degree to which the proposed subdivision avoids, remedies or mitigates the potential adverse effects of:
  (i) erosion;
  (ii) overland flow paths, flooding and inundation;
  (iii) landslip;
  (iv) rockfall;
  (v) alluvion (deposition of alluvium);
  (vi) avulsion (erosion by streams or rivers);
  (vii) unconsolidated fill;
  (viii) soil contamination;
  (ix) subsidence;
  (x) fire hazard;
  (xi) sea level rise

Provided that where ***Coastal Hazard Maps*** show land as being within a Coastal Hazard 1 Area, any subdivision that will create additional allotments (other than to facilitate the subdivision of land for the purposes of transfer to the Council) shall be a non-complying subdivision activity.

13.7.3.3 WATER SUPPLY

All new allotments shall be provided with the ability to connect to a safe potable water supply with an adequate capacity for the respective potential land uses, except where the allotment is for a utility, road, reserve or access purposes, by means of one of the following:

(a) a lawfully established reticulated water supply system; or

(b) where no reticulated water supply is available, the ability to provide an individual water supply on the respective allotment.

In considering a controlled (subdivision) activity application under ***Rule 13.7.3.3*** the Council will restrict the exercise of its control to the following matters:

(i) the adequacy of the supply of water to every allotment being created on the subdivision, and its suitability for the likely land use, for example the installation of filtration equipment if necessary;

(ii) adequacy of water supplies, and access for fire fighting purposes;

(iii) the standard of water supply infrastructure installed in subdivisions, and the adequacy of existing supply systems outside the subdivision.

13.7.3.4 STORMWATER DISPOSAL

(a) All allotments shall be provided, within their net area, with a means for the disposal of collected stormwater from the roof of all potential or existing buildings and from all impervious surfaces, in such a way so as to avoid or mitigate any adverse effects of stormwater runoff on receiving environments, including downstream properties. This shall be done for a rainfall event with a 10% Annual Exceedance Probability (AEP).

(b) The preferred means of disposal of collected stormwater in urban areas will be by way of piping to an approved outfall, each new allotment shall be provided with a piped connection to the outfall laid at least 600mm into the net area of the allotment. This includes land allocated on a cross lease or company lease. The connection should be at the lowest point of the site to enable water from driveways and other impervious surfaces to drain to it. Where it is not practical to provide stormwater connections for each lot then the application for subdivision shall include a report detailing how stormwater from each lot is to be disposed of without adversely affecting downstream properties or the receiving environment.

(c) The provision of grass swales and other water retention devices such as ponds and depressions in the land surface may be required by the Council in order to achieve adequate mitigation of the effects of stormwater runoff.

(d) All subdivision applications creating sites 2ha or less shall include a detailed report from a Chartered Professional Engineer or other suitably qualified person addressing stormwater disposal.

(d) Where flow rate control is required to protect downstream properties and/or the receiving environment then the stormwater disposal system shall be designed in accordance with the onsite control practices as contained in "*Technical Publication 10, Stormwater Management Devices – Design Guidelines Manual" Auckland Regional Council (2003).*

In considering a controlled (subdivision) activity application under ***Rule 13.7.3.4*** the Council will restrict the exercise of its control to the following matters:

(i) control of water-borne contaminants, litter and sediments;

(ii) the capacity of existing and proposed stormwater disposal systems (refer also to the Council's various urban stormwater management plans and any relevant Northland Regional Council stormwater discharge consents);

(iii) the effectiveness and environmental impacts of any measures proposed for avoiding or mitigating the effects of stormwater runoff, including low impact design principles;

(iv) the location, scale and construction of stormwater infrastructure;

(v) measures that are necessary in order to give effect to any drainage or catchment management plan that has been prepared for the area.

13.7.3.5 SANITARY SEWAGE DISPOSAL

(a) Where an allotment is situated within a duly gazetted district or drainage area of a lawfully established reticulated sewerage scheme, or within an area to be serviced by a private reticulated sewerage scheme for which Northland Regional Council has issued a consent, each new allotment shall be provided with a piped outfall connected to that scheme and shall be laid at least 600mm into the net area of the allotment.

(b) Where connection is not available, all allotments in urban, rural and coastal zones shall be provided with a means of disposing of sanitary sewage within the net area of the allotment, except where the allotment is for a road, or for access purposes, or for a purpose or activity for which sewerage is not necessary (such as a transformer).

Note: Allotments include additional vacant sites on cross lease or unit titles.

In considering a controlled (subdivision) activity application under ***Rule 13.7.3.5*** the Council will restrict the exercise of its control to the following matters:

(i) the method and adequacy of sewage disposal where a Council owned reticulated system is not available;

(ii) the capacity of, and impacts on, the existing reticulated sewage disposal system;

(iii) the location, capacity and environmental effects of the proposed sanitary sewerage system.

13.7.3.6 ENERGY SUPPLY

All urban allotments (Residential, Commercial, Industrial Zones) including the Coastal Residential, Russell Township, and Rural Living Zones, shall be provided with the ability to connect to an electrical utility system and applications for subdivision consent should indicate how this could be done.

In considering a controlled (subdivision) activity application under ***Rule 13.7.3.6*** the Council will restrict the exercise of its control to the following matters:

(i) the adequacy and standard of any electrical utility system.

13.7.3.7 TELECOMMUNICATIONS

All urban allotments (Residential, Commercial, Industrial Zones) including the Coastal Residential, Russell Township, and Rural Living Zones, shall be provided with the ability to connect to a telecommunications system at the boundary of the site.

In considering a controlled (subdivision) activity application under ***Rule 13.7.3.7*** the Council will restrict the exercise of its control to the following matters:

(i) the adequacy and standard of telecommunication installations.

13.7.3.8 EASEMENTS FOR ANY PURPOSE

Easements shall be provided where necessary for public works and utility services.

In considering a controlled (subdivision) activity application under ***Rule 13.7.3.8*** the Council will restrict the exercise of its control to the following matters:

(a) Easements in gross where a service or access is required by the Council.

(b) Easements in respect of other parties in favour of nominated allotments or adjoining Certificates of Title.

(c) Service easements, whether in gross or private purposes, with sufficient width to permit maintenance, repair or replacement. Centre line easements shall apply when the line is privately owned and unlikely to require upgrading.

(d) The need for easements for any of the following purposes:

  (i) private ways, whether mutual or not;

  (ii) stormwater, sanitary sewer, water supply, electric power, gas reticulation;

  (iii) telecommunications;

  (iv) party walls and floors/ceilings;

  (v) other utilities.

13.7.3.9 PRESERVATION OF HERITAGE RESOURCES, VEGETATION, FAUNA AND LANDSCAPE, AND LAND SET ASIDE FOR CONSERVATION PURPOSES

Where any proposed allotment contains one or more of the following:

(a) a Notable Tree as listed in ***Appendix 1D***;

(b) an Historic Site, Building or Object as listed in ***Appendix 1E***;

(c) a Site of Cultural Significance to Maori as listed in ***Appendix 1F***;

(d) an Outstanding Natural Feature as listed in ***Appendix 1A***;

(e) an Outstanding Landscape Feature as listed in ***Appendix 1B***;

(f) an archaeological site as listed in ***Appendix 1G***;

(g) an area of significant indigenous vegetation or significant habitats of indigenous fauna, as defined in ***Method 12.2.5.6***.

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

Note: There are many ways in which preservation/protection can be achieved, and the appropriate means will vary according to the circumstance. In some cases physical means (e.g. fencing) may be appropriate. In other cases, a legal means will be preferred instead of (or as well as) physical means.

Council encourages permanent protection by:

(i) a reserve or covenant under the Reserves Act;

(ii) a Maori reservation under s338 and s340 of Te Ture Whenua Maori (Maori Land) Act;

(iii) a conservation covenant with the Department of Conservation or the Council;

(iv) an open space covenant with the Queen Elizabeth II National Trust;

(v) a heritage covenant with the Heritage New Zealand Pouhere Taonga.

The Act also provides for a consent notice under s221 in accordance with ***Rule 13.6.7***.

In considering a controlled (subdivision) activity application under ***Rule 13.7.3.9*** the Council will restrict the exercise of its control to the preservation of significant indigenous vegetation and fauna habitats, heritage resources and landscape.

Where an application is made under this provision, the following shall be included as affected parties in terms of s93 and s94 of the Act:

- for an Historic Site, Building or Object, or archaeological site, the Heritage New Zealand Pouhere Taonga and the Department of Conservation;
- for a Site of Cultural Significance to Maori, the tangata whenua for whom the site has significance;
- for an area of significant indigenous vegetation or significant habitat of indigenous fauna, the Department of Conservation.

13.7.3.10 ACCESS TO RESERVES AND WATERWAYS

Where appropriate and relevant, public access shall be provided in proposed subdivisions, to public reserves, waterways and esplanade reserves.

The Council may decide, on application, that public access to reserves or public areas may be provided in lieu of, or partially in lieu of, any reserves or financial contribution that is required in respect of the subdivision.

In considering a controlled (subdivision) activity application under ***Rule 13.7.3.10*** the Council will restrict the exercise of its control to the provision of easements or registration of an instrument for the purpose of public access and the provision of public works and utility services.

13.7.3.11 LAND USE COMPATIBILITY

Subdivision shall avoid, remedy or mitigate any adverse effects of incompatible land uses (reverse sensitivity). In considering a controlled subdivision activity under **Rule 13.7.3.11** the Council will restrict the exercise of its control to the following matters:

(i) the degree to which the proposed allotments take into account adverse effects arising from incompatible land use activities (including but not limited to noise, vibration, smell, smoke, dust and spray) resulting from an existing land use adjacent to the proposed subdivision.

13.7.3.12 PROXIMITY TO AIRPORTS

Where applications for subdivision consent relate to land that is situated within 500m of the nearest boundary of land that is used for an airport, the airport operator will be considered by the Council to be an affected party. The written approval of the airport operator to the proposed subdivision must be obtained by the applicant. Where this approval cannot be obtained, the Council will consider the application as a discretionary activity application.

13.7.4 SUBDIVISION WITHIN THE NATIONAL GRID CORRIDOR FOR ALL ZONES

Subdivision is a controlled activity where:

(a) The site is within the National Grid Corridor, and every allotment is capable of containing within its net site area a building envelope located entirely outside of the National Grid Yard.

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

(i) Whether the design and construction of any subdivision allows for earthworks, buildings and structures to comply with the requirements in the New Zealand Electrical Code of Practice for Electrical Safe Distances (NZECP:34 2001);

(ii) Whether the design and construction of any subdivision provides for continued physical access to the National Grid line to provide for inspections, maintenance and upgrading of the transmission network;

(iii) The extent to which the subdivision design and consequential development (e.g. future building envelope location, outlook of buildings, access location) will avoid, remedy or mitigate the potential reverse sensitivity on the National Grid, while also addressing nuisance effects (e.g. visual amenity) created by the National Grid;

(iv) The extent to which the design and construction of the subdivision allows for activities to be setback from high voltage transmission lines to ensure adverse effects on and from the National Grid

transmission network and on public safety and property are appropriately avoided, remedied or mitigated e.g. through the location of roads, reserves and building envelopes;

(v) The nature and location of any proposed vegetation to be planted in the vicinity of any National Grid transmission lines;

(vi) Provision for the ongoing operation; maintenance and any planned development and upgrade of the existing National Grid;

(vii) The outcome of any consultation with Transpower in relation to (i)-(v) above;

(viii) The matters listed in 13.7.3.

Where an application is required because of non-compliance with this rule, Transpower New Zealand Limited shall be considered an affected party in accordance with the Act.

Note: If a subdivision activity does not comply with the above rule it becomes a non complying activity in accordance with ***Rule 13.11(e).***

13.8 RESTRICTED DISCRETIONARY ACTIVITIES

13.8.1 SUBDIVISION WITHIN THE RURAL PRODUCTION ZONE

Subdivision is a restricted discretionary activity where:

(a) the minimum lot size is 12ha; or alternatively

(b) a maximum of 3 lots in any subdivision, provided that the minimum size of any lot is 4,000m^2 and there is at least one lot in the subdivision with a minimum lot size of 4ha, and provided further that the subdivision is of sites which existed at or prior to 28 April 2000, or which are amalgamated from titles existing at or prior to 28 April 2000; or alternatively

(c) a maximum of 5 lots in a subdivision (including the parent lot) where the minimum size of lots is 2ha, and where the subdivision is created from a lot that existed at or prior to 28 April 2000.

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

(i) for applications under ***13.8.1(a)***:

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

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

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

In considering whether or not to impose conditions on applications for restricted discretionary subdivision activities the Council will restrict the exercise of its discretion to the following matters:

(1) the matters listed in ***13.7.3***;

(2) the matters listed in ***(i)*** and ***(ii)*** above.

For the purposes of this rule the upstream boundary of the coastal environment in the upper reaches of harbours is to be established by multiplying the width of the river mouth by five.

13.8.2 SUBDIVISION WITHIN 100M OF MINERALS ZONE

Subdivision is a restricted discretionary activity in the Rural Production and Coastal Living Zones where any part of any proposed lot is within 100m of the boundary of a Minerals Zone.

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

(i) the location of the building site(s) for residential buildings having regard to topography, geology, distance from the boundary of the Minerals Zone, distance from the existing and proposed quarry faces;

(ii) the likelihood and effects of vibration, dust, noise and flyrock on the identified building site/s;

(iii) any cumulative adverse effects resulting from the approval of the subdivision;

(iv) access to the subdivision in relation to the adjoining Minerals Zone;

(v) the matters listed in **13.7.3**.

13.8.3 SUBDIVISION IN THE GOLF LIVING SUB-ZONE (KAURI CLIFFS ZONE)

Subdivision of up to 60 new lots for residential (golf living) purposes is a restricted discretionary activity in the Golf living sub-zone of the Kauri Cliffs Zone, provided that:

(a) no lot is less than 4,000m^2 in area;

(b) the subdivision is otherwise undertaken in accordance with ***Rules 13.7*** to ***13.11*** (***Chapter 13 Subdivision***), but excluding ***Rule 13.7.2.1***;

(c) on-site treatment and disposal of wastewater is provided for; and

(d) the building footprints are specified on an approved plan of subdivision.

The provisions of ***Rule 13.10*** shall apply when assessing any proposed subdivision within the Golf living sub-zone.

Applications for restricted discretionary activities within the Golf living sub-zone will be treated as non notified applications provided the written approval of owners of land adjoining the lots to be subdivided has been obtained, and will be assessed having regard to:

(i) the extent to which the activity may impact adversely on the unique character of the Kauri Cliffs Zone;

(ii) the extent to which any adverse effects on areas of indigenous vegetation and habitat are avoided, remedied or mitigated;

(iii) the effect on adjoining activities.

13.8.4 SUBDIVISION IN THE GENERAL COASTAL ZONE

The Council will restrict the exercise of its discretion and may impose conditions on restricted discretionary activity applications for subdivision in the General Coastal Zone to the following matters:

(a) the location of access to the lots;

(b) the location of utility services;

(c) the location of building envelopes;

(d) the effect of earthworks and utilities;

(e) the location of lot boundaries;

(f) the matters listed in ***13.7.3***;

(g) whether provision for access to the subdivision has been made in a manner that will avoid, remedy or mitigate adverse effects on the environment, including but not limited to traffic effects, visual effects, effects on vegetation and habitats, and natural character;

(h) whether the effects of earthworks and the provision of services to the subdivision will have an adverse visual effect on the environment and whether these effects can be avoided, remedied or mitigated;

(i) the maintenance and enhancement of public access to and along the coastal marine area and other water bodies. Refer also to rules in ***Chapters 12.7*** and ***14***.

13.8.5 SUBDIVISION IN THE COASTAL LIVING AND SOUTH KERIKERI INLET ZONES

The Council will restrict the exercise of its discretion and may impose conditions on restricted discretionary activity applications for subdivision in the Coastal Living and South Kerikeri Inlet Zones to the following matters:

(a) the location of access to the lots;

(b) the location of utility services;

(c) the location of building envelopes;

(d) the effect of earthworks and utilities;

(e) the location of lot boundaries;

(f) the mitigation of fire hazards for health and safety of residents;

(g) the matters listed in ***13.7.3***;

(h) whether provision for access to the subdivision has been made in a manner that will avoid, remedy or mitigate adverse effects on the environment, including but not limited to traffic effects, visual effects, effects on vegetation and habitats, and natural character;

(i) whether the effects of earthworks and the provision of services to the subdivision will have an adverse effect on the environment and whether these effects can be avoided, remedied or mitigated.

Applications for restricted discretionary activities within the South Kerikeri Inlet Zone will be treated as limited notification applications requiring notification of all property owners within the Zone and DH Ellis (being the property owner of Lot 2 DP 114410) at least.

13.9 DISCRETIONARY (SUBDIVISION) ACTIVITIES

Subdivision is a discretionary activity where:

(a) it does not comply with one or more of the standards for controlled or restricted-discretionary (subdivision) activities set out in rules under ***13.7*** and ***13.8***, but

(b) it complies with the rules under ***13.9.1***, ***13.9.2*** or ***13.9.3***;

(c) it is located in the Pouerua Heritage Precinct.

Applications for discretionary and non-complying activities within the South Kerikeri Inlet Zone will require notification of all property owners within the Zone and DH Ellis (being the property owner of Lot 2 DP 114410) at least.

If a subdivision activity does not comply with the standards for a discretionary (subdivision) activity, it will be a non-complying (subdivision) activity.

13.9.1 MINIMUM NET AREA FOR VACANT NEW LOTS AND NEW LOTS WHICH ALREADY ACCOMMODATE STRUCTURES

Refer to ***Table 13.7.2.1*** under ***Rule 13.7.2.1*** column headed “Discretionary Activity Status”.

13.9.2 MANAGEMENT PLANS

CONTEXT

The purpose of management plan subdivision or development is to facilitate the sustainable management of natural and physical resources in an integrated way.

The management plan rule provides a once-off opportunity for integrated subdivision or development which results in superior outcomes to more traditional forms of subdivision, use or development.

Management plans allow subdivision and development where the location, form and scale of the proposal complements sustainable environmental management consistent with the protection of natural character, landscape, amenity, heritage, and cultural values.

Management plans provide flexibility to create innovative and site specific proposals.

13.9.2.1 CONTENTS OF APPLICATION

An application for a management plan subdivision or development must, to the extent that it is relevant to the site and the proposal, provide within the application, including assessment of environmental effects and accompanying specialist reports, information on the following:

(a) Description of the Proposal

(i) a cadastral plan that shows the parent site(s) in which the management plan is located; the specified portion of the site(s) subject to the management plan; and any balance area, including for the purpose of complying with ***Rule 13.9.2.2(c)***;

(ii) the size and location of the proposed lots on the property and the provision made for roads, accessways, public utilities, proposed reserves (including esplanade reserves, esplanade strips, and access strips), covenanted areas or other encumbrances or restrictions, and information on infrastructure proposed to vest in Council (including road, utilities, and reserves);

(iii) details of the building envelopes within which all built elements are to be located;

(iv) details of requirements for earthworks including the management of run-off during construction;

(v) requirements for vegetation clearance;

(vi) stormwater and effluent disposal systems;

(vii) proposals for staging of development including, where a subdivision is to be staged, arrangements for vesting any reserves, access facilities (vehicle and pedestrian) or public utilities required by the resource consent and located in subsequent stages;

(viii) details of the consultation that has been undertaken and the result(s) of this;

(ix) how sustainable management is to be achieved including the management objectives, details of what is to happen and where, and how this is to be monitored and reviewed.

(b) Existing Site Characteristics

(i) a description of the shape and location of the property in relation to its wider geographic context and local setting;

(ii) topography and geography of the property;

(iii) geotechnical aspects of the property;

(iv) stormwater channels/overland flow paths and presence of natural hazards (such as flood prone land or land liable to erosion or any fire hazard);

(v) the property history including past uses and management and any implications for future management;

(vi) soil types and their classification on the NZ Land Inventory worksheets;

(vii) the natural character, landscape (including identification of any Outstanding Landscapes, Outstanding Landscape Features and Outstanding Natural Features as shown on the ***Resource Maps***), visual and amenity value characteristics of the site, and an assessment of the effects of construction and site development on those characteristics and values. Attention is drawn to the 1995 LA4 Landscape Assessment of the Far North District held by the Council that provides further information on landscape values and characteristics of the District;

(viii) areas of indigenous vegetation and habitats of indigenous fauna with identification of any such areas which are significant as defined in ***Method 12.2.5.6***, and any notable or heritage trees;

(ix) archaeological sites, historic heritage resources or sites of significance to Maori;

(x) relevant information regarding adjoining properties;

(xi) the location and purpose of any public reserve land in the vicinity of the site;

(xii) any known areas in the vicinity which are being actively managed for pest control or protected or enhanced for conservation benefit;

(xiii) the District Plan zoning of surrounding land, including any relevant structure plan, Long Term Council Community Plan proposal(s) or other document identified in s74.

(xiv) the presence of any transmission lines or network utility within, or in the vicinity of, the site.

(c) Proposed Management Measures

(i) measures to protect, manage and enhance indigenous vegetation and habitats, outstanding landscapes and natural features, heritage resources and riparian margins, including appropriate means of controlling dogs, cats, rats[1], mustelids and other animal pests and the means of controlling pest plants;

(ii) measures to maintain open space in order to retain coastal and/or rural character;

(iii) measures to protect the life-supporting capacity of soils;

(iv) measures to protect sites of significance to Maori on the property;

(v) measures for the ongoing control and management of stormwater and effluent disposal;

(vi) measures to promote and achieve integrated catchment management;

(vii) measures to control the placement and visual appearance of dwellings and ancillary buildings such as garages and water tanks;

(viii) any other measures to internalise adverse effects including measures to avoid reverse sensitivity on existing activities or uses.

The Council may require additional information on aspects of the proposal.

[1]Kiore are considered a taonga by Ngatiwai Trust Board.

(d) Draft Management Plan

The proposal must include a Draft Management Plan (to be finalised in accordance with the conditions of consent) setting out, the extent relevant to the proposal:

(i) the objectives of the proposal;

(ii) the mechanisms to ensure that the management plan applies to and binds future owners;

(iii) where restoration planting and/or other natural resource management works are to be undertaken, performance may be secured by a Council bond on the following basis:

- bonded work is to be completed within 4 years of the subdivision s224(c) certificate issuing;
- access to bonding will not be available until one year after planting, where there is evidence to Council's satisfaction of the successful initial implementation of an approved management plan;
- the management plan is to include matters of the following type. Named species appropriate to the location, size at planting, density (for example 7,000 stems/ha), seed source, weed clearance/release, pest control, fertiliser application and, at Council's discretion, a requirement for irrigation should conditions require;
- legally effective post s224 certificate arrangements are required which secure the retention of re-planted vegetation; establish responsibility for continued execution of the management plan until its objectives (be they tree height, percentage canopy cover or both) and/or term are satisfied (this may require a community owned management structure depending on the number of subsequent owners); and ensure Council access to the land in the event the bond is to be executed. These requirements may necessitate a bond to be complemented by covenants or other legal instruments;
- Council retains the discretion not to accept bonding where there is a potentially harsh environment or other factor(s), which present a significant risk in its assessment to successful re-establishment or management plan implementation. Evidence of the degree of risk should be included in the information required by ***Rule 13.9.2.1***.

13.9.2.2 MANAGEMENT PLAN STANDARDS

Management plan subdivision is a discretionary activity in the Rural Production, Waimate North, General Coastal and Coastal Living Zones where it complies with the standards set out below:

(a) The average size of all lots in the management plan subdivision, excluding lots used solely for access, utilities, roads and reserves shall be no less than:

(i) 2ha in the Rural Production Zone;

(ii) 1ha in the Waimate North Zone;

(iii) 6ha in the General Coastal Zone;

(iv) 5,000m^2 in the Coastal Living Zone; and

(v) 2ha average in the South Kerikeri Inlet Zone.

over that specified portion of the site that is subject to the management plan.

(b) Only one consent for a discretionary (subdivision) activity in terms of a management plan can be granted in respect of a site or any specified portion of a site provided that the averaging provisions contained within this rule can only be used for each specified portion of the site once.

(c) Where a management plan subdivision or development is granted in respect of a specified portion of a site, separate title shall be obtained or amalgamated with another adjoining lot not within the management plan application for the portion of the site not subject to the management plan. The portion of a site that is not subject to the management plan shall be no less than:

(i) 4ha in the Rural Production Zone;

(ii) 4ha in the Waimate North Zone;

(iii) 20ha in the General Coastal Zone; and

(iv) 4ha in the Coastal Living Zone and South Kerikeri Inlet Zone.

(d) The Development Bonuses available under ***Rules 12.1.6.3.1***, ***12.2.6.3.2***, ***12.5.6.3.1*** and ***18.3.6.4.3*** will not be available on any site created by a consent granted under this rule, nor will they be available as part of the process of obtaining such a consent.

(e) Any further subdivision of any lot contained within a subdivision management plan shall be a non-complying activity.

(f) The application must include a draft management plan as described in ***Rule 13.9.2.1(d)***.

13.9.2.3 ASSESSMENT CRITERIA

In assessing an application for discretionary subdivision and development in accordance with a management plan, the Council may require more detail to be provided and will have regard to the following matters (to the extent that these are relevant to the proposal) in addition to other relevant matters set out in ***Rule 13.10***:

(a) the adequacy of the management plan;

(b) the degree to which the management plan gives effect to the NZ Coastal Policy Statement;

(c) the degree to which the management plan gives effect to the Regional Policy Statement for Northland and is consistent with the Regional Coastal Plan for Northland;

(d) the District-wide objectives and policies the objectives and policies of this chapter and those for the particular zone or zones affected by the application; including, where relevant, the objectives and policies applying generally to the coastal environment set out in ***Sections 10.3*** and ***10.4*** and the rural environment set out in ***Sections 8.3*** and ***8.4***;

(e) the degree to which potential adverse effects on the environment have been identified and avoided as far as practicable, and where it is not practicable to avoid any adverse effects , those have been remedied or mitigated;

(f) the degree to which the proposal represents better sustainable management of natural and physical resources of the land and surrounding environment; (and protects the productive potential of the land);

(g) where the subdivision is all or partly within the coastal environment (and acknowledging that the management plan provisions also apply elsewhere in the District) the degree to which the proposal preserves the natural character of the coastal environment, wetlands, and lakes and rivers and their margins and protects them from inappropriate subdivision, use and development and enhances the natural character of the coastal environment;

(h) whether landscape, visual and amenity value characteristics of the site are maintained, protected or enhanced and the degree to which regard is had of the LA4 Landscape Assessment report (1995);

(i) whether the proposals to ensure long-term protection and enhancement of indigenous flora and fauna are adequate and the need for conditions to ensure ongoing compliance with such proposals;

(j) the adequacy of proposals for rehabilitation or re-establishment of areas of indigenous flora, including the extent to which land which is steep or has stability issues or is of low value for food production is set aside for revegetation;

(k) the extent to which planting proposals utilise indigenous flora appropriate to the locality and the extent to which local genetic stock is used;

(l) where relevant, measures to provide public access through the property to and along the coastal marine area, lakes and rivers;

(m) the proposals to recognise and provide for the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu and other taonga;

(n) the adequacy of any areas proposed to be vested as open space reserve(s) using mechanisms identified in ***Rule 13.7.3.9 (i – v)***;

(o) the degree to which the proposal protects life supporting capacity of soils and provides for continued productive use of the land;

(p) whether the subdivision proposed by the management plan is likely to have more than a minor adverse effect on the options for a future road network to serve the area, or for water supply, sewerage, and stormwater reticulation, or for reserves or community facilities or for any other utility service;

(q) effects of the subdivision on the use and management of public land in the vicinity of the site;

(r) the degree to which the proposal avoids natural hazards including fire hazards;

(s) whether the proposal has the potential to cause reverse sensitivity issues for existing activities or uses;

(t) the degree to which the application complies with the Other Matters set out in ***Rule 13.7.3***;

(u) the provisions of any structure plan or other management plan on an adjoining property that has been prepared for the locality;

(v) whether bonds are necessary to assist in achieving the management plan;

(w) the extent to which information and proposed management measures are provided by suitably qualified persons;

(x) the extent to which the proposal creates a large balance lot and protects and, if appropriate, restores it;

(y) the appropriateness of the location of building platforms and the associated building envelopes;

(z) the extent to which the application promotes energy efficiency and renewable energy development and use as provided for in Policy 13.4.15 through incorporating the following initiatives:

  (i) ability to develop energy efficient buildings and structures (e.g. by providing a north-facing site with the ability to place a building on an east/west axis);

  (ii) reduced travel distances and car usage by designing a layout with as many links to adjacent sites and surrounding roads as practicable;

  (iii) encouragement of pedestrian and cycle use by designing a layout that allows easy direct access to and from, shops, schools, work places, reserves and other amenities;

  (iv) access to alternative transport facilities;

  (v) domestic or community renewable electricity generation;

  (vi) solar street lighting;

(aa) any other matter which is determined to be relevant to the application; and in particular:

  (i) whether further subdivision of all lots within the management plan is prohibited through the use of relevant legal instruments.

13.9.3 DEVELOPMENT BONUS

Where any proposed plan of subdivision provides for the formal protection of Outstanding Landscape (as shown on the ***Resource Maps***), or Outstanding Landscape Features or Outstanding Natural Features (as listed in ***Appendices 1A*** and ***1B*** and shown on the ***Resource Maps***), or areas of significant indigenous vegetation or significant habitats of indigenous fauna (refer to criteria in ***Method 12.2.5.6*** of the Plan), or heritage resources, the Council may grant a development bonus, on application for a resource consent. Notwithstanding the rules referred to below, bonus lots may not be located in Natural Resource Overlay Areas or in the General Coastal Zone.

The rules relating to development bonuses are as follows:

(a) ***12.1.6.3.1*** (in respect of landscape and natural features);

(b) ***12.2.6.3.2*** (in respect of indigenous flora and fauna);

(c) ***12.5.6.3.1*** (in respect of heritage resources); and

(d) ***18.3.6.4.3*** (in respect of the Waimate North Zone).

Note: Applications under these rules must identify donor and recipient areas and assess environmental effects on those areas.

13.10 ASSESSMENT CRITERIA

In considering whether or not to grant consent or impose conditions on applications for discretionary (subdivision) activities, the Council will have regard to s104, s105 and s106 of the Act, the objectives and policies of the Plan and to the assessment criteria set out below.

Note: Attention is drawn to the need to also refer to ***Chapter 15.1*** for rules relating to property access.

13.10.1 ALLOTMENT SIZES AND DIMENSIONS

(a) Whether the allotment is of sufficient area and dimensions to provide for the intended purpose or land use, having regard to the relevant zone standards and any District wide rules for land uses.

(b) Whether the proposed allotment sizes and dimensions are sufficient for operational and maintenance requirements.

(c) The relationship of the proposed allotments and their compatibility with the pattern of the adjoining subdivision and land use activities, and access arrangements.

(d) Whether the cumulative and long term implications of proposed subdivisions are sustainable in terms of preservation of the rural and coastal environments.

13.10.2 NATURAL AND OTHER HAZARDS

In assessing any subdivision, and for the purposes of s106 of the Act, the Council will have regard to:

(a) Any information held by the Council or the Northland Regional Council regarding natural hazards, contaminated sites or other hazards.

(b) Information obtained by suitably qualified experts, whose investigations are supplied for subdivision applications.

(c) Potential adverse effects on other land that may be caused by the subdivision or anticipated land use activities.

(d) In relation to inundation from any source, the Council shall have regard to the following factors:

(i) the effects of any proposed filling being undertaken to avoid inundation and the consequential effects on the natural drainage pattern and adjoining land;

(ii) flood plain management measures proposed;

(iii) the proposed coastal protection mechanisms / techniques / measures and their environmental effects;

(iv) any proposed boundary drainage to protect surrounding properties;

(v) the adequacy of existing outfalls and any need for upgrading;

(vi) any need for retention basins to regulate the rate and volume of surface run-off.

(e) In relation to erosion, falling debris or slippage, the need for ongoing conditions aimed at avoiding, remedying or mitigating future potential adverse effects, and any need for registration of consent notices on the allotment's Certificate of Title, pursuant to ***Rule 13.6.7***.

(f) In relation to subsidence, the provision of suitability certificates, such as NZS 4431, or if not appropriate, the setting of ongoing conditions, with consent notices registered on the Certificates of Title, pursuant to ***Rule 13.6.7***.

(g) In relation to contaminated sites, any soil tests establishing suitability, and methods to avoid, mitigate or remedy the effects, including removal to approved disposal points.

(h) In relation to land filling and excavation operations, the following factors:

(i) the effects on surrounding properties in terms of dust nuisance, visual detraction, or the potential height of buildings on filled land;

(ii) any adverse impacts on the natural pattern of surface drainage both on and outside the site;

(iii) the type of, and placement of, fill material in terms of its potential for contamination of land or water, or potential subsidence;

(iv) mitigation, or avoidance, of adverse effects caused by filtration affecting neighbouring properties;

(v) remedies necessary during emergencies;

(vi) the rules contained in ***Section 12.3*** relating to filling and excavation of land;

(vii) the impact of filling or excavation on heritage values, ecological values, cultural values, surface water quality, and access along waterways;

(viii) any beneficial effects in terms of waterway enhancement.

Attention is drawn to Northland Regional Council's natural hazards information and to s106 of the Resource Management Act 1991 which allows a consent authority to refuse subdivision consent in certain circumstances.

13.10.3 WATER SUPPLY

(a) Where there is no reticulated water supply available for connection, whether it would be appropriate to allow a private restricted flow rural-type water supply system; such supply being always available and complying with *"Drinking Water Standards of New Zealand" (1995)*.

(b) Whether the provisions of the *"Engineering Standards and Guidelines 2004 – Revised March 2009" (*to be used in conjunction with NZS 4404:2004) have been met in respect of fire fighting water supply requirements.

(c) Whether the provisions of the Council's *"Engineering Standards and Guidelines" (2004) - Revised March 2009* (to be used in conjunction with NZS 4404:2004) have been met in

respect of installation of all necessary water supply pipe lines, and ancillary equipment necessary for the subdivision, including extensions to existing supply systems, and including mains, sub-mains, service and fire hydrants.

(d) Whether the existing water supply systems, to which the connection will be made, have sufficient capacity to service the subdivision.

(e) Whether it may be necessary to provide new reservoirs, pumping stations and rising mains, or increased pipe sizes leading to the subdivision in existing streets, or providing new wells and new pumping units.

(f) Whether there is a need for a local purpose reserve to be set aside and vested in the Council as a site for any public water supply utility required to be provided.

13.10.4 STORMWATER DISPOSAL

(a) Whether the application complies with any regional rules relating to any water or discharge permits required under the Act, and with any resource consent issued to the District Council in relation to any urban drainage area stormwater management plan or similar plan.

(b) Whether the application complies with the provisions of the Council's *"Engineering Standards and Guidelines" (2004) - Revised March 2009* (to be used in conjunction with NZS 4404:2004).

(c) Whether the application complies with the Far North District Council Strategic Plan - Drainage.

(d) The degree to which Low Impact Design principles have been used to reduce site impermeability and to retain natural permeable areas.

(e) The adequacy of the proposed means of disposing of collected stormwater from the roof of all potential or existing buildings and from all impervious surfaces.

(f) The adequacy of any proposed means for screening out litter, the capture of chemical spillages, the containment of contamination from roads and paved areas, and of siltation.

(g) The practicality of retaining open natural waterway systems for stormwater disposal in preference to piped or canal systems and adverse effects on existing waterways.

(h) Whether there is sufficient capacity available in the Council's outfall stormwater system to cater for increased run-off from the proposed allotments.

(i) Where an existing outfall is not capable of accepting increased run-off, the adequacy of proposals and solutions for disposing of run-off.

(j) The necessity to provide on-site retention basins to contain surface run-off where the capacity of the outfall is incapable of accepting flows, and where the outfall has limited capacity, any need to restrict the rate of discharge from the subdivision to the same rate of discharge that existed on the land before the subdivision takes place.

(k) Any adverse effects of the proposed subdivision on drainage to, or from, adjoining properties and mitigation measures proposed to control any adverse effects.

(l) In accordance with sustainable management practices, the importance of disposing of stormwater by way of gravity pipe lines. However, where topography dictates that this is not possible, the adequacy of proposed pumping stations put forward as a satisfactory alternative.

(m) The extent to which it is proposed to fill contrary to the natural fall of the country to obtain gravity outfall; the practicality of obtaining easements through adjoining owners' land to other outfall systems; and whether filling or pumping may constitute a satisfactory alternative.

(n) For stormwater pipes and open waterway systems, the provision of appropriate easements in favour of either the registered user or in the case of the Council, easements in gross, to be shown on the survey plan for the subdivision, including private connections passing over other land protected by easements in favour of the user.

(o) Where an easement is defined as a line, being the centre line of a pipe already laid, the effect of any alteration of its size and the need to create a new easement.

(p) For any stormwater outfall pipeline through a reserve, the prior consent of the Council, and the need for an appropriate easement.

(q) The need for and extent of any financial contributions to achieve the above matters.

(r) The need for a local purpose reserve to be set aside and vested in the Council as a site for any public utility required to be provided.

13.10.5 SANITARY SEWAGE DISPOSAL

(a) Whether the capacity, availability, and accessibility of the reticulated system is adequate to serve the proposed subdivision.

(b) Whether the application includes the installation of all new reticulation, and complies with the provisions of the Council's *"Engineering Standards and Guidelines" (2004) - Revised March 2009* (to be used in conjunction with NZS 4404:2004).

(c) Whether the existing sanitary sewage disposal system, to which the outfall will be connected, has sufficient capacity to service the subdivision.

(d) Whether a reticulated system with a gravity outfall is provided, and where it is impracticable to do so, whether it is feasible to provide alternative individual pump connections (with private rising mains), or new pumping stations, complete pressure, or vacuum systems.

Note: Council consent to install private rising mains within legal roads will be required, under the Local Government Act.

(e) Where a reticulated system is not available, or a connection is impractical, whether a suitable sewage treatment or other disposal systems is provided in accordance with regional rules or a discharge system in accordance with regional rules or a discharge permit issued by the Northland Regional Council.

(f) Where a reticulated system is not immediately available but is likely to be in the near future, whether a temporary system is appropriate.

Note: Consent notices may be registered against Certificates of Title pursuant to ***Rule 13.6.7*** requiring individual allotments to connect with the system when it does become available.

(g) Whether provision has been made by the applicant for monitoring mechanisms to ensure contaminants are not discharged into the environment from a suitable sewage treatment or other disposal system, together with any consent notices to ensure compliance.

(h) Whether there is a need for, and the extent of, any development contributions to achieve the above matters.

(i) Whether there is a need for a local purpose reserve to be set aside and vested in the Council as a site for any public sewage utility for sanitary disposal purposes required to be provided.

(j) Whether the subdivision represents the best practical option in respect of the provision that is made for the disposal of sewage and waste water.

13.10.6 ENERGY SUPPLY

(a) Where the subdivision involves the construction of new roads or formed rights of way, whether an extended reticulation system will be installed (at the subdivider's cost), having regard to the provisions of the Council's *"Engineering Standards and Guidelines 2004 – Revised March 2009 (*to be used in conjunction with NZS 4404:2004). The application for subdivision consent should also indicate how lots are to be reticulated.

(b) Whether the proposed reticulated system to be installed by the subdivider is adequate for the likely development.

(c) Where the proposed system will serve other land that is not part of the subdivision, whether the network operator is providing sufficient capacity as initially installed and the cost of such provision.

Note: Upgrading or cost sharing will be solely a matter for the network operator.

(d) Where a gas supply is proposed, whether the gas network operator is responsible for the installation of all pipelines and their future maintenance, in line with the provisions of the Council's *"Engineering Standards and Guidelines" (2004)- Revised March 2009 (*to be used in conjunction with NZS 4404:2004).

(e) Whether there is a need for a local purpose reserve to be set aside as a site for any public utility required to be provided.

(f) Whether there will be potential adverse effects of the proposed reticulation system on amenity values.

(g) Whether the subdivision design, location of building platforms and proposed electricity supply has had adequate regard to the future adoption of appropriate renewable energy initiatives and technologies.

13.10.7 TOP ENERGY TRANSMISSION LINES

Where it is proposed to subdivide land to create new allotments within an area measured 20m of either side of the centre point of an electrical transmission line designed to operate at or above 50 kV, particular regard shall be had to the following matters:

(a) The extent to which the subdivision design mitigates the effects of the lines through the location of roads and reserves under the route of the line.

(b) The ability to carry out maintenance and inspection of transmission lines to avoid risk of injury and/or property damage.

(c) The outcomes of consultation with the affected utility operator.

(d) The subdivision design, location of building platforms, location of any proposed tree planting, extent and nature of earthworks.

13.10.8 TELECOMMUNICATIONS

(a) Where the subdivision involves construction of new roads or formed rights of way, whether an extended reticulation system has been installed (at the subdivider's cost), having regard to the Council's "*Engineering Standards and Guidelines 2004 – Revised March 2009* (to be used in conjunction with NZS 4404:2004) and "The National Environmental Standard for Telecommunication Facilities 2008".

(b) Where the proposed system will serve other land which is not part of the subdivision, whether the network operator is providing sufficient capacity as initially installed, and the cost of such provision.

(c) Whether the proposed reticulation system will have potential adverse effects on amenity values.

Note: Upgrading or cost-sharing will be solely a matter for the network operator.

13.10.9 EASEMENTS FOR ANY PURPOSE

Whether there is a need for an easement for any of the following purposes:

(a) Easements in gross where a service or access is required by the Council.

(b) Easements in respect of other parties in favour of nominated allotments or adjoining Certificates of Title.

(c) Service easements, whether in gross or private purposes, with sufficient width to permit maintenance, repair or replacement. Centre line easements shall apply when the line is privately owned and unlikely to require upgrading.

(d) Easements for any of the following purposes:

(i) private ways, whether mutual or not;

(ii) stormwater, sanitary sewer, water supply, electric power, gas reticulation;

(iii) telecommunications;

(iv) party walls and floors/ceilings.

(v) any other network utilities.

(e) Easements in gross in favour of the Council adjoining banks of rivers, streams, lakes, wetlands or the coastal marine area not subject to an esplanade reserve or strip.

(f) Stormwater easements passing through esplanade reserves where drainage will be to the adjoining lake or river.

13.10.10 PROVISION OF ACCESS

(a) Whether provision for access to and within the subdivision, including private roads, has been made in a manner that will avoid, remedy or mitigate adverse effects on the environment, including but not limited to traffic effects, including effects on existing roads, visual effects, effects on vegetation and habitats, and natural character.

13.10.11 EFFECT OF EARTHWORKS AND UTILITIES

(a) Whether the effects of earthworks and the provision of services to the subdivision will have an adverse effect on the environment and whether these effects can be avoided, remedied or mitigated.

13.10.12 BUILDING LOCATIONS

(a) Whether the subdivision provides physically suitable building sites.

(b) Whether or not development on an allotment should be restricted to parts of the site.

(c) Where a proposed subdivision may be subject to inundation, whether the establishment of minimum floor heights for buildings is necessary in order to avoid or mitigate damage.

(d) Whether the subdivision design in respect of the orientation and dimensions of new allotments created facilitates the siting and design of buildings able to take advantage of passive solar gain (e.g. through a northerly aspect on an east/west axis).

Note: Attention is also drawn to the Visual Amenity rules applying in the General Coastal, South Kerikeri Inlet and Coastal Living Zones and in Outstanding Landscapes (see ***Chapter 10*** and ***Section 11.1***).

13.10.13 PRESERVATION AND ENHANCEMENT OF HERITAGE RESOURCES, VEGETATION, FAUNA AND LANDSCAPE, AND LAND SET ASIDE FOR CONSERVATION PURPOSES

(a) Whether any vegetation, habitats of indigenous fauna, heritage resources and landscape features are of sufficient value in terms of the objectives and policies in ***Chapter 12*** of the Plan, that they should be protected.

(b) Whether the means (physical and/or legal) by which ongoing preservation of the resource, area or feature will be achieved is adequate.

(c) Where there are Sites of Cultural Significance to Maori, (refer to ***Appendix 1F*** and the ***Resource Maps***), whether it is appropriate to require their protection by physical or legal means and/or to provide for access to the site over the land to be subdivided.

(d) Where a reserve is to be set aside and vested in the Council, whether the value of the reserve land is offset against the assessment of any financial contribution.

(e) Whether any measures are proposed to protect known high density kiwi habitats from predation by dogs, cats, rats, mustelids, pigs, and other animal pests.

(f) Whether the subdivision would have an adverse effect on the ability to protect listed historic buildings, places or objects and their setting or surrounds; and the protection of listed notable trees.

(g) Whether the subdivision will result in the permanent protection and/or enhancement of heritage resources, areas of significant indigenous vegetation and significant habitats of indigenous fauna, outstanding landscapes, outstanding landscape features or outstanding natural features.

(h) Whether the subdivision will result in the significant enhancement of biodiversity values through planting of native flora (preferably those species that naturally grow in the area) and ongoing management (including pest animal and plant control, fencing and replacement of failed plantings, stream enhancement and waterway protection).

Note: There are many ways in which preservation/protection can be achieved, and the appropriate means will vary according to the circumstance. In some cases physical means (e.g. fencing) may be appropriate. In other cases, a legal means will be preferred instead of (or as well as) physical means. Mechanisms other than a Consent Notice which may be acceptable include:

(i) a Maori reservation under s338 and s340 of Te Ture Whenua Maori (Maori Land) Act;

(ii) a conservation covenant with the Department of Conservation or the Council;

(iii) an open space covenant with the Queen Elizabeth II National Trust;

(iv) a heritage covenant with the Heritage New Zealand Pouhere Taonga;

(v) a reserve under the Reserves Act.

13.10.14 SOIL

(a) The extent to which any subdivision will contribute to or affect the ability to safeguard the life supporting capability of soil.

(b) The degree to which the life supporting capacity of the soil may be adversely affected by the subdivision and the degree to which any soils classified as I, II or III in the NZ Land Resource Inventory Worksheets are adversely affected by the subdivision.

13.10.15 ACCESS TO WATERBODIES

(a) Whether the subdivision provides public access to and along the coastal marine area or to and along banks of lakes or rivers, and whether that access is appropriate, given the nature of the land subject to the subdivision application, and the sensitivity of the waterbody to environmental effects resulting from the use of that access by the public.

13.10.16 LAND USE INCOMPATIBILITY

(a) The degree to which the proposed allotments take into account adverse effects arising from incompatible land use activities (including but not limited to noise, vibration, smell, smoke, dust and spray) resulting from an existing land use adjacent to the proposed subdivision.

13.10.17 PROXIMITY TO AIRPORTS

(a) The degree to which the proposal takes into account reverse sensitivity - adverse effects arising from incompatible land use activities arising from being in proximity to an airport (including, but not limited to, the hours of operation, flight paths, noise, vibration, glare and visual intrusion).

13.10.18 NATURAL CHARACTER OF THE COASTAL ENVIRONMENT

(a) The degree to which the proposal takes into account the preservation and/or enhancement of the natural character of the coastal environment.

13.10.19 ENERGY EFFICIENCY AND RENEWABLE ENERGY DEVELOPMENT/USE

The extent to which the application promotes energy efficiency and renewable energy development and use through the following initiatives:

(a) ability to develop energy efficient buildings and structures (e.g. by providing a north-facing site with the ability to place a building on an east/west axis);

(b) reduced travel distances and car usage by designing a layout with as many links to adjacent sites and surrounding roads as practicable;

(c) encouragement of pedestrian and cycle use by designing a layout that allows easy direct access to and from, shops, schools, work places, reserves and other amenities;

(d) access to alternative transport facilities;

(e) domestic or community renewable electricity generation;

(f) solar street lighting.

13.10.20 NATIONAL GRID CORRIDOR

Where it is proposed to have development within the National Grid Corridor particular regard shall be had to the following matters:

(a) Whether the design and construction of the subdivision allows for earthworks, buildings and structures to comply with the safe distance requirements of the New Zealand Electrical Code of Practice for Safe Distances (NZECP 34:2001);

(b) Provision for the ongoing operation, maintenance and planned upgrade of the National Grid.

Where an application is made for development within the National Grid Corridor as a non complying activity, Transpower New Zealand Limited will be considered an affected party in accordance with the Act.

13.11 NON-COMPLYING (SUBDIVISION) ACTIVITIES

Subdivision is a non-complying activity where:

(a) If a subdivision activity does not comply with the standards for a discretionary (subdivision) activity; or

(b) the subdivision is in a Coastal Hazard 1 Area, as shown on the ***Coastal Hazard Maps***;

(c) the subdivision is in the Recreational Activities and Conservation Zones. Any application for a subdivision in the Recreational Activities and Conservation Zones will be publicly notified; or

(d) a new boundary line passes through the Outstanding Natural Feature (***Appendix 1A***) or Outstanding Landscape Feature (***Appendix 1B***) or a lot is created which results in the only building site and/or access to it being located in the feature unless it is for creation of a reserve under the Reserves Act 1977. This clause does not apply within the Pouerua Heritage Precinct.

(e) if a subdivision activity does not comply with the standards of Rule 13.8.1 (National Grid Corridor).

The Council will use the assessment criteria in ***13.10*** as a guide when assessing non-complying subdivision activities in conjunction with the matters set out in Sections 104, 104B, 104D and 106 of the Act.

13.12 STRUCTURE PLANS

Structure plans are valuable tools to co-ordinate development carried out by individuals, and particularly urban development on the periphery of existing settlements. Development carried out in accordance with a structure plan will ensure that proper provision is made for roads, reserves, community facilities and public works so that the new area of development is a logical and workable extension of the existing development.

A structure plan will be given effect to through a Proposed Change to the District Plan. The relevant provisions of the Act will apply to any such Proposed Change.

A structure plan may be prepared by the Council or by others as a preliminary to subdivision. The purpose of a structure plan is to establish the broad framework for development in a particular area. The plan will

make provision for the community infrastructure which is needed, and will ensure that individual development decisions and applications in the area covered by the plan are co-ordinated and consistent with the District Plan.

A structure plan will consist of plans and written material and should include information on the following:

(a) the size and location of the area covered by the structure plan;

(b) the topography and geography of the structure plan area;

(c) the classification of the soil;

(d) the geotechnical aspects of the structure plan area;

(e) the presence of natural hazards (such as flood prone land or land liable to erosion);

(f) the identification of any outstanding landscapes and natural features, areas of significant indigenous vegetation and significant habitats of indigenous fauna, or heritage resources;

(g) the proposed roading pattern for the area (including footpaths and cycleways);

(h) the proposed reserves network for the area;

(i) the proposed location of community facilities such as halls and community centres;

(j) the proposed location of rural, residential, commercial and industrial environments;

(k) the requirements (if any) of network utility operators such as electricity, telecommunications, education and healthcare;

(l) the Low Impact Design principles utilised to reduce impermeable areas and reduce stormwater runoff volumes and avoid or mitigate adverse effects on receiving environments.

Pacific Ocean

Far North District

Kaipara District

Whangarei District

Kiwi_distribution_2018

Density

High

Present

10 Km

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community

NZTM
Not for publication nor navigation

Created for distribution by the Far North District Council

Kiwi Distribution in the Far North June 19

Department of Conservation
Te Papa Atawhai

New Zealand Government

High density kiwi and kiwi present areas

The council has Department of Conservation maps showing “kiwi present” and “high density kiwi” zones within Northland. Call count monitoring and survey data, kiwi distribution known by Northland kiwi practitioners and landowner reports have all contributed to the development of the maps. These maps are in general terms and are drawn at a large scale and this limits the precision. They should be seen as a guide.

Important Note - The property that is the subject of this LIM is within an identified kiwi present, or high density kiwi area. Please check the record of title for the property, and any resource consents applying to the property, for anything restricting or prohibiting the keeping of cats and dogs and mustelids (kiwi predators). Where such a restriction exists, the property owner must abide by that restriction. You can obtain a copy of the record of title by undertaking a title search through Land Record Search | Toitū Te Whenua - Land Information New Zealand (linz.govt.nz)

Where there is no existing restriction applying, property owners can help by voluntarily taking measures to minimise the risk to kiwi from predation by dogs and cats, either by not having any cats and/or dogs on the site, or where there are cats and/or dogs, by taking practicable steps to keep them under control, especially at night and especially when there are likely to be chicks and juvenile kiwi present.

Further information can be obtained about kiwi areas and predator risk form the Department of Conservation.

Assessment of Environmental Effects (AEE)
Resource Consent Application - Retaining Wall
22 Bowden Road, Taupo Bay

Applicant: Treston Elliott Laybourn
Date: 18 September 2025

1. Site Description:

The subject site is located at 22 Bowden Road, Taupo Bay, Northland. It is zoned Rural Production under the Far North District Plan. The site is moderately sloping and stable, with no sensitive ecological areas or waterways nearby.

2. Proposal Summary:

The proposal involves the construction of a retaining wall within 5.43m of the road boundary, breaching the 10m setback requirement under Rule 8.6.5.1.4 of the Operative District Plan. The retaining wall is designed to support stable ground and includes subsoil drainage.

3. Environmental Effects:

- The retaining wall is located on stable ground and does not affect neighbouring properties.
- Subsoil drainage is designed to relieve pore water pressure and will not discharge surface water.
- The site is elevated, and groundwater is expected to be minimal.
- The relocated wastewater disposal field maintains a 12m setback and complies with NRC requirements.

4. Compliance with District Plan:

- The proposal breaches the 10m road boundary setback; therefore, resource consent is required.
- All other aspects of the design comply with the District Plan and Building Code.

5. Supporting References:

- MBIE Determination 2020/031: Confirms subsoil drainage behind retaining walls is not subject to Clause E1 of the Building Code.
- AC2231 Practice Note: Provides engineering guidance supporting the drainage design and exemption from E1 compliance.
- Updated Site Plan: Shows relocated dripper lines and retaining wall location.

6. Conclusion:

The proposed retaining wall and wastewater field relocation are designed to meet environmental and engineering standards. The effects of the boundary setback breach are considered minor, and the proposal is consistent with the purpose of the Resource Management Act 1991.

Regards,

Treston Elliott Laybourn

RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD

Search Copy

R.W. Muir
Registrar-General of Land

Identifier	**318767**
Land Registration District	**North Auckland**
Date Issued	16 September 2008

Prior References
NA122B/938

Estate	Fee Simple
Area	4770 square metres more or less
Legal Description	Lot 4 Deposited Plan 379468
Registered Owners	

Treston Elliott Laybourn

Interests

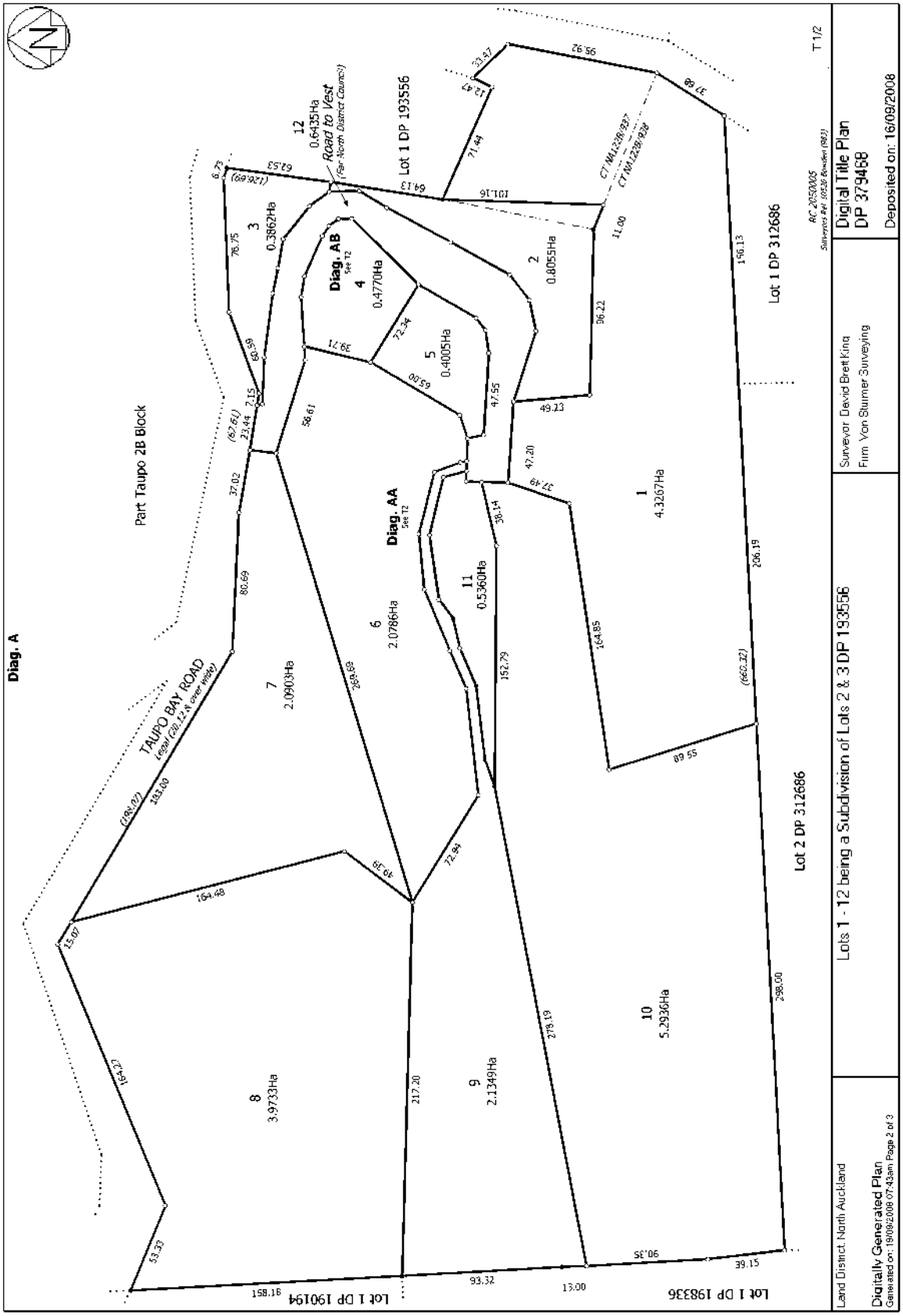
Subject to Section 8 Mining Act 1971

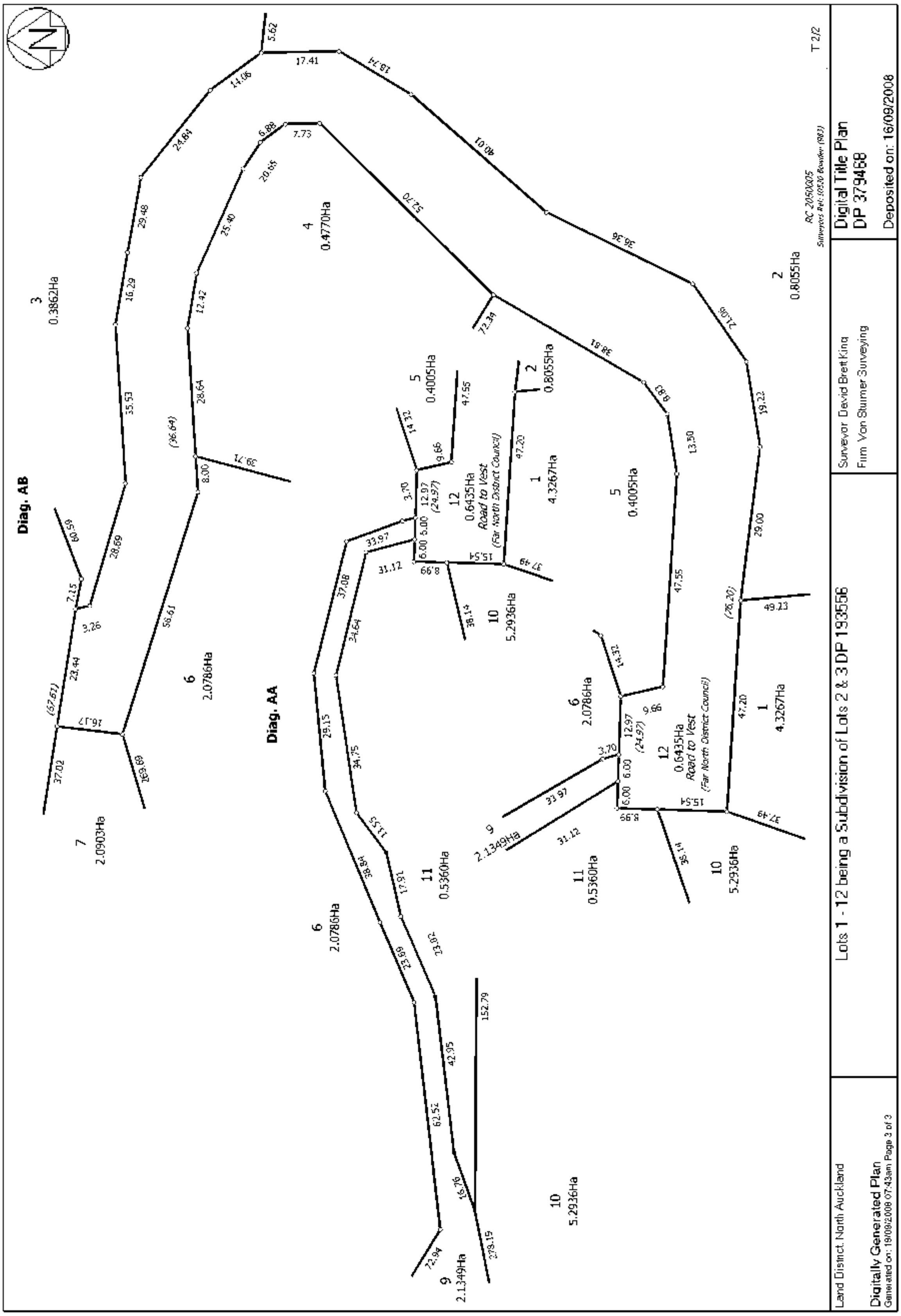
Subject to Section 5 Coal Mines Act 1979

Land Covenant in Easement Instrument 7938214.2 - 16.9.2008 at 9:00 am

10356872.3 Revocation of Covenant 7938214.2 insofar as it is over Lots 7 and 9 DP 379468 appurtenant hereto - 11.4.2016 at 6:57 pm

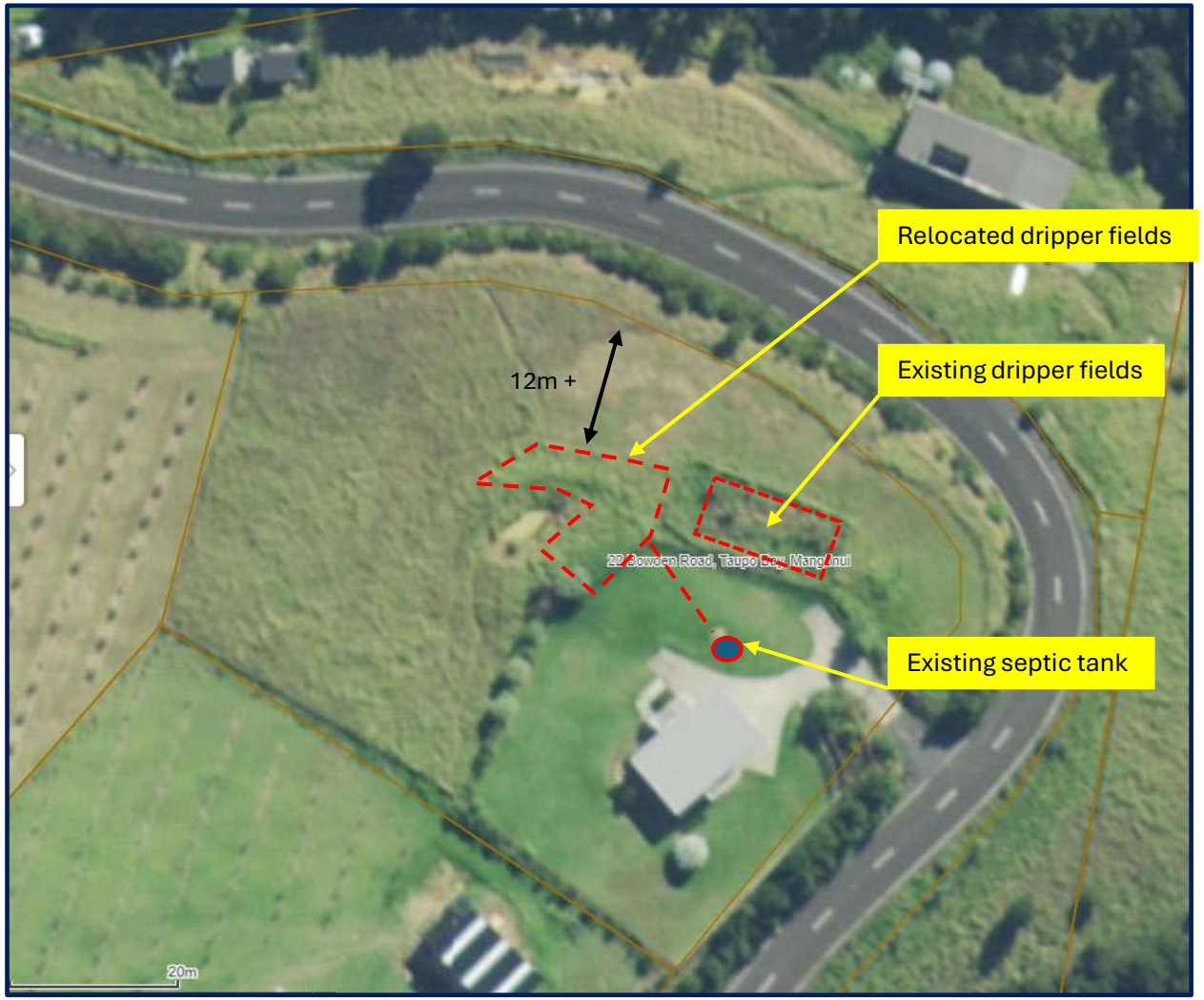
13134675.2 Mortgage to ANZ Bank New Zealand Limited - 25.10.2024 at 1:29 pm


Diag. A
Part Taupo 2B Block
TAUPO BAY ROAD
Lot 1 DP 193556
Lot 1 DP 312686
Lot 2 DP 312686
Lot 1 DP 190194
Lot 1 DP 198336
Diag. AB
Diag. AA
1 4.3267Ha
2 0.8055Ha
3 0.3862Ha
4 0.4770Ha
5 0.4005Ha
6 2.0786Ha
7 2.0903Ha
8 3.9733Ha
9 2.1349Ha
10 5.2936Ha
11 0.5360Ha
12 0.6435Ha
Road to Vest
Lots 1 - 12 being a Subdivision of Lots 2 & 3 DP 193556
Digital Title Plan
DP 379468
Deposited on: 16/09/2008
Surveyor David Bret King
Firm Von Stuimer Surveying
Land District North Auckland
Digitally Generated Plan


Digital Title Plan
DP 379468
Deposited on: 16/09/2008
Surveyor David Brett King
Firm Von Stumer Surveying
Lots 1 - 12 being a Subdivision of Lots 2 & 3 DP 193556
Land District North Auckland
Digitally Generated Plan
Diag. AA
Diag. AB
Road to Vest
(Far North District Council)
T 2/2

Dripper field relocation plan 22 Bowden Road, Taupo Bay plan – Building consent number: EBC-2026-203/0

- Move dripper lines to NE corner of property.
- Dripper field will maintain minimum 10m set back from property boundary, proposed area is 12m set back.
- Dipper fields are positioned on stable & moderate sloping ground.
- There are no waterways or sensitive ecological areas near the relocated site.
- Proposed site is clear or fill or structural loads.
- Proposed area will maintain original 194 m2 active disposal area with 64m2 reserve area.
- Maintain using pressuring compensating drip lines at 1m spacing, 0.4m emitter spacing.
- Fence area off from Livestock.
- 150mm of new, good quilty mulch placed over the dripper lines.
- Plant new proposed area with native plants.



Reference: https://farnorth.isoplan.co.nz/eplan/rules/0/22/0/0/0/72

Dripper field relocation plan 22 Bowden Road, Taupo Bay plan – Building consent number: EBC-2026-203/0

From: Treston Laybourn
To: LAYBOURN, Treston
Subject: Fwd: Fw: [EXTERNAL] EBC-2026-203/0 22 Bowden Road, Taupo Bay 0494 - Request for Further Information
Date: Thursday, September 18, 2025 4:59:00 PM
Attachments: image008.png
image009.png
image010.png
image011.png
image012.png
image013.png
image014.png
image010.png
image014.png
image009.png
image008.png
image012.png
image013.png
image011.png
E1 Determination Retaining Walls.pdf
ac2231-retaining-walls.pdf

---------- Forwarded message ---------
From: **Wayne Thorburn** <wayne@haighworkman.co.nz>
Date: Thu, 18 Sept 2025, 2:37 pm
Subject: RE: Fw: [EXTERNAL] EBC-2026-203/0 22 Bowden Road, Taupo Bay 0494 - Request for Further Information
To: Treston Laybourn <treston.laybourn@gmail.com>

Hey Treston,

There is no requirement as it is not surface water, therefore it does not need to comply with E1.

The purpose of the drain is to relive pore water pressure within the soil and the wall itself is a permeable wall (refer attached AC2231). There is also a determination on this by MBIE (2020-031), which states the subsoil drain behind a wall is not considered surface water as defined in Clause E1 of the Building Code.

Also refer to AC2231 from Auckland Council Section 9, stormwater should discharge to approved drain, this does not apply to subsoil drains as these are solely used to relieve water pressure behind the wall.

Mā te wā

Wayne Thorburn

CMEngNZ, CPEng (Geotechnical), IntPE(NZ)

Phone 09 407 8327 | Mobile 027 395 5940

wayne@haighworkman.co.nz

Website . LinkedIn . Careers

From: Treston Laybourn <treston.laybourn@gmail.com>
Sent: Thursday, 18 September 2025 1:20 pm
To: Wayne Thorburn <wayne@haighworkman.co.nz>
Subject: Fwd: Fw: [EXTERNAL] EBC-2026-203/0 22 Bowden Road, Taupo Bay 0494 - Request for Further Information

Hi Wayne,

Can you please refer to point 2 of the attached letter from FNDC, I will address the other points raised.

Is there a requirement to show how the water is dispered ? If so, is this not something that should've been in the plan ?

Thanks.

---------- Forwarded message ---------
From: **LAYBOURN, Treston** <Treston.Laybourn@police.govt.nz>
Date: Thu, 18 Sept 2025, 12:55 pm
Subject: Fw: [EXTERNAL] EBC-2026-203/0 22 Bowden Road, Taupo Bay 0494 - Request for Further Information

To: Treston Laybourn <treston.laybourn@gmail.com>

Get Outlook for iOS

From: Building Support <Building.Group@fndc.govt.nz>
Sent: Thursday, September 18, 2025 12:44:08 PM
To: LAYBOURN, Treston <Treston.Laybourn@Police.Govt.NZ>
Subject: [EXTERNAL] EBC-2026-203/0 22 Bowden Road, Taupo Bay 0494 - Request for Further Information

Good afternoon,

Please find attached letter requesting further information for the above consent.

For any enquiries please contact the letter writer on Freephone 0800 920029 or 09 4015200.

Please provide the requested information via email to bsg@fndc.govt.nz.

Yours faithfully

Siobhan - Building Support
Building Services Administration
P 6494070423 | Building.Group@fndc.govt.nz

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

Pokapū Kōrero 24-hāora | 24-hour Contact Centre 0800 920 029
fndc.govt.nz

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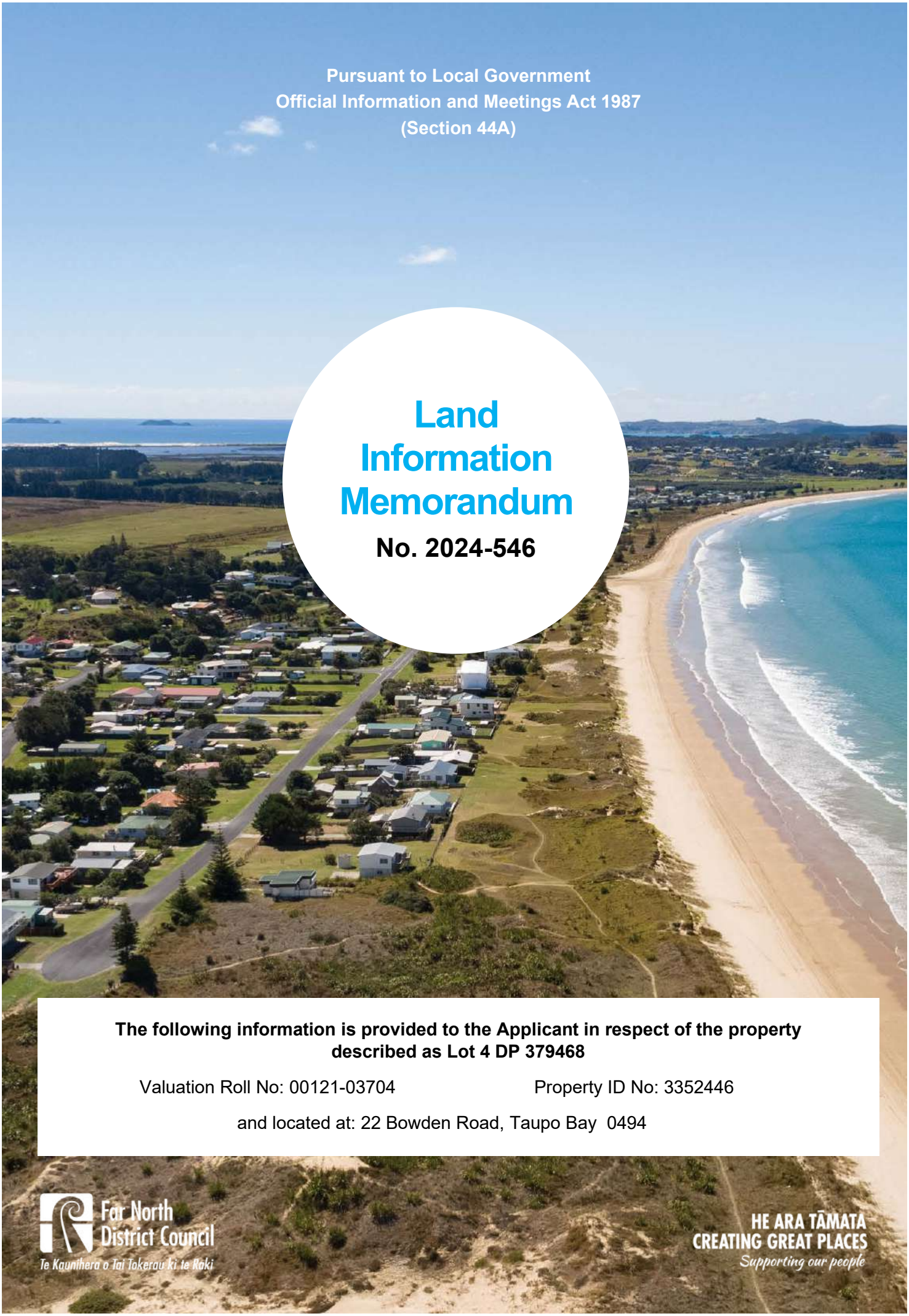
LAND INFORMATION MEMORANDUM

Disclaimer:

This Land Information Memorandum (LIM) has been obtained from the Auckland Council on behalf of the Vendors and copies are made available to prospective Purchasers and interested parties for general information purposes only. The information originates from a third party, the Far North District Council, and not from the Real Estate Salesperson, New Zealand Sotheby's International Realty or from the Vendor.

Neither the Vendors nor New Zealand Sotheby's International Realty warrants the accuracy of the LIM and no liability is accepted for any errors or omissions.

It is recommended to all Purchasers and interested parties that they make their own property file enquiries with the Auckland Council for 'Due Diligence' purposes, and your own investigations with your lawyer.



Pursuant to Local Government
Official Information and Meetings Act 1987
(Section 44A)

Land Information Memorandum

No. 2024-546

The following information is provided to the Applicant in respect of the property described as Lot 4 DP 379468

Valuation Roll No: 00121-03704 Property ID No: 3352446

and located at: 22 Bowden Road, Taupo Bay 0494

Far North District Council
Te Kaunihera o Tai Tokerau ki te Raki

HE ARA TĀMATA
CREATING GREAT PLACES
Supporting our people

Far North District Council
Te Kaunihera o Tai Tokerau ki te Raki

LIM-2024-546

Land Information Memorandum

Pursuant to Local Government Official Information and Meetings Act 1987 (Section 44A)

Date Lodged: 01-Feb-2024 **Receipt No:** 7756694 **Issued Date:** 14-Feb-2024

1. Personal details

NZSIR North
Attn: Sasha Teplovskaya
159 Hurstmere Road
Takapuna
Auckland 0622

Email: takapuna@northnzsir.com

For any queries relating to the contents of this LIM please contact the relevant department in question. Contact information can be found at the end of each section.

2. Special Features or Characteristics

Refers to the NZ Land Resource Inventory Worksheet – Land Use Capability Unit 6e9.

a	Slope	Strongly rolling to moderately steep.
b	Rock Type	Greywacke association of rocks.
c	Soils	Yellow-brown earth hill soils on greywacke and argillite. Moderately to strongly leached yellow-brown earths of Marua suite.
d	Potential Erosion	Moderate.
e	Avulsion / Alluvion	Nil
f	Falling Debris	Nil
g	Subsidence	Moderate potential.
h	Slippage	Moderate potential.
i	Inundation	Nil
j	Hazardous Contaminants	None known
k	Any other	-

Note: The above information is generic and may not be site-specific, for more information please click here.

If you have any queries regarding Section 2, please contact askus@fndc.govt.nz Subject: LUC query.

3. Disclosure of Rates for the Purposes of a Land Information Memorandum

The Local Government Official Information and Meetings Act requires that Council provide information relating to any rates owing in relation to the land covered by the LIM.

This disclosure document sets out the rate position as at the date shown below. It should be noted that this figure must not be taken as a settlement figure for the payment of outstanding rates as at the time of settlement of any purchase of the property concerned. It remains the responsibility of the vendor and purchaser to determine the final rates figure on the settlement date and ensure that this is paid in accordance with the requirements of the Local Government (Rating) Act 2002.

Valuation Number:		**00121-03704**
Rate Account No:		5009581
Rates Levied for the Current Year:	$	2,681.83
Date of Disclosure:		05-Feb-2024

2022 Rating Valuation Details		**00121-03704**
Land Value:	$	390,000
Improvement Value:	$	330,000
Capital Value:	$	720,000
Rating Value Area:		0.4770Ha

If you have any queries regarding Section 3, please contact rates@fndc.govt.nz.

4. Consents

Resource Consents	Includes Certificates, Notices and Orders where available.	
21-Nov-2007	2080338-RMAVAR	Variation to RC 2050005.
02-Jun-2005	2050005-RMASUB	Subdivision of Lots 1-3 DP 193556 created DP 379468.
20-Jan-2003	20318-RMAEWK	Excavation to provide access to Lots 3 & 5 DP 193556.
Monitoring	Nil	
Licenses	Nil	

The Council has no current record of a pool or spa pool registered on this property. Swimming pools and spa pools must have a barrier that complies with the Building Act 2004. Pool barrier information is available here.

If you have any queries regarding Section 4, please contact duty.planner@fndc.govt.nz.

5. Building Information

Status	Date of Issue	Number	Description
Code Compliance Certificate Issued	26-Jan-2017	CCC-2016-744/1	Construct a Prefabricated 2 Bedroom 1 Bathroom Dwelling in Advance yard and Relocate to Site within District then to Include Foundations Deck Services and new OSD Wastewater System.
Building Consent Issued	14-Mar-2016	BC-2016-744/0	Construct a Prefabricated 2 Bedroom 1 Bathroom Dwelling in Advance yard and Relocate to Site within District then to Include Foundations Deck Services and new OSD Wastewater System.

Comments:

- See Onsite Wastewater Disposal information attached, dated 08-Feb-2024.
- Council reserves the right to serve requisitions whenever found necessary.
- Memo attached - “Information Regarding Buildings where Council Holds no Record of Consents”.
- Domestic Smoke Alarms Guidance Notes attached.

Any known outstanding issues:

None known

Are there any unauthorised building works known to Council?

None known

Note 1: The Building Act 2004 was implemented from 31 March 2005 and replaced the Building Act 1991. All applications for building consents are now processed under this Act. Code Compliance Certificates do not apply to building permits that were issued prior to the Building Act 1991.

Note 2: Where a Code Compliance Certificate (a “CCC”) has not issued, reasons could be that the owner has not requested a final inspection, or that there is further work required to meet compliance.

Note 3: The Far North District Council does not copy building plans for Land Information Memoranda. Site and drainage plans are included if on file.

If you have any queries regarding Section 5, please contact building.group@fndc.govt.nz.

6. Development Contributions

From the 1st of July 2015, Council has ceased charging Development Contributions. For the term of this Policy Council will not require Development Contributions.

7. Utilities

a)	Drinking Water Supply	Not known
b)	Stormwater	Not Serviced
c)	Sewer	Not Serviced – On site

If you have any queries regarding Section 7, please email islrfs@ventia.com

8. Land Uses

Far North District Plan

Land zoned as ***Rural Production*** under the Far North District Plan.
*(*Please refer to attached zone rules for Land Use and Subdivision activities).

Note: It is suggested that any queries you may have regarding any aspects of the Far North District Plan be referred to the Council’s Planning Department, Ph 0800 920 029.

9. Notices under Other Acts Notified by any Statutory Organisation

Nothing on file.

10. Notices by any Network Utility Operator

Nothing on file.

11. Road Legalisation Issues

If you would like information on your road classification, please contact howcanwehelp@nta.govt.nz.

12. Other Information

See Kiwi Distribution Zone map and Advice note attached.

Land Covenant in Easement Instrument & Revocation of Covenant registered on Title.

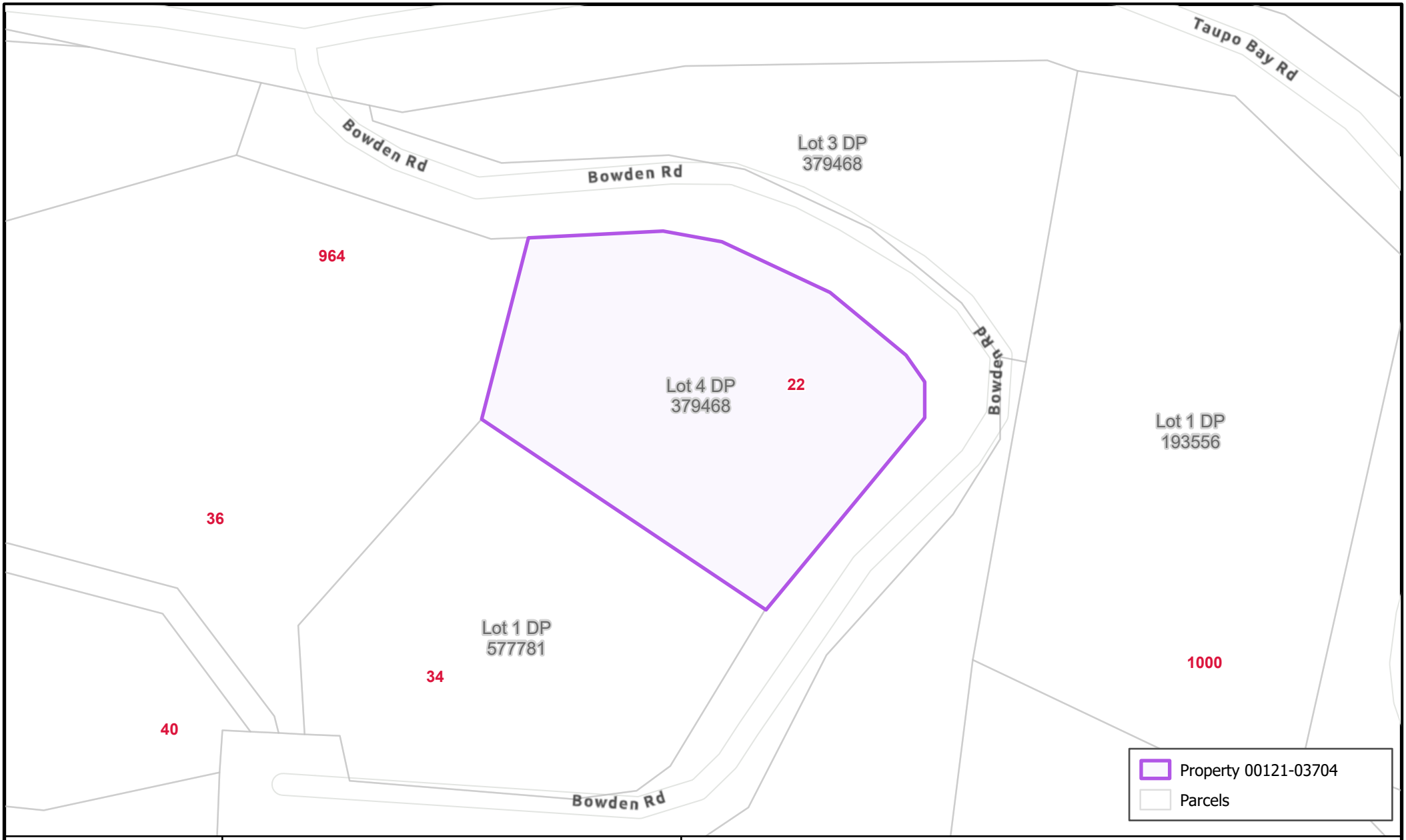
The Far North District Council is planning a number of new infrastructure projects across the district. When these projects are completed, the rates for the property subject to this Land Information Memorandum report may increase. These projects, and any associated estimated rates increase, are reported on in the most recent Far North District Council Long Term Plan or Annual Plan document.

See information attached re: Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011.

L BRAIN
PROPERTY INFORMATION

Note for Applicants: The above information represents the information held by the Far North District Council in respect of any of the categories of information listed. Where the Council has advised 'not known' in respect of any category it is the responsibility of the applicant to undertake any other enquiries. No further comment concerning this property can be made without an inspection by a Council Officer. Such inspection will be carried out if you desire and a charge will be made for this service on a cost basis.

Disclaimer
The information in this Memorandum is provided for the use of the applicant alone and is not to be relied on by any third party. The Council assumes no responsibility to any person other than the applicant. Where information has been supplied to Council by a third party it cannot guarantee the accuracy of that information and it is supplied on the understanding that no liability shall arise or be accepted by the Council for any error contained there.



Far North District Council
Te Kaunihera o Tai Tokerau ki te Raki

Valuation: 00121-03704

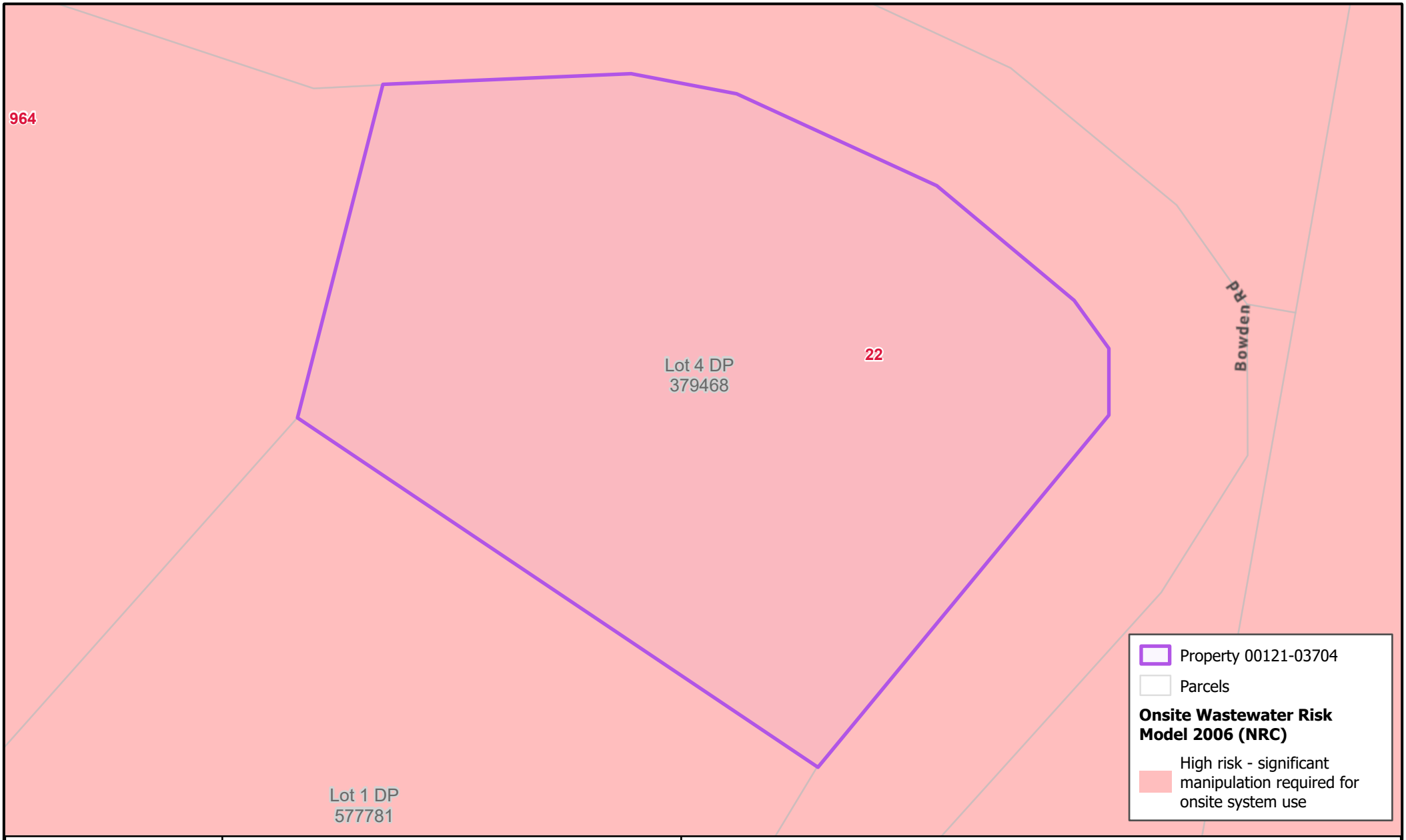
0 30 60 90 metres

Projection NZTM2000. Datum NZGD2000. Scale:1:1,067

DISCLAIMER:
While the Far North District Council strives to keep the data in this service current, it may not be the most recent or most accurate data available. No reliance on the information contained on this map by any person is permitted. FNDC will not be liable for any omissions or errors of information contained on this map. FNDC recommends that persons seek specific advice on individual properties from FNDC and other specialist organisations which may hold more up to date or accurate information.

LIM No. LIM2024-546

Created: 13/02/2024



Far North District Council
Te Kaunihera o Tai Tokerau ki te Raki

Onsite Wastewater Risk Model

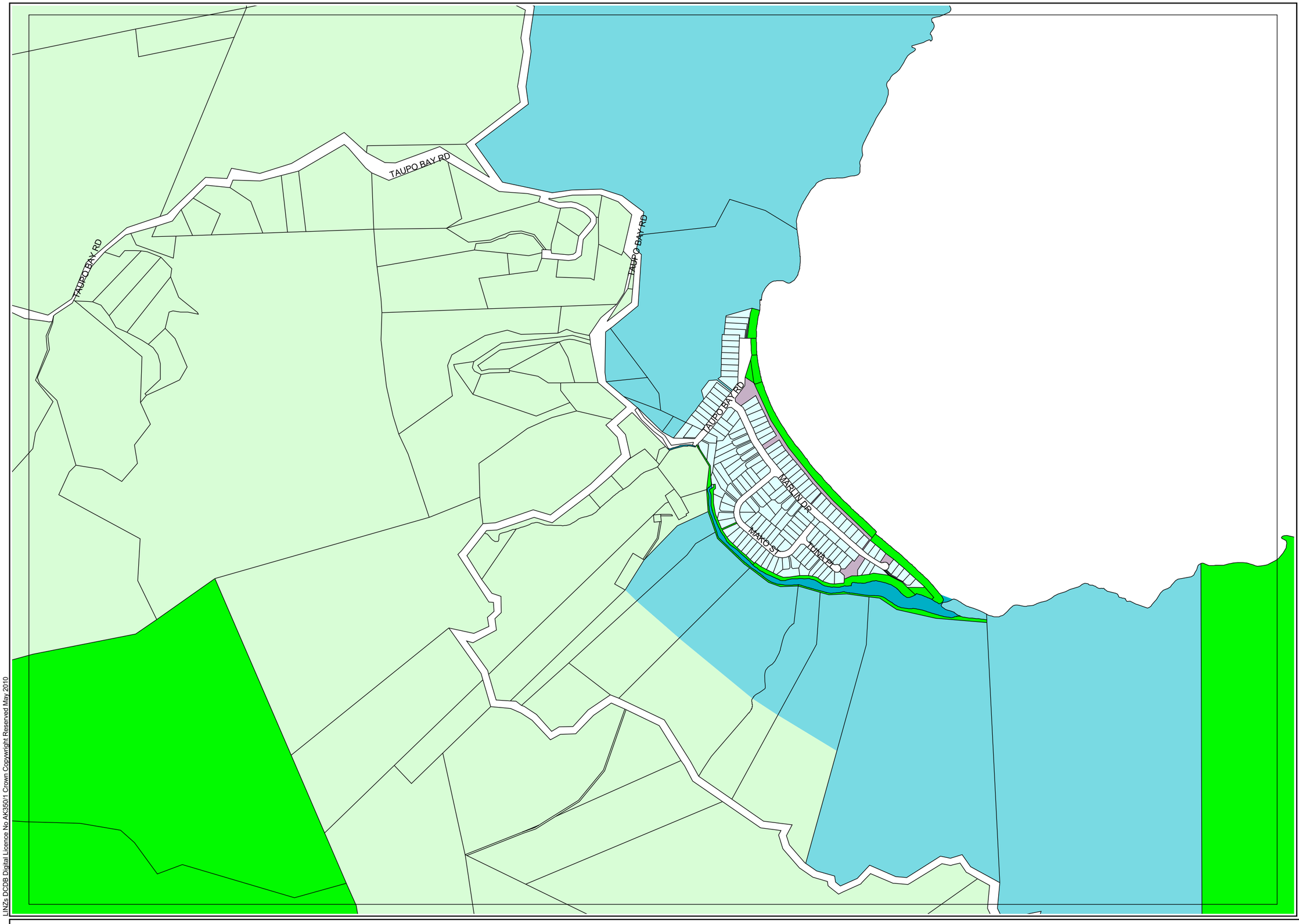
0 10 20 30 metres

Projection NZTM2000. Datum NZGD2000. Scale:1:582

DISCLAIMER:
While the Far North District Council strives to keep the data in this service current, it may not be the most recent or most accurate data available. No reliance on the information contained on this map by any person is permitted. FNDC will not be liable for any omissions or errors of information contained on this map. FNDC recommends that persons seek specific advice on individual properties from FNDC and other specialist organisations which may hold more up to date or accurate information.

LIM No. LIM2024-546

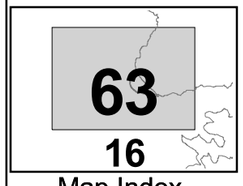
Created: 13/02/2024



Zone

- Conservation
- Coastal Residential
- General Coastal
- Lakes and Rivers
- Recreational Activities
- Rural Production
- Road
- Coastal Marine

Note :-
Roads carry the same zoning as the adjoining land. If a boundary between zones follows a road, the zone boundary is located on the centreline of the formed road, or where unformed, the centreline of the legal road



Map Index

Map 63

TAUPO BAY

Far North District Plan - Zone Maps

N

0 200 400 600 m

Scale 1:10,000

DISCLAIMER

Considerable care has been taken to avoid errors and omissions, and the latest information has been included in these District Plan maps. However, even with the greatest care inaccuracies may occur and therefore the Far North District Council cannot accept any responsibility for such errors and omissions.

FAR NORTH DISTRICT COUNCIL

FAR NORTH DISTRICT PLAN

IN THE MATTER OF
The Resource Management Act 1991

AND

IN THE MATTER OF
an application for a change or cancellation of resource consent conditions under the aforesaid Act by

Christopher Richard Bowden

FILE NUMBER: RC-2080338-RMAVAR

That pursuant to Section 127 of the Resource Management Act 1991, the Council grants its consent to RC-2080338-RMAVAR which is an application by Christopher Richard Bowden BOWDEN: SUBDIVISION BY PT BOUNDARY ADJUSTMENT FOLLOW-ON FROM RC 2030487 - VARIATION TO RC 2050005. This previous application was for a subdivision of 11 lots with a further lot to vest as road with the Council.

The following conditions of consent are now changed as follows:

1. The subdivision shall be carried out in accordance with the approved plan of subdivision prepared by Von Sturmers, attached to this consent with the Council's "Approved Plan" stamp affixed to it.

2. The survey plan shall show:
   a) Lot 12 to vest as road.
   b) Stormwater easements required for the conveyance of stormwater.
   c) The following amalgamation conditions:
      - "That Lots 4 and 5 DP 193556 and Lot 1 hereon be held in the same Certificate of Title"
      - "That Lots 1 and 11 hereon be held in the same Certificate of Title". {DLR Ref: 382243}

After consideration of the application under Section 104, the following reasons are given for this decision pursuant to Section 113 of the Act:

Minor variations to the approved plan of subdivision have been made due to the positioning of engineering works and accurate surveying of the proposed new boundaries. These changes do not affect the intent of the original application or increase the level of effects on the environment from it. As such the Council accepts the changes proposed.

An error in the decision notice is also rectified in Condition 2c), in that it is Lots 1 and 11 hereon that are to be amalgamated according to the face of the plan and the correspondence with the District Land Registrar.

DECISION PREPARED BY:

Tony Pickard RESOURCE PLANNER

CONSENT GRANTED UNDER DELEGATED AUTHORITY:

P J Killalea

Pat Killalea **RESOURCE CONSENTS MANAGER**

2nd November 2007 **DATE**

RC-2080338-RMAVAR

FAR NORTH DISTRICT COUNCIL

FAR NORTH OPERATIVE DISTRICT PLAN {Whangaroa}

AND

FAR NORTH PROPOSED DISTRICT PLAN

IN THE MATTER OF
The Resource Management Act 1991

AND

IN THE MATTER OF
an application for Resource Consent
under the aforesaid Act by

Christopher Richard Bowden

FILE NUMBER RC-2050005-RMASUB

That pursuant to Sections 105(1) (a) and (b), 108 and 220 of the Resource Management Act 1991, the Council grants its consent to Christopher Richard Bowden to subdivide a property at Taupo Bay Road, Mangonui 0557, being more particularly described as Lots 1-3 DP 193556 contained in certificate of title reference NA-122B/936-8 respectively (North Auckland Registry) to subdivide into 11 lots with proposed Lot 12 being road to vest which includes a boundary adjustment subject to the following conditions:

1. The subdivision shall be carried out in accordance with the approved plan of subdivision prepared by Von Sturmers, referenced 983, dated 1-7-04, and attached to this consent with the Council's "Approved Plan" stamp affixed to it.

2. The survey plan shall show:
   a) Lot 12 to vest as road.
   b) Stormwater easements required for the conveyance of stormwater.
   c) The following amalgamation conditions:
      - "That Lots 4 and 5 DP 193556 and Lot 1 hereon be held in the same Certificate of Title"
      - "That Lots 1 and 2 hereon be held in the same Certificate of Title".
      {DLR Ref: 382243}

3. That before a certificate is issued pursuant to Section 223 of the Act, the subdividing owner shall:

   a) Submit plans and details of all works for the approval of Council prior to commencing construction. Such works are to be designed in accordance with Council's Engineering Standards and Guidelines: 2004 and NZS 4404:2004.

      In particular the plans shall show:
      i) The road to vest in Council on lot 12 to be formed and sealed to comply with the Council standard for a Type A Rural Road.
      ii) The road to vest be sealed with a 2 coat chip seal (Grade 3 and 5).

iii) Road markings and street lighting on the road to vest.
iv) A formed and sealed entrance to the boundary of each lot in accordance with Council Standard FNDC/S/06.
v) A stormwater collection, control and discharge system.

vi) The proposed stormwater control works to be in place prior to and during construction.
vii) Permanent stormwater control structures.

b) Following approval of the plans and selection of the contractor provide to Council;

i) Details of the successful contractor
ii) Details of the planned date and duration of the contract
iii) Details of the supervising engineer
iv) A traffic management plan.

c) Provide for Council's approval a preferred road name and two alternatives for the road to vest.

4. That before a certificate is issued pursuant to Section 224(c) of the Act, the subdividing owner shall:

a) Upon completion of the works, provide certification of the work from a chartered professional engineer that all work has been completed in accordance with the approved plans.

b) Provide three copies of as-built plans which are to include the following information:

i) Drawings showing the location of all underground services, including co-ordinates of manhole lids and levels of manhole inverts and lids to DOSDLI datum. This information is also to be provided in a digital format to enable it to be added to Council's GIS data base.

ii) Stormwater overland flow paths including the extent and level of floodwater for a storm event with a 1% AEP.

iii) The area and extent of any fill material placed on the site.

iv) A schedule of assets, which are to vest in council, listing the quantity the unit rate and the value of each of the components (this information is required for valuation purposes)

v) Information for RAMM database;

- Subgrade depth, aggregate type and source
- Base course depth, aggregate type and source
- Lime or cement stabilisation details
- Seal coat details including binder type/grade and residual application rate

c) Provide evidence that a maintenance agreement has been entered into with the Contractor who is to maintain the work for a minimum period of 12 months. The minimum value of the bond is to be 10% of the construction cost.

d) Provide evidence that electrical and telecommunication services have been reticulated to the boundary of each lot.

e) Pay to Council the cost of purchasing and installing a road name sign for the road to vest.

In consideration of the application under Section 104 of the Act, the following reasons are given for this decision:

1. Written approval has been obtained from all persons and interested parties who might be adversely affected by the granting of consent to the proposal.

2. There are no apparent conflicts with the purpose of the Act, nor with the matters or principles noted in Sections 6, 7 and 8 of the Act, nor with the objectives and policies of the two relevant District Plans.

3. The imposed conditions will ensure compliance with the relevant rules of the District Plans, and will adequately avoid, or mitigate to a minor impact level, the expected effects on the environment.

STATUTORY INFORMATION

The following matters are noted as being relevant to the land, and possibly requiring additional action for statutory or code compliance. The applicant and any prospective purchasers should be aware of these matters; and hence the information will be placed on the property file and will be cited in any related Project or Land Information Memorandum that may be issued by the Council.

(1) Pursuant to Section 102 of the Local Government Act 2002, the Far North District Council has prepared and adopted a Development Contributions Policy. Under this Policy, the activity to which this Consent relates is subject to Development Contributions.

You will be advised of the assessment of the Development Contributions payable under separate cover in the near future.

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

Further information regarding Councils Development Contributions Policy may be obtained from the Long Term Community Consultation Plan (LTCCP) or Councils web page at www.fndc.govt.nz

(2) If during the course of undertaking the site works there is a discovery made of any archaeological find, or suspected find, the work on that portion of the site should cease immediately and the NZ Historic Places Trust and a representative of the relevant local iwi contacted. It is unlawful to modify, damage or destroy an archaeological site without prior authority from the Trust under the Historic Places Act 1993.

(3) The Revised Proposed District Plan shows that Lots 1-3 DP 193556 are located in an outstanding landscape unit therefore any future development may require resource consent.

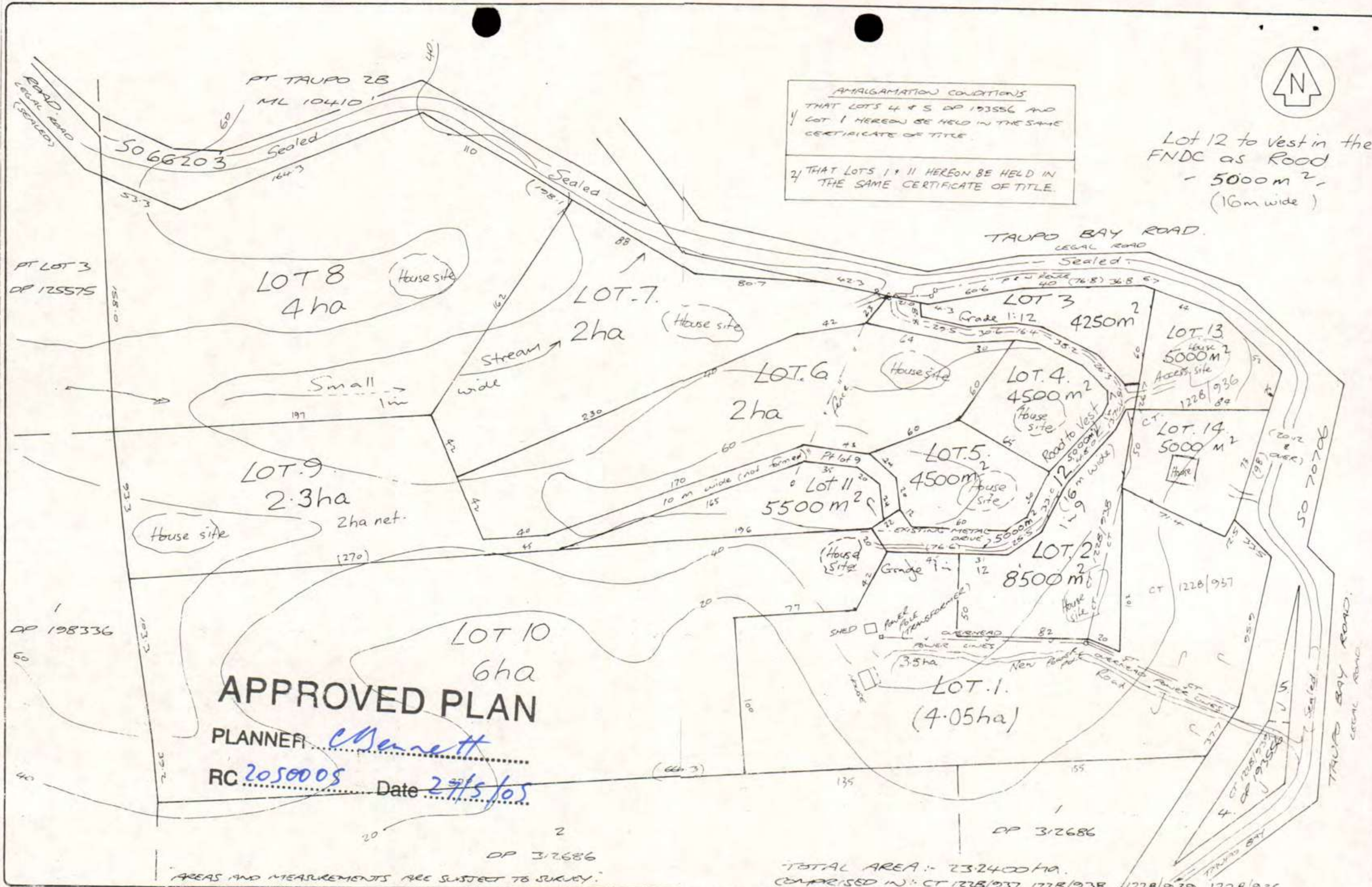
(4) That the landowner/s be advised of the consent notices currently registered on the certificates of titles for Lots 2 and 4 DP 193556.

DECISION PREPARED BY: Cristal Bennett, RESOURCE PLANNER

CONSENT GRANTED UNDER DELEGATED AUTHORITY:

P.J. Killalea 20 June 2005

PAT KILLALEA **RESOURCE CONSENTS MANAGER**



FAR NORTH DISTRICT COUNCIL
BLOCK 11 WHANGAROA SD.

PROPOSED SUBDIVISION OF LOTS 1, 2 & 3 DP 193556

This plan is for Resource Consent Purposes only (Areas are approximate)

PREPARED FOR CHRIS BOWDEN BY VON STURMERS, REGISTERED SURVEYORS, KAITAIA

SHEET 1

Land Registration District	Plan Number
North Auckland	DP 379468

Territorial Authority (the Council)

Far North District RC 2050005 RC 2080338 (Variation)

Certifications under the Resource Management Act 1991 ***(options that do not apply must be deleted)***

Pursuant to the Resource Management Act 1991 I hereby certify that:

☐ the above plan was approved by the Council pursuant to section 223 of the Resource Management Act 1991 on the 27th day of December 2007[1]

☐ the approval of the Council under section 223 of the Resource Management Act 1991 is subject to the amalgamation conditions set out hereon (see Consultation Number 382243)[2]

Dated this 27th day of December 2007

Authorised Officer

TA Approvals

Territorial Authority	Far North District Council TA Certification Division	**TA Reference**	rc 2080338
Survey Number	LT 379468	**Survey Purpose**	LT Subdivision
Surveyor Reference	10520 Bowden	**Land District**	North Auckland
Surveyor	David Brett King		
Surveyor Firm	Von Sturmer Surveying		
Dataset Description	Lots 1 - 12 being a Subdivision of Lots 2 & 3 DP 193556		

TA Certificates

Pursuant to Section 224(c) Resource Management Act 1991 I hereby certify that all the conditions of the subdivision consent have been complied with to the satisfaction of the Far North District Council Dated this 27th day of March 2008. ☑

Signature

Signed by Wayne Eric Smith, Authorised Officer, on 27/03/2008 02:48 PM

Receipt Information

Transaction Receipt Number	3312322
Signing Certificate (Distinguished Name)	Smith, Wayne Eric
Signing Certificate (Serial Number)	1019504140
Signature Date	27/03/2008

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

Plan Number

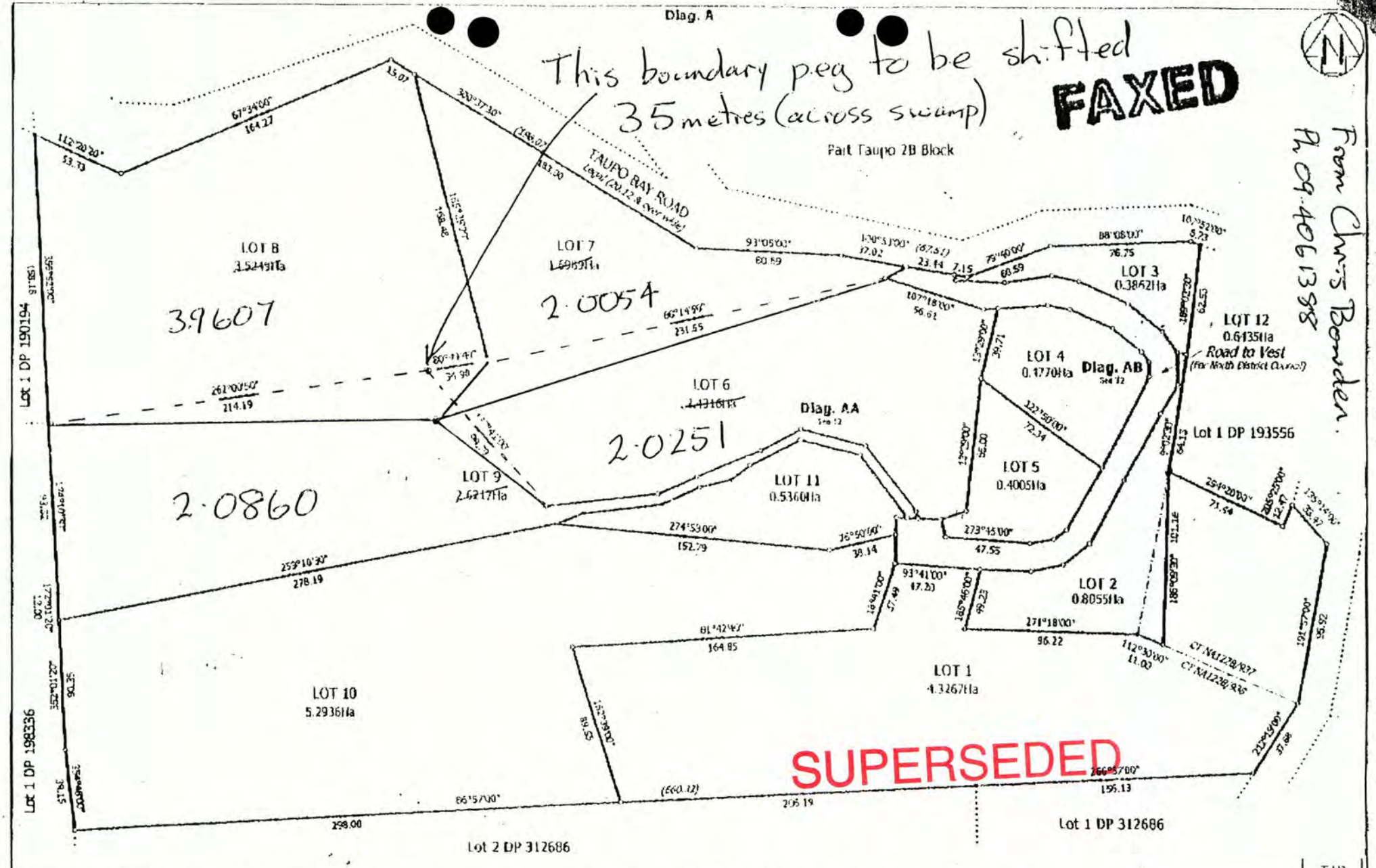
DP 379468	RC 2050005

Amalgamation Conditions
(Pursuant to s220 Resource Management Act 1991)

That Lots 4 and 5 DP 193556 and Lot 1 hereon be held in the same Certificate of Title.

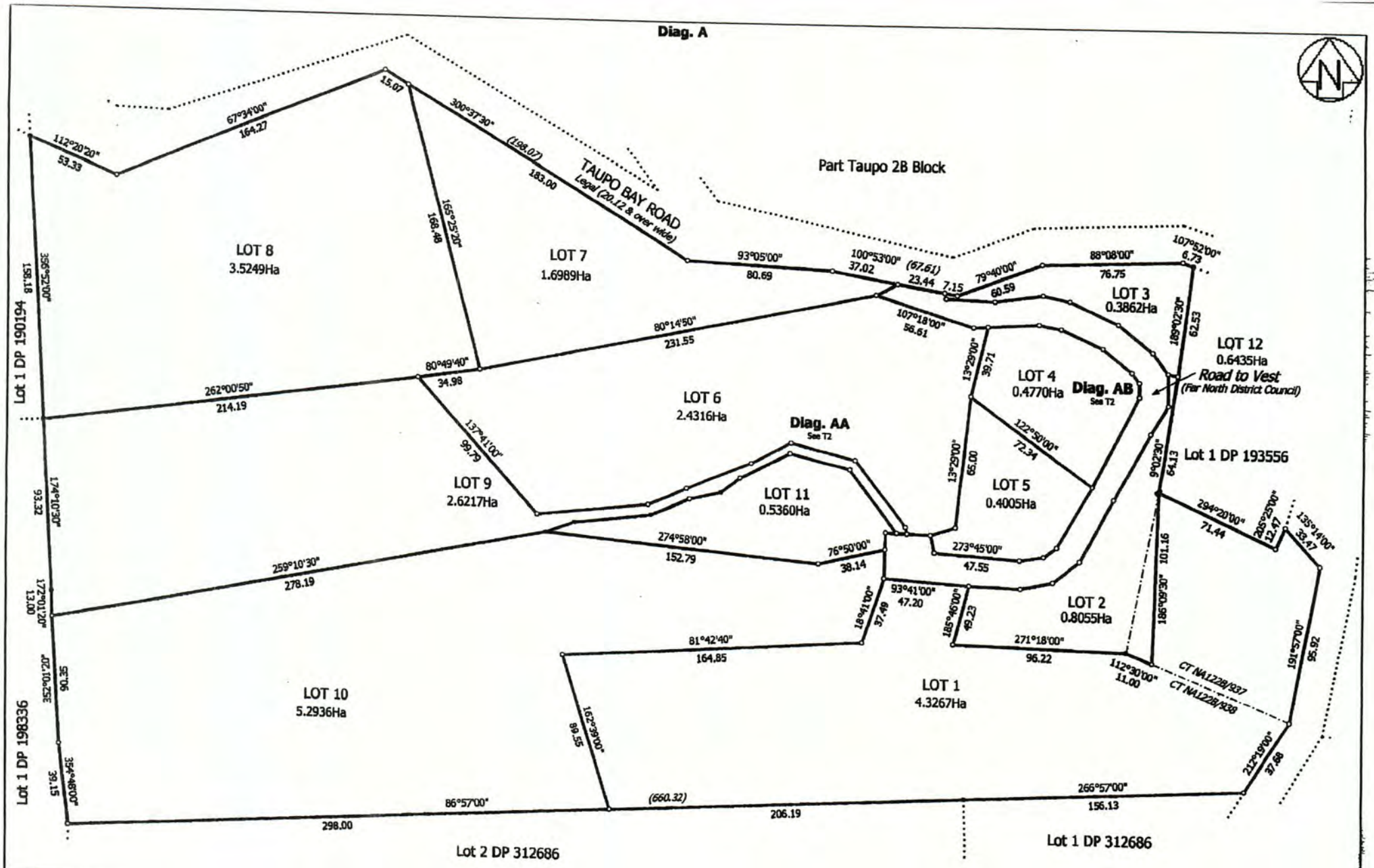
That Lots 1 and 11 hereon be held in the same Certificate of Title.

21-12-07



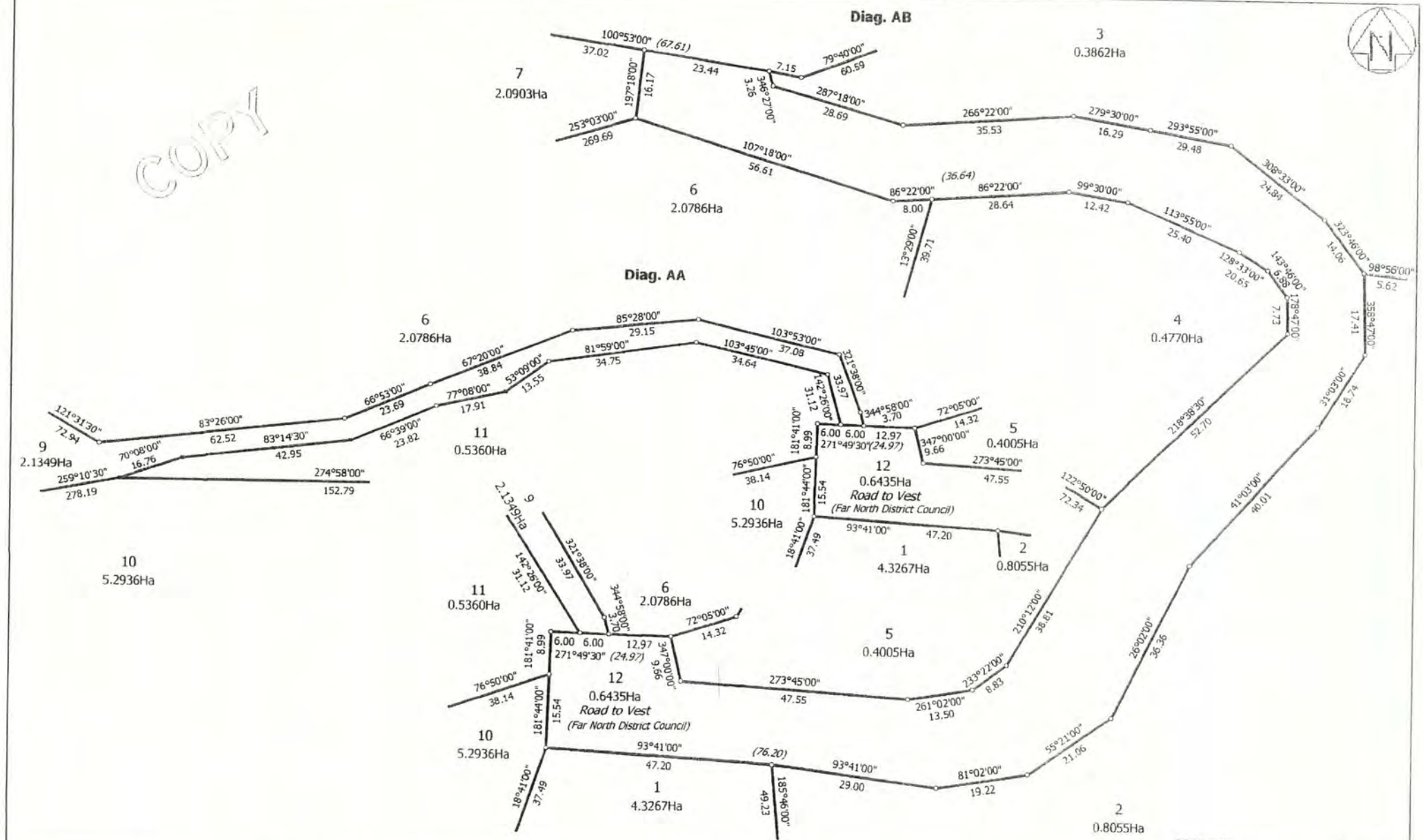
Land District North Auckland Digitally Generated Plan Generated on 15/12/2006 4:23pm Page 1 of 2	Lots 1 - 12 being a Subdivision of Lots 2 & 3 DP 193556	Surveyor: David Brett King Firm: Von Sturmer Surveying	Digital Survey Plan LT 379468

Diag. A



Land District: North Auckland Digitally Generated Plan Generated on: 15/12/2006 4:23pm Page 1 of 2	Lots 1 - 12 being a Subdivision of Lots 2 & 3 DP 193556	Surveyor: David Brett King Firm: Von Sturmer Surveying	Digital Survey Plan LT 379468

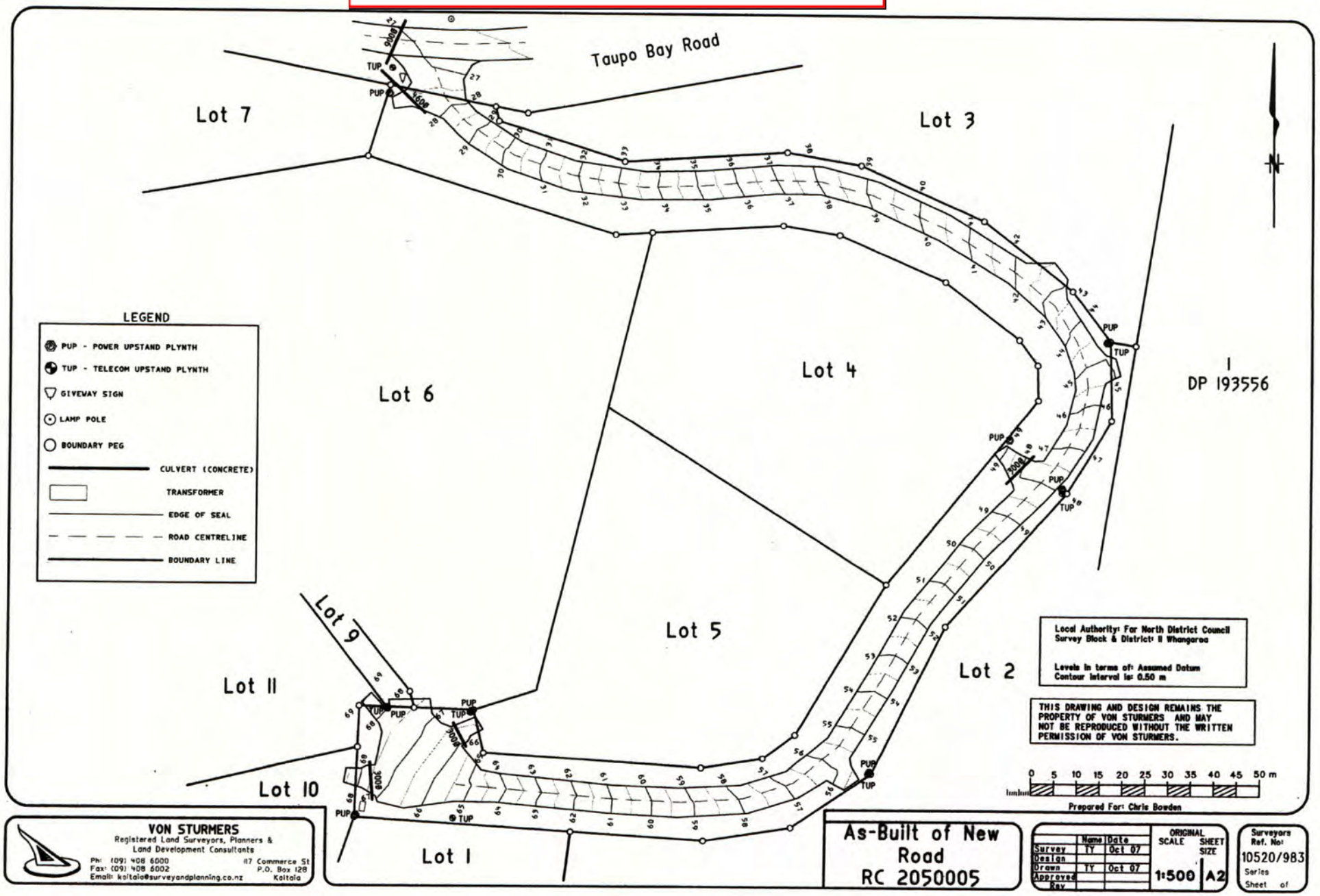
T 1/2



RC 2050005
Surveyors Ref: 10520 Bowden (983)

T 2/2

Land District: North Auckland Digitally Generated Plan Generated on: 09/11/2007 1:25pm Page 2 of 2	Lots 1 - 12 being a Subdivision of Lots 2 & 3 DP 193556	Surveyor: David Brett King Firm: Von Sturmer Surveying	Digital Survey Plan LT 379468



VON STURMERS
Registered Land Surveyors, Planners & Land Development Consultants
Ph: (09) 408 6000
Fax: (09) 408 6002
Email: kaitaia@surveyandplanning.co.nz
87 Commerce St
P.O. Box 128
Kaitaia

As-Built of New Road RC 2050005

	Name	Date
Survey	TY	Oct 07
Design		
Drawn	TY	Oct 07
Approved		
Rev		

ORIGINAL SCALE 1:500 SHEET SIZE A2

Surveyors Ref. No: 10520/983
Series
Sheet of

Member
ipeNz

RICHARD I. R. CATTERALL
M.A., M.I.C.E., M.I.P.E.N.Z.
CONSULTING ENGINEER

STORMWATER MANAGEMENT PLAN
PROPOSED SUBDIVISION OF LOTS 1, 2 & 3 DP 193556
964 TAUPO BAY ROAD, TAUPO BAY
For Chris Bowden
RC 2050005

INTRODUCTION

The proposed development is for reasonably large sized lots and hence the stormwater impact will be relatively minor.

The proposal is for the stormwater to be spread in a diffuse manner along existing flow paths to the existing roadside system.

SITE DESCRIPTION

The land is rolling country mainly in grass. There are two existing access roadways to the land as indicated on the attached plan. The main access (proposed Lot 12) currently provides a natural collection area fro stormwater from the higher land. There are existing culverts under this roadway which discharge to the land with diffuse flow. There are no signs of erosion or other problems with the existing system.

Stormwater from the land mainly flows down to the water table on Taupo Bay road and from there to the stream and hence to the sea.

GEOLOGY

The underlying rock on this land is sandstone and the exposed clays are quite sandy. Reasonable soakage of the soils can therefore be expected.

STORMWATER MANAGEMENT

In order to minimise the impact of the development on the downstream environment it is important to maximise the absorption of stormwater on the land.

The existing metal roadway (Lot 12) has 300 diameter culverts as shown. An additional culvert is required as marked. These culverts discharge directly to the

"Windermere" 2 Tasman Street, P.O. Box 53, Mangonui, Far North. Tel/Fax 09 406 0668

grass paddocks and it is proposed that the outlets are protected by rock spalls to disperse the flow and protect the immediate area from scouring and erosion. It is proposed to seal the roadway and increase its width which will require extensions to the existing pipes.

Stormwater from the development of the house sites on the various lots can best be managed on site. Roof water will be collected into tanks for household use and the overflow from the tank(s) should be directed into soakage pits with a broad overflow path for extreme storm conditions.

Driveway stormwater can be directed either to the access road or as diffuse flow across the downhill areas.

The practice of spreading the stormwater over the maximum area of the land will increase the soakage of stormwater and hence reduce the down stream effects in the local streams which are already know to flood during extreme stormwater events.

CONCLUSIONS

Stormwater can be managed on this property so that there is minimla effects on the environment.

R I R CATTERALL
MA, MICE, MIPENZ, CPEng

Mangonui
21 February 2005

FAR NORTH DISTRICT COUNCIL

121-03700

SCHEDULE B
EARTHWORKS PERMIT

9896 Nº 20318

DATE: 21/01/03

RECEIPT Nº: 223,957

PAID BY: Alister Whatmough

RCINF 2030487

VALUATION ASSESSMENT Nº:

1. OWNER: C.R. Bowden
ADDRESS: Tampo Bay Rd

CONTRACTOR: A. Whatmough
ADDRESS:

2. LOCATION: LOT: 3+5 D.P.~~45417~~ 193556 SECTION: BLK:
S.D.: STREET: TOWN/DISTRICT:

3. ZONING:

4. NATURE OF PERMIT {tick box}:
Excavation: ☑ Cellar: ☐ Filling: ☑
Length: ☐ Metres: ☐ Width: ☐ Depth: ☐

5. DESCRIPTION OF WORK AND MAIN USE OR PURPOSE:
Excavation to provide access

6. SPECIAL CONDITIONS:
1/ Install silt traps to remove silt & debris from stormwater runoff prior to its discharge into streams or water courses
2/ Reline the metal table channel to prevent scouring on the steep gradients
3/ Reestablish vegetative cover on all exposed surfaces

PERMISSION IS HEREBY GRANTED to carry out the proposed works described herein in accordance with the approved drawings, documents and conditions imposed: such work to be subject at any time during progress to inspection and to be carried out in strict conformity with the requirements and sub to the contractor taking full responsibility for any damage done to any works such as telephone cables, power cables, water mains, sewers, pipes, footpaths, ro or other services or any adjacent property.

Issuing Officer: R.M. Strano

Far North District Council

08-Feb-2024

According to Council records there is a Aerated System Installed at Lot 4, Bowden Road, Taupo Bay 0494. Under Councils "Onsite Wastewater Disposal" bylaw this system requires servicing every year.

- According to Council records, the system was serviced by Advanced Wastewater Systems Ltd on the 12 December 2018. The system was due for servicing by 12 December 2019, reminder letter sent to owner.

"Why do I need to maintain my wastewater system?"

Council's "Onsite Wastewater Disposal" bylaw requires every septic tank to be serviced every five years and alternative systems to be serviced as per Manufacturers requirements. The bylaw is applicable to every dwelling with an onsite wastewater disposal system. A full version of the bylaw is available for viewing on Councils website www.fndc.govt.nz

Far North District Council

Property ID: 3352446

FORM 7

CODE COMPLIANCE CERTIFICATE

Section 95, Building Act 2004

Building Consent Number: BC-2016-744/1

THE BUILDING

Street Address of Building: Lot 4, Bowden Road, Taupo Bay 0494

Legal description of land where building is located: Lot 4 DP 379468

Building Name:

Level/Unit Number:

Current, lawfully established, use: Residential - Dwelling

Location of Building within site / block number:

Year first constructed: 2017

THE OWNER

Name of Owner: Doreen Wilkinson

Contact Person Name: **Regan Simpkin**

Mailing Address:
PO Box 166
Kaitaia 0441

Street Address / Registered Office: As Above

Phone Number:

Landline: **09 408 7232**

Mobile: **021 242 3115**

Daytime:

After Hours:

Facsimile Number:

Email Address: regan@advancebuild.co.nz

Website:

First point of contact for communications with the building consent authority:

Far North District Council
Memorial Avenue
Private Bag 752
Kaikohe 0440
New Zealand

Freephone: 0800 920029
Phone: (09) 401 5200
Fax: (09) 401 2137
Email: ask.us@fndc.govt.nz
Website: www.fndc.govt.nz

BUILDING WORK

The following building work is authorised and issued by Far North District Council:

Construct a Prefabricated 2 Bedroom 1 Bathroom Dwelling in Advance yard and Relocate to Site within District then to Include Foundations Deck Services and new OSD Wastewater System

CODE COMPLIANCE

The building consent authority named below is satisfied, on reasonable grounds, that:

The building work complies with the building consent.

Signature: P.P.

Chris West

Position: Building Officer

On behalf of: Far North District Council (Building Consent Authority)

Date: 26 January 2017

Far North District Council

Property ID: 3352446

FORM 5

BUILDING CONSENT

Section 51, Building Act 2004

Building Consent Number: BC-2016-744/0

THE BUILDING

Street Address of Building
Lot 4, Bowden Road, Taupo Bay 0494

Legal description of land where building is located:
Lot 4 DP 379468

Building Name:

Location of Building within site / block number:

Level/unit number:

THE OWNER

Name of Owner:
Christopher Richard Bowden

Contact Person Name:
Brent Papworth

Mailing Address:
C/- Advance Build
PO Box 59
Awanui 0451

Street Address / Registered Office:
As Above

Phone Number:

Landline:
09 408 7232

Mobile:
021 983 741

Daytime:

After Hours:

Facsimile Number:

Email Address:
brent@advancebuild.co.nz

Website:

First point of contact for communications with the building consent authority:

Far North District Council
Memorial Avenue
Private Bag 752
Kaikohe 0440
New Zealand

Freephone: 0800 920029
Phone: (09) 401 5200
Fax: (09) 401 2137
Email: ask.us@fndc.govt.nz
Website: www.fndc.govt.nz

BUILDING WORK

The following building work is authorised by this building consent:

Construct a Prefabricated 2 Bedroom 1 Bathroom Dwelling in Advance yard and Relocate to Site within District then to Include Foundations Deck Services and new OSD Wastewater System

This building consent is issued under section 51 of the Building Act 2004. This building consent does not relieve the owner of the building (or proposed building) of any duty or responsibility under any other Act relating to or affecting the building (or proposed building). This building consent also does not permit the construction, alteration, demolition, or removal of the building (or proposed building) if that construction, alteration, demolition, or removal would be in breach of any other Act.

This building consent is subject to the following conditions:

This building consent is issued subject to the condition as specified by section 90 of the Building Act 2004, that agents authorised by the building consent authority are entitled to inspect, at all times during normal working hours or while building work is being done. Inspection means the taking of all reasonable steps to ensure that building work is being carried out in accordance with this building consent. The required inspections are detailed further in the consent in the appended information.

Important Imperative Information

The following will need to be addressed or provided with your Code Compliance Certificate Application (Form 6) prior to or at the final inspection:-

1. PS3 (As Built Plan) from the drainage installer.
2. Commissioning Statement and a signed Maintenance Agreement for the septic system.
3. All subfloor and deck fixings to be stainless steel.

Section 88 Restricted Building Work

This project has been identified as Restricted Building Works. On completion of any Restricted Building Work (RBW), every Licensed Building Practitioner who carries out or supervises RBW must:

- Provide the owner and the Council with a Record of Building Work stating what RBW the LBP carried out or supervised
- Provide written notice if the LBP ceases to be engaged or changes during the project
- Provide Record of Building Work(s) prior to issue of the Code Compliance Certificate

The Certificate of Design Work supplied with this consent has identified Restricted Building Works for the following:

Primary Structure

- All RBW design work relating to B1
- Foundations and subfloor framing
- Walls
- Roof
- Columns and Beams
- Bracing

External moisture management systems (carpenter, external plasterer, roofer)

- All RBW design work relating to E2
- Roof cladding or roof cladding system
- Ventilation system
- Wall cladding or wall cladding system

PIM/DP Conditions/Advice Notes

1. Please refer to 'Master' Project Information Memorandum BC2011-33 which covers buildings built at Advance Build yard in Awanui.
2. During the assessment of your application it was noted that a private Land Covenant exists on your property. Council does not enforce private covenants and this does not affect Council approving your plans. However you may wish to get independent legal advice, as despite having a building consent from Council, it can be enforced by those specified in the covenant.
3. All work required to re-instate the exterior including painting and repair of joinery shall be completed within six months of the building being delivered to the site. Reinstatement work is to include connections to all infrastructure services and closing in and ventilation of the foundations.
4. The applicant is responsible for the repair and reinstatement of the Council road surfaces, kerbs, footpath and any buried services damaged as a result of the relocation of the building.

COMPLIANCE SCHEDULE

A compliance schedule is not required for the building.

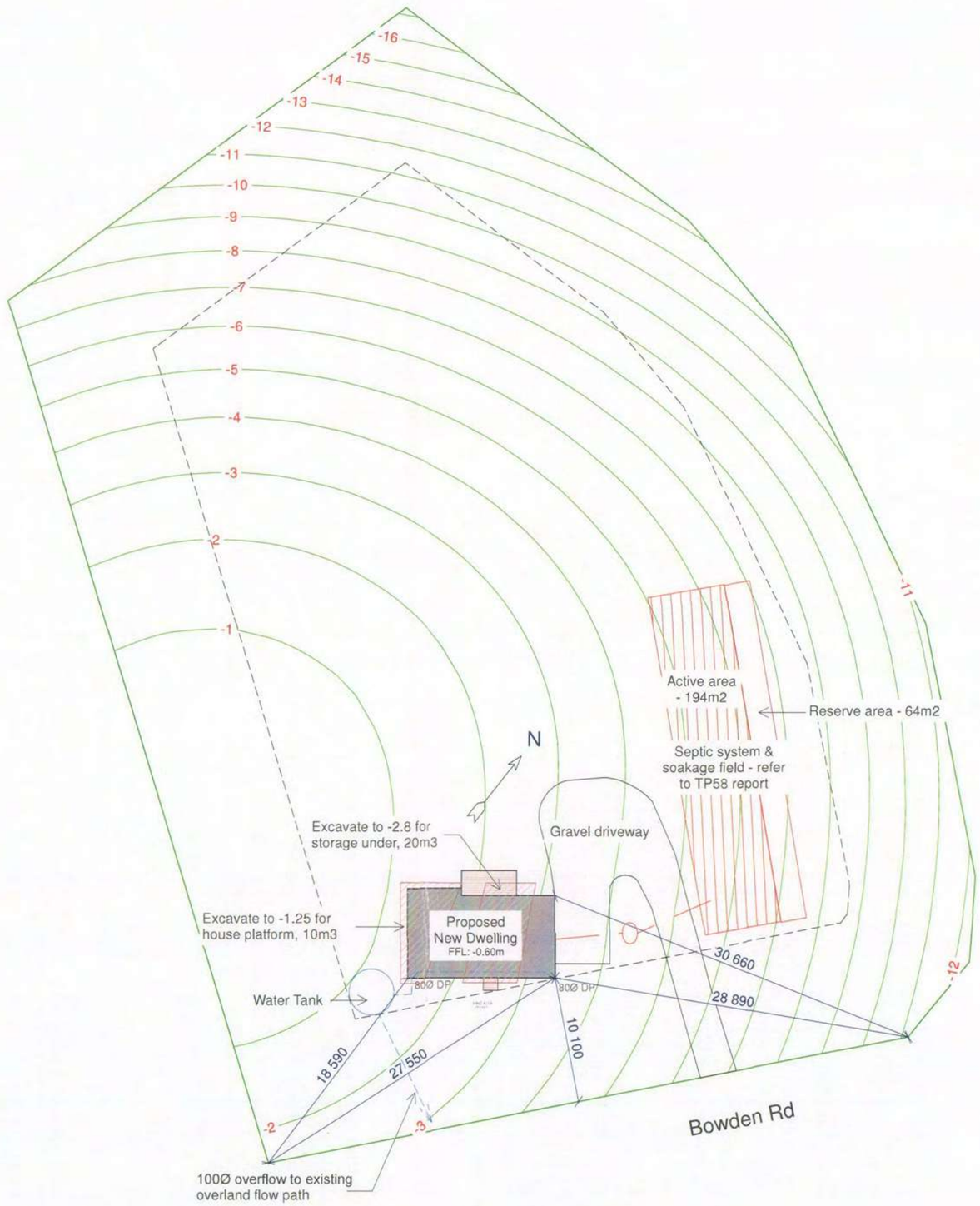
Signature:	pp. C. M. Dane.
	Chris West
Position:	Building Officer:
On behalf of:	Far North District Council (Building Consent Authority)
Date	15 March 2016

Site Information

Lot 4 Bowden Rd
Lot 4
DP 379468
Very High Wind Zone
Corrosion Zone D
Earthquake Zone 1
Zone: Rural Production
Valuation #: 00121-03701

Site area: 4770m2
Driveway area: 150m2
New buildings roof area: 106.5m2
Total impermeable surfaces: 256.5m2 = 5.4%

Cut Volume: 30m3
Fill Volume: Nil



FAR NORTH DISTRICT COUNCIL BUILDING CONSENT ISSUED
BC 2016/744 Date 14/3/16
District Plan Granting Officer:
Building Granting Officer:
Specific conditions are recorded on building consent

FAR NORTH DISTRICT COUNCIL
Approved Documents

Revision	By:	Date:
Drawn	DRM	30/11/15
Rev	DRM	8/12/15
Rev	DRM	11/12/15
FWD01	TAS	9/03/2016

Advance build
Ph 09 408 7232
Fax 09 408 7234
PO Box 59, Awanui 0451
www.advancebuild.co.nz

Proposed New Home
Doreen Wilkinson
37 Bowden Rd
Taupo Bay

Sheet Title:
Site Plan

Scale: 1 : 400 (A3 Original)

Project No:	Page:	Revision:
580	02	FWD01

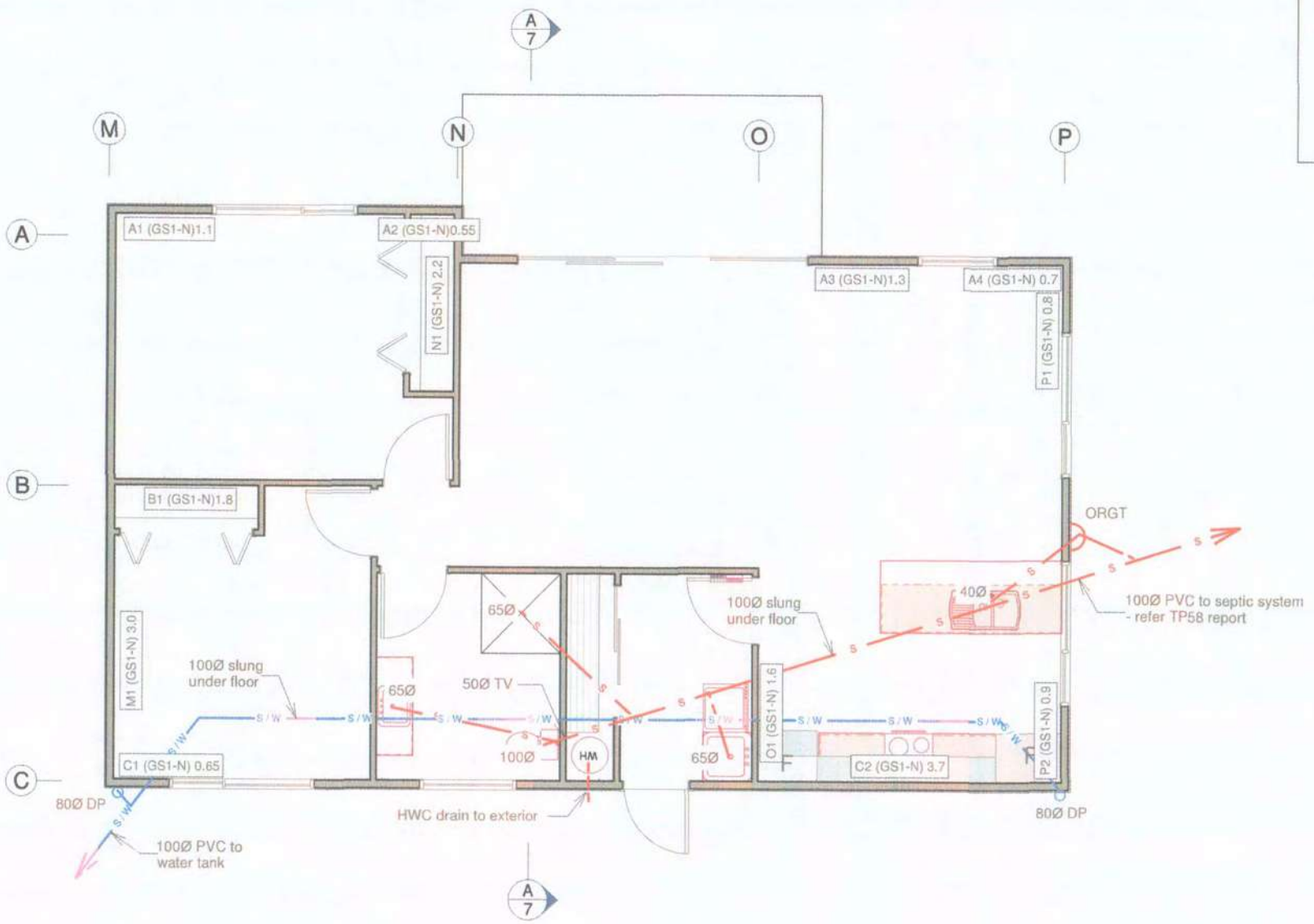
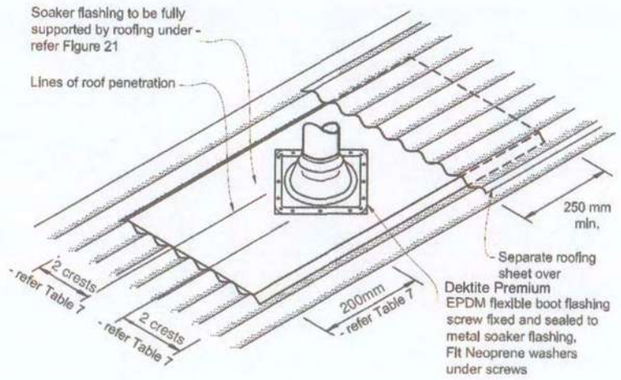


Figure 54: Soaker flashing for pipe penetrations
Paragraph 8.4.17

NOTE: (1) Suitable for pipes from 86 mm to 500 mm diameter.



Waste Pipe Gradients	
40Ø	1 : 40 min
65Ø	1 : 40 min
100Ø	1 : 60 min

Revision	By:	Date:
Drawn	DRM	30/11/15
Rev	DRM	8/12/15
Rev	DRM	11/12/15
FWD01	TAS	21/12/2015

Advance build
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Proposed New Home
Doreen Wilkinson
37 Bowden Rd
Taupo Bay

Sheet Title:
Bracing & Plumbing Plan

Scale: 1 : 75 (A3 Original)

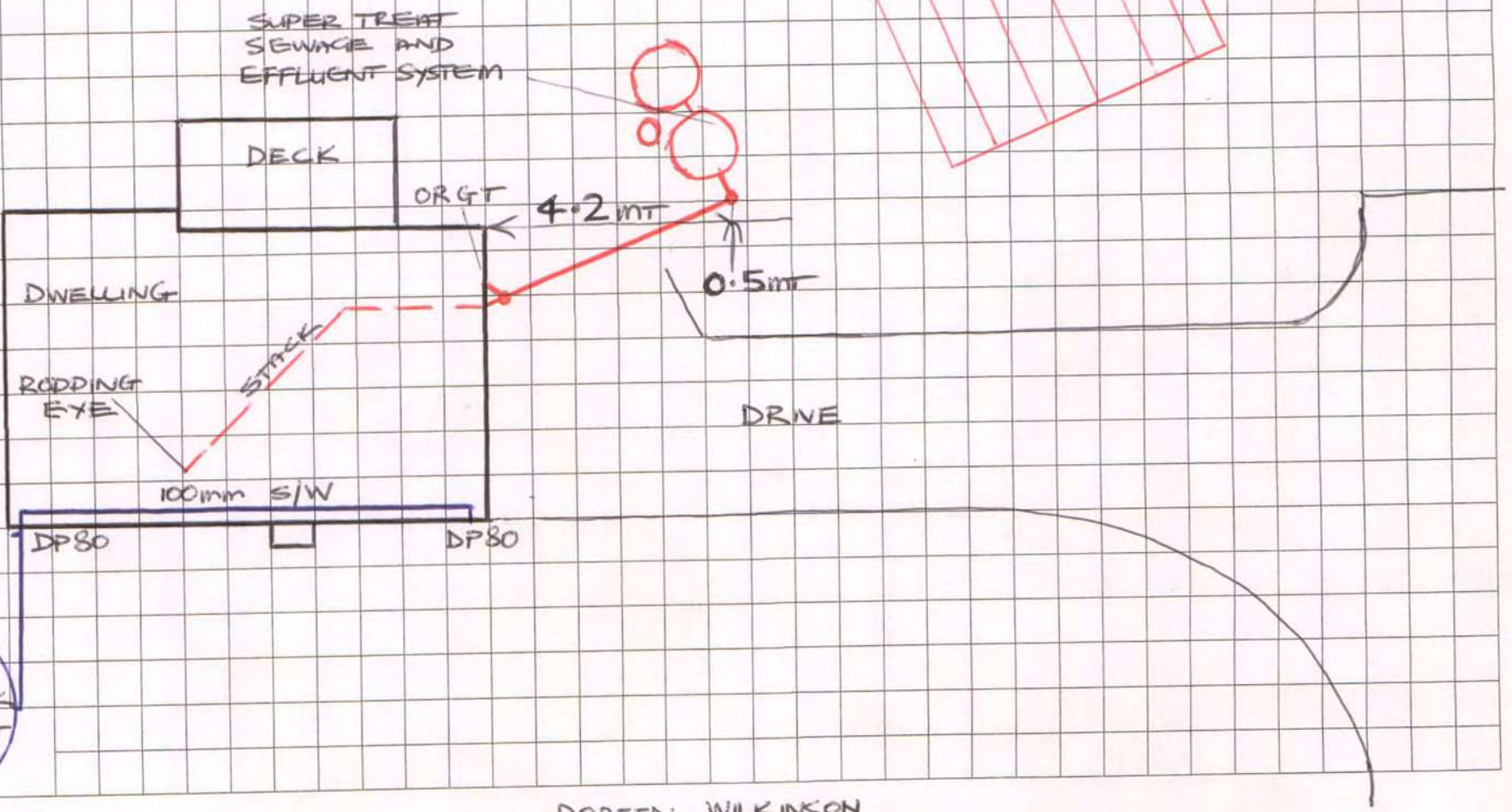
Project No:	Page:	Revision:
580	06	FWD01

Far North District Council

Complies with Building Consent No:

Trades person: GLEN MORROGH

Registration No: 05872



Signature:

Date:

20/7/2016

DOREEN WILKINSON
37 BOWDEN RD
TAUPO BAY

1 of 1

OBJECT ID: A1107503

REVIEW DATE: 1/08/2016

ADVANCE BUILD

VISION
CONSULTING ENGINEERS

LOT 4, BOWDEN ROAD, TAUPO BAY

ON- SITE WASTEWATER MANAGEMENT REPORT

5 February 2016 12378

ADVANCE BUILD
LOT 4, BOWDEN ROAD, TAUPO BAY
ON-SITE WASTEWATER MANAGEMENT REPORT

INTRODUCTION

Vision Consulting Engineers Ltd was requested to conduct a site assessment and prepare a design for the on-site wastewater management system for a proposed dwelling located at Lot 4, Bowden Road, Taupo Bay.

The objective of the investigation was to assess the site conditions and determine the indicative permeability of the soil at the planned location of the proposed effluent disposal field. This information was then analysed and a design carried out to determine an appropriate wastewater treatment and disposal system suitable to the site conditions and the calculated volume of waste to be produced.

SITE CONDITIONS

Disposal of treated effluent is proposed over an area of moderately sloping land falling mostly to the north-east with a linear divergent shape.

The area has moderate to high exposure to wind and moderate exposure to sunlight.

Subsurface investigations undertaken on the 14/01/16 revealed a 0.3m layer of topsoil followed by a residual soil being CLAY with minor silt to a depth of 1.7m.

Soil unit at test level:	CLAY with minor silt
Measured static water table level at time of investigation:	> 1.7m below EGL
Presence of mottling in soils above water table:	No
Anticipated perched / seasonally elevated water table level:	>0.6m below EGL
Drainage required:	Yes, cut off above field
Distance between proposed disposal field and nearest bore-supply/well:	>500m from the site

EVAPOTRANSPIRATION POTENTIAL

The proposed site of the disposal field will have a moderate to high exposure to wind and moderate exposure to sun assisting the potential for evapo-transpiration to occur.

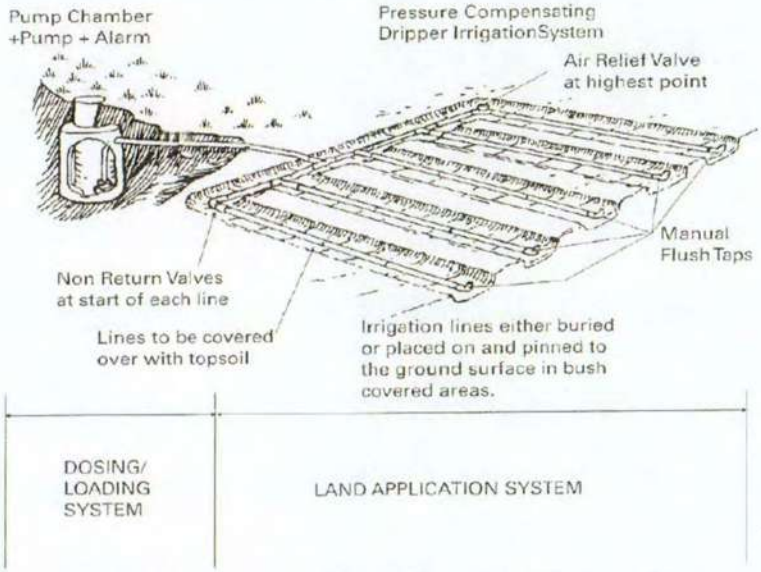
EFFLUENT DISCHARGE

Proposed development:	2 bedroom house
No. of Permeability Tests:	1
Clearance:	Maintain 1.5m clearance from all site boundaries/ all buildings / topographical discontinuities, 15m from any surfacewater channels or open drains, and 0.6m above winter groundwater table.
Reserve area available:	Yes, along the northern/down slope side of the active field area.
Total number of bedrooms:	2
Total number of occupants:	4 people
Water Supply Source:	Roof water collection
Design Wastewater Discharge:	145 litres / person / day
Total daily discharge rate:	580 litres /day
AS/NZS 1547 Classification:	Category 6 to 7, non-swelling to swelling clay, slow to non-draining
Design loading rate (DLR):	3.0 ltr/m2/day

TREATMENT & DISPOSAL

Primary Treatment: Standard Secondary Aerated Treatment

Disposal Method: Drip irrigation. Typical layout as follows:



Note: Above is one example, there are alternatives to the layout shown

At this site, we would recommend that irrigation lines are sub-surface pressure compensating drip lines and covered with a 150mm layer of top soil or leaf litter/mulch.

Disposal Area required: We recommend an aerial loading area of 194 square metres. Fill was not identified on site during the site walkover. We recommend that the disposal area be clear of any fill supporting structures. The area of the proposed effluent field should be protected from surface water run-on via drains constructed around the perimeter.

Distribution field pipework: The distribution field would consist of 194 lineal metres of pressure compensating drip irrigation lines laid at lateral lengths no greater than 75 metres long will be needed on the site. Lines should be laid at 1m centres with 1.6L/hr drippers at 0.4m centres generally on the contour. See conceptual schematic above. Distribution field to be fenced off from livestock.

Reserve Area: 64 square metres 33% of design Disposal Area.

Notes:

1. The use of alternative layouts is acceptable provided the layout meets the manufacturer's recommendations.

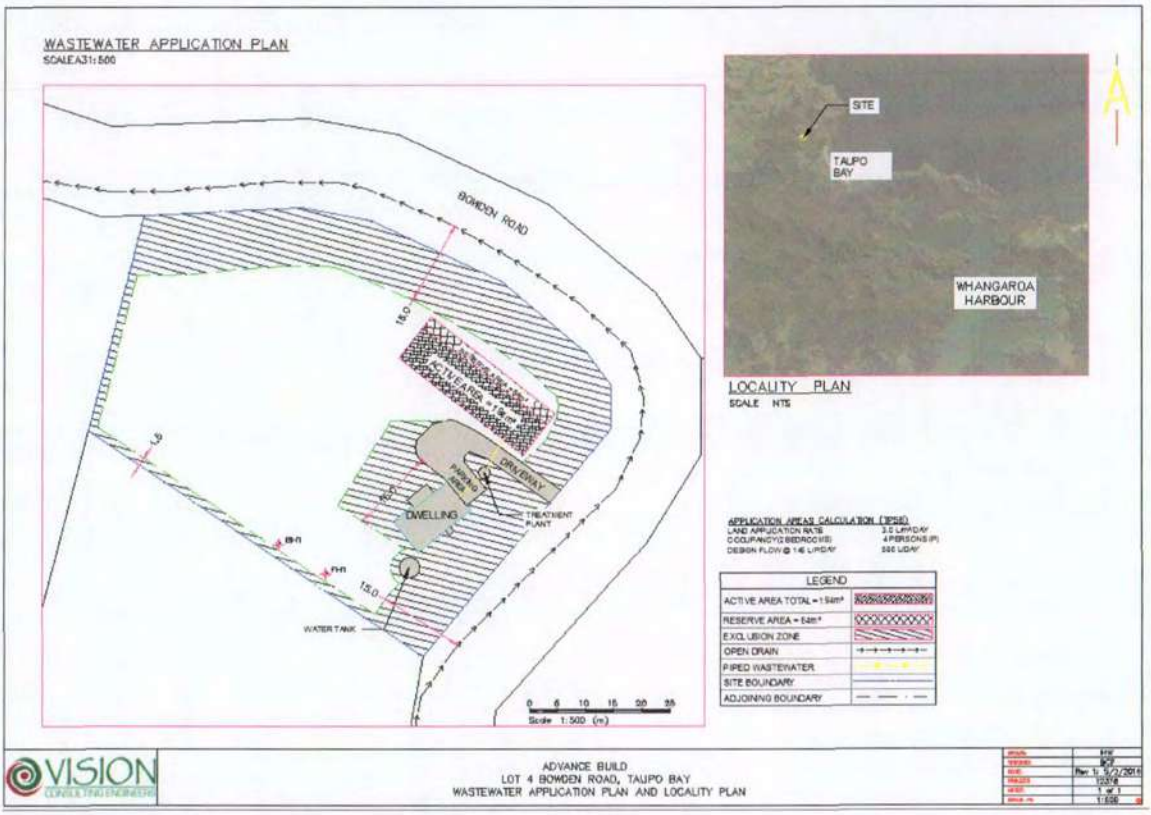


Figure 1: Proposed effluent disposal areas

STORMWATER MANAGEMENT

Stormwater flows from any sealed parking area or water tank overflows to be piped or channelled away to the open drain in the road reserve.

MONITORING, OPERATION AND MAINTENANCE

The owner should be responsible for the operation and maintenance of the household system, which shall include full operational and maintenance details and service provider attendance and actions as shown in Table 1.

Table 1

Level of attendance and responses.	3 Monthly	Annually
1. Site Inspection - Visual assessment of overall system for unusual noise, odour, damage, potential infiltration ex gully trap, access lids, vents etc. Rectify any issues.	✓	
2. Septic Tank - Clean filter Check lids Check and log sludge and scum levels (arrange for ST desludging when sludge or scum levels exceed 300mm)		✓
3. Recirculation Tank - Clean filter Check lids Check sludge and scum levels Check pump Current draw Floats Pump cycle time noise		✓
4. Textile POD (if applicable) Check lids integrity Check even distribution of flow over textile		✓
5. Irrigation Pump Check lids Visual check of effluent quality Check pump Current draw Floats Pump cycle time Pump flow rate Noise Check high level alarm initiates telemetry call-out		✓
6. Irrigation Field Walk entire area and check for signs of breakout or non-uniform discharge Purge all laterals Check air/vacuum valves	✓	
7. Alarm Responses a) Determine and rectify the fault. If fault cannot be rectified immediately arrange for offsite tankerage for effluent until fault repaired. b) If alarm is due to excessive flows: i. Visit site and confirm that treatment and disposal system is coping. ii. Identify reason for high flows and rectify if possible. iii. If the fault is considered to be a gross failure, and results in poor treatment performance and / or effluent breakout which may discharge to receiving waters, then arrange for off-site tankerage of effluent until the problem is rectified.		

SUMMARY

The effluent disposal design put forward in this report will ensure compliance with all relevant Far North District Council Guidelines and ARC TP58:2004 standards and will also ensure satisfactory performance with respect to any/all conditions relating to the subject property. Environmental constraints have been considered during the design of the system, specifically poor soils, proximity to surface water, and the coastal environment. Additionally costs incurred in the construction phase together with continued operation and maintenance have been taken into consideration for the purposes of this design.

The area of the proposed effluent field should be protected from surface water run-on via drains constructed around the perimeter.

We recommend that:

The preferred system for this site follows:

a) Standard Secondary Treatment Plant.

b) We recommend an aerial loading area of 194 square metres with a reserve of 64 square metres or 33% of design Disposal Area.

c) Disposal of partly treated effluent via pressure compensating dripper irrigation. We recommend the use of 1.6 litre per hour emitters at 0.4m centres. Irrigation lines can be laid at 1 metre centres and a maximum lateral length of 75m with individual flushing valves. This requires a total of 194 linear meters of dripper line.

d) A reserve area has been provided for along the northern/down slope side of the active field area.

e) We recommend that the disposal area be clear of any fill supporting structures.

f) Stormwater flows from any sealed parking area or water tank overflows to be piped away to the open drain in the road reserve.

g) Field in which effluent disposal field is located to be fenced appropriately to keep livestock out.

APPLICABILITY

This report has been prepared exclusively for Advance Build with respect to the particular brief given to us. Information, opinions and recommendations contained in it can not be used for any other purpose or by any other entity without our review and written consent. Vision Consulting Engineers Ltd accepts no liability or responsibility whatsoever for or in respect of any use or reliance upon this report by any third party.

The nature and continuity of the subsurface conditions given in this report are based on a review of previous reports and desktop study of published and un-published information about the site. The nature and continuity of subsurface materials is inferred and may differ from that described herein.

We should be contacted immediately if variations are encountered. It is possible that further investigation or modification of the design is required.

Yours faithfully
VISION CONSULTING ENGINEERS LTD

Report prepared by:

Imogen Webb
DipEng
Graduate Engineer

Report reviewed by:

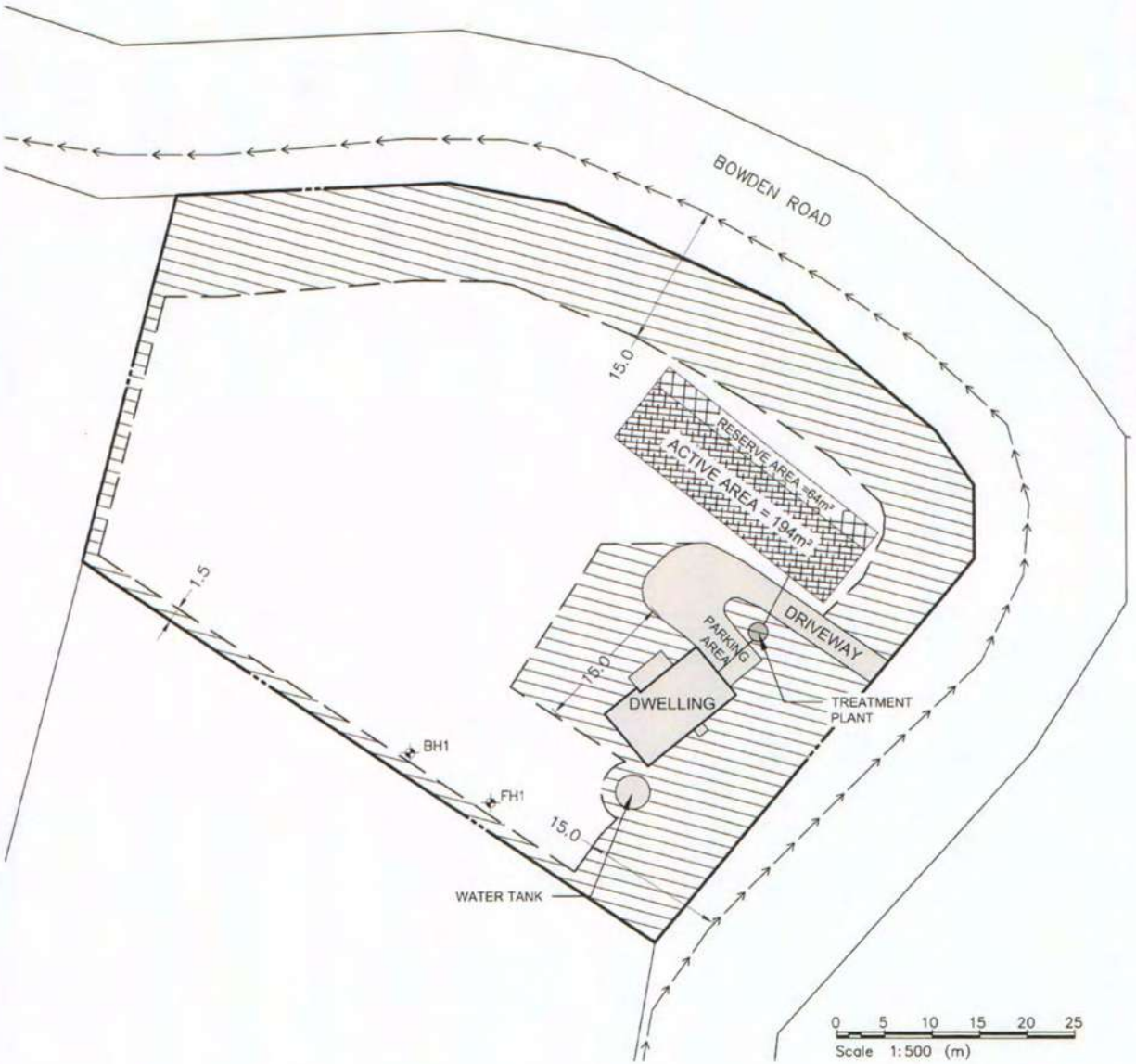
Ben Perry
MIPENZ, CPEng
Civil Engineer

Attached: Wastewater Application and Locality Plan
Site test logs (FH 1 & BH 1)
FNDC Appendix E
VCE Calculations

12378 20160205 TP58_Final_Rev 1

WASTEWATER APPLICATION PLAN

SCALE A3 1:500



LOCALITY PLAN

SCALE NTS

APPLICATION AREAS CALCULATION (TP58)

LAND APPLICATION RATE	3.0 L/m²/DAY
OCCUPANCY(2 BEDROOMS)	4 PERSONS (P)
DESIGN FLOW @ 145 L/P/DAY	580 L/DAY

LEGEND	
ACTIVE AREA TOTAL= 194m²	
RESERVE AREA = 64m²	
EXCLUSION ZONE	
OPEN DRAIN	
PIPED WASTEWATER	
SITE BOUNDARY	
ADJOINING BOUNDARY	

VISION CONSULTING ENGINEERS

ADVANCE BUILD
LOT 4 BOWDEN ROAD, TAUPO BAY
WASTEWATER APPLICATION PLAN AND LOCALITY PLAN

DRAWN:	IHW
CHECKED:	BCP
DATE:	Rev 1: 5/2/2016
PROJECT:	12378
SHEET:	1 of 1
SCALE A4:	1:500

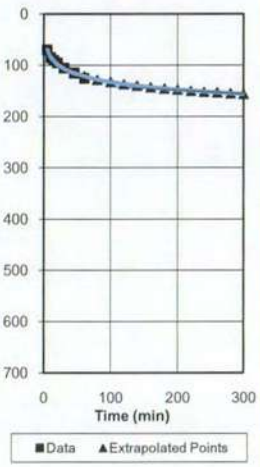
BOREHOLE LOG -Falling Head Test FH1

Client: Advance Build	**Project:** TP58 Report	**Project No.:** 12378
Project Location: Lot 4 Bowden Road, Taupo Bay	**Borehole Location:** At proposed WW field	**Drilled by:** BH **Logged by:** IHW
Hole started: 14/01/2015 **Hole completed:** 14/01/2015	**Drill method:** 100mm handauger	

VISION CONSULTING ENGINEERS

Depth (m)	Graphic	Moisture	Soil Description	Geology
0.00		M	SILT with minor clay and rootlets; dark brown. Moist	Topsoil
0.25		D-M	CLAY with minor silt; orange with minor brown. Dry to moist.	Residual Soil
0.60			Orange.	
0.75			End of Borehole at 0.7m Groundwater not encountered.	

Falling Head Test



BOREHOLE LOG - BH1

Client: Advance Build	**Project:** TP58 Report	**Project No.:** 12378
Project Location: Lot 4 Bowden Road, Taupo Bay	**Borehole Location:** At proposed WW field	**Drilled by:** I. Webb **Logged by:** I. Webb
Hole started: 6/11/15 **Hole completed:** 6/11/15	**Drill method:** 50mm handauger	

VISION CONSULTING ENGINEERS

Depth (m)	Graphic	Moisture	Soil Description	Geology & other notes
0.00		M	SILT with minor clay and rootlets; dark brown. Moist	Topsoil
0.25		D-M	CLAY with minor silt; orange with minor brown, firm to stiff. Dry to moist.	Residual Soil
0.60			Orange, very stiff.	
1.60			Red, white and orange striations.	
1.70		M	Moist, soft to firm.	
1.75			End of Borehole at 1.7m. Target depth reached.	
1.80			Groundwater not encountered.	

PRODUCER STATEMENT

DESIGN: ON-SITE EFFLUENT DISPOSAL SYSTEMS (T.P.58)

ISSUED BY: Vision Consulting Engineers Ltd (approved qualified design professional)

TO: Advance Build (owner)

TO BE SUPPLIED TO: .....Far North District Council.....

PROPERTY LOCATION Lot 4, Bowden Road, Taupo Bay

LOT 4 DP 379468 VALUATION NUMBER 00121-03704

TO PROVIDE: Design an on-site effluent disposal system in accordance with Technical paper 58 and provide a schedule to the owner for the systems maintenance.

THE DESIGN: Has been in accordance with G13 (Foul Water) G14 (Industrial Liquid Waste) B2 (durability 15 years) of the Building Regulations 1992.

As an independent approved design professional covered by a current policy of Professional Indemnity Insurance (Design) to a minimum value of $200,000.00, I BELIEVE ON REASONABLE GROUNDS that subject to:
(1) The site verification of the soil types.
(2) All proprietary products met the performance requirements.

The proposed design will meet the relevant provisions of the Building Code and 8.15 of The Far North District Council Engineering Standards.

CPEng, MIPENZ MIPENZ, CPEng

CPEng, Member Number 98351

Address Level 1, 62 Kerikeri Road
Kerikeri 0230

Phone Number 09 401 6287
Fax Number
Cell Phone 021 210 2206
Date 5/02/2016
VCE Producer Statement Reference: 12378-01

Note: This form is to accompany every application for a Building Consent incorporating a T.P.58. Approval as a design professional is at Councils discretion.

FAR NORTH DISTRICT COUNCIL

Appendix E

TP58

On-site Wastewater Disposal Site Evaluation Investigation Checklist

PART A – Owners Details

1. Applicant Details:

Applicant Name	Advance Build	
Company Name		
	First Name(s)	Surname
Property Owner Name(s)	Christopher Richard	Bowden

Nature of Applicant* Owner

*(*i.e. Owner, Leasee, Prospective Purchaser, Developer)*

2. Consultant / Site Evaluator Details:

Consultant/Agent Name	Vision Consulting Engineers Ltd			
Site Evaluator Name	Ben Perry			
Postal Address	Level 1, 62 Kerikeri Road,			
	Kerikeri 0230			
Phone Number	Business	09 401 6287	Private	
	Mobile	021 210 2206	Fax	09 401 6289
Name of Contact Person	Ben Perry			
E-mail Address	info@vce.co.nz			

3. Are there any previous existing discharge consents relating to this proposal or other waste discharge on this site?

Yes		No	✓	(Please tick)

If yes, give Reference Numbers and Description

4. List any other consent in relation to this proposal site and indicate whether or not they have been applied for or granted
If so, specify Application Details and Consent No.
(eg. LandUse, Water Take, Subdivision, Earthworks Stormwater Consent)

N/A

PART B – Property Details

1. Property for which this application relates:

Physical Address of Property	8 McKenzie Road, Whangaroa
Territorial Local Authority	FAR NORTH DISTRICT COUNCIL
Regional Council	NORTHLAND REGIONAL COUNCIL
Legal Status of Activity	Permitted: ✓ Controlled: Discretionary:
Relevant Regional Rule(s)	
(Note 1)	
Total Property Area (m²)	4,770 *more or less*
Map Grid Reference of Property	N/A
If Known	

2. Legal description of land (as shown on Certificate of Title)

Lot No.	4	DP No.	379468	CT No.	318767
Other (specify)					

Please ensure copy of Certificate of Title is attached

PART C: Site Assessment - Surface Evaluation

(Refer TP58 - Sn 5.1 General Purpose of Site Evaluation and Sn 5.2.2(a) Site Surface Evaluation)
Note: Underlined terms defined in Table 1, attached

Has a relevant property history study been conducted?

Yes		No	✓	(Please tick one)

If yes, please specify the findings of the history study, and if not please specify why this was not considered necessary.

A site specific soil test and evaluation report is attached.

1. Has a Slope Stability Assessment been carried out on the property?

Yes		No	✓	Please tick

If No, why not?

Slope stability was outside of our scope of work.

If Yes, please give details of report (and if possible, please attach report):

Author	
Company/Agency	
Date of Report	
Brief Description of Report Findings:	

2. Site Characteristics (See Table 1 attached):

Provide descriptive details below:
Performance of Adjacent Systems:
Unknown
Estimated Rainfall and Seasonal Variation:
Information available from **N.I.W.A MET RESEARCH**
1200mm typically per year.
Vegetation / Tree Cover:
See attached report.
Slope Shape: (Please provide diagrams)
See attached report.
Slope Angle:
On proposed disposal field approximately 8-12 degrees
Surface Water Drainage Characteristics:
See attached report.
Flooding Potential: ~~YES~~/NO
If yes, specify relevant flood levels on appended site plan, i.e. one in 5 years and/or 20 year and/or 100 year return period flood level, relative to disposal area.
Surface Water Separation:
15m from any surface water channels or open drains. An additional 10m has been allowed for on the steeper part of the slope. See attached report.
Site Characteristics: or any other limitation influencing factors
None

3. Site Geology **Check Rock Maps**

Rangiora clay, clay loam and silty clay loam being Soils of the rolling and hilly land, Imperfectly to very poorly drained
See attached report

Geological Map Reference Number	

4. What Aspect(s) does the proposed disposal system face? (please tick)

North	✓	**West**	
North-West		**South-West**	
North-East		**South-East**	
East		**South**	

5. Site clearances, (Indicate on site plan where relevant)

Separation Distance from	Treatment Separation Distance (m)	Disposal Field Separation Distance (m)
Boundaries	>1.5	>1.5
Surface water, rivers Creeks drains etc	>15	>15m
Groundwater	>0.6	>0.6
Stands of Trees/Shrubs	N/A	N/A
Wells, water bores	N/A	>500m
Embankments/retaining walls	>3	>3
Buildings	>1.5	>1.5
Other (specify):		

PART D: Site Assessment - Subsoil Investigation

(Refer TP58 - Sn 5.1 General Purpose of Site Evaluation, and Sn 5.2.2(a) Site Surface Evaluation and Sn 5.3 Subsurface Investigations)
Note: Underlined terms defined in Table 2, attached

1. Please identify the soil profile determination method:

Test Pit			No of Test Pits	
Bore Hole		(Depth 0.7 & 1.7m	No of Bore Holes	2
Other (specify):				

Soil Report attached?

Yes	✓	No		Please tick

2. Was fill material intercepted during the subsoil investigation?

Yes		No	✓	Please tick

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

The disposal field will be clear of any areas of fill.

3. Percolation testing

N/A					
Test Report attached?	Yes	✓	No		Please tick

4. Are surface water interception/diversion drains required?

Yes		No	✓	Please tick

If yes, please show on site plan

4a Are subsurface drains required

NO

5. Please state the depth of the seasonal water table:

Winter	>0.6m	Measured		Estimated	✓
Summer	>1.7m	Measured	✓	Estimated	

6. Are there any potential storm water short circuit paths?

Yes		No	✓	Please tick

If the answer is yes, please explain how these have been addressed

7. Based on results of subsoil investigation above, please indicate the disposal field soil category *(Refer TP58 Table 5.1)*

Is Topsoil Present? ✓	If so, Topsoil Depth? 0.3	(m)

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

Reasons for placing in stated category

Site specific soil tests

PART E: Discharge Details

1. Water supply source for the property (please tick):

Rainwater (roof collection)	✓
Bore/well	
Public supply	

2. Calculate the maximum daily volume of wastewater to be discharged, unless accurate water meter readings are available (Refer TP58 Table 6.1 and 6.2)

Number of Bedrooms	2			
Design Occupancy	4			(Number of People)
Per capita Wastewater Production	140	160	180	(tick) (Litres per person per day)
Other - specify	200	220	145✓	
Total Daily Wastewater Production	580			(litres per day)

3. Do any special conditions apply regarding water saving devices

a) Full Water Conservation Devices?	Yes		No	✓	(Please tick)
b) Water Recycling - what %?	%				(Please tick)

If you have answered yes, please state what conditions apply and include the estimated reduction in water usage

4. Is Daily Wastewater Discharge Volume more than 2000 litres:

Yes		(Please tick)
No	✓	(Please tick)

Note if answer to the above is yes, an N.R.C wastewater discharge permit may be required

5. Gross Lot Area to Discharge Ratio:

Gross Lot Area	4,770	m^2
Total Daily Wastewater Production	580	(Litres per day)(from above)
Lot Area to Discharge Ratio	N/A	

7. Does this proposal comply with the Northland Regional Council Gross Lot Area to Discharge Ratio of greater than 3?

Yes		No		Please tick - N/A

8. Is a Northland Regional Council Discharge Consent Required?

Yes		No	✓	Please tick

PART F: Primary Treatment *(Refer TP58 Section 7.2)*

1. Please indicate below the no. and capacity (litres) of all septic tanks including type (single/dual chamber grease traps) to be installed or currently existing: If not 4500 litre, duel chamber explain why not

Number of Tanks	Type of Tank	Capacity of Tank (Litres)
	Total Capacity	

2. Type of Septic Tank Outlet Filter to be installed?

PART G: Secondary and Tertiary Treatment
(Refer TP58 Section 7.3, 7.4, 7.5 and 7.6)

1. Please indicate the type of additional treatment, if any, proposed to be installed in the system: (please tick)

Secondary Treatment			
Home aeration plant	✓		
Commercial aeration plant			
Intermediate sand filter			
Recirculating sand filter			
Recirculating textile filter			
Clarification tank			
Tertiary Treatment			
Ultraviolet disinfection			
Chlorination			
Other		Specify	

PART H: Land Disposal Method
(Refer TP58 Section 8)

1. Please indicate the proposed loading method: (please tick)

Gravity	
Dosing Siphon	
Pump	✓

2.High water level alarm to be installed in pump chambers

Yes	~~No~~

If not to be installed, explain why

3. If a pump is being used, please provide the following information:

Total Design Head	see attached VCE Calculations	(m)
Pump Chamber Volume	see attached VCE Calculations	(Litres)
Emergency Storage Volume	see attached VCE Calculations	(Litres)

4. Please identify the type(s) of land disposal method proposed for this site: (please tick)
(Refer TP58 Sections 9 and 10)

Surface Dripper Irrigation			
Sub-surface Dripper irrigation	✓		
Standard Trench			
Deep Trench			
Mound			
Evapo-transpiration Beds			
Other		Specify	

5. Please identify the loading rate you propose for the option selected in Part H, Section 4 above, stating the reasons for selecting this loading rate:

Loading Rate	Aerial	3.0	(Litres/m2/day)
Disposal Area	Design	194	(m2)
	Reserve	64	(m2)

Explanation *(Refer TP58 Sections 9 and 10)*

See attached report.

6. What is the available reserve wastewater disposal area *(Refer TP58 Table 5.3)*

Reserve Disposal Area (m²)	64
Percentage of Primary Disposal Area (%)	33

7. Please provide a detailed description of the design and dimensions of the disposal field and attach a detailed plan of the field relative to the property site:
Description and Dimensions of Disposal Field:

See attached report					
Plan Attached?	Yes	✓	No		(Please tick)

If not, explain why not

PART I: Maintenance & Management

(Refer TP58 Section 12.2)

1. Has a maintenance agreement been made with the treatment and disposal system suppliers?

Yes		No	✓	(Please tick)

Name of Suppliers

PART J: Assessment of Environmental Effects

1. Is an assessment of environmental effects (AEE) included with application?
(Refer TP58 section 5. Ensure all issues concerning potential effects addressed)

Yes		No	✓	(Please tick)

If Yes, list and explain possible effects

A less than minor effect on the environment is anticipated, provided the installation adheres to the
recommendations outlined in this form and those of the attached report.

PART K: Is Your Application Complete?

1. In order to provide a complete application you have remembered to:

Fully Complete this Assessment Form	✓
Include a *Location Plan* and *Site Plan* (with Scale Bars)	✓
Attach an Assessment of Environmental Effects (AEE)	N/A

1. Declaration

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

Name : Ben Perry		
Position : Managing Director	Date	5/02/2016

Note
Any alteration to the site plan or design after approval will result in non compliance.

APPENDIX F: DESIGN SIZE DISPOSAL AREA REQUIREMENTS

	Design Size (level or slightly sloping Sites - Most Conservative Design Loading)		
Disposal Systems and Site Conditions	3-Bedroom 5-persons 700 litres/day	2-Bedroom 4-Persons 450 litres/day (full water saving devices)	Design Area Requirements
1.0 TRENCHES Soil category / Loading Rate 1 — 35mm/day 2 — 20mm/day 3 — 15 mm/day 4 — 10mm/day	 20 m² 35 m² 47 m² 70 m²	 13 m² 23 m² 30 m² 45 m²	(a) 20 m² gives 3 trenches 450 mm wide and 15 m length, 2.0 m centres, overall enclosing area 102 m² (with reserve area 102m², total is 204 m²). (b) 70 m² gives 5 trenches 450mm wide and (2x15) m length. 2.0m centres, overall enclosing area 340m² (width reserve area m², total is 680m²).
2.0 BEDS Soil category / Loading Rate 2 — 20 mm/day 3 — 12.5mm/day 4 — 10 mm/day	 35 m² 56 m² 70 m²	 23 m² 36 m² 45 m²	(a) 35m² gives 2 beds 1500mm wide and 12m length at 3m centres, overall enclosing area 90m² (with reserve area 90m² total is 180m²) (b) 70m² gives 4 beds 1500mm wide and 12m length at 3m centres, overall enclosing area 180m² (with reserve area 180m², total is 360m²
3.0 INFILTRATIVE SYSTEMS Loading rate 200mm/day (Soil Categories 1 & 2 with no site constraints)	3.5m²	2.25m²	(a) 3.5m² gives 3 of 1200 mm dia. Soakage holes (3.0m clearance between each) overall enclosing area 53m² (with reserve area 53m², total is 106m²). (b) 3.5m² gives one rectangular pit, 1200mm by 3000mm, overall enclosing area 25m² (with reserve area 25m² totals is 50m²).

APPENDIX F: DESIGN SIZE DISPOSAL AREA REQUIREMENTS

Disposal Systems and Site Conditions	Design Size (level or slightly sloping Sites - Most Conservative Design Loading)		Design Area Requirements
4.0 ETS (EVAPOTRANSPIRATION SEEPAGE) AND ASB (AEROBIC SEEPAGE BED) Loading rate 10mm/day (soil categories 5 and 6)	70 m²	45 m²	(a) Pre-treatment via two septic tanks in series (2700 litres plus 1800 litres) or "Ecotank". Pumped dose loading. (b) Bed width 1500 mm with crowned and grassed (or ET planted) surface, plus surface water and groundwater controls. (c) 70m² gives beds 1500mm wide and 12m length at 3m centres, overall enclosing area 180m² (with reserve area 180m². total is 360m²).
5.0 TET (TOTAL EVAPOTRANSPIRATION OVERFLOW) Loading rate 7mm/day (Soil Categories 1 & 2) and which have potential for significant groundwater impacts).	100 m²	65 m²	(a) Pre-treatment via two septic tanks in series (2700 litres plus 1800 litres) or "Ecotank". (b) Bed width 3.0m with crowned surface planted in cannas lilies or other high transpiration plantings; bed fully sealed with plastic liners. (c) 100m² gives 2 beds each 16.7m length, spacing 2m between each, overall enclosing area (including overflow trench) 225m² (with 50% reserve bed area at 20m², total is 375m². (d) Overflow trench length, 15m.

Project No.:	12378
Project:	Lot 4, Bowden Road, Taupo Bay
Client:	Advance Build
Date:	5/02/2016
By:	IHW
Checked:	BCP

COMPONENT	HEAD LOSS (m)	COMMENTS
Emitter	4.0	Minimum pressure required.
Lateral	0.0	Head loss insignificant for short run.
Submain	0.0	Using No Submain x 0 m length.
Main (Note 1)	2.3	Using 19mm LPED x 30 m length.
Valve	0.0	No Valve
Filter	4.0	For a semi blocked (3m) to blocked (5m) filter.
Tank Depth (Note 2)	2.0	OR actual depth.
Water Meter (Note 3)	0.0	
Elevation:		
Septic Tank	47.0	Height of the septic tank lid
Upslope	46.0	Height to uppermost point of field pipework
Downslope	41.0	Height of lowest point of field pipework
Head Loss Range	**6-12**	(Note 5)
Total plus 10%	**5-14**	

Note:

1. Depends on distance from treatment plant to irrigation systems.
2. Actual depth to pump to be used if more than 2.0m.
3. Depends on type of water meter used.
4. Include antisiphoning measures at pump station when pumping downhill.
5. Calculation based on Irrigation Technology Services "Drip Irrigation Effluent Disposal Fields Design Manual" for standard pressure compensation irrigation lines. ITS 2001 and Netafim design guidelines. For the use of alternative pressure compensating irrigation systems the design/installer is to confirm the manufacturers recommended head loss guideline values.

Where the land disposal application system is located downslope of the pump it is important to ensure the system does not empty the tank by uncontrolled siphoning. Where the system is uphill of the pump the difference in elevation between top of the pump and the highest point of elevation is to be added to the head loss calculation.

Project No.: 12378
Project: Lot 4, Bowden Road, Taupo Bay
Client: Advance Build
Date: 5/02/2016
By: IHW
Checked: BCP

COMPONENT	Pipe diam (mm)	Total Length (m)	Volume (Ltr)	COMMENTS
Lateral w/ emitters	12.9	194	25.4	lateral emitter pipe total length per pump cycle
Submain	No Submai	0.0	0.0	submain dimensions
Main (Note 1)	19	30.0	8.5	main dimensions
Pump			1.0	volume of water in pump
TOTAL			**35**	approx. Pipework Volume
Rec. Pump Volume			**70**	recommended duty volume
Min. Pump Volume			**46**	minimum recommended duty volume

Note:
1. Assumes gridded latteral lines over entire Unit Loading Area.
2. Actual volume of pump to be used if more than 1.0 litres.
3. Calculation based a unit loading area, the total field size may be larger with sequencing valves cycling to each unit area.

System and Pump Volume Checks

It is important to ensure that the volume of the effluent in the pipes is replaced each cycle. We generally recommend that the volume within the pipes is half of the pump chamber duty volume.

Project No.:	12378
Project:	Lot 4, Bowden Road, Taupo Bay
Client:	Advance Build
Date:	5/02/2016
By:	IHW
Checked:	BCP

COMPONENT	Value	Units
Design Daily Flow	580	litres per day
Total Design Area	194	m2
No. Unit Areas	1	
Unit Loading Area	194	m2
Unit Application rate	3.0	litres per m2
Pump-out Volume	70	litres (pump chamber)
Dripper rate	1.6	litres per hour
Dripper spacing	0.4	m
lateral spacing	1.0	m
Total Design flow rate	776.0	litres per hour (main)
Unit Area flow rate	No Submain	litres per hour (submain)
Pump-on time	5.4	minutes

Note:

1. Assumes gridded latteral lines over entire Unit Loading Area.
2. Actual volume of pump to be used if more than 1.0 litres.
3. Calculation based a unit loading area, the total field size may be larger with sequencing valves cycling to each unit area.

Pump on-time and total area flow calculations.

SUPER TREAT
SYSTEMS NZ LTD

Waste Water & Sewage • Treatment Systems & Tanks

Super-Treat Wastewater Treatment Systems
Annual Maintenance Contract

Contract Period:

From: 12-7-16 **To:** 12-7-17

Customer Details:

Name: DORGEN WILKINSON

Address: Lot 4 Bowden Rd, TAURO BAY

Phone No:

Council: F.N.D.C

Amount to Pay: PATO

Contract Details:

(Business Name)**.....** SUPER-TREAT SYSTEMS NZ

(Business Address)**.....** SH/10 (1666) KERIKERI

(Business Phone Number)**.....** 021 407 130

(Business email)**.....** supertreatnz@xtra.co.nz

Hereby agrees to provide preventative maintenance as well as required emergency service for the installed Household Wastewater Treatment System at the above address under the following conditions:

1. For the Contract period provide services as per the Maintenance schedule, including the supply of required disinfectant.
2. Complete a written report at the time of each service call, providing a Service Report copy to Customer and a copy to the Local Authority.
3. Following the Warranty period as stated in the sales Contract on "Super-Treat" Systems, any parts or materials necessary for service will be a separate charge to the customer, together with labour costs should return calls need to be made due to replacement or factory reconditioning of damaged parts. Other brand systems will be treated similarly. Quotation for such costs will be supplied prior to providing the required service and repairs.
4. Should any repairs or parts need to be provided during regular or emergency servicing as a result of negligence, willful interference with the system, overloading beyond the systems capability, or if due to earthquake, fire, flood, storm, lightening or tempest then labour and parts supply costs will be considered the responsibility of the owner.
5. Maintenance Contract issued for products other than "Super-Treat" Systems require a detailed condition inspection to be made before acceptance and issue of a Contract. It being understood that we are unable to provide any Warranty obligations for such system.
6. Emergency Service required under this Contract after business hours or at weekend periods, holidays etc. may be handled the first available normal work period following the reported difficulty.

CERTIFICATE OF COMPLIANCE
COMMISSIONING STATEMENT

TO: ______________________________

of: ______________________________

Super Treat Systems Pty Ltd manufacturer of

Super-Treat Aerated Wastewater Treatment systems

***certifies that the model* SB440/SE10**

Installed at the above site on 12/ 7/ 16 --

has been manufactured and installed in accordance with the relevant specifications approved by NSW Health Department or Certificate of approval issued by the Victorian Environmental Protection Authority.

Major system specifications:

- Air supply by VENTURI delivering 110/115 L /min air at depth of 1.2m.
- Growth Media capacity 81_M² total number of media sheets 88
- Irrigation Pump Type PROTEC 750HM Capacity: ___L/m@ 32 m head.

Super Treat Systems Pty Ltd guarantees that where a random grab sample of the final effluent from the system does not comply with the following standard,

- BOD_5 < 20 mg/L
- Suspended Solids < 30 mg/L
- Free residual Chlorine > 0.2 and < 2.0mg/L
- Thermotolerant coliforms < 100 cfu /100ml

They will at their expense, make good the system and retest, provided that the system has not been abused or neglected by the house occupier or where they have no agreement to maintain the system.

SUPER-TREAT SYSTEMS

Distributor

25 - 8 - 2016

Date

Far North District Council

Private Bag 752, Memorial Ave
Kaikohe 0440, New Zealand
Freephone: 0800 920 029
Phone: (09) 405 2750
Fax: (09) 401 2137
Email: ask.us@fndc.govt.nz
Website: www.fndc.govt.nz

Te Kaunihera o Tai Tokerau Ki Te Raki

The top place where talent wants to live, work and invest

Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011

All landowners need to be aware of the introduction from 1 January 2012 of the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to protect Human Health) Regulations 2011.

These regulations provide a national environmental standard for activities on pieces of land where the soil may be contaminated in such a way as to be a risk to human health.
The identified activities are:
- removing or replacing a fuel storage system;
- sampling the soil, disturbing the soil;
- subdividing land; and
- changing the use of the piece of land.

Depending on the level of soil contamination and the proposed remedial action to be taken any of the above activities will be either a permitted activity, a controlled activity, a restricted discretionary activity, or a discretionary activity and may require an application for resource consent.

The land covered by the regulations is land which is being used, or has been used, or more likely than not is being used or has been used for any of the activities or industries, as identified in the current edition of the *Hazardous Activities and Industries List* (HAIL) Ministry for the Environment under the following categories:
Chemical manufacture, application and bulk storage
Electrical and electronic works, power generation and transmission
Explosives and ordinances production, storage and use
Metal extraction, refining and reprocessing, storage and use
Vehicle refuelling, service and repair
Cemeteries and waste recycling, treatment and disposal

Council records cannot confirm whether the subject land is, has been or may be a HAIL site and it is recommended that landowners or potential owners make their own enquiries.

(*The full Hazardous Activities and Industries List has been attached for your information)*

Attachment 1

THIS LIST IS CURRENT TO DATE OF PUBLICATION OF RESOURCE MANAGEMENT (NATIONAL STANDARD FOR ASSESSING AND MANAGING CONTAMINANTS IN SOIL TO PROTECT HUMAN HEALTH) REGULATIONS 2011 - refer MfE website for the most up to date edition.

Hazardous Activities and Industries List (HAIL)
October 2011

A Chemical manufacture, application and bulk storage

1. Agrichemicals including commercial premises used by spray contractors for filling, storing or washing out tanks for agrichemical application
2. Chemical manufacture, formulation or bulk storage
3. Commercial analytical laboratory sites
4. Corrosives including formulation or bulk storage
5. Dry-cleaning plants including dry-cleaning premises or the bulk storage of dry-cleaning solvents
6. Fertiliser manufacture or bulk storage
7. Gasworks including the manufacture of gas from coal or oil feedstocks
8. Livestock dip or spray race operations
9. Paint manufacture or formulation (excluding retail paint stores)
10. Persistent pesticide bulk storage or use including sport turfs, market gardens, orchards, glass houses or spray sheds
11. Pest control including the premises of commercial pest control operators or any authorities that carry out pest control where bulk storage or preparation of pesticide occurs, including preparation of poisoned baits or filling or washing of tanks for pesticide application
12. Pesticide manufacture (including animal poisons, insecticides, fungicides or herbicides) including the commercial manufacturing, blending, mixing or formulating of pesticides
13. Petroleum or petrochemical industries including a petroleum depot, terminal, blending plant or refinery, or facilities for recovery, reprocessing or recycling petroleum-based materials, or bulk storage of petroleum or petrochemicals above or below ground
14. Pharmaceutical manufacture including the commercial manufacture, blending, mixing or formulation of pharmaceuticals, including animal remedies or the manufacturing of illicit drugs with the potential for environmental discharges
15. Printing including commercial printing using metal type, inks, dyes, or solvents (excluding photocopy shops)
16. Skin or wool processing including a tannery or fellmongery, or any other commercial facility for hide curing, drying, scouring or finishing or storing wool or leather products
17. Storage tanks or drums for fuel, chemicals or liquid waste
18. Wood treatment or preservation including the commercial use of anti-sapstain chemicals during milling, or bulk storage of treated timber outside

B Electrical and electronic works, power generation and transmission

1. Batteries including the commercial assembling, disassembling, manufacturing or recycling of batteries (but excluding retail battery stores)
2. Electrical transformers including the manufacturing, repairing or disposing of electrical transformers or other heavy electrical equipment
3. Electronics including the commercial manufacturing, reconditioning or recycling of computers, televisions and other electronic devices
4. Power stations, substations or switchyards

C Explosives and ordinances production, storage and use

1. Explosive or ordinance production, maintenance, dismantling, disposal, bulk storage or re-packaging

2. Gun clubs or rifle ranges, including clay targets clubs that use lead munitions outdoors
3. Training areas set aside exclusively or primarily for the detonation of explosive ammunition

D Metal extraction, refining and reprocessing, storage and use

1. Abrasive blasting including abrasive blast cleaning (excluding cleaning carried out in fully enclosed booths) or the disposal of abrasive blasting material
2. Foundry operations including the commercial production of metal products by injecting or pouring molten metal into moulds
3. Metal treatment or coating including polishing, anodising, galvanising, pickling, electroplating, or heat treatment or finishing using cyanide compounds
4. Metalliferous ore processing including the chemical or physical extraction of metals, including smelting, refining, fusing or refining metals
5. Engineering workshops with metal fabrication

E Mineral extraction, refining and reprocessing, storage and use

1. Asbestos products manufacture or disposal including sites with buildings containing asbestos products known to be in a deteriorated condition
2. Asphalt or bitumen manufacture or bulk storage (excluding single-use sites used by a mobile asphalt plant)
3. Cement or lime manufacture using a kiln including the storage of wastes from the manufacturing process
4. Commercial concrete manufacture or commercial cement storage
5. Coal or coke yards
6. Hydrocarbon exploration or production including well sites or flare pits
7. Mining industries (excluding gravel extraction) including exposure of faces or release of groundwater containing hazardous contaminants, or the storage of hazardous wastes including waste dumps or dam tailings

F Vehicle refuelling, service and repair

1. Airports including fuel storage, workshops, wash-down areas, or fire practice areas
2. Brake lining manufacturers, repairers or recyclers
3. Engine reconditioning workshops
4. Motor vehicle workshops
5. Port activities including dry docks or marine vessel maintenance facilities
6. Railway yards including goods-handling yards, workshops, refuelling facilities or maintenance areas
7. Service stations including retail or commercial refuelling facilities
8. Transport depots or yards including areas used for refuelling or the bulk storage of hazardous substances

G Cemeteries and waste recycling, treatment and disposal

1. Cemeteries
2. Drum or tank reconditioning or recycling
3. Landfill sites
4. Scrap yards including automotive dismantling, wrecking or scrap metal yards
5. Waste disposal to land (excluding where bio-solids have been used as soil conditioners)
6. Waste recycling or waste or wastewater treatment

H Any land that has been subject to the migration of hazardous substances from adjacent land in sufficient quantity that it could be a risk to human health or the environment

I Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment

Far North District Council

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INFORMATION REGARDING BUILDINGS WHERE COUNCIL HOLDS NO RECORDS OF CONSENTS

WHAT IF A LIM SHOWS THAT NO RECORDS ARE HELD BY THE COUNCIL BUT THERE ARE BUILDINGS OR STRUCTURES ON THE PROPERTY?

Land Information Memoranda (LIM's) identify the information held by the Council concerning any Building Consent or Permit for existing buildings or structures. In some instances however, if there is a building in existence, the Council records may be incomplete. The absence of records for Building Consents or Permits may mean one of the following:

- The building was erected without a Building Consent or Permit
- The original building may have been erected by a Government Department, e.g. Education, Railways, Electricity, and such Permits were kept in their records.
- The Council record was unable to be located.
- Hokianga County Council records prior to November 1987 were lost in a fire which destroyed the Hokianga County Council building.
- Prior to the Building Act 1991, Council was only required to keep documents for not less than ten years (See NSZ1990 Chapter 2). Documents may have discarded after the expiry of that period.

WHAT IF I BUY A PROPERTY WHICH HAS AN EXISTING BUILDING WITHOUT ANY BUILDING CONSENT OR PERMIT?

If building work was carried out without a Building Permit prior to the introduction of the Building Act 1991, then there was no authority under that Act, and there is no authority under the Building Act 2004, for Council to retrospectively issue a Building Consent for that work. If this is the situation, Council is generally unlikely to take any action against the current owners of that building unless the building is deemed Dangerous and/or Insanitary pursuant to the Building Act 2004 or the Health Act 1956. This assumes that the buildings comply in all other respects with other statutory requirements.

For post-Building Act 1991 building work, for which Council holds no records, it is likely that the building work was carried out without consent. If so, the property owner and the person that carried out the work may have contravened the Building Act 1991 or the Building Act 2004 and enforcement action may be taken at the Councils discretion.
Council may upon a successful application decide to issue a Certificate of Acceptance (COA) where work has been carried out without consent.

Certificates of Acceptance for unconsented building work can only be made if the work was carried out after 1 July 1992 (Introduction of the Building Act 1991).
The value of the COA to the owner or potential purchaser will ultimately depend on the extent to which the building work is able to be inspected.
Council may refuse to issue a Certificate of Acceptance if it is unable to determine compliance with the Building Code.

CAN I AS AN OWNER, PLACE ANY INFORMATION ON THE FILE TO ACKNOWLEDGE BUILDINGS CONSTRUCTED PRIOR TO 1ST JULY 1992?

For building work carried out before 1st July 1992, a Condition Assessment Report (CAR) may be submitted to the council for inclusion on the relevant property file.
This service is only available for buildings constructed under the former Building Permit system (pre-1992) where final certificates were not issued.
The report should be completed by a Suitably Qualified Professional with appropriate insurance cover such as a Licensed Building Practitioner (LBP), engineer, designer or architect.

The report will need to establish that:

- The work is considered safe (verified by an appropriate trade professional)
- The structure is sanitary (not offensive or likely to be a health risk)
- The structure is not subject to dampness
- The structure has adequate drinking water or sanitary facilities (where applicable).

Councils Disclaimer:
The report records the views of the report writer only. The council has not inspected the building. Placing the report on the property file does not constitute a building consent under the Building Act 2004 or alter the legal status of the building work. The council will not be liable for any damage or loss resulting from reliance on the report by the current or any future owner(s).

Domestic Smoke Alarms Guidance Notes 15 April 2003

Building Act

Section 44(1)(c) of he Building Act has been amended by adding, after the word "dangers", the words "(other than a warning system for fire that is entirely within a household unit and serves only that unit)".

Building Regulations

Building Code Clause F7 has been amended as follows:

Clause 7.2 of the First Schedule of the principal regulations is amended by adding the words "in an emergency".

The First Schedule of the principal regulations is amended by revoking clause F7.3, and substituting:

Limits on application: Performance F7.3 does not apply to *Outbuildings* or *Ancillary buildings*, and

Performance

F7.3.1 A means of detection and warning must alert people to the emergency in *adequate* time for them to reach a *safe place*.

F7.3.2 Appropriate means of detection and warning for fire must be provided within each *household unit*.

F7.3.3 Appropriate means of warning for fire and other emergencies must be provided in *buildings* as necessary to satisfy the other performance requirements of this code.

The above amendments to the Building Regulations come into force on 24 April 2003.

Approved Document F7 Warning Systems

The above amendments to the Building Act and Building Code enable the Approved Document F7 to require the installation of an automatic smoke detection and alarm system where one is not already required by Table 4.1 of C/AS1. Further it is to obviate the requirement for a compliance schedule where domestic smoke alarms are required under Approved Document F7.

Smoke alarms may be battery powered and are not required to be interconnected. In addition they shall be provided with a hush facility having a minimum duration of 60 seconds.

Smoke alarms shall have a test facility located on the smoke alarm (readily accessible to building occupants).

Smoke alarms shall be listed or approved by a recognized authority as complying with at least one of: UL 217, ULC S531, AS 3786, BS 5446 Part 1.

Smoke alarms shall be located on the escape routes on all levels within the *household unit*. On levels containing the sleeping spaces, the smoke alarms shall be located either:

a) In every sleeping space, or

b) Within 3.0 m of every sleeping space door. In this case the smoke alarms must be audible to sleeping occupants on the other side of the closed doors.

Smoke alarms shall be installed on or near the ceiling in accordance with AS 1670.6 and the manufacture's instructions.

Recommended maintenance procedures are:

a) In-situ annual cleaning with a vacuum cleaner (no disassembly of smoke alarm).

b) Monthly testing by use of the smoke alarm's test facility.

Note that under the Approved Documents there is no intention that increases in travel distances should be allowed because domestic smoke alarms are installed. Further, alternations under section 38 and change of use under section 46 will trigger the requirement to install domestic smoke alarms.

Approved Document F7 will be available in limited supply on Thursday 17 April 2003. Otherwise it will be generally available from Wednesday 23 April 2003 from:

Victoria University Book Centre
PO Box 12 337
Wellington

Phone: 0800 370 370
Fax: 04 463 5510
Email: enquiries@bookcentre.co.nz
Web: www.bookcentre.co.nz

Far North District Council
Te Kaunihera o Tai Tokerau ki te Raki

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Far North Proposed District Plan 2022 - overview

The Far North Proposed District Plan (PDP) will bring about changes to the current operative plan that you should be aware of. Developing the Proposed District Plan - FAQs Far North District Council (fndc.govt.nz)

Upon public notification on 27th July 2022 some rules in the Proposed District Plan will have immediate legal effect (these are attached but can also be identified on the link below) and must be complied with under the Resource Management Act 1991. The majority of the PDP however will not immediately apply until Council decisions on the whole plan are made (refer to the diagram below). This may also mean that rules with immediate effect may also be subject to change in the final plan.

Far North Proposed District Plan (isoplan.co.nz)

What's new to your LIM report

- A map will be printed from the PDP showing zoning and overlays applicable to the property. Zoning does not have immediate legal effect, but some overlays do such as notable trees or heritage items.
- LIM reports will contain rules with immediate legal effect from 27 July 2022. These are attached as a whole, so refer to the relevant chapters of the PDP to determine if any rules with immediate legal effect apply to the property or an activity you may be wanting to undertake. To help with this refer to the attached map.
- It is important to remember that rules with immediate legal effect and all other parts of the PDP (e.g zoning, other rules that do not have immediate legal effect) may change through submissions, hearings and appeals. Therefore it is important to check what rules are applicable at the time of undertaking any development, while we work with two district plans.

Please note: For all properties on State Highways - State Highway Designation rules may impact your property. Please check the Proposed District Plan and associated State Highway Designation rules.

We advise you seek further advice from the District Planning team if you require further information on the PDP. They can be contacted at pdp@fndc.govt.nz or 0800 920 029. If you would like to discuss whether you would require a resource consent under the current operative district plan and any rule that has immediate legal effect under the PDP please contact Councils Duty Planner at duty.planner@fndc.govt.nz or 0800 920 029.

The current operative Far North District Plan 2007 is still included in your LIM and still applies to the property and any activity you may want to undertake. District Plan Far North District Council (fndc.govt.nz)

Overview

Subdivision is the process of dividing an allotment or building into one or more additional lots or units or changing an existing boundary location. The way an allotment is subdivided, including its size and shape is important as it not only determines the quality and character of development, but it also impacts on surrounding sites and the future use of the land. Subdivision affects the natural and physical environment and introduces long-term development patterns that are unlikely to be reversed.

Subdivisions should be designed in an integrated way that contributes to a sense of place, supports connectivity and provides well-designed, accessible and safe spaces. It should not result in reverse sensitivity effects that cause land to be sterilised and result in the inability to undertake the activities enabled in the relevant zone. The subdivision process also provides the opportunity to create esplanade reserves or strips adjacent to the coast and rivers to enable public access and recreation, or to manage conservation values.

Te Ture Whenua Māori Act 1993 exempts hapū partitions and combined partitions from the subdivision provisions of the Act and these are administrated by the Māori Land Court. However, full partitions are subject to the subdivision provisions.

Subdivision of land that contains an identified feature or resource overlay may be subject to additional provisions. Regard should be given to the relevant chapter managing that feature/ resource, including its objectives and policies. Zone rules may also have a bearing on subdivision applications. For example, a subdivision may result in an existing land use activity failing to comply with rules in the Plan due to the change in allotment size. Other sections of the Plan will be relevant for land use activities, which may be associated with and/or required to implement the subdivision e.g. earthworks or the formation of roads.

Consent for subdivision or land use may also be required under the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (NESCS), unless it can be demonstrated that the NESCS does not apply to the application site.

Council has a responsibility under the RMA and the Northland Regional Policy Statement to ensure that there is sufficient land available to meet the future demands of the district, that development is in the right location, and manage the rural land resource to provide for the economic, social and cultural well-being of people and communities while managing adverse effects on natural and physical, historic heritage and cultural values, natural features and landscapes or indigenous biodiversity.

Objectives	
SUB-O1	Subdivision results in the efficient use of land, which: a. achieves the objectives of each relevant zone, overlays and district wide provisions; b. contributes to the local character and sense of place; c. avoids reverse sensitivity issues that would prevent or adversely affect activities already established on land from continuing to operate; d. avoids land use patterns which would prevent land from achieving the objectives and policies of the zone in which it is located; e. does not increase risk from natural hazards or risks are mitigates and existing risks reduced; and f. manages adverse effects on the environment.
SUB-O2	Subdivision provides for the: a. Protection of highly productive land; and b. Protection, restoration or enhancement of Outstanding Natural Features, Outstanding Natural Landscapes, Natural Character of the Coastal Environment, Areas of High Natural Character, Outstanding Natural Character, wetland, lake and river margins, Significant Natural Areas, Sites and Areas of Significance to Māori, and Historic Heritage.
SUB-O3	Infrastructure is planned to service the proposed subdivision and development where: a. there is existing infrastructure connection, infrastructure should provided in an integrated, efficient, coordinated and future-proofed manner at the time of subdivision; and b. where no existing connection is available infrastructure should be planned and consideration be given to connections with the wider infrastructure network.
SUB-O4	Subdivision is accessible, connected, and integrated with the surrounding environment and provides for: a. public open spaces; b. esplanade where land adjoins the coastal marine area; and c. esplanade where land adjoins other qualifying waterbodies.

Policies	

SUB-P1	Enable boundary adjustments that: a. do not alter: i. the degree of non compliance with District Plan rules and standards; ii. the number and location of any access; and iii. the number of certificates of title; and b. are in accordance with the minimum lot sizes of the zone and comply with access, infrastructure and esplanade provisions.
SUB-P2	Enable subdivision for the purpose of public works, infrastructure, reserves or access.
SUB-P3	Provide for subdivision where it results in allotments that: a. are consistent with the purpose, characteristics and qualities of the zone; b. comply with the minimum allotment sizes for each zone; c. have an adequate size and appropriate shape to contain a building platform; and d. have legal and physical access.
SUB-P4	Manage subdivision of land as detailed in the district wide, natural environment values, historical an cultural values and hazard and risks sections of the plan
SUB-P5	Manage subdivision design and layout in the General Residential, Mixed Use and Settlement zone to provide for safe, connected and accessible environments by: a. minimising vehicle crossings that could affect the safety and efficiency of the current and future transport network; b. avoid cul-de-sac development unless the site or the topography prevents future public access and connections; c. providing for development that encourages social interaction, neighbourhood cohesion, a sense of place and is well connected to public spaces; d. contributing to a well connected transport network that safeguards future roading connections; and e. maximising accessibility, connectivity by creating walkways, cycleways and an interconnected transport network.
SUB-P6	Require infrastructure to be provided in an integrated and comprehensive manner by: a. demonstrating that the subdivision will be appropriately serviced and integrated with existing and planned infrastructure if available; and b. ensuring that the infrastructure is provided is in accordance the purpose, characteristics and qualities of the zone.
SUB- P7	Require the vesting of esplanade reserves when subdividing land adjoining the coast or other qualifying waterbodies.
SUB-P8	Avoid rural lifestyle subdivision in the Rural Production zone unless the subdivision: a. will protect a qualifying SNA in perpetuity and result in the SNA being added to the District Plan SNA schedule; and b. will not result in the loss of versatile soils for primary production activities.
SUB-P9	Avoid subdivision rural lifestyle subdivision in the Rural Production zone and Rural residential subdivision in the Rural Lifestyle zone unless the development achieves the environmental outcomes required in the management plan subdivision rule.
SUB-P10	To protect amenity and character by avoiding the subdivision of minor residential units from principal residential units where resultant allotments do not comply with minimum allotment size and residential density.
SUB-P11	Manage subdivision to address the effects of the activity requiring resource consent including (but not limited to) consideration of the following matters where relevant to the application: a. consistency with the scale, density, design and character of the environment and purpose of the zone; b. the location, scale and design of buildings and structures; c. the adequacy and capacity of available or programmed development infrastructure to accommodate the proposed activity; or the capacity of the site to cater for on-site infrastructure associated with the proposed activity; d. managing natural hazards; e. Any adverse effects on areas with historic heritage and cultural values, natural features and landscapes, natural character or indigenous biodiversity values; and f. any historical, spiritual, or cultural association held by tangata whenua, with regard to the matters set out in Policy TW-P6.

Rules

Notes:

1. **There may be rules in other District-Wide Matters and the underlying zone in Part 3 - Area Specific Matters that apply to a proposed activity, in addition to the rules in this chapter. These other rules may be more**

stringent than the rules in this chapter. Ensure that the underlying zone chapter and other relevant District-Wide Matters chapters are also referred to, in addition to this chapter, to determine whether resource consent is required under other rules in the District Plan. Refer to *how the plan works* chapter to determine the activity status of a proposed activity where resource consent is required under multiple rules.

2. **Subdivision of land within the Treaty Settlement Overlay is subject to the subdivision rules and standards for the underlying zone**
3. **Where a site has a split zoning the more restrictive rules relating to minimum allotment sizes will apply.**
4. **Any application for a resource consent in relation to a site that is potentially affected by natural hazards must be accompanied by a report prepared by a suitably qualified and experienced engineer that addresses the matters identified in the relevant objectives, policies, performance standards and matters of control/discretion including an assessment of whether the site includes an area of land susceptible to instability.**

SUB-R1	**Boundary adjustments**	
All zones (except Open Space zones, Motorua Island zone, and Airport zone)	**Activity status: Controlled** **Where**: **CON-1** 1. The boundary adjustment complies with standards: SUB-1 Minimum allotment sizes for controlled activities, except where an existing allotment size is already non-compliant, the degree of non-compliance shall not be increased; SUB-S2 Requirements for building platforms for each allotment; SUB-S3 Water supply; SUB-S4 Stormwater management; SUB-S5 Wastewater disposal; SUB-S6 Telecommunications and power supply; and SUB-S7 Easements for any purpose; **CON-2** 1. the boundary adjustment does not alter: i. the ability of existing activities to continue to be permitted under the rules and standards in this District Plan; ii. the degree of non compliance with zone or district wide standards; iii. the number and location of any access; and iv. the number of certificates of title. **CON-3** 1. The boundary adjustment complies with standard: SUB -S8 Esplanades **Matters of control are limited to:** a. the design and layout of allotments, and the ability to accommodate permitted and/or intended land uses; b. the provision of easements or registration of an instrument for the purpose of public access and reserves; c. the effects of development phase works on the surrounding area; d. extent of potential effects on sites and areas of significance to Māori, ancestral lands, water, site, wāhi tapu and other taonga; e. adverse effects on areas with historic heritage and cultural values, natural features and landscapes, wetland, lake and river margins, natural character or indigenous biodiversity values including indigenous taxa that are listed as threatened or at risk in the New Zealand Threat Classification system lists; f. natural hazards or geotechnical constraints; g. where relevant compliance with Far North District Council Engineering Standards 2022;and	**Activity status where compliance not achieved with CON-1:** **Restricted Discretionary** **Matters of discretion are restricted to:** a. matters of any infringed standard; and b. any relevant matters of control. **Activity status where compliance not achieved with CON-2 and CON-3:** **Discretionary**

	h. adverse effects arising from land use incompatibility including but not limited to noise, vibration, smell, smoke, dust and spray. **NOTE:** If a resource consent application is made under this rule on land that is within 500m of the airport zone, the airport operator will likely be considered an affected person for any activity where the adverse effects are considered to be minor or more than minor.	
Natural Open Space zone **Open Space zone** **Sport and Active Recreation zone** **Motorua Island zone** **Airport zone**	**Activity status: Non-complying**	**Activity status where compliance not achieved: Not applicable**
SUB-R2	**Subdivision of land solely to create an allotment that is for the purpose of public works, infrastructure, reserves or access**	
All zones	**Activity status: Controlled** **Matters of control are limited to:** a. the size, design and layout of lots for the purpose of public works, infrastructure, reserves or access; b. the provision of easements or registration of an instrument for the purpose of public access and reserves; c. the effects of development phase works on the surrounding area; d. the effects on cultural values; e. preservation of the natural character of the coastal environment and the margins of lakes, rivers and wetlands; f. protection of natural features/landforms, waterbodies, indigenous vegetation, indigenous taxa that are listed as threatened or at risk in the New Zealand Threat Classification system lists, historic heritage, sites of significance to tangata whenua, archaeological site or identified feature; g. natural hazards or geotechnical constraints; h. where relevant compliance with Council's engineering standards; i. effects on notable trees within or adjoining the site; and j. adverse effects arising from land use incompatibility including but not limited to noise, vibration, smell, smoke, dust and spray. **NOTE:** If a resource consent application is made under this rule on land that is within 500m of the airport zone, the airport operator will likely be considered an affected person for any activity where the adverse effects are	

	considered to be minor or more than minor.	
SUB-R3	**Subdivision of land to create a new allotment**	
Rural Production **Rural Lifestyle** **Rural Residential** **General Residential zone** **Kororāreka Russell Township zone** **Settlement zone** **Mixed Use zone** **Light Industrial zone** **Heavy Industrial zone** **Horticulture zone** **Horticulture Processing zone** **Hospital zone**	**Activity status: Controlled** **Where:** **CON-1** 1. The subdivision complies with standards: SUB-S2 Requirements for building platforms for each allotment; SUB-S3 Water supply; SUB-S4 Stormwater management; SUB-S5 Wastewater disposal; SUB-S6 Telecommunications and power supply; SUB-S7 Easements for any purpose; **CON-2** 1. The subdivision complies with standards: SUB-S1 Minimum allotment sizes SUB-S8 Esplanades **Matters of control are limited to:** a. the design and layout of allotments, and the ability to accommodate permitted and/or intended land uses; b. the provision of easements or registration of an instrument for the purpose of public access and reserves; c. the effects of development phase works on the surrounding area; d. extent of potential effects on sites and areas of significance to Māori, ancestral lands, water, site, wāhi tapu and other taonga; e. adverse effects on areas with historic heritage and cultural values, natural features and landscapes, wetland, lake and river margins, natural character or indigenous biodiversity values including indigenous taxa that are listed as threatened or at risk in the New Zealand Threat Classification system lists; f. natural hazards or geotechnical constraints; g. where relevant compliance with Far North District Council Engineering Standards 2022;and h. adverse effects arising from land use incompatibility including but not limited to noise, vibration, smell, smoke, dust and spray. **NOTE:** If a resource consent application is made under this rule on land that is within 500m of the airport zone, the airport operator will likely be considered an affected person for any activity where the adverse effects are considered to be minor or more than minor.	**Activity status where compliance not achieved with CON- 1: Restricted Discretionary** **Matters of discretion are restricted to:** a. matters of any infringed standard; and b. any relevant matters of control. **Activity status where compliance not achieved with CON-2: Discretionary** **Where:** **DIS-1** 1. compliance with SUB-S1 Minimum allotment sizes - controlled activity is not achieved, but discretionary activity achieved **Activity status where compliance not achieved with DIS-1:Non-complying**
Orongo Bay zone	**Activity status: Controlled** **Where:** **CON-1:** 1. The subdivision complies with standards: SUB-S3 Water supply; SUB-S4 Stormwater management; SUB-S5 Wastewater disposal;	**Activity status where compliance not achieved with CON-1: Restricted Discretionary** **Matters of discretion are restricted to:** a. matters of any infringed standard; and b. any relevant matters of control in SUB-R3.

	SUB-S6 Telecommunications and power supply; SUB-S7 Easements for any purpose. **CON-2** 1. The subdivision complies with standard: SUB-S8 Esplanades **CON- 3** 1. The subdivision complies with the following table: Orongo Bay zone: 1. the minimum lot sizes are: • 3,000m_2 (onsite sewerage disposal); • 1,000m_2 (reticulated sewerage disposal); 2. the subdivision is part of an approved Comprehensive Development Plan; 3. Maximum number of separate titles created shall not exceed seven. **Matters of control are limited to:** a. Matters on control in SUB-R3.	**Activity status where compliance not achieved with CON-2: Discretionary** **Activity status where compliance not achieved with CON-3: Non-complying**
Carrington Estate zone	**Activity status: Controlled** **Where:** **CON-1:** 1. The subdivision complies with standards: SUB-S3 Water supply; SUB-S4 Stormwater management; SUB-S5 Wastewater disposal; SUB-S6 Telecommunications and power supply; and SUB-S7 Easements for any purpose. **CON-2** 1. The subdivision complies with standard: SUB-S8 Esplanades **CON-3:** 1. The subdivision is a Unit title subdivision of the accommodation units and lodge/golf club complex, as identified in the Carrington Estate Development Plan. **Matters of control are limited to:** a. Matters on control in SUB-R3	**Activity status where compliance not achieved with CON-1: Restricted Discretionary** **Matters of discretion are restricted to:** a. matters of any infringed standard; and b. any relevant matters of control in SUB-R3. **Activity status where compliance not achieved with CON-2: Discretionary** **Activity status where compliance not achieved with CON-3: Non-complying**
Kauri Cliffs zone	**Activity status: Restricted Discretionary** **Where:** **RDIS-1:** 1. The subdivision complies with standards: SUB-S3 Water supply; SUB-S4 Stormwater management; SUB-S5 Wastewater disposal; SUB-S6 Telecommunications and power supply; SUB-S7 Easements for any purpose;and SUB-S8 Esplanades. **RDIS-2:** 1. Subdivision of up to 60 new lots for residential (golf	**Activity status where compliance not achieved with RDIS-1: Discretionary** **Activity status where compliance not achieved with RDIS-2: Discretionary**

	living) purposes, provided that: i. no lot is less than 4,000m^2 in area; ii. on-site treatment and disposal of wastewater is provided for; and iii. the building footprints are specified on an approved plan of subdivision. **Matters of discretion are restricted to:** a. matters of control in SUB-R3; b. the extent to which the activity may impact adversely on the unique character of the Kauri Cliffs Zone; c. the extent to which any adverse effects on areas of indigenous vegetation and habitat are avoided, remedied or mitigated; and d. the effect on adjoining activities. **NOTE:** Applications for restricted discretionary activities within the Golf living sub-zone will be treated as non notified applications provided the written approval of owners of land adjoining the lots to be subdivided has been obtained.	
Māori Purpose zone **Ngawha Innovation and Enterprise Park**	**Activity status: Discretionary**	**Activity status where compliance not achieved: Not applicable**
Open space zones **Motorua Island zone** **Quail Ridge zone** **Airport zone**	**Activity status: Non-complying**	**Activity status where compliance not achieved: Not applicable**
SUB-R4	**Subdivision that creates a private accessway**	
All zones	**Activity status: Controlled** **Where:** **CON -1** 1. A private accessway serves a maximum of 8 sites. **CON-2** 1. Where a subdivision serves 9 or more sites, access shall be by public road.	**Activity status where compliance not achieved with CON-1 and CON-2: Discretionary**
SUB-R5	**Subdivision around an approved multi-unit development**	
General Residential zone	**Activity status: Controlled** **Where:** **CON-1** 1. Subdivision complies with standards: SUB-S2 Requirements for building platforms for	**Activity status where compliance not achieved with CON-1: Restricted Discretionary** **Matters of discretion are restricted to:**

	each allotment; SUB-S3 Water supply; {Link, 6375,SUB-S4 Stormwater management; {Link, 6377,SUB-S5 Wastewater disposal; {Link, 6379,SUB-S6 Telecommunications and power supply; and SUB-S7 Easements for any purpose. **CON-2** 1. Subdivision complies with standards SUB-S1 Minimum allotment sizes - Controlled activity SUB-S8 Esplanades **CON-3** 1. The multi-unit development has already been constructed or the subdivision is proposed around a multi-unit development that has been approved by way of resource consent. **Matters of control are limited to:** a. the design and layout of allotments, and the ability to accommodate permitted and/or intended land uses; b. the provision of easements or registration of an instrument for the purpose of public access and reserves; c. the effects of development phase works on the surrounding area; d. extent of potential effects on sites and areas of significance to Māori, ancestral lands, water, site, wāhi tapu and other taonga; e. adverse effects on areas with historic heritage and cultural values, natural features and landscapes, wetland, lake and river margins, natural character or indigenous biodiversity values including indigenous taxa that are listed as threatened or at risk in the New Zealand Threat Classification system lists; f. natural hazards or geotechnical constraints; g. where relevant compliance with Far North District Council Engineering Standards 2022; and h. adverse effects arising from land use incompatibility including but not limited to noise, vibration, smell, smoke, dust and spray. **NOTE:** If a resource consent application is made under this rule on land that is within 500m of the airport zone, the airport operator will likely be considered an affected person for any activity where the adverse effects are considered to be minor or more than minor.	a. matters of any infringed standard; and b. any relevant matters of control in SUB-R4. **Activity status where compliance not achieved with CON-2: Discretionary** **Activity status where compliance not achieved with CON-3: Non-complying**
SUB-R6	**Environmental benefit subdivision**	
Rural Production zone	**Activity status: Restricted Discretionary** **Where:** **RDIS -1** 1. Subdivision complies with standards: SUB-S2 Requirements for building platforms for each allotment; SUB-S3 Water supply; {Link, 6375,SUB-S4 Stormwater management; {Link, 6377,SUB-S5 Wastewater disposal; {Link, 6379,SUB-S6 Telecommunications and power supply;	**Activity status where compliance not achieved with RDIS -1, RDIS-2, RDIS-3, RDIS-4 and RDIS-5 is not achieved: Discretionary** **Activity status where compliance not achieved with RDIS-6, RDIS-7 and RDIS-8 is not achieved: Non-complying**

SUB-S7 Easements for any purpose; and
SUB-S8 Esplanades.

RDIS -2
The Environmental benefit subdivision complies with either Table 1 or Table 2 as follows:

Table 1.

Total area of significant indigenous vegetation or significant indigenous habitat to be legally protected on an individual Record of Title	**Maximum Number of additional lots that can be created on an individual Record of Title**
Greater than 4ha – less than 10ha	1
Greater than 10ha – less than 20ha	2
Greater than 20ha	3

Table 2.

Total area of natural wetland to be legally protected on an individual Record of Title	**Maximum Number of additional lots that can be created on an individual Record of Title**
Greater than 0.5ha ($5,000m^2$) – less than 1ha	1
Greater than 1ha – less than 2ha	2
Greater than 2ha	3

RDIS-2
Each separate area of significant indigenous vegetation, significant indigenous habitat or natural wetland included in the proposal must be assessed by a suitably qualified and experienced ecologist as satisfying at least one criteria in Appendix 5 of the Northland RPS (Criteria for determining significance of indigenous biodiversity).

RDIS-3
The significant indigenous vegetation, significant indigenous habitat or natural wetland must be added to the list of scheduled Significant Natural Areas in the District Plan, which will be incorporated into the District Plan as part of the next plan update plan change.

RDIS-4
The subdivision proposes to protect all areas of indigenous vegetation, indigenous habitat or natural wetland by way of a conservation covenant pursuant to the Reserves Act 1977 or the Queen Elizabeth II National Trust Act 1977.

RDIS-5
An ecological management plan is prepared to address the ongoing management of the covenanted area to ensure that the values are maintained and the plan includes:
1. Fencing requirements for the covenant area
2. Ongoing pest plant and animal control
3. Any enhancement or edge planting required within the covenant area

RDIS-6

	All proposed new environmental allotments are to be a minimum size of 2ha in area and the balance lot must be greater than 40ha. **RDIS-7** This rule has not been used previously to gain an additional subdivision entitlement. **RDIS-8** Where the land to be subdivided contains versatile soil (as determined by a property scale site specific Land Use Capability Classification prepared by a suitably qualified person), the proposed new allotments created by the new environmental benefit lot subdivision, exclusive of the balance area, must not individually contain more than 15% versatile soils within the allotment. **Matters of discretion are restricted to:** a. subdivision design and layout and proximity to the significant indigenous vegetation, significant indigenous habitat or natural wetland being protected; b. the ecological benefits that will result from the subdivision and level of protection and enhancement proposed; c. matters contained in the ecological management plan for the covenant area; d. effects of the subdivision on rural character and amenity values; e. the extent of earthworks including earthworks for the location of building platforms and access ways; f. effects on rural productivity and the availability and productivity capacity of versatile soils; g. potential for reverse sensitivity effects; h. how the subdivision layout and design may impact on the operation, maintenance, upgrading and development of existing infrastructure assets; and i. any relevant matters of control in SUB -R3. **NOTE:** If a resource consent application is made under this rule on land that is within 500m of the airport zone, the airport operator will likely be considered an affected person for any activity where the adverse effects are considered to be minor or more than minor.	
SUB-R7	**Management plan subdivision**	
Rural Production zone **Rural Lifestyle zone**	**Activity status: Discretionary** **Where**: **DIS-1** 1. the average size of all lots in the management plan subdivision, excluding lots used solely for access, utilities, roads and reserves is no less than 2ha in the Rural Production zone and 5,000m^2 in the Rural Lifestyle zone; 2. This is the only management plan subdivision for the specified portion of a site; 3. The portion of a site that is not subject to the management plan shall be no less than 8ha in the Rural Production and 2ha Rural Lifestyle zone and ; and 4. The application contains the information listed in APP3- Subdivision management plan criteria.	**Activity status where compliance not achieved with DIS-1: Non-complying**

Note: **Rules SUB-R8 – SUB-R20 are specific rules relating to subdivision of land in the district wide, natural environment values, historical an cultural values and hazard and risks sections of the plan and apply in addition to SUB-R1 – SUB-R7.**		
SUB-R8	**Subdivision of a site containing land susceptible to land instability**	
All zones	**Activity status: Controlled** **Where:** **CON-1** The proposed development area, including the building platform and any area that is required for access and services, is located wholly outside of any area on the site that is identified as being land susceptible to land instability. **Matters of control are limited to:** a. the location of lots, building platforms, access and services; b. the management of the land instability hazard to enable the intended use of the land and protect other property; and c. the feasibility and integrity of any physical mitigation measures required so that land instability hazard risk to the subject site or other property is not increased.	**Activity status where compliance not achieved with CON-1: Discretionary**
SUB-R9	**Subdivision of a site within the National Grid Corridor**	
All zones	**Activity status: Restricted Discretionary** **Where:** **RDIS- 1** Proposed building platforms are identified for each allotment and located wholly outside of the National Grid Yard (except where he allotments are for roads, esplanades, accessways and infrastructure). **Matters of discretion are restricted to:** a. the extent to which the subdivision allows for the ongoing efficient operation, maintenance and upgrading of the National Grid, including the ability for continued reasonable access for inspections, maintenance and upgrading; b. the location of any future building platform as it relates to the National Grid Yard; c. the extent to which the subdivision design allows for any future sensitive activity and associated buildings to be setback from the National Grid; d. the nature and location of any vegetation to be planted in the vicinity of the National Grid; e. the ability of future development to comply with NZECP 34: 2001 New Zealand Electricity Code of Practice for Electricity Safe Distances; f. the risk of electrical hazards affecting public or individual safety, and the risk of public and private property damage; and g. the outcome of any consultation with the owner and operator of the National Grid.	**Activity status where compliance not achieved with RDIS-1: Non-complying**
SUB-R10	**Subdivision of site within 32m of the centre line of a Critical Electricity Line**	
All zones	**Activity status: Restricted Discretionary** **Matters of discretion are restricted to:**	**Activity status where compliance not achieved: Not applicable**

	a. the safe and efficient operation and maintenance of the electricity supply network; b. the location of any future building platform and access as it relates to the critical electricity line; c. effects on access to critical electricity lines and associated infrastructure for inspections, maintenance and upgrading purposes; d. the extent to which the subdivision design allows for any future sensitive activity and associated buildings to be setback from the critical electricity line; e. the mature size, growth rate, location, and fall zone of any associated tree planting; f. including landscape planting and shelterbelts; g. compliance with NZECP 34: 2001 New Zealand Electricity Code of Practice for Electricity Safe Distances; h. effects on public health and safety; and i. the outcome of any consultation with the owner and operator of the potentially affected infrastructure.	
SUB-R11	**Subdivision of a site within flood hazard areas**	
All zones	**Activity status: Restricted Discretionary** **Where:** **RDIS -1** 1. Building platforms are located wholly outside the spatial extent of the 1 in 100 year floodplain: 2. Newly created allotments must be located and designed to not divert flood flow onto other properties or otherwise result in any increase in flood hazard beyond the site; 3. Any private roads, right of ways or accessways must be located where the depth of flood waters in a 1 in 100 year flood event does not exceed 200mm above ground level. **Matters of discretion are restricted to:** a. location of suitable and stable building platforms, access and servicing, including on-site wastewater/ stormwater disposal where applicable; b. the effects of the hazard on the intended use of the site or sites created by the subdivision, the range of uses permitted under the relevant zone, and the vulnerability of the uses to flood hazard events; c. the degree to which there may be material damage, through inundation or erosion, in a 1 in 100 year flood event; d. the provision of safe access and egress to and within the created lots during a flood event, including consideration of depth and velocity of flood water over private roads and accessways; e. effects on the functions of floodplains and overland flow paths; f. the effects of potential changes in flood depth, velocity and frequency on other properties, including upstream and downstream from the site; and g. the proposed use of, necessity for and design of engineering solutions (soft or hard) to mitigate the hazard**.**	**Activity status where compliance not achieved with RDIS-1: Non-complying**
SUB-R12	**Subdivision of a site within coastal hazard areas**	
All zones	**Activity status: Restricted Discretionary** **Where:**	**Activity status where compliance not achieved with RDIS-1: Non-complying**

	RDIS-1 All building platforms and associated access for each allotment are located wholly outside the spatial extent of the Coastal Hazard Area. **Matters of discretion are restricted to:** a. location and structural integrity of the building platforms, access and services where they may be affected by inundation or erosion from coastal hazards; b. the effects of the hazard on the intended use of the site or sites created by the subdivision, the range of uses permitted under the relevant zone and the vulnerability of these uses to coastal storm inundation and erosion events; c. the effects of any proposed hazard mitigation works including any earthworks on public access, landscape and other environmental values; and d. the proposed use of, necessity for and design of hard protection structures to mitigate hazards.	
SUB-R13	**Subdivision of a site within a heritage area overlay**	
All zones **All Heritage Area overlays**	**Activity status: Restricted Discretionary** **Matters of discretion are restricted to:** a. the heritage values of the Heritage Area Overlay; b. whether the allotments are of a size that will ensure sufficient land is provided around any scheduled Heritage Resource to provide a suitable heritage setting and protect associated heritage values; c. whether there are measures to minimise obstruction of views of any scheduled Heritage Resource from adjoining public spaces that may result from any future land use or development; d. any consultation with Heritage New Zealand Pouhere Taonga, Department of Conservation and tangata whenua; and e. provision of legal and physical access to any scheduled Heritage Resource within the subdivision if appropriate to maintain, protect, or enhance it.	**Activity status where compliance not achieved: Not applicable**
SUB-R14	**Subdivision of a site that contains a scheduled heritage resource**	
All zones	**Activity status: Restricted Discretionary** **Matters of discretion are restricted to:** a. the particular heritage values associated with the scheduled Heritage Resource; b. whether sufficient land is provided around the scheduled Heritage Resource to protect its heritage values; c. whether the allotments are of a size that will continue to provide the scheduled Heritage Resource with a suitable setting to maintain, protect or enhance the associated heritage values; d. whether there are measures to minimise obstruction of views of the scheduled Heritage Resource from adjoining public spaces that may result from any future land use or development; e. any consultation with Heritage New Zealand Pouhere Taonga, Department of Conservation and tangata whenua; and f. provision of legal and physical access to any scheduled Heritage Resource within the subdivision	**Activity status where compliance not achieved: Not applicable**

	if appropriate to maintain, protect, or enhance it.	
SUB- R15	**Subdivision of a site containing a scheduled site and area of significance to Māori**	
All zones	**Activity status: Restricted Discretionary** **Matters of discretion are restricted to:** a. the particular cultural, spiritual and/or historical values, interests or associations of importance to tangata whenua that are associated with the site which may be affected; b. whether sufficient land is provided around the Site and area of significance to Māori to protect associated cultural, spiritual and/or historical values, interests or associations; c. consultation with and/or cultural advice provided by tangata whenua, in particular with respect to mitigation measures and/or the incorporation of mātauranga Māori principles into the design, development and/or operation of activities that may affect the site; d. opportunities for the relationship of tangata whenua with the site or area to be maintained or strengthened on an ongoing or long term basis, including practical mechanisms to access, use and maintain the identified site; and e. whether the allotments are of a size that will continue to provide the Site or Area of Significance to Māori with a suitable cultural setting to maintain, protect or enhance the associated cultural values.	**Activity status where compliance not achieved: Not applicable**
SUB-R16	**Subdivision of a site containing a mineral extraction overlay**	
All zones	**Activity status: Discretionary** **Where:** **DIS-1** A building platform for each allotment can be setback 100m or more from the Mineral extraction overlay.	**Activity status where compliance not achieved with DIS-1: Non-complying**
SUB-R17	**Subdivision of a site containing a scheduled SNA**	
All zones	**Activity status: Discretionary** **Where:** **DIS-1** The site is located outside the coastal environment; **DIS-2** The subdivision does not divide an SNA.	**Activity status where compliance not achieved with DIS-1 and DIS-2: Non-complying**
SUB-R18	**Subdivision of a site within an Outstanding Natural Landscape and Outstanding Natural Feature**	
All zones	**Activity status: Discretionary**	**Activity status where compliance not achieved: Not applicable**
SUB-R19	**Subdivision of a site within wetland, lake and river margins**	
All zones	**Activity status: Discretionary**	**Activity status where compliance not achieved: Not applicable**
SUB-R20	**Subdivision of a site within the Coastal Environment (excluding Outstanding Natural Character Areas)**	
All zones	**Activity status: Discretionary**	**Activity status where compliance not achieved: Not applicable**
SUB-R21	**Subdivision of a site within Outstanding Natural Character Areas in the Coastal Environment**	

All zones	**Activity status: Non-complying**	**Activity status where compliance not achieved: Not applicable**

Standards

SUB-S1 Minimum allotment sizes

Zone	Controlled Activity	Discretionary Activity
Rural Production	40ha	8ha
Rural Residential	4,000m^2	2,000m^2
Rural Lifestyle	4ha	2ha
General Residential	600m^2	300m^2
Mixed Use	2,000m^2 onsite wastewater disposal 250m^2 reticulated wastewater disposal	no minimum lot size
Light Industrial	2,000m^2 onsite wastewater disposal 500m^2 reticulated wastewater disposal	no minimum lot size
Heavy Industrial	2ha	5,000m^2
Horticulture Processing Facility	2ha	5,000m^2
Horticulture	10ha	4ha
Settlement	3,000m^2	1,500m^2
Kororāreka Russell Township	1,000m^2	800m^2
All other zones	N/A	N/A
All allotments created for public works, network utilities, reserves or access	No minimum lot size	no minimum lot size

SUB-S2 Requirements for building platforms for each allotment

General Residential zone

Kororāreka Russell Township zone

Settlement zone

Rural Production zone

Horticulture zone

Rural Lifestyle zone

Rural Residential zone

Allotments created must be able to accommodate a square building envelope of the minimum dimensions specified below. which does not encroach into the permitted activity boundary setbacks for the relevant zones or into an area that does not allow a building to be located.

Zone	Minimum dimensions
General Residential, Kororāreka Russell Township, Settlement	**14m x 14m**
Rural Production, Horticulture, Rural Lifestyle, Rural Residential	**30m x 30m**

Matters of discretion are restricted to:

a. allotment area and dimensions for intended purpose or land use, having regard to the relevant zone standards and any District wide rules for land uses;
b. allotment sizes and dimensions are sufficient for operational and maintenance requirements;
c. compatibility with the pattern of the surrounding subdivision, land use activities, and access arrangements;
d. any physical constraints; and
e. whether a suitable alternative building platform can be provided.

SUB-S3 Water supply

All zones	1. All new allotments shall have the ability to connect to a safe potable water supply with a capacity that is adequate for the anticipated potential land uses; 2. Where a connection to Council's reticulated water supply systems is available, all allotments must connect; 3. Where a connection to Council's reticulated water systems is not available all allotments must provide a water supply system; 4. All new allotments must have access to sufficient water supplies for fire fighting consistent with the SNZ PAS 4509:2008 New Zealand Fire Service Firefighting Water Supplies Code of Practice. **Note:** This standard does not apply where the allotment is for a road, or for access purposes, or for a purpose or activity for which water supply is not necessary.	**Matters of discretion are restricted to:** a. adequacy of the supply of water to every allotment, and its suitability for the likely land use; b. adequacy of water supplies, and access for fire fighting purposes; and c. the standard of water supply infrastructure installed in subdivisions, and the adequacy of existing supply systems outside the subdivision.
SUB-S4	**Stormwater management**	
All zones	1. All allotments shall be provided, within their site area, with a means for the disposal of collected stormwater from the roof of all potential or existing buildings and from all impermeable surfaces, in such a way so as to avoid or mitigate any adverse effects of stormwater runoff on receiving environments, including downstream properties. This shall be done for a rainfall event with a 10% Annual Exceedance Probability (AEP); and 2. All stormwater management shall be in accordance with Far North Council Engineering Standards 2022.	**Matters of discretion are restricted to:** a. control of water-borne contaminants, litter and sediments; b. the capacity of existing and proposed stormwater disposal systems (refer also to the Council's various urban stormwater management plans and any relevant Northland Regional Council stormwater discharge consents); c. the effectiveness and environmental impacts of any measures proposed for avoiding or mitigating the effects of stormwater runoff, including low impact design principles; d. the location, scale and construction of stormwater infrastructure; and e. measures that are necessary in order to give effect to any drainage or catchment management plan that has been prepared for the area.
SUB-S5	**Wastewater disposal**	
All zones	1. Where a connection to Council owned reticulated wastewater scheme is available, all allotments must connect; 2. Where connection is not available, all allotments shall be provided with a means of disposing of wastewater within the site area of the allotment; and 3. All wastewater disposal shall be in accordance with Far North Council Engineering Standards April 2022. **Note:** This standard does not apply where the allotment is for a road, or for access purposes, or for a purpose or activity for which wastewater disposal is not necessary.	**Matters of discretion are restricted to:** a. the method and adequacy of wastewater disposal where a Council owned reticulated system is not available; b. the capacity of, and impacts on, the existing reticulated wastewater disposal system; and c. the location, capacity and environmental effects of the proposed wastewater disposal system.
SUB-S6	**Telecommunications and power supply**	
General Residential zone **Kororāreka Russell Township zone** **Mixed Use zone**	Connections shall be provided at the boundary of the site area of the allotment for: 1. telecommunications i. Fibre where it is available or; ii. Copper where fibre is not available 2. Electricity supply through the local electricity distribution network. **Note:** This standard does not apply to allotments for a utility, road, reserve or for access purposes.	**Matters of discretion are restricted to :** a. alternative provision of telecommunication and electricity supply.

Light Industrial zone **Heavy Industrial zone** **Settlement zone** **Rural Residential zone** **Horticulture Processing Facility zone**		
SUB-S7	**Easements for any purpose**	
All zones	Easements shall be provided where necessary for: 1. public works and utility services; 2. easements in gross where a service or access is required by the Council; 3. easements in favour of nominated allotments or adjoining Certificates of Title; 4. Service easements, whether in gross or for private purposes, with sufficient width to permit maintenance, repair or replacement of services. Centre line easements shall apply when the line is privately owned; and 5. The need for easements for any of the following purposes: i. accessways, whether shared or not; ii. stormwater, wastewater disposal, water supply, utilities; iii. party walls and floor/ceilings; iv. other utilities.	**Matters of discretion are restricted to:** a. whether the easement is located appropriately for its purpose and users.
SUB-S8	**Esplanades**	
All zones	Any subdivision involving the creation of one or more allotments less than 4ha which adjoins: 1. The line of MHWS; 2. The bank of a river whose bed has an average width of 3m or more; and 3. A lake that is larger than 8 ha in size. An esplanade reserve must be provided with a minimum width of 20m, in accordance with section 230 of the RMA.	**Activity status when compliance is not achieved: Discretionary**

Overview

Earthworks involve the alteration or disturbance of land, including by moving, removing, placing, blading, cutting, contouring, filling or excavation of earth. Earthworks are an integral part and necessary component of the use and development of rural and urban land for living, business and recreation purposes. In addition, earthworks are a key component of the development, operation, maintenance and upgrading of infrastructure.

However, earthworks can be significant and result in long term adverse effects. Earthworks, have the potential to detrimentally alter and affect landforms, landscapes, natural features, historic and cultural heritage and the natural character of the coastal environment. Earthworks associated with subdivision and land use can result in adverse effects including increased land instability and accelerated erosion and alteration or loss of overland flow paths leading to increased risks from natural hazards and sedimentation entering waterbodies and the coastal marine area. Often the effects of earthworks are to such an extent that the identified amenity values and character of an area can be changed permanently and unidentified historic and cultural sites are destroyed or damaged.

Council has responsibilities under the RMA and the RPS to manage any effects from land use and subdivision, which includes the management of earthworks. The purpose of this chapter is to ensure that the adverse effects associated with earthworks are appropriately managed and minimised. The NRC also has responsibilities to manage earthworks for the purposes of soil conservation and water quality and quantity for waterbodies and the coastal marine area.

Objectives	
EW-O1	Earthworks are enabled where they are required to facilitate the efficient subdivision and development of land, while managing adverse effects on waterbodies, coastal marine area, public safety, surrounding land and infrastructure.
EW-O2	Earthworks are appropriately designed, located and managed to protect historical and cultural values, natural environmental values, preserve amenity and safeguard the life-supporting capacity of soils.
EW-O3	Earthworks are undertaken in a manner which does not compromise the stability of land, infrastructure and public safety.

Policies	
EW-P1	Enable earthworks necessary to provide for the District's social, economic and cultural well-being, and their health and safety where they provide for: a. urban land uses and development within urban zones; b. rural land uses and development including, farm tracks, land drainage, and other farming activities within the Rural zones; c. conservation and recreation activities; d. land drainage and flood control works; and e. installation, upgrade and maintenance of infrastructure.
EW-P2	Ensure earthworks are managed, when it has the potential to: a. create new or exacerbate existing natural hazards, including but not limited to flooding, instability, and coastal hazards; b. result in adverse effects on the amenity, characteristics and qualities of outstanding natural landscapes, outstanding natural features, historic heritage, cultural values, indigenous biodiversity and significant natural areas and features; and c. adversely affect waterbodies and the coastal marine area due to inadequate setbacks.
EW-P3	Ensure earthworks are located and designed appropriately to manage the effects of the activity by: a. controlling maximum depth and height and maximum area or volume of earthworks; b. requiring appropriate setbacks are maintained from adjoining property boundaries, waterbodies and the coastal environment; c. managing the location and design of infrastructure; d. managing impacts on natural drainage patterns and overland flow paths; and e. controlling the movement of dust and sediment beyond the area of development to avoid: i. nuisance effects and/or amenity effects on surrounding sites, or ii. silt and sediment entering stormwater systems or waterbodies and the coastal marine area.
EW-P4	Require earthworks to be of a type, scale and form that is appropriate for the location having regards to the effects of the activity, and: a. existing site constraints, opportunities and specific engineering requirements; b. the impact on existing natural landforms, features, historic heritage and indigenous biodiversity; c. compatibility with the visual amenity and character values of the area; d. changes in the natural landform that will lead to instability, erosion and scarring; e. impacts on natural drainage patterns and overland flow paths;

	f. using materials for retaining structures that are compatible with the visual amenity and the characteristics and qualities of the surrounding area; g. minimising adverse visual effects associated with any exposed cut faces or retaining structures, including with the use of screening, landscaping and/or planting; and h. loss of flood storage within flood hazard areas.
EW-P5	Manage effects on historic heritage and cultural values that may be discovered when undertaking earthworks by: a. requiring a protocol for the accidental discovery of archaeology, kōiwi and artefacts of Māori origin; and b. undertaking appropriate actions in accordance with mātauranga and tikanga Māori when managing effects on cultural values.
EW-P6	Require that all earthworks are designed and undertaken in a manner that ensures the stability and safety of surrounding land, buildings or structures.
EW-P7	Ensure all earthworks associated with land development are designed and assessed in a coordinated and integrated manner at the time of subdivision, by: a. controlling earthworks associated with subdivision, including for the purpose of site preparation, creating roads or access to/within the subdivision, and for the provision of infrastructure; and b. considering the appropriateness of earthworks in conjunction with site design and layout of future subdivision and/or development of land, particularly for future infill or greenfield subdivision.
EW-P8	Manage earthworks to address the effects of the activity requiring resource consent, including (but not limited to) consideration of the following matters where relevant to the application: a. the location, scale and volume; b. depth and height of cut and fill; c. the nature of filling material and whether it is compacted; d. the extent of exposed surfaces or stockpiling of fill; e. erosion, dust and sediment controls; f. the risks of natural hazards, particularly flood events; g. stormwater controls; h. flood storage, overland flow paths and drainage patterns; i. impacts on natural coastal processes; j. the stability of land, buildings and infrastructure; k. visual amenity, natural character and landscape values, l. historic heritage values, and whether any assessment or advice from a suitably qualified and experienced heritage expert is required; m. any historical, spritual, or cultural association held by tangata whenua, with regard to the matters set out in Policy TW-P6; n. the life-supporting capacity of soils; o. the extent of indigenous biodiversity clearance and its effect on biodiversity values; p. outstanding natural character, outstanding natural landscapes and outstanding natural features; q. riparian margins; r. the location, operational and functional needs and use of infrastructure; s. temporary or permanent nature of any adverse effect; and t. traffic and noise effects.

Rules

Notes:

1. **More stringent earthworks rules apply in the following other District -wide matters: Natural Character, Natural Features and Landscapes, Coastal Environment, Heritage Area Overlays, Historic Heritage, Notable Trees, and Sites and Areas of Significance to Māori. Those earthworks rules apply in addition to the earthworks rules and standards in this chapter. Refer to the *how the plan works* chapter to determine the activity status of a proposed activity where resource consent is required under multiple rules in this District Plan.**
2. **The Ecosystems and Indigenous biodiversity chapter manages land disturbance associate with indigenous vegetation clearance.**
3. **EW-R11 and 12 apply in addition to the rule(s) that relates to the activity being undertaken. They must be read in conjunction with each other to determine whether a resource consent is required.**
4. **Earthworks associated with plantation forestry are regulated under the National Environmental Standards for Plantation Forestry 2017 (NES-PF) and are not managed through the District Plan except where district plan rules may be more stringent under Regulation 6 of the NES-PF. If the activity relates to earthworks associated with plantation forestry, refer to the NES-PF. However, if plantation forestry earthworks are located in the Coastal Environment or Natural Features and Landscapes overlays, the more stringent earthworks rules in this District Plan prevails over the NES-PF.**
5. **The Northland Regional Plan currently in force and the National Environment Standards for Freshwater**

2020 include rules and regulations relating to earthworks to manage effects on freshwater and soil. Consent may be required for earthworks in terms of the regional rules and regulations in those documents in addition to this District Plan.

6. **Where soil sampling and land disturbance is proposed on land where a hazardous activity or industry has been, is more likely than not have been or is currently operating, then the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health Regulations 2011 apply.**

EW-R1	**Earthworks for buildings or structures, and extensions to existing buildings or structures**	
All zones	**Activity status: Permitted** **Where:** **PER-1** The earthworks complies with standards: EW-S1 Maximum earthworks thresholds; EW-S2 Maximum depth and slope; EW-S4 Site reinstatement; EW-S6 Setbacks; EW-S7 Land stability; EW-S8 Nature of filling material; and EW-S9 Flood and coastal hazards. **EW-S1 does not apply** to Motoura Island or Orongo Bay zones	**Activity status where compliance not achieved with PER-1:** **Restricted discretionary** **Matters of discretion are restricted to:** a. the matters of discretion of any infringed standard.
EW-R2	**Earthworks for creating fence lines, poles, piles and service connections**	
All zones	**Activity status: Permitted** **Where:** **PER-1** The earthworks complies with standards: EW-S1 Maximum earthworks thresholds; EW-S2 Maximum depth and slope; EW-S4 Site reinstatement; EW-S6 Setbacks; EW-S7 Land stability; EW-S8 Nature of filling material; and EW-S9 Flood and coastal hazards. **EW-S1 does not apply** to Motoura Island or Orongo Bay zones	**Activity status where compliance not achieved with PER-1:** **Restricted discretionary** **Matters of discretion are restricted to:** a. the matters of discretion of any infringed standard.
EW-R3	**Earthworks for rural industry activity**	
All zones	**Activity status: Permitted** **Where:** **PER-1** The earthworks complies with standards: EW-S1 Maximum earthworks thresholds; EW-S2 Maximum depth and slope; EW-S4 Site reinstatement; EW-S6 Setbacks; EW-S7 Land stability; EW-S8 Nature of filling material; and EW-S9 Flood and coastal hazards. **EW-S1 does not apply** to Motoura Island or Orongo Bay zones	**Activity status where compliance not achieved with PER-1:** **Restricted discretionary** **Matters of discretion are restricted to:** a. the matters of discretion of any infringed standard.
EW-R4	**Earthworks for a farming activity where sites are 8 hectares or greater**	
Rural Production zone	**Activity status: Permitted** **Where:**	**Activity status where compliance not achieved with PER-1:** **Restricted discretionary**

Māori Purpose zone - Rural **Horticulture zone** **Ngawha Innovation and Technology Park zone**	**PER-1** The earthworks complies with standards: EW-S4 Site reinstatement; EW-S6 Setbacks; EW-S7 Land stability; EW-S8 Nature of filling material; and EW-S9 Flood and coastal hazards.	**Matters of discretion are restricted to:** a. the matters of discretion of any infringed standard.
EW-R5	**Earthworks for farming a activity on sites less than 8ha and for sites in zones not listed in Rule EW-R4**	
All zones	**Activity status: Permitted** **Where:** **PER-1** The earthworks complies with standards: EW-S1 Maximum earthworks thresholds; EW-S2 Maximum depth and slope; EW-S4 Site reinstatement; EW-S6 Setbacks; EW-S7 Land stability; EW-S8 Nature of filling material; and EW-S9 Flood and coastal hazards. **EW-S1 does not apply** to Motoura Island or Orongo Bay zones	**Activity status where compliance not achieved with PER-1:** **Restricted discretionary** **Matters of discretion are restricted to:** a. the matters of discretion of any infringed standard.
EW-R6	**Earthworks for the formation of unformed roads and the formation or upgrade of private roads and private accessways**	
All zones	**Activity status: Permitted** **Where:** **PER-1** The earthworks for formation of an unformed road is located within the legal road corridor. **PER-2** The earthworks complies with standards: EW-S1 Maximum earthworks thresholds; EW-S2 Maximum depth and slope; EW-S4 Site reinstatement; EW-S6 Setbacks; EW-S7 Land stability; EW-S8 Nature of filling material; and EW-S9 Flood and coastal hazards. **EW-S1 does not apply** to Motoura Island or Orongo Bay zones **NOTE:** Approval from Council is required to undertake work on legal road, where they are the landowner irrespective of complying with rules in a district plan.	**Activity status where compliance not achieved with PER-2:** **Restricted discretionary** **Matters of discretion are restricted to:** a. the matters of discretion of any infringed standard. **Activity status where compliance not achieved with PER-1: Discretionary**
EW-R7	**Earthworks for new infrastructure or repair and upgrades**	
All zones	**Activity status: Permitted** **Where:** **PER-1**	**Activity status where compliance not achieved with PER-1:** **Restricted discretionary** **Matters of discretion are restricted to:**

	The earthworks complies with standards: EW-S1 Maximum earthworks thresholds; EW-S2 Maximum depth and slope; EW-S4 Site reinstatement; EW-S6 Setbacks; EW-S7 Land stability; EW-S8 Nature of filling material; and EW-S9 Flood and coastal hazards. **EW-S1 does not apply** to Motoura Island or Orongo Bay zones	a. the matters of discretion of any infringed standard.
EW-R8	**Earthworks for new infrastructure or repair and upgrades of existing infrastructure owned by network utility providers or requiring authority**	
All zones	**Activity status: Permitted** **Where:** **PER-1** The activity is undertaken by the network utility operator or requiring authority. **PER-2** The earthworks complies with standards: EW-S1 Maximum earthworks thresholds; EW-S2 Maximum depth and slope; EW-S4 Site reinstatement; EW-S6 Setbacks; EW-S7 Land stability; EW-S8 Nature of filling material; and EW-S9 Flood and coastal hazards. **EW-S1 does not apply** to Motoura Island or Orongo Bay zones	**Activity status where compliance not achieved with PER-2:** **Restricted discretionary** **Matters of discretion are restricted to:** a. the matters of discretion of any infringed standard. **Activity status where compliance not achieved with PER-1: Discretionary**
EW-R9	**Earthworks for sport and recreation activity**	
All zones	**Activity status: Permitted** **Where:** **PER-1** The earthworks complies with standards: EW-S1 Maximum earthworks thresholds; EW-S2 Maximum depth and slope; EW-S4 Site reinstatement; EW-S6 Setbacks; EW-S7 Land stability; EW-S8 Nature of filling material; and EW-S9 Flood and coastal hazards. **EW-S1 does not apply** to Motoura Island or Orongo Bay zones	**Activity status where compliance not achieved with PER-1:** **Restricted discretionary** **Matters of discretion are restricted to:** a. the matters of discretion of any infringed standard.
EW-R10	**Earthworks for the construction, or upgrade of walkways, cycle tracks and leisure activity**	
All zones	**Activity status: Permitted** **Where:** **PER-1** The earthworks complies with standards: EW-S1 Maximum earthworks thresholds; EW-S2 Maximum depth and slope; EW-S4 Site reinstatement; EW-S6 Setbacks; EW-S7 Land stability; EW-S8 Nature of filling material; and	**Activity status where compliance not achieved with PER-1:** **Restricted discretionary** **Matters of discretion are restricted to:** a. the matters of discretion of any infringed standard.

	EW-S9 Flood and coastal hazards. **EW-S1 does not apply** to Motoura Island or Orongo Bay zones	
EW-R11	**Earthworks for conservation activity**	
All zones	**Activity status: Permitted** **Where:** **PER-1** The earthworks complies with standards: EW-S1 Maximum earthworks thresholds; EW-S2 Maximum depth and slope; EW-S4 Site reinstatement; EW-S6 Setbacks; EW-S7 Land stability; EW-S8 Nature of filling material; and EW-S9 Flood and coastal hazards. **EW-S1 does not apply** to Motoura Island or Orongo Bay zones	**Activity status where compliance not achieved with PER-1: Restricted discretionary** **Matters of discretion are restricted to:** a. the matters of discretion of any infringed standard.
EW-R12	**Earthworks and the discovery of suspected sensitive material**	
All zones	**Activity status: Permitted** **Where:** **PER-1** The earthworks complies with standard EW-S3 - Accidental Discovery Protocol.	**Activity status where compliance not achieved: Discretionary**
EW-R13	**Earthworks and erosion and sediment control**	
All zones	**Activity status: Permitted** **Where:** **PER-1** The earthworks complies with standard EW-S5 Erosion and sediment control.	**Activity status where compliance not achieved with PER-1: Restricted discretionary** **Matters of discretion are restricted to:** a. the matters of discretion of any infringed standard.
EW-R14	**Activities not otherwise listed in this chapter**	
All zones	**Activity status: Discretionary**	**Activity status where compliance not achieved: Not applicable**
EW-R15	**110kV Transmission lines and National Grid Yard**	
All zones	**Activity status: Non-complying** **Where:** **PER-1** Earthworks around Top Energy or Transpower 110kV or greater electricity transmission line poles must: i. be no deeper than 300mm within 2.2m of a transmission pole support structure or stay wire; ii. be no deeper than 750mm within 2.2. to 5m of a transmission pole support structure or stay wire; except that vertical holes not exceeding 500mm diameter beyond 1.5m from the outer edge of a pole support structure or stay wire are exempt from Standards EW-REQ10(a) and EW-REQ10(b) above. **PER-2** Earthworks around Top Energy or Transpower 110kV or greater electricity transmission line towers must:	**Activity status where compliance not achieved: Not applicable**

	ii. be no deeper than 300mm within 6m of the outer visible edge of a transmission tower support structure; iii. be no deeper than 3m between 6-12m from the outer visible edge of a transmission tower support structure. **PER-3** Earthworks within 12m of a Top Energy or Transpower 110kV or greater electricity transmission line pole or tower must not: ii. create an unstable batter that will affect a transmission support structure; iii. result in a reduction in the ground to conductor clearance distances as required by New Zealand Electrical Code of Practice for Electrical Safe Distances NZECP34:2001. **This rule does not apply to** the network utility operator.	

Standards

EW-S1 **Maximum earthworks thresholds**

All zones, except Moturoa Island, Orongo Bay

The following maximum volumes and area thresholds for all earthworks undertaken on a site within a single calendar year:

Zone	Volume (m^3)	Area (m^2)
General Residential , Mixed Use, Light Industrial, Heavy Industrial, Hospital, Horticulture Processing Facility, Carrington, Kororāreka Russell Township, Hospital, Māori Purpose - Urban	200	2,500
Conservation, Open Space, Sport and Recreation, Rural Residential, Settlement, Quail Ridge, Airport	300	2,500
Rural Lifestyle	1000	2,500
Rural Production, Horticulture, Kauri Cliffs, Ngawha Innovation Park, Māori Purpose - Rural	5000	2,500

Where the standard is not met, matters of discretion are restricted to:

a. the location, scale and volume;
b. depth and height of cut and fill;
c. the nature of filling material and whether it is compacted;
d. the extent of exposed surfaces or stockpiling of fill;
e. erosion, dust and sediment controls;
f. the risks of natural hazards, particularly flood events;
g. stormwater controls;
h. flood storage, overland flow paths and drainage patterns;
i. impacts on natural coastal processes;
j. the stability of land, buildings and infrastructure;
k. natural character, landscape, historic heritage, spiritual and cultural values;
l. the life-supporting capacity of soils;
m. the extent of indigenous vegetation clearance and its effect on biodiversity;
n. impact on any outstanding natural character, outstanding natural landscapes and outstanding natural features;
o. riparian margins;
p. the location and use of infrastructure;
q. temporary or permanent nature of any adverse effect;
r. traffic and noise effects;
s. time of year earthworks will be carried out and duration of the activity; and
t. impact on visual and amenity values.

EW-S2 **Maximum depth and slope**

All zones The maximum depth of any cut or height of any fill shall **Where the standard is not met, matters of**

	not exceed: i. 1.5m, i.e. maximum permitted cut and fill height may be 3m; or ii. 3m subject to it being retained by a engineered retaining wall, which has had a building consent issued.	**discretion are restricted to:** a. the location, scale and volume; b. depth and height of cut and fill; c. the extent of exposed surfaces or stockpiling of fill; d. the risks of natural hazards, particularly flood events; e. stormwater controls; f. flood storage, overland flow paths and drainage patterns; g. impacts on natural coastal processes; h. the stability of land, buildings and infrastructure; i. natural character, landscape, historic heritage, spiritual and cultural values; j. the life-supporting capacity of soils; k. the extent of indigenous vegetation clearance and its effect on biodiversity; l. impact on any outstanding natural character, outstanding natural landscapes and outstanding natural features; m. riparian margins; n. the location and use of infrastructure; o. temporary or permanent nature of any adverse effect; p. traffic and noise effects; q. time of year earthworks will be carried out and duration of the activity; and r. impact on visual and amenity values.
EW-S3	**Accidental discovery protocol**	
All zones	On discovery of any suspected sensitive material, the person must take the following steps: 1. Cease all works within 20m of any part of the discovery immediately and secure the area, including: i. shutting down all earth disturbing machinery and stopping all earth moving activities; and ii. establish a sufficient buffer area to ensure that all material remains undisturbed. 2. Within 24 hours of the discovery the owner of the site, tenant or the contractor must: i. inform the following parties of the discovery: ■ The New Zealand Police if the discovery is of human remains or kōiwi; ■ The Council in all cases; ■ Heritage New Zealand Pouhere Taonga if the discovery is an archaeological site, Māori cultural artefact, human remains or kōiwi; ■ Tangata Whenua if the discovery is an archaeological site, Māori cultural artefact, or kōiwi. 3. No works shall recommence until the discovery area is inspected by the relevant authority or agency, this shall include: i. If the discovery is human remains or kōiwi the New Zealand Police are required to investigate the human remains to determine whether they are those of a missing person or a crime scene. The remainder of this process will not apply until the New Zealand Police confirm that they have no further interest in the discovery; or ii. If the discovery is of archaeological material, other than evidence of contaminants, a site inspection for the purpose of initial assessment and response will be arranged by	**Where the standard is not met, matters of discretion are restricted to: Not applicable**

	the Council in consultation with Heritage New Zealand Pouhere Taonga and appropriate Tangata Whenua representatives. 4. Recommencement of work: ◦ Heritage New Zealand has confirmed that an archaeological authority has been approved for the work or that none is required; ◦ Any required notification under the Protected Objects Act 1975 has been made to the Ministry for Culture and Heritage; ◦ Resource consent has been granted to any alteration or amendment to the earthworks or land disturbance that may be necessary to avoid the sensitive materials that is not otherwise permitted under the plan or allowed by any existing resource consent.	
EW-S4	**Site reinstatement**	
All zones	As soon as practicable, but no later than six months from the commencement of works: i. the earthworks area shall be stablished, filled and/or recontoured in a manner consistent with the surrounding land. ii. replanted with vegetation which is the same as, or of similar species, to that which existed on the site prior to the earthworks taking place (if any), except that where the site was vegetation with any plant pest, the site may be replanted with indigenous vegetation, from locally sourced genetic stocks or iii. sealed, paved, metaled or built over.	**Where the standard is not met, matters of discretion are restricted to:** a. the location, scale and volume; b. depth and height of cut and fill; c. the nature of filling material and whether it is compacted; d. the extent of exposed surfaces or stockpiling of fill; e. erosion, dust and sediment controls; f. the risks of natural hazards, particularly flood events; g. stormwater controls; h. flood storage, overland flow paths and drainage patterns; i. impacts on natural coastal processes; j. the stability of land, buildings and infrastructure; k. natural character, landscape, historic heritage, spiritual and cultural values; l. the life-supporting capacity of soils; m. the extent of indigenous vegetation clearance and its effect on biodiversity; n. outstanding natural character, outstanding natural landscapes and outstanding natural features; o. riparian margins; p. the location and use of infrastructure; q. temporary or permanent nature of any adverse effect; r. traffic and noise effects; s. time of year earthworks will be carried out and duration of the activity; and t. impact on visual and amenity values
EW-S5	**Erosion and sediment control**	
All zones	Earthworks i. must for their duration be controlled in accordance with the Erosion and Sediment Control Guidelines for Land Disturbing Activities in the Auckland Region 2016 (Auckland Council Guideline Document GD2016/005); ii. shall be implemented to prevent silt or sediment from entering water bodies, coastal marine area, any stormwater system, overland flow paths, or roads.	**Where the standard is not met, matters of discretion are restricted to:** a. the location, scale and volume; b. depth and height of cut and fill; c. the nature of filling material and whether it is compacted; d. the extent of exposed surfaces or stockpiling of fill; e. erosion, dust and sediment controls; f. the risks of natural hazards, particularly flood events; g. stormwater controls; h. flood storage, overland flow paths and

		drainage patterns; i. impacts on natural coastal processes; j. the stability of land, buildings and infrastructure; k. natural character, landscape, historic heritage, spiritual and cultural values; l. the life-supporting capacity of soils; m. the extent of indigenous vegetation clearance and its effect on biodiversity; n. outstanding natural character, outstanding natural landscapes and outstanding natural features; o. riparian margins; p. the location and use of infrastructure; q. temporary or permanent nature of any adverse effect; r. traffic and noise effects; s. time of year earthworks will be carried out and duration of the activity; and t. impact on visual and amenity values.
EW-S6	**Setback**	
All zones	Earthworks must be setback by the following minimum distances: i. earthworks supported by engineered retaining walls - 1.5m from a site boundary; ii. earthworks not supported by engineered retaining walls - 3m from a site boundary; iii. earthworks must be setback by a minimum distance of 10m from coastal marine area. **Note:** setbacks from waterbodies is managed by the Natural Character chapter.	**Where the standard is not met, matters of discretion are restricted to:** a. the location, scale and volume; b. depth and height of cut and fill; c. the nature of filling material and whether it is compacted; d. the extent of exposed surfaces or stockpiling of fill; e. erosion, dust and sediment controls; f. stormwater controls; g. the stability of land, buildings and infrastructure; h. the life-supporting capacity of soils; i. temporary or permanent nature of any adverse effect; j. traffic and noise effects k. time of year earthworks will be carried out and duration of the activity; l. natural character, landscape, historic heritage, spiritual and cultural values; and m. impact on visual and amenity values.
EW-S7	**Land stability**	
All zones	Earthworks must not result in any instability of land at or beyond the boundary of the property where the earthworks occurs.	**Where the standard is not met, matters of discretion are restricted to:** a. the location, scale and volume; b. depth and height of cut and fill; c. the nature of filling material and whether it is compacted; d. the extent of exposed surfaces or stockpiling of fill; e. erosion, dust and sediment controls; f. the risks of natural hazards, particularly flood events; g. stormwater controls; h. flood storage, overland flow paths and drainage patterns; i. impacts on natural coastal processes; j. where the land instability adversely affects any buildings, structures or infrastructure; k. the life-supporting capacity of soils; l. the extent of vegetation clearance; m. proximity to any waterbody or coastal

		marine area; n. the location and use of infrastructure; o. temporary or permanent nature of any adverse effect; p. traffic and noise effects;and q. time of year earthworks will be carried out and duration of the activity.
EW-S8	**Nature of filling material**	
All zones	The fill material shall not: i. contain putrescible, pollutant, inflammable or hazardous components; ii. consist of material other than soil, rock, stone, aggregate, gravel, sand, silt, or demolition material. iii. comprise more than 5% vegetation (by volume) of any load.	**Where the standard is not met, matters of discretion are restricted to:** a. the location, scale and volume; b. depth and height of cut and fill; c. the nature of filling material and whether it is compacted; d. the extent of exposed surfaces or stockpiling of fill; e. erosion, dust and sediment controls; f. the risks of natural hazards, particularly flood events; g. stormwater controls; h. flood storage, overland flow paths and drainage patterns; i. impacts on natural coastal processes; j. the stability of land, buildings and infrastructure; k. natural character, landscape, historic heritage, spiritual and cultural values; l. the life-supporting capacity of soils; m. outstanding natural character, outstanding natural landscapes and outstanding natural features; n. riparian margins; o. the location and use of infrastructure; p. temporary or permanent nature of any adverse effect; and q. traffic and noise effects; r. time of year earthworks will be carried out and duration of the activity; and s. impact on visual and amenity values.
EW-S9	**Flood and coastal hazards**	
All zones	Earthworks must not: i. divert flood flow or coastal inundation onto other properties or otherwise result in any increase in flood hazard or coastal inundation beyond the boundaries of the site. ii. result in the loss of any flood storage volume within a flood hazard area, unless equivalent flood storage is provided.	**Where the standard is not met, matters of discretion are restricted to:** a. the location, scale and volume; b. depth and height of cut and fill; c. the nature of filling material and whether it is compacted; d. the extent of exposed surfaces or stockpiling of fill; e. erosion, dust and sediment controls; f. the risks of natural hazards, particularly flood events; g. stormwater controls; h. flood storage, overland flow paths and drainage patterns; i. impacts on natural coastal processes; j. the stability of land, buildings and infrastructure; k. the life-supporting capacity of soils; l. temporary or permanent nature of any adverse effect; and m. time of year earthworks will be carried out and duration of the activity.

Overview

There are activities within the Far North District that use hazardous substances, these may pose a potential threat to the health and safety of communities and the natural environment. Hazardous substances are defined in the Hazardous Substances and New Organisms Act 1996 (HSNO Act) and include substances with radioactive properties or high biological oxygen demand. Substances fall within the definition if they have certain hazardous properties such as explosiveness, flammability or corrosiveness (among other factors) and must be managed, stored, used, transported and disposed of in a safe and secure manner. The HSNO Act regulates the introduction and use of hazardous substances and determines what controls should be in place to mitigate risks to people and the environment. However, the controls under the HSNO Act are substance specific and do not take into account the sensitivity of the receiving environment.

The RMA enables District Plans to manage the adverse effects of the storage, use, disposal and transport of hazardous substances, provided these do not duplicate controls in the HSNO Act or other legislation. Land use controls for hazardous substances in District Plans may be necessary to manage the risks associated with significant hazardous facilities and their potential impacts on other sensitive activities, incompatible land uses and the natural environment.

Council has responsibilities under the RMA to manage the adverse effects of the use and development of land. This includes the adverse effects that may arise from significant hazardous facilities on sensitive activities and sensitive environments, the risks of natural hazards, cumulative effects (agglomeration of significant hazardous facilities) and reverse sensitivity issues.

Objectives	
HS-O1	The risks associated with the storage, use or disposal of hazardous substances to people, property and the environment are minimised to acceptable levels while recognising the benefits of activities that store, use and dispose of hazardous substances.
HS-O2	Significant hazardous facilities and sensitive activities are managed through separation distances and other methods to avoid to the extent practicable, or otherwise mitigate, reverse sensitivity effects.

Policies	
HS-P1	Manage the effects of hazardous substances by: a. locating, designing, constructing and managing significant hazardous facilities to avoid or mitigate adverse effects and risks to people, property and the environment, particularly sensitive environments and sensitive activities; b. identifying, assessing and managing risks and adverse effects, including cumulative effects, of significant hazardous facilities so they do not create unacceptable residual risks to people, property and the environment; and c. locating land use activities so that the adverse effects and risks of transporting hazardous substances on roading infrastructure and other land use activities are minimised.
HS-P2	Require appropriate separation distances between significant hazardous facilities and sensitive activities to avoid where practicable, or otherwise mitigate, reverse sensitivity effects and the risks to people and property.
HS-P3	Manage new or expanded significant hazardous facilities and sensitive activities to address the effects of the activity requiring resource consent, including (but not limited to) consideration of the following matters where relevant to the application: a. separation distances and other methods to avoid and mitigate risks and adverse effects of significant hazardous facilities on sensitive activities and sensitive environments; b. separation distances and other methods to avoid or mitigate reverse sensitivity effects between significant hazardous facilities and sensitive activities; c. the extent to which adverse effects and risks are adequately managed through other legislation and organisations; d. the type, scale, intensity, duration and frequency of the risks and effects on people, property and the environment; e. site design and layout of the activity and the ability to internalise effects within the site; f. any historical, spiritual or cultural association held by tangata whenua, with regards to the matters set out in Policy TW-P6; g. avoidance or management of risks associated with natural hazards; and h. any potential adverse cumulative effects.

Rules

Note:

1. **There may be rules in other District-Wide Matters and the underlying zone in Part 3 - Area Specific Matters that apply to a proposed activity, in addition to the rules in this chapter. These other rules may be more stringent than the rules in this chapter. Ensure that the underlying zone chapter and other relevant District-Wide Matters chapters are also referred to, in addition to this chapter, to determine whether resource consent is required under other rules in the District Plan. Refer to the *how the plan works* chapter to determine the activity status of a proposed activity where resource consent is required under multiple rules.**

HS-R1	**Maintenance and repair of a significant hazardous facility**	
All zones	**Activity status: Permitted** **Where:** **PER-1** The volume of hazardous substances used by the significant hazardous facility does not increase; **PER-2** The location of hazardous substances on the site will not be located closer to any sensitive activities. **PER-3** The type of hazardous substances on the site remains the same; **PER-4** Alterations to the significant hazardous facility do not increase any residual risks.	**Activity status where compliance not achieved with PER-1, PER- 2, PER- 3, or PER-4: Discretionary**
HS-R2	**Establishment of a new significant hazardous facility**	
Heavy Industrial zone	**Activity status: Permitted** **Where:** **PER-1** The new significant hazardous facility is not located within a sensitive environment; **PER-2** The new significant hazardous facility is setback at least 250m from a sensitive activity. ***Note:*** • ***This rule only has immediate legal effect 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.***	**Activity status where compliance not achieved with PER-1 or PER-2: Discretionary**
Light Industrial zone **Rural Production zone** **Ngawha Innovation and Enterprise Park zone**	**Activity status: Discretionary** **Where:** **DIS-1** The new significant hazardous facility is not located within a sensitive environment; **DIS-2** The new significant hazardous facility is setback at least 250m from a sensitive activity; **DIS-3** A new significant hazardous facility does not create any residual risk. ***Note:***	**Activity status where compliance not achieved with DIS-1, DIS-2, or DIS-3: Non-complying**

	• ***This rule only has immediate legal effect 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.***	
All other zones	**Activity status: Non-complying**	**Activity status where compliance not achieved: Not applicable**
HS-R3	**Significant hazardous facility within the coastal environment**	
All zones	**Activity status: Non-complying**	**Activity status where compliance not achieved: Not applicable**
HS-R4	**Significant hazardous facility within an outstanding natural feature or landscape**	
All zones	**Activity status: Non-complying**	**Activity status where compliance not achieved: Not applicable**
HS-R5	**Significant hazardous facility within a scheduled site and area of significance to Māori**	
All zones	**Activity status: Non-complying**	**Activity status where compliance not achieved: Not applicable**
HS-R6	**Significant hazardous facility within a significant natural area**	
All zones	**Activity status: Non-complying**	**Activity status where compliance not achieved: Not applicable**
HS-R7	**Significant hazardous facility within a flood hazard area**	
All zones	**Activity status: Non-complying**	**Activity status where compliance not achieved: Not applicable**
HS-R8	**Significant hazardous facility within a coastal hazard area**	
All zones	**Activity status: Non-complying**	**Activity status where compliance not achieved: Not applicable**
HS-R9	**Significant hazardous facility within a scheduled heritage resource**	
All zones	**Activity status: Non-complying**	**Activity status where compliance not achieved: Not applicable**
HS-R10	**Significant hazardous facility within 100 metres of the edge of a surface water body**	
All zones	**Activity status: Non-complying**	**Activity status where compliance not achieved: Not applicable**
HS-R11	**New sensitive activity**	
All zones	**Activity status: Non-complying** **Where:** **NC-1** The new sensitive activity is located within 250m of a Significant Hazardous Facility.	**Activity status where compliance not achieved: Not applicable**

Overview

The District is home to a wide range of indigenous species, habitats and ecosystems and a high number of regionally endemic species, including a number that are of cultural significance to tangata whenua. The protection, maintenance and enhancement of indigenous biodiversity contributes to the District's unique scenery, its natural character, its amenity values, and its economic opportunities, such as tourism and recreation.

A large portion of the District is covered in indigenous vegetation and habitat. Based on the criteria in Appendix 5 of the Northland Regional Policy Statement 2016 (RPS), approximately 42% of the District has indigenous vegetation and habitat with potentially significant ecological values. Around 58% of this indigenous vegetation and habitat is on private land, including Māori land, which can create tensions between the aspirations of landowners to develop their land while protecting those areas and habitats. Vegetation clearance, fragmentation, and the introduction of pest plants and species can all diminish the quality and extent of indigenous ecosystems.

Council has responsibilities under the RMA, the NZCPS and the RPS to identify and protect areas of significant indigenous biodiversity (Significant Natural Areas) and maintain indigenous biodiversity. Where Significant Natural Areas are identified in the District Plan or through ecological assessments in accordance with the significance criteria in Appendix 5 of the RPS or any more recent National Policy Statement on indigenous biodiversity there will be greater control over land use and subdivision to ensure that the ecological significance of these areas are protected. There may be tension between the public and ecological benefits in protecting, maintaining or enhancing indigenous biodiversity and the associated costs or restrictions to private and public (including Māori) landowners

Objectives	
IB-O1	Areas of significant indigenous vegetation and significant habitats of indigenous fauna (Significant Natural Areas) are identified and protected for current and future generations.
IB-O2	Indigenous biodiversity is managed to maintain its extent and diversity in a way that provides for the social, economic and cultural well-being of people and communities.
IB-O3	The relationship between tangata whenua and indigenous biodiversity, including taonga species and habitats, is recognised and provided for.
IB-O4	The role of tangata whenua as kaitiaki and landowners as stewards in protecting and restoring significant natural areas and indigenous biodiversity is provided for.
IB-O5	Restoration and enhancement of indigenous biodiversity is promoted and enabled.

Policies	
IB-P1	Identify Significant Natural Areas by: a. using the ecological significance criteria in Appendix 5 of the RPS or in any more recent National Policy Statement on indigenous biodiversity; b. including areas that meet the ecological significance criteria as Significant Natural Areas in Schedule 4 of the District Plan and on the planning maps where this is agreed with the landowner and verified by physical inspection where practicable; c. encouraging landowners to include identified Significant Natural Areas in Schedule 4 of the District Plan at the time of subdivision and development; d. providing assistance to landowners to add Significant Natural Areas to Schedule 4 of the District Plan; and e. requiring an assessment of the ecological significance for indigenous vegetation clearance to establish permitted activity thresholds in Rule IB R2-R4.
IB-P2	Within the coastal environment: a. avoid adverse effects of land use and subdivision on Significant Natural Areas; and b. avoid significant adverse effects and avoid, remedy or mitigate other adverse effects of land use and subdivision on areas of important and vulnerable indigenous vegetation, habitats and ecosystems.
IB-P3	Outside the coastal environment: a. avoid, remedy or mitigate adverse effects of land use and subdivision on Significant Natural Areas to ensure adverse effects are no more than minor; and b. avoid, remedy or mitigate adverse effects of land use and subdivision on areas of important and vulnerable indigenous vegetation, habitats and ecosystems to ensure there are no significant adverse effects.
IB-P4	If adverse effects on indigenous species, habitats and ecosystems located outside of the coastal environment cannot be avoided, remedied or mitigated in accordance with IB-P3, consider whether it is appropriate to apply the following steps as an effects management hierarchy:

	a. biodiversity offsetting to address more than minor residual adverse effects to achieve a no net loss and preferably net gain in indigenous biodiversity; and b. environmental biodiversity compensation to address more than minor residual adverse effects where it is not practicable to achieve biodiversity offsetting.
IB-P5	Ensure that the management of land use and subdivision to protect Significant Natural Areas and maintain indigenous biodiversity is done in a way that: a. does not impose unreasonable restrictions on existing primary production activities, particularly on highly versatile soils; b. recognises the operational need and functional need of some activities, including regionally significant infrastructure, to be located within Significant Natural Areas in some circumstances; c. allows for maintenance, use and operation of existing structures, including infrastructure; and d. enables Māori land to be used and developed to support the social, economic and cultural well-being of tangata whenua, including the provision of papakāinga, marae and associated residential units and infrastructure.
IB-P6	Encourage the protection, maintenance and restoration of indigenous biodiversity, with priority given to Significant Natural Areas, through non-regulatory methods including consideration of: a. assisting landowners with physical assessments by suitably qualified ecologists to determine whether an area is a Significant Natural Area; b. reducing or waiving resource consent application fees; c. providing, or assisting in obtaining funding from other agencies and trusts; d. sharing and helping to improve information on indigenous biodiversity; and e. working directly with iwi and hapū, landowners and community groups on ecological protection and enhancement projects.
IB-P7	Encourage and support active management of pest plants and pest animals.
IB-P8	Promote the protection of species that are endemic to Northland by eco-sourcing plants from within the ecological district.
IB-P9	Require landowners to manage pets and pest species, including dogs, cats, possums, rats and mustelids, to avoid risks to threatened indigenous species, including avoiding the introduction of pets and pest species into kiwi present or high-density kiwi areas.
IB-P10	Manage land use and subdivision to address the effects of the activity requiring resource consent for indigenous vegetation clearance and associated land disturbance, including (but not limited to) consideration of the following matters where relevant to the application: a. the temporary or permanent nature of any adverse effects; b. cumulative effects of activities that may result in loss or degradation of habitats, species populations and ecosystems; c. the extent of any vegetation removal and associated land disturbance; d. the effects of fragmentation; e. linkages between indigenous ecosystems and habitats of indigenous species; f. the potential for increased threats from pest plants and animals; g. any downstream adverse effects on waterbodies and the coastal marine area; h. where the area has been mapped or assessed as a Significant Natural Areas: i. the extent to which the proposal will adversely affect the ecological significance, values and function of that area; ii. whether it is appropriate or practicable to use biodiversity offsets or environmental biodiversity compensation to address more than minor residual adverse effects; i. the location, scale and design of any proposed development; j. the extent of indigenous vegetation cover on the site and whether it is practicable to avoid or reduce the extent of indigenous vegetation clearance; k. the functional or operational needs of regionally significant infrastructure; l. any positive contribution any proposed biodiversity offsets or environmental biodiversity compensation will have on indigenous biodiversity; and m. any historical, spiritual or cultural association held by tangata whenua, with regard to the matters set out in Policy TW-P6.

Rules

Notes:

1. **Rules IB-R2 to IB-R4 apply to indigenous vegetation clearance not permitted under Rule IB-R1.**
2. **There are rules for indigenous vegetation clearance in the following District-Wide Matters chapters: Natural Character, Natural Features and Landscapes, and Coastal Environment. These other rules for vegetation clearance may be more stringent and apply in addition to the indigenous vegetation clearance rules in this chapter. Refer to the How the plan works chapter to determine the activity status of a proposed activity where resource consent is required under multiple rules.**

3. **This chapter manages land disturbance associated with indigenous vegetation clearance. Earthworks that permanently alter the profile of the land are managed through the earthworks chapter. The Earthworks chapter rules apply 'in addition' to the earthworks rules in this overlay chapter, not instead of. In the event of a conflict between the earthworks chapter and this chapter's earthworks rules, the most stringent rule will apply.**
4. **This chapter does not apply to indigenous vegetation clearance in urban environment allotments. Refer to the Notable Trees chapter for rules relating to scheduled notable trees and groups of trees.**
5. **Plantation forestry is regulated under the National Environmental Standards for Plantation Forestry 2017 (NES-PF). The NES-PF allows district plan rules to be more stringent than the NES-PF when the rule relates to the protection of Significant Natural Areas and IB-R5 in this chapter is a more stringent rule for plantation forestry activities in Significant Natural Areas. This chapter does not apply to indigenous vegetation clearance associated with plantation forestry activities outside Significant Natural Areas which is regulated under Regulation 93 and 94 of the NES-PF.**

IB-R1	**Indigenous vegetation pruning, trimming and clearance and any associated land disturbance for specified activities within and outside a Significant Natural Area**	
All zones	**Activity status: Permitted** **Where:** **PER-1** It is for any of the following: 1. To address an immediate risk to the health and safety of the public or damage to property; 2. To remove dead trees, provided that no more indigenous vegetation is cleared or trimmed than is necessary for safe removal; 3. The formation of walking tracks less than 1.2m wide using manual methods which do not require the removal of any tree over 300mm in girth; 4. Clearance for biosecurity reasons; 5. The sustainable non-commercial harvest of plant material for rongoā Māori (customary medicine); 6. To create or maintain a 20m setback from a building used for a vulnerable activity (excluding accessory buildings) to the edge of the indigenous vegetation area; 7. To allow for the construction of a single residential unit on a title and essential associated on-site infrastructure and access and it does not exceed 1,000m^2; 8. It is within an area subject to an Open Space Covenant under the Queen Elizabeth II National Trust Act 1977, a Ngā Whenua Rahui Kawenata, a Conservation Covenant under the Reserves Act 1977 or the Conservation Act 1987, or a Heritage covenant under the Heritage New Zealand Pouhere Taonga Act 2014 and the vegetation clearance is provided for in that covenant or order; 9. The construction of a new fence where the purpose of the new fence is to exclude stock and/or pests from the area of indigenous vegetation provided that the clearance does not exceed 3.5m in width either side of the fence line; 10. The removal or clearance from land which was previously cleared and the indigenous vegetation to be cleared is less than 10 years old; 11. Creation and maintenance of firebreaks to manage fire risk; 12. The harvesting of indigenous timber approved under the Forests Act 1949 via either a registered sustainable forest management plan, a registered sustainable forest management permit or a personal use approval for the harvesting and milling of indigenous timber from the Ministry of Primary Industries; 13. It is for the operation, repair and maintenance of the	**Activity status where compliance not achieved with PER-1: Discretionary**

	following activities where they have been lawfully established: i. fences ii. infrastructure iii. buildings iv. driveways and access v. walking tracks vi. cycling tracks vii. farming tracks.	
IB-R2	**Indigenous vegetation clearance and any associated land disturbance within a Significant Natural Area for papakāinga**	
Māori Purpose zone, Treaty Settlement Land overlay, Rural Production zone	**Activity status: Permitted** **Where:** **PER-1** It does not exceed: 1. 1,500m^2 for a marae complex, including associated infrastructure and access; and 2. 500m^2 per residential unit. ***Note:*** *Rules MPZ-R5 and RPROZ-R20 include specific land use rules that also apply to papakainga in the Māori Purpose zone, Treaty Settlement Land overlay and Rural Production zones.*	**Activity status where compliance not achieved with PER-1: Discretionary**
IB-R3	**Indigenous vegetation clearance and any associated land disturbance within a Significant Natural Area**	
All zones	**Activity status: Permitted** **Where:** **PER-1** It does not exceed 100m^2 per site in any calendar year.	**Activity status where compliance not achieved with PER-1: Discretionary**
IB-R4	**Indigenous vegetation clearance and any associated land disturbance outside a Significant Natural Area**	
All zones	**Activity status: Permitted** **Where:** **PER-1** 1. A report has been obtained from a suitably qualified and experienced ecologist confirming that the indigenous vegetation does not meet the criteria for a Significant Natural Area and it is submitted to Council 14 days in advance of the clearance being undertaken; and 2. It does not exceed the following amounts per site over a 5-year period: i. Rural Production zone, Horticulture zone, Māori Purpose zone and Treaty Settlement Land Overlay – 5,000m^2 if not in a remnant forest, otherwise 500m^2 in a remnant forest; ii. All other zones – 500m^2. **PER-2** 1. A report has not been obtained from a suitably qualified and experienced ecologist confirming that the indigenous vegetation does not meet the criteria for a Significant Natural Area and a report has not been submitted to Council 14 days in advance of the clearance being undertaken; and 2. It does not exceed 100m^2 per site in any calendar year.	**Activity status where compliance not achieved with PER-1 or PER-2: Discretionary**

	Note: *This rule only has immediate legal effect for indigenous vegetation clearance where compliance is not achieved with PER-2 (i.e. in circumstances where a report confirming that the indigenous vegetation is not a Significant Natural Area has not been obtained).*	
IB-R5	**Plantation forestry and plantation forestry activities within a Significant Natural Area**	
All zones	**Activity status: Discretionary**	**Activity status where compliance not achieved: Not applicable**

Overview

The District has many rivers and lakes which are valued for their important ecological, recreation, natural character, amenity and cultural values. A wide range of activities occur on the surface of rivers and lakes. This includes activities that have a functional need to locate on water surfaces such as jetties and piers, recreation activities such as fishing and boating, and customary activities undertaken by tangata whenua.

The Council has an obligation to manage any actual or potential effects of activities in relation to the surface of water in rivers and lakes. This does not include the mouth of rivers where they are within the CMA. The activities managed by this chapter include the use of motorised and non-motorised craft on rivers and lakes for various purposes, and the construction of structures.

Activities occurring on the surface of water can have potential adverse effects on the ecological values of the freshwater waterbody particularly during fish spawning and bird breeding seasons, recreation values and natural character, and on the associated cultural values.

The Council has responsibilities under the RMA, NZCPS and the RPS to manage activities occurring on and adjacent to waterbodies. Given their overlapping functions, Council needs to work collaboratively with NRC that is responsible for managing water quality and quantity, ecosystems within the Region's freshwater bodies, and activities on the beds of rivers and lakes.

Objective	
ASW-O1	Activities on the surface of water are managed in a way that protects and enhances the ecological, recreation, natural character, amenity and cultural values of the District's rivers and lakes for current and future generations.

Policies	
ASW-P1	Enable the non-commercial recreational use of rivers and lakes where it will not result in adverse effect on ecological, recreation, natural character, amenity or cultural values.
ASW-P2	Provide for activities on the surface of water where: a. there is a functional need to locate on the surface of the waterbody; b. the land use is consistent with the characteristics and qualities of the waterbody and adjacent zone or overlay; c. it will not result in adverse effects on the habitat of breeding birds or fish spawning areas; d. it will not result in adverse effects on any other indigenous flora and fauna within the riparian margins of the waterbody; e. it will not result in adverse effects on cultural and spiritual values associated with the waterbody; f. public access is not adversely affected or it is provided or enhanced; g. it will not result in adverse effects on other recreational activities; and h. it will not result in cumulative adverse effects with other structures or activities on the surface of the waterbody.
ASW-P3	Recognise tangata whenua's relationship with and cultural practices associated with freshwater when managing activities on the surface of water in rivers and lakes, including the ability to undertake customary activities.
ASW-P4	Manage activities on the surface of water to address the effects of the activity, including (but not limited to) consideration of the following matters where relevant to the application: a. whether there is a functional need for the activity or structure to be located on the waterbody; b. any adverse effects on indigenous biodiversity and riparian margins; c. any adverse effects on associated wetlands; d. any adverse effects on cultural and spiritual values; e. any adverse effects on recreation activity; f. any adverse effects on public access; g. any enhancement or provision of public access, including any consideration for launching, retrieval and damage to margins; h. whether the activity is within a water catchment that serves a public water supply; i. any cumulative adverse effects; j. the scale and location of any structure on the waterbody and adjacent land; k. whether the activity may exacerbate or be adversely affected by a natural hazard, including bank/channel erosion due to activity; l. servicing requirements, i.e. sewerage, refuse, access to the waterbody and parking; m. any adverse effect on the characteristics and qualities of the waterbody; and n. any public benefit.

Rules

Notes:

1. **There may be rules in other Part 2 - District-Wide Matters and the underlying zones in Part 3 - Area-Specific Matters that apply to a proposed activity, in addition to the rules in this chapter. This includes Part 2 rules relating to natural hazards, public access, light, noise and temporary activities. Activities are also required to comply with Part 3 zone rules applying to the waterbody. These other rules may be more stringent than the rules in this chapter. Ensure that the underlying zone chapter and other relevant District-Wide Matters chapters are also referred to, in addition to this chapter, to determine whether resource consent is required under other rules in the District Plan. Refer to the *how the plan works* chapter to determine the activity status of a proposed activity where resource consent is required under multiple rules.**
2. **The Proposed Regional Plan for Northland, the Operative Regional Water and Soil Plan for Northland, and the Resource Management (National Environmental Standards for Freshwater) Regulations 2020 also guide resource consent decision-making in relation to freshwater resources. Plan users are advised to refer to these documents when considering activities on or in proximity to freshwater resources.**

ASW-R1	**The use of non-motorised craft**	
Surface of all rivers and lakes in all zones	**Activity status: Permitted** **Where:** **PER-1** The use is a non-commercial recreation activity or a customary activity. **PER-2** The craft is not used for residential activity. **PER-3** The craft is used for search and rescue, scientific investigations, noxious flora and fauna control, maintenance of the habitat of indigenous fauna, or monitoring; or irrigation network maintenance on Waingaro and Manuwai Reservoirs.	**Activity status where compliance not achieved with PER-1, PER-2 or PER-3: Discretionary**
ASW-R2	**The use of motorised craft**	
Surface of all rivers and lakes in all zones	**Activity status: Permitted** **Where:** **PER-1** The use is a non-commercial recreation activity. **PER-2** The craft is not used for residential activity. **PER-3** The craft is used for search and rescue, scientific investigations, noxious flora and fauna control, maintenance of the habitat of indigenous fauna, or monitoring; or irrigation network maintenance on Waingaro and Manuwai Reservoirs. **PER-4** With the exception of activities provided for in PER-3, the activity does not occur on any of the following water bodies: a. Lake Ngatu; b. Lake Owhariti; c. Lake Heather; d. Lake Rotorua; e. Far North Dune Lakes; f. Waitangi River (above Haruru Falls); g. Waingaro Reservoir;	**Activity status where compliance not achieved with PER-1, PER-2, PER-3 or PER-4: Discretionary**

	h. Manuwai Reservoir.	
ASW-R3	**Structures**	
Surface of all rivers and lakes in all zones	**Activity status: Permitted** **Where:** **PER-1** The structure is associated with a river crossing, scientific investigations, noxious flora and fauna control, maintenance of the habitat of indigenous fauna, or monitoring; or irrigation network maintenance on Waingaro and Manuwai Reservoirs.	**Activity status where compliance not achieved with PER-1: Discretionary**
ASW-R4	**Any activity not provided for as permitted or discretionary in this chapter**	
Surface of all rivers and lakes in all zones	**Activity status: Non-complying**	**Activity status where compliance not achieved: Not applicable**

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Taupo Bay

Scale: 1:10,000

0 0.2 0.4
Kilometres

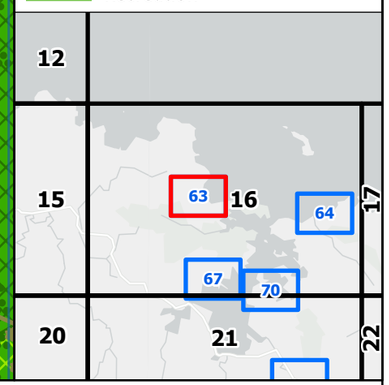
N

Legend

- Notable Tree
- Sites & Areas of Significance to Māori
- Treaty Settlement Land
- Coastal Environment
- Outstanding Natural Feature
- Outstanding Natural Landscape
- Outstanding Natural Character
- High Natural Character

Zone

- General Residential
- Māori Purpose - Rural
- Natural Open Space
- Rural Production
- Settlement
- Sport And Active Recreation

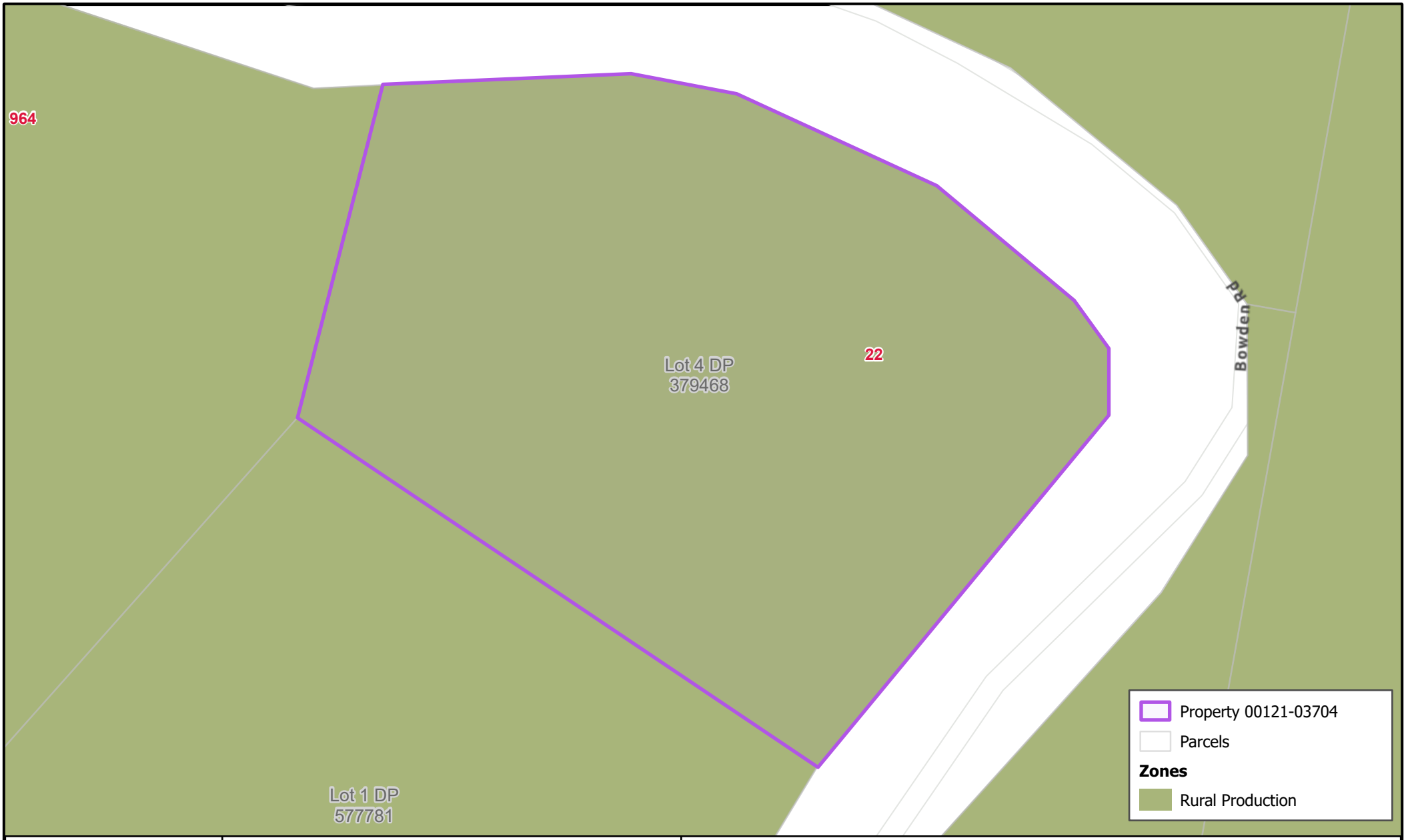


Far North District Council
Te Kaunihera o Tai Tokerau ki te Raki

Proposed Far North District Plan
Volume 1: Planning Maps (27 July 2022)

NOTE
Roads carry the same zoning as the adjoining land. If a boundary between zones follows a road, the zone boundary is located on the centreline of the formed road, or where unformed, the centreline of the legal road.

DISCLAIMER
Considerable care has been taken to avoid errors and omissions, and the latest information has been included in these District Plan maps.
However, even with the greatest care inaccuracies may occur and therefore the Far North District Council cannot accept any responsibility for such errors and omissions.



Far North District Council
Te Kaunihera o Tai Tokerau ki te Raki

Proposed District Plan - Zones

0 10 20 30 metres

Projection NZTM2000. Datum NZGD2000. Scale:1:582

DISCLAIMER:
While the Far North District Council strives to keep the data in this service current, it may not be the most recent or most accurate data available. No reliance on the information contained on this map by any person is permitted. FNDC will not be liable for any omissions or errors of information contained on this map. FNDC recommends that persons seek specific advice on individual properties from FNDC and other specialist organisations which may hold more up to date or accurate information.

LIM No. LIM2024-546

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Overview

The Rural Production zone is the largest zone in the district and accounts for approximately 65% of all land. The Rural Production zone is a dynamic environment, influenced by changing farming and forestry practices and by a wide range of productive activities. The purpose of this zone is to provide for primary production activities including non-commercial quarrying, farming, intensive indoor primary production, plantation forestry activities, and horticulture. The Rural Production zone also provides for other activities that support primary production and have a functional need to be located in a rural environment, such as processing of timber, horticulture, apiculture and dairy products. There is also a need to accommodate recreational and tourism activities that may occur in the rural environment, subject to them being complementary to the function, character and amenity values of the surrounding environment. This zone includes land subject to the Coastal Environment Overlay, which has provisions to protect the natural character of the coastal environment.

Rural land is an important resource as it underpins the social, economic and cultural well-being of the Far North District. The historic fragmentation of rural land has undermined the integrity of the rural environment and its ability to function for its intended purpose. It is important to protect this finite resource from inappropriate land use and subdivision to ensure it can be used for its primary purpose. In particular, primary production activities should be able to operate without experiencing reverse sensitivity effects based on complaints about noise, dust, heavy traffic and light spill (which may be temporary or seasonal in nature) that should be anticipated and tolerated in a rural environment. This is particularly relevant for rural land adjacent to the district's larger urban areas, which are subject to growth pressures and are expanding outside of urban zoned areas. Forcing primary production activities to locate further away from urban areas adds to the cost of transporting primary products, can result in primary production activities needing to move on to less suitable soils or topography, and may require people to travel further to work.

It is important to differentiate the Rural Production zone from the Rural Lifestyle zone and the Rural Residential zone. The Rural Lifestyle and Rural Residential zones seek to concentrate rural lifestyle or rural residential living in appropriate places in the district, to help avoid further fragmentation of productive land and reverse sensitivity effects on the district’s primary sector. Conversely, rural lifestyle development is not provided for in the Rural Production zone unless an environmental benefit is obtained through the protection of indigenous biodiversity in perpetuity (as provided for in the Subdivision chapter). Industrial and commercial activities, including retail, are not anticipated in the Rural Production zone as these are best located in urban zones with appropriate infrastructure or in the Settlement zone. This also ensures that industrial and commercial activities are separated from potentially incompatible primary production activities.

Council has a responsibility under the RMA and the Northland Regional Policy Statement to manage the rural land resource to provide for the economic, social and cultural well-being of people and communities, protect highly versatile soils, and avoid reverse sensitivity effects on primary production activities. The Rural Production zone also contains many of our areas of indigenous biodiversity, historical and cultural values and high value landscapes and features. The protection of these resources must be managed in conjunction with the ability to undertake activities anticipated in this zone.

Objectives	
RPROZ-O1	The Rural Production zone is managed to ensure its availability for primary production activities and its long-term protection for current and future generations.
RPROZ-O2	The Rural Production zone is used for primary production activities, ancillary activities that support primary production and other compatible activities that have a functional need to be in a rural environment.
RPROZ-O3	Land use and subdivision in the Rural Production zone: a. protects highly productive land from sterilisation and enables it to be used for more productive forms of primary production; b. protects primary production activities from reverse sensitivity effects that may constrain their effective and efficient operation; c. does not compromise the use of land for farming activities, particularly on highly productive land; d. does not exacerbate any natural hazards; and e. is able to be serviced by on-site infrastructure.
RPROZ-O4	The rural character and amenity associated with a rural working environment is maintained.

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

RPROZ-P2	Ensure the Rural Production zone provides for activities that require a rural location by: a. enabling primary production activities as the predominant land use; b. enabling a range of compatible activities that support primary production activities, including ancillary activities, rural produce manufacturing, rural produce retail, visitor accommodation and home businesses.
RPROZ-P3	Manage the establishment, design and location of new sensitive activities and other non-productive activities in the Rural Production zone to avoid where possible, or otherwise mitigate, reverse sensitivity effects on primary production activities.
RPROZ-P4	Land use and subdivision activities are undertaken in a manner that maintains or enhances the rural character and amenity of the Rural Production zone, which includes: a. a predominance of primary production activities; b. low density development with generally low site coverage of buildings or structures; c. typical adverse effects such as odour, noise and dust associated with a rural working environment; and d. a diverse range of rural environments, rural character and amenity values throughout the district.
RPROZ-P5	Avoid land use that: a. is incompatible with the purpose, character and amenity of the Rural Production zone; b. does not have a functional need to locate in the Rural Production zone and is more appropriately located in another zone; c. would result in the loss of productive capacity of highly productive land; d. would exacerbate natural hazards; and e. cannot provide appropriate on-site infrastructure.
RPROZ-P6	Avoid subdivision that: a. results in the loss of highly productive land for use by farming activities; b. fragments land into parcel sizes that are no longer able to support farming activities, taking into account: 1. the type of farming proposed; and 2. whether smaller land parcels can support more productive forms of farming due to the presence of highly productive land. c. provides for rural lifestyle living unless there is an environmental benefit.
RPROZ-P7	Manage land use and subdivision to address the effects of the activity requiring resource consent, including (but not limited to) consideration of the following matters where relevant to the application: a. whether the proposal will increase production potential in the zone; b. whether the activity relies on the productive nature of the soil; c. consistency with the scale and character of the rural environment; d. location, scale and design of buildings or structures; e. for subdivision or non-primary production activities: i. scale and compatibility with rural activities; ii. potential reverse sensitivity effects on primary production activities and existing infrastructure; iii. the potential for loss of highly productive land, land sterilisation or fragmentation f. at zone interfaces: i. any setbacks, fencing, screening or landscaping required to address potential conflicts; ii. the extent to which adverse effects on adjoining or surrounding sites are mitigated and internalised within the site as far as practicable; g. the capacity of the site to cater for on-site infrastructure associated with the proposed activity, including whether the site has access to a water source such as an irrigation network supply, dam or aquifer; h. the adequacy of roading infrastructure to service the proposed activity; i. Any adverse effects on historic heritage and cultural values, natural features and landscapes or indigenous biodiversity; j. Any historical, spiritual, or cultural association held by tangata whenua, with regard to the matters set out in Policy TW-P6.

Rules

Notes:

1. **There may be other rules in Part 2- District-Wide Matters of the District Plan that apply to a proposed activity, in addition to the rules in this zone chapter. These District-Wide rules may be more stringent than the rules in this chapter. Ensure that relevant District-Wide Matters chapters are also referred to in addition to this chapter, to determine whether resource consent is required under other rules in the District Plan. Refer to the *how the plan works* chapter to determine the activity status of a proposed activity where resource consent is required under multiple rules.**
2. **This zone chapter does not contain rules relating to setback to waterbodies for building and structures or setbacks to waterbodies for earthworks and indigenous vegetation clearance. The Natural Character contains rules for activities within wetland, lake and river margins. The Natural Character chapter should**

be referred to in addition to this zone chapter.

RPROZ-R1	New buildings or structures, and extensions or alterations to existing buildings or structures	
Rural Production zone	**Activity status: Permitted** **Where:** **PER-1** The new building or structure, or extension or alteration to an existing building or structure, will accommodate a permitted activity. **PER-2** The new building or structure, or extension or alteration to an existing building or structure complies with standards: RPROZ-S1 Maximum height; RPROZ-S2 Height in relation to boundary; RPROZ-S3 Setback (excluding from MHWS or wetland, lake and river margins) RPROZ-S4 Setback from MHWS RPROZ-S5 Building or structure coverage}; RPROZ-S6 Buildings or structures used to house, milk or feed stock (excluding buildings or structures used for an intensive indoor primary production activity)}. RPROZ-S7 Sensitive activities setback from boundaries of a Mineral extraction overlay	**Activity status where compliance not achieved with PER-2: Restricted Discretionary** **Matters of discretion are restricted to:** a. the matters of discretion of any infringed standard **Activity status where compliance not achieved with PER-1: Discretionary**
RPROZ-R2	**Impermeable surface coverage**	
Rural Production zone	**Activity status: Permitted** **Where:** **PER-1** The impermeable surface coverage of any site is no more than 15%.	**Activity status where compliance not achieved with PER-1: Restricted Discretionary** **Matters of discretion are restricted to:** a. the extent to which landscaping or vegetation may reduce adverse effects of run-off, b. the effectiveness of the proposed method for controlling stormwater on site; c. the availability of land for disposal of effluent and stormwater on the site without adverse effects on adjoining waterbodies (including groundwater and aquifers) or on adjoining sites; d. whether low impact design methods and use of green spaces can be used; e. any cumulative effects on total catchment impermeability; and f. natural hazard mitigation and site constraints.
RPROZ-R3	**Residential activity**	
Rural Production zone	**Activity status: Permitted** **Where:** **PER-1** The site area per residential unit is at least 40ha. **PER-2** The number of residential units on a site does not exceed six.	**Activity status where compliance not achieved with PER-1 or PER-2: Discretionary** **Where:** **DIS-1** The site area per residential unit is at least 8ha.

	PER-1 does not apply to: a single residential unit located on a site less than 40ha.	**DIS-2** The number of residential units on a site does not exceed two. **Activity status where compliance not achieved with DIS 1 or DIS 2: Non-complying**
RPROZ-R4	**Visitor accommodation**	
Rural Production zone	**Activity status: Permitted** **Where:** **PER-1** The visitor accommodation is within a residential unit, accessory building or minor residential unit. **PER-2** The occupancy does not exceed 10 guests per night. **PER-3** The site does not share access with another site.	**Activity status where compliance not achieved with PER-1, PER-2 or PER-3: Discretionary**
RPROZ-R5	**Home Business**	
Rural Production zone	**Activity status: Permitted** **Where:** **PER-1** The home business is undertaken within: 1. a residential unit; or 2. an accessory building that does not exceed 40m^2 GFA; or 3. a minor residential unit. **PER-2** There is no more than two full-time equivalent persons engaged in the home business who reside off-site. **PER-3** All manufacturing, altering, repairing, dismantling or processing of any material or articles associated with an activity is carried out within a building or screened from residential units on adjoining sites. **PER-4** Hours of operation are between: 1. 7am-8pm Monday to Friday. 2. 8am-8pm Weekends and public holidays.	**Activity status where compliance not achieved with PER-1, PER-2, PER-3 or PER- 4: Discretionary**
RPROZ-R6	**Educational facility**	
Rural Production zone	**Activity status: Permitted** **Where:** **PER-1** The educational facility is within a residential unit, accessory building or minor residential unit. **PER-2** Hours of operation are between; 1. 7am-8pm Monday to Friday. 2. 8am-8pm Weekends and public holidays. **PER-3** The number of students attending at one time does not exceed four, excluding those who reside onsite.	**Activity status where compliance not achieved with PER-1, PER-2 or PER-3: Discretionary**

RPROZ-R7	**Farming activity**	
Rural Production zone	**Activity status: Permitted**	**Activity status where compliance not achieved: Non-applicable**
RPROZ-R8	**Conservation activity**	
Rural Production zone	**Activity status: Permitted**	**Activity status where compliance not achieved: Not applicable**
RPROZ-R9	**Recreational activity**	
Rural Production zone	**Activity status: Permitted** **Where:** **PER-1** The recreational activity is not being operated as a commercial activity. **PER-2** There is no motorsport activity.	**Activity status where compliance not achieved with PER-1 or PER-2: Discretionary**
RPROZ-R10	**Rural produce retail**	
Rural Production zone	**Activity status: Permitted** **Where:** **PER-1** The activity does not exceed GBA of 100m^2 and is set back a minimum of 30m from any internal boundary. **PER-2** The number of rural produce retail operations does not exceed one per site.	**Activity status where compliance not achieved with PER-1 or PER-: Discretionary**
RPROZ-R11	**Rural produce manufacturing**	
Rural Production zone	**Activity status: Permitted** **Where:** **PER-1** The building undertaking rural produce manufacturing does not exceed GFA of 100m^2. **PER-2** The number of rural produce manufacturing operations does not exceed one per site. **PER-3** All manufacturing, altering, repairing, dismantling or processing of any materials or articles is carried out within a building or screened from residential units on adjoining properties.	**Activity status where compliance not achieved with PER-1, PER-2 or PER-3: Discretionary**
RPROZ-R12	**Farm quarry**	
Rural Production zone	**Activity status: Permitted** **Where:** **PER-1** 1. The farm quarry is not within 30m of a site boundary; and 2. no more than 5,000m^3 of material is extracted in a calendar year.	**Activity status where compliance not achieved with PER-1: Discretionary**

RPROZ-R13	Catteries and dog boarding kennels	
Rural Production zone	**Activity status: Permitted** **Where:** **PER-1** Any building, compound or part of a site used for a cattery, is located a minimum of: 1. 600m from the boundary of a site within the General Residential, Mixed Use, Kororāreka Russell Township, Rural Residential, Māori Purpose - Urban, Settlement zones; 2. 50m from the boundary of a site for all other zones. **PER-2** Any building, compound or part of a site used for a dog boarding kennel, is located a minimum of: 1. 600m from the boundary of a site within the General Residential, Mixed Use, Kororāreka Russell Township, Rural Residential, Māori Purpose - Urban, Settlement zones; 2. 300m from the boundary of a site for all other zones.	**Activity status where compliance not achieved with PER-1 or PER-2: Discretionary**
RPROZ-R14	**Cemeteries / Urupā**	
Rural Production zone	**Activity status: Permitted**	**Activity status where compliance not achieved: Not applicable**
RPROZ-R15	**Plantation forestry and and plantation forestry activity**	
Rural Production zone	**Activity status: Permitted** **Where:** **PER-1** It is not located on versatile soils.	**Activity status where compliance not achieved with PER-1: Discretionary**
RPROZ-R16	**Additions or alterations to an existing Community Facility**	
Rural Production zone	**Activity status: Permitted** **Where:** **PER-1** The combined GFA of all buildings on the site does not exceed 300m^2 or a maximum increase of 10% of combined GFA of all buildings on the site, whichever is the greater.	**Activity status where compliance not achieved with PER-1: Restricted Discretionary** **Matters of discretion are restricted to:** a. the character and appearance of the building(s) b. the sitting of the building(s), decks and outdoor areas including parking relative to adjoining sites; c. whether the building(s) are visually dominant and create a loss of privacy for surrounding residential units and their associated outdoor areas; d. ability of the supporting roading network to cater for the additional vehicular and if applicable cycling and pedestrian traffic; e. servicing requirements and any constraints of the site; f. whether the location of the building(s) and community facility activity could create reverse sensitivity effects on adjacent and surrounding primary production activities; g. whether the layout of the development maintains the existing rural character of the surrounding area; h. any lighting or noise effects i. the frequency of the use, hours and days

		of operation and the number of people it can cater for; and j. any natural hazard affecting the site or surrounding area.
RPROZ-R17	**Emergency service facility**	
Rural Production zone	**Activity status: Permitted** **Where:** **PER-1** The combined GFA of all buildings on the site does not exceed 150m^2.	**Activity status where compliance not achieved with PER-1: Restricted Discretionary** **Matters of discretion are restricted to:** a. the character and appearance of the building b. the sitting of the building, decks and outdoor areas including parking relative to adjoining sites; c. whether the building creates a loss of privacy for surrounding residential units and their associated outdoor areas; d. ability of the supporting roading network to cater for the additional vehicular; e. servicing requirements and any constraints of the site; f. any lighting or noise effects; g. the frequency of the use, hours and days of operation and the number of people it can cater for; and h. any natural hazard affecting the site or surrounding area.
RPROZ-R18	**Mineral prospecting and exploration**	
Rural Production zone	**Activity status: Permitted** **Where:** **PER-1** It is undertaken using handtools.	**Activity status where compliance not achieved with PER-1: Discretionary**
RPROZ-R19	**Minor residential unit**	
Rural Production zone	**Activity status: Controlled** **Where:** **CON-1** The number of minor residential units on a site does not exceed one. **CON-2** The site area per minor residential unit is at least one hectare. **CON-3** The minor residential unit shares vehicle access with the principal residential unit. **CON-4** The separation distance between the minor residential unit and the principal residential unit does not exceed 15m. **CON-5** The minor residential unit: 1. does not exceed a GFA of 65m^2; 2. with an optional attached garage or carport that does not exceed GFA of 18m^2, where the garage or	**Activity status where compliance not achieved with CON-3: Discretionary** **Activity status where compliance not achieved with CON-1, CON-2, CON-4 or CON-5: Non complying**

	carport is used for vehicle storage, general storage and laundry facilities.	
RPROZ-R20	**Papakāinga Housing**	
Rural Production zone	**Activity status: Restricted Discretionary** **Where:** **RDIS-1** The number of residential units per site does not exceed 10. **RDIS-2** There is a legal mechanism in place to ensure that the land will stay in communal ownership and continue to be used in accordance with ancestral cultural practices. **Matters of discretion are restricted to:** a. the character and appearance of the residential unit(s) and any accessory building(s); b. the sitting of the building(s), decks and outdoor areas relative to adjoining sites; c. whether the building(s) are visually dominant and create a loss of privacy for surrounding residential units and their associated outdoor areas; d. ability of the supporting roading network to cater for the additional vehicular and if applicable cycling and pedestrian traffic; e. servicing requirements and any constraints of the site; f. the each residential unit has sufficient outdoor open space, and there is sufficient room for any landscaping, egress and any accessory building(s) required; g. whether the location of the building(s) and residential activity could create reverse sensitivity effects on adjacent and surrounding primary production activities; h. whether the development will result in the site being unable to continue to undertake a primary production activity or undertake one in the future due to loss of productive land; i. whether the layout of the development reduces the risk of future land fragmentation or sterilisation while maintaining the existing rural character of the surrounding area; j. any natural hazard affecting the site or surrounding area.	**Activity status where compliance not achieved with RDIS-1: Discretionary** **Activity status where compliance not achieved with RDIS-2: Non complying**
RPROZ-R21	**Expansion of existing mineral extraction activity**	
Rural Production zone	**Activity status: Restricted Discretionary** **Where:** **RDIS-1** A Mineral Extraction Activity Management Plan has been provided that contains the information required in ME-S1 Mineral extraction activity management plan. **RDIS-2** The hours of operation remain the same. **RDIS-3** The extraction volumes do not increase by more than 10%.	**Activity status where compliance not achieved with RDIS-1, RDIS-2, RDIS-3, RDIS-4 or RDIS-5: Discretionary**

	RDIS-4 Any expansion does not occur within 30m of the site boundary. **RDIS-5** The vehicle access to the Mineral Extraction activity remains unchanged. **Matters of discretion are restricted to:** a. measures to manage off-site effects including dust, odour, lighting, visual amenity, traffic generation, noise and vibration; b. landscaping and screening; c. the tenure of activities including extraction, processing and sales; d. any adverse effect on historic heritage or cultural values e. any adverse effect on natural environment values and the coastal environment. f. the proposed rehabilitation programme including provision for clean-filling, recontouring, revegetation; g. monitoring; and h. recommendations, proposed mitigation measures and conditions of the Mineral Extraction Activity Management Plan, including the means by which the Consent Holder will comply with the relevant rules in the Plan and the conditions of the consent.	
RPROZ-R22	**Rural tourism activity**	
Rural Production zone	**Activity status: Restricted Discretionary** **Matters of discretion are restricted to:** a. the character and appearance of the building(s); b. the link between the tourism activity and the rural environment; c. the siting of the building(s), decks and outdoor areas including parking relative to adjoining sites; d. whether the building(s) are visually dominant and create a loss of privacy for surrounding residential units and their associated outdoor areas; e. ability of the supporting roading network to cater for the additional vehicular and if applicable cycling and pedestrian traffic; f. servicing requirements and any constraints of the site; g. whether the location of the building(s) and rural tourism activity could create reverse sensitivity effects on adjacent and surrounding primary production activities; h. whether the development will result in the site being unable to continue to undertake a primary production activity or undertake one in the future due to loss of productive land; i. whether the layout of the development maintains the existing rural character of the surrounding area; j. any lighting or noise effects; k. the frequency of the use, hours and days of operation and the number of people it can cater for; l. any natural hazard affecting the site or surrounding area.	**Activity status where compliance not achieved: Not applicable**
RPROZ-R23	**Intensive indoor primary production**	
Rural Production zone	**Activity status: Restricted discretionary** **Where:**	**Activity status where compliance not achieved with RDIS-1: Non-complying**

	RDIS-1 Buildings or structures housing animals are setback at least 300m from any sensitive activity on a site under separate ownership. **Matters of discretion are restricted to:** a. odour, noise and dust effects; b. impacts on the transport network; c. the scale, character and appearance of the building(s); d. the sitting of the building(s) and outdoor areas relative to adjoining sites; e. whether the building(s) are visually dominant and create a loss of privacy for surrounding residential units and their associated outdoor areas; f. the number and types of animals; g. method of effluent management and disposal; h. likely presence of vermin; i. the frequency and nature of management and supervision; j. landscaping or screening; and k. any natural hazard affecting the site or surrounding area.	
RPROZ-R24	**Rural industry**	
Rural Production zone	**Activity status: Restricted Discretionary** **Where:** **RDIS-1** The rural industry activity does not exceed a GBA of 500m^2 per site. **RDIS-2** The number of rural industry activities per site does not exceed one. **Matters of discretion are restricted to:** a. the character and appearance of the building(s) b. the siting of the building(s) and outdoor areas including parking relative to adjoining sites; c. whether the building(s) are visually dominant and create a loss of privacy for surrounding residential units and their associated outdoor areas; d. ability of the supporting roading network to cater for the additional traffic; e. servicing requirements and any constraints of the site; f. whether the location of the building(s) and the rural industry is compatible with adjacent and surrounding primary production activities; g. whether the layout of the development maintains the existing rural character of the surrounding area; h. any lighting or noise effects; i. the frequency of the use, hours and days of operation and the number of people employed; j. any natural hazard affecting the site or surrounding area. **Note:** Rural Produce Manufacturing is controlled by RPROZ-R11.	**Activity status where compliance not achieved with RDIS-1 or RDIS-2: Discretionary**
RPROZ-R25	**Camping grounds**	
Rural Production zone	**Activity status: Discretionary**	**Activity status where compliance not achieved: Not applicable**

RPROZ-R26	**Community facility**	
Rural Production zone	**Activity status: Discretionary**	**Activity status where compliance not achieved: Not applicable**
RPROZ-R27	**Extension of existing commercial activity**	
Rural Production zone	**Activity status: Discretionary**	**Activity status where compliance not achieved: Not applicable**
RPROZ-R28	**Extension of existing industrial activity**	
Rural Production zone	**Activity status: Discretionary**	**Activity status where compliance not achieved: Not applicable**
RPROZ-R29	**Commercial composting**	
Rural Production zone	**Activity status: Discretionary**	**Activity status where compliance not achieved: Not applicable**
RPROZ-R30	**New mineral extraction activity**	
Rural Production zone	**Activity status: Discretionary**	**Activity status where compliance not achieved: Not applicable**
RPROZ-R31	**Activities not otherwise listed in this chapter**	
Rural Production zone	**Activity status: Discretionary**	**Activity status where compliance not achieved: Not applicable**
RPROZ-R32	**Industrial activity**	
Rural Production zone	**Activity status: Non-complying** **Note:** If the activity is a rural industry activity then that is controlled by RPROZ-R24	**Activity status where compliance not achieved: Not applicable**
RPROZ-R33	**Commercial activities not otherwise provided for as a permitted, restricted discretionary or discretionary activity**	
Rural Production zone	**Activity status: Non-complying**	**Activity status where compliance not achieved: Not applicable**
RPROZ-R34	**Landfill, including managed fill**	
Rural Production zone	**Activity status: Non-complying**	**Activity status where compliance not achieved: Not applicable**
RPROZ-R35	**Community corrections activity**	
Rural Production zone	**Activity status: Non-complying**	**Activity status where compliance not achieved: Not applicable**
RPROZ-R36	**Retirement Village**	
Rural Production zone	**Activity status: Non-complying**	**Activity status where compliance not achieved: Not applicable**
RPROZ-R37	**Offensive trade**	
Rural Production zone	**Activity status: Non-complying**	**Activity status where compliance not achieved: Not applicable**

Standards		
RPROZ-S1	**Maximum height**	
Rural Production zone	The maximum height of a building or structure, or extension or alteration to an existing building or structure is 12m above ground level, except that artificial crop protection and support structures shall not exceed a height of 6m above ground level. **This standard does not apply to:** i. solar and water heating components provided these do not exceed the height by more than 0.5m on any elevation. ii. chimney structures not exceeding 1.2m in width and 1m in height on any elevation. iii. chimney structures not exceeding 1.2m in width and 1m in height on any elevation. iv. architectural features (e.g. finials, spires) that do not exceed 1m in height on any elevation.	**Where the standard is not met, matters of discretion are restricted to:** a. the character and amenity of the surrounding environment; b. dominance in relation to the road and adjoining sites, including potential loss relation to vacant sites; c. loss of privacy to adjoining sites, including potential loss in relation to vacant sites; d. shading and loss of access to sunlight to adjoining sites; e. landscaping; and f. natural hazard mitigation and site constraints.
RPROZ-S2	**Height in relation to boundary**	
Rural Production zone	The building or structure, or extension or alteration to an existing building or structure must be contained within a building envelope defined by the following recession planes measured inwards from the respective boundary: 1. 55 degrees at 2m above ground level at the northern boundary of the site; 2. 45 degrees at 2m above ground level at the the eastern and western boundaries of the site; and 3. 35 degrees at 2m above ground level at the southern boundary of the site. **This standard does not apply to:** i. solar and water heating components provided these do not exceed the height by more than 0.5m on any elevation. ii. chimney structures not exceeding 1.2m in width and 1m in height on any elevation. iii. satellite dishes and aerials that do not exceed 1m in height and/or diameter on any elevation. iv. architectural features (e.g. finials, spires) that do not exceed 1m in height on any elevation.	**Where the standard is not met, matters of discretion are restricted to:** a. loss of privacy to adjoining sites, including potential loss in relation to vacant sites; b. shading and loss of access to sunlight to adjoining sites, including buildings and outdoor areas; and c. natural hazard mitigation and site constraints.
RPROZ-S3	**Setback (excluding from MHWS or wetland, lake and river margins)**	
Rural Production zone	The building or structure, or extension or alteration to an existing building or structure must be setback at least 10m from all site boundaries, except: 1. on sites less than 5,000m^2 accessory buildings can be setback to a minimum of 3m for boundaries that do not adjoin a road; 2. artificial crop protection and support structures must be setback at least 3m from all site boundaries; and 3. habitable buildings must be setback at least 30m from the boundary of an unsealed road. **This standard does not apply to:** i. fences or walls no more than 2m in height above ground level; ii. uncovered decks less than 1m in height above ground level; iii. underground wastewater infrastructure; iv. water tanks less than 2.7m in height above ground level.	**Where the standard is not met, matters of discretion are restricted to:** a. the character and amenity of the surrounding area; b. screening, planting and landscaping on the site; c. the design and siting of the building or structure with respect to privacy and shading; d. natural hazard mitigation and site constraints; e. the effectiveness of the proposed method for controlling stormwater; f. the safety and efficiency of the current or future access, egress on site and the roading network; and g. the impacts on existing and planned public walkways, reserves and esplanades.
RPROZ-S4	**Setbacks from MHWS**	
Rural	The building or structure, or extension or alteration to an	**Where the standard is not met, matters of**

Production zone	existing building or structure must be setback at least 30m from MHWS.	**discretion are restricted to:** a. the natural character of the coastal environment; b. screening, planting and landscaping on the site; c. the design and siting of the building or structure with respect to dominance on adjoining public space; d. natural hazard mitigation and site constraints; e. the effectiveness of the proposed method for controlling stormwater; and f. the impacts on existing and planned roads, public walkways, reserves and esplanades.
RPROZ-S5	**Building or structure coverage**	
Rural Production zone	The building or structure coverage of any site is no more than 12.5%.	**Where the standard is not met, matters of discretion are restricted to:** a. the character and amenity of the surrounding area; b. any landscaping, planting and screening to mitigate any adverse effects; c. the extent to which private open space can be provided for future uses; d. the extent to which the sitting, setback and design mitigate visual dominance on adjacent sites and surrounding environment; and e. natural hazard mitigation and site constraints.
RPROZ-S6	**Buildings or structures used to house, milk or feed stock (excluding buildings or structures used for an intensive indoor primary production activity)**	
Rural Production zone	Stock holding and feeding areas, milking sheds and buildings used to house or feed stock must be set back at least: 1. 30m from any boundary; or 2. 100m from a boundary of of land zoned General Residential, Mixed Use, Kororāreka Russell Township, Settlement, Māori Purpose-Urban, Rural Residential; 3. 100m from residential units on an adjoining site under separate ownership.	**Where the standard is not met, matters of discretion are restricted to:** a. privacy of adjoining sites; b. scale and bulk of buildings; c. odour; d. noise, disturbance and loss of privacy effects on adjoining sites; e. the number and types of animals; f. method of effluent management and disposal; g. likely presence of vermin; h. the frequency and nature of management and supervision; and i. landscaping or screening.
RPROZ-S7	**Sensitive activities setback from boundaries of a Mineral Extraction overlay**	
Rural Production zone	Sensitive activities (excluding non habitable accessory buildings) must be setback at least 100m from the boundary of an Mineral Extraction Overlay	**Where the standard is not met, matters of discretion are restricted to:** a. noise, disturbance and vibrations; b. scale and type of mineral extraction activity; c. the frequency and nature of any blasting or extraction method to obtain the mineral resource;; d. hours of operation of the mineral extraction activity e. design of the building; f. whether there are alternative options for the location of the building; and

		g. temporary effects.

PRODUCER STATEMENT – PS1
DESIGN

Building Code Clause(s):	B1,	Job number: 25 005
ISSUED BY: *(Engineering Design Firm)*	Haigh Workman	
TO: *(Client)*	Treston Laybourn	
TO BE SUPPLIED TO: *(Building Consent Authority)*	Far North District Council	
IN RESPECT OF: *(Description of building work))*	Timber pole SED retaining walls	
AT: *(Address)*	22 Bowden Road, Taupo Bay	
LEGAL DESCRIPTION	Lot 4 DP 379468	

We have been engaged by Treston Laybourn to provide:

SED Retaining Walls,

in respect of the requirements of the Clause(s) of the Building Code specified above for part only, as specified in the attached Schedule, of the proposed building work.

In this document SED means "Specific Engineering Design".

The design carried out by Haigh Workman has been prepared in accordance with:

✓ compliance documents issued by the Ministry of Business, Innovation & Employment (Verification method /acceptable solution): B1

✓ alternative solutions as per the attached Schedule.

The proposed building work covered by this producer statement is described in the drawings specified in the attached Schedule, together with the specification, and other documents set out in the attached Schedule.

On behalf of Haigh Workman, and subject to:

- all proprietary products meeting their performance specification requirements;

I believe on reasonable grounds that:

- 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 specified above; and that
- the persons who have undertaken the design have the necessary competence to do so.

I recommend the CM2 level of construction monitoring.

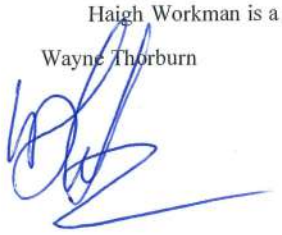
I, Wayne Thorburn, am:

- CPEng number 1006534
- and hold the following qualifications: B.E.(Hons), GDipEng

Haigh Workman holds a current policy of Professional Indemnity Insurance no less than $200,000.

✓ Haigh Workman is a member of ACE New Zealand.

SIGNED BY: Wayne Thorburn

(Signature): 

Date: 19/3/2025

ON BEHALF OF: Haigh Workman

Note: This statement has been prepared solely for Far North District Council and shall not be relied upon by any other person or entity. Any liability in relation to this statement accrues to Haigh Workman only. As a condition of reliance on this statement, Far North District Council accepts that the total maximum amount of liability of any kind arising from this statement and all other statements provided to Far North District Council in relation to this building work, whether in tort or otherwise, is limited to the sum of $200,000.

This form is to accompany **Form 2 of the Building (Forms) Regulations 2004** for the application of a Building Consent.

SCHEDULE TO PS1

Please include an itemised list of all referenced documents, drawings, or other supporting materials in relation to this producer statement below:

- Construction Monitoring Schedule, Structural Maintenance Schedule, B2 Letter in Lieu - Design
- Refer drawing register
- Retaining Wall Design Report by Haigh Workman, dated 21 January 2025, Referenced 25 005

Limited Scope of Engagement

We have been engaged by Treston Laybourn to provide services in respect of the requirements of the Clause(s) of the Building Code specified above for the following parts of the proposed building work:

Timber pole SED retaining wall

Alternative Solution

The design carried out by Haigh Workman has been prepared in accordance with:

as per the attached schedule.

GUIDANCE ON USE OF PRODUCER STATEMENTS

Information on the use of Producer Statements and Construction Monitoring Guidelines can be found on either the **ACE New Zealand** or **Engineering New Zealand** websites.

Producer statements were first introduced with the Building Act 1991. The producer statements were developed by a combined task committee consisting of members of the New Zealand Institute of Architects (NZIA), Institution of Professional Engineers New Zealand (now Engineering New Zealand), Association of Consulting and Engineering New Zealand (ACE NZ) in consultation with the Building Officials Institute of New Zealand (BOINZ). The original suite of producer statements has been revised at the date of this form to ensure standard use within the industry.

The producer statement system is intended to provide Building Consent Authorities (BCAs) with part of the reasonable grounds necessary for the issue of a Building Consent or a Code Compliance Certificate, without necessarily having to duplicate review of design or construction monitoring undertaken by others.

PS1 DESIGN: Intended for use by a suitably qualified independent engineering design professional in circumstances where the BCA accepts a producer statement for establishing reasonable grounds to issue a Building Consent;
PS2 DESIGN REVIEW: Intended for use by a suitably qualified independent engineering design review professional where the BCA accepts an independent design professional's review as the basis for establishing reasonable grounds to issue a Building Consent;
PS3 CONSTRUCTION: Forms commonly used as a certificate of completion of building work are Schedule 6 of NZS 3910:2013 or Schedules E1/E2 of NZIA's SCC 20112
PS4 CONSTRUCTION REVIEW: Intended for use by a suitably qualified independent engineering construction monitoring professional who either undertakes or supervises construction monitoring of the building works where the BCA requests a producer statement prior to issuing a Code Compliance Certificate.
This must be accompanied by a statement of completion of building work (Schedule 6).
The following guidelines are provided by ACE New Zealand and Engineering New Zealand to interpret the Producer Statement.

Competence of Engineering Professional

This statement is made by an engineering firm that has undertaken a contract of services for the services named, and is signed by a person authorised by that firm to verify the processes within the firm and competence of its personnel.
The person signing the Producer Statement on behalf of the engineering firm will have a professional qualification and proven current competence through registration on a national competence-based register such as a Chartered Professional Engineer (CPEng).
Membership of a professional body, such as Engineering New Zealand provides additional assurance of the designer's standing within the profession. If the engineering firm is a member of ACE New Zealand, this provides additional assurance about the standing of the firm.
Persons or firms meeting these criteria satisfy the term "suitably qualified independent engineering professional".

Professional Indemnity Insurance

As part of membership requirements, ACE New Zealand requires all member firms to hold Professional Indemnity Insurance to a minimum level.
The PI Insurance minimum stated on the front of this form reflects standard practice for the relationship between the BCA and the engineering firm.

Professional Services during Construction Phase

There are several levels of service that an engineering firm may provide during the construction phase of a project (CM1-CM5 for engineers3). The BCA is encouraged to require that the service to be provided by the engineering firm is appropriate for the project concerned.

Requirement to provide Producer Statement PS4

BCAs should ensure that the applicant is aware of any requirement for producer statements for the construction phase of building work at the time the building consent is issued. No design professional should be expected to provide a producer statement unless such a requirement forms part of Haigh Workman's engagement.

Refer Also:

1 Conditions of Contract for Building & Civil Engineering Construction NZS 3910: 2013
2 NZIA Standard Conditions of Contract SCC 2011
3 Guideline on the Briefing & Engagement for Consulting Engineering Services (ACE New Zealand/Engineering New Zealand 2004)
4 PN01 Guidelines on Producer Statements

www.acenz.org.nz
www.engineeringnz.org

CONSTRUCTION MONITORING SCHEDULE

SCHEDULE OF MONITORING FOR

Address: 22 Bowden Road, Taupo Bay

Job number: 25 005

We propose that at least the following site monitoring is undertaken to Engineering New Zealand/ACENZ CM2:

No.	Item of monitoring	Timeframe	To be monitored by
1.	Timber piles	Once holes are at the specified depth and clear of loose soil, pre-concrete pour	Engineer
2.	Retaining wall back boards (walling planks)	Before placing drainage material, while additional planks can practicably be added	Engineer

Notes:

a) The above items of monitoring are the minimum required to enable Haigh Workman to issue a PS4 – Producer Statement Construction Review for the specific engineering design items.

b) The above items of monitoring do not cover work constructed in accordance with NZS 3604:2011, for which monitoring is to be undertaken by the Building Consent Authority.

c) The Contractor/Builder is to provide Haigh Workman at least 24 hours' notice of the requirement for monitoring. The above timeframes are indicative, the Engineer and Contractor are to agree the timing of monitoring prior to work commencing on site.

d) A copy of this monitoring schedule is to be held on site during the works, and the Contractor/Builder is to provide reasonable and safe access to enable works to be monitored according to the schedule.

e) The above schedule does not necessarily represent the actual number of monitorings to be undertaken. The number of monitorings will depend on the construction method, sequence of the works and whether or not unforeseen conditions or difficulties are encountered on site.

STRUCTURAL MAINTENANCE SCHEDULE

TIMBER POLE SED RETAINING WALL AT 22 BOWDEN ROAD, TAUPO BAY

This schedule of ongoing inspection and maintenance of structural elements shall be included with the Operations and Maintenance manuals and provided to the Owner/Body Corporate and building managers.

Inspection/maintenance timeframe and item	
(a) Half-yearly	Not applicable.
(b) 5 yearly	Not applicable.
(c) 10 yearly	• Check exposed timber fixings for corrosion, repair as required.
(d) 25 yearly	• Inspect all exposed, external timber. Repair as required.
(e) Following fit-out or alterations	Not applicable.
(f) Following seismic shaking > SLS1 event	• Inspections and repair as per sections above

LETTER IN LIEU – DESIGN

To the Building Official,
Far North District Council
Timber pole SED retaining wall at 22 Bowden Road, Taupo Bay

COMPLIANCE WITH BUILDING CODE CLAUSE B2 – DURABILITY

The purpose of this letter is to demonstrate how compliance with Clause B2 (Durability) of the Building Code will be achieved for the above project. We can confirm that for specifically designed structural elements that are included within our design documentation:

Material	Means of Compliance	Details
Structural timber	B2/AS1	Timber treatment has been selected in accordance with Table 1A of B2/AS1

Yours faithfully,

Wayne Thorburn
For and on behalf of
Haigh Workman

Retaining Wall Design Report

22 Bowden Road, Taupo Bay

for

Treston Laybourn

Haigh Workman reference 25 005

March 2025

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PO Box 89 • 6 Fairway Drive • Kerikeri 0245 • New Zealand

Revision History

Revision Nº	Issued By	Description	Date
A	Philippe Szyncel	Design Report	18 March 2025

Prepared by

Philippe Szyncel

Geotechnical Engineer

MEngNZ

Reviewed and approved by

Wayne Thorburn

Senior Geotechnical Engineer

CMEngNZ, CPEng

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1 Introduction

1.1 General

Haigh Workman Limited (Haigh Workman) were engaged by Treston Laybourn (the Client) to undertake retaining wall design as part of building platform preparation for a future detached garage. This report presents the design calculations, recommendations and the assumptions made.

Figure 1 – Site Location Plan

1.2 Site Description

The site is legally described as Lot 4 DP 379468 with total area of approximately 4765 m^2 and is currently developed with a two-storey dwelling with garaging under the dwelling. There is a water tank located south of to the dwelling and a second tank is proposed. The site is located along a ridgeline sloping eastward. At the location of the proposed development, slopes are typically moderate up to 16 degrees. A sceptic tank is located in proximity to the location of the proposed cut wall. A steep cut road batter for Bowden Road is located downslope of the development area, however considered well away to not require further consideration. Existing dripper lines are located within the proposed development area and they will need to be relocated prior to the construction of the walls.

Scope of Works

The scope of works is to provide design for timber pole retaining walls to support excavations and filling as part of construction of a building platform for a future pole shed. The following items have been undertaken to inform the design:

- Site walkover, site measurements and hand augered boreholes to determine the subsoil strengths and confirm geology.
- Design of a cantilever timber pole retaining walls. Design to include sloping ground conditions and future shed surcharge.
- Preparation of design drawings and specification for construction.

2 Published Geology

The published geology map indicates the site is underlain by the Tupou Complex of the Northern Allochthon described as 'strongly indurated, poorly stratified conglomerate, sandstone and argillite' as shown in figure 2 below. The soils encountered throughout the investigation were consistent with the Tupou Complex geology.

Figure 2 – GNS New Zealand Geology Web Map Extract (1:250,000)

3 Subsurface Conditions

Subsurface investigations were undertaken on 14 January 2025 and on 11 February 2025. Investigations comprised a total of seven hand augered boreholes drilled to maximum depth of 4.0 m below ground level (bgl), BH1 to BH7. Subsurface conditions encountered at the test locations are summarised below and a detailed description of the soils encountered is presented on appended borehole logs (Appendix B), with borehole locations shown on the investigation plan (Appendix A).

A general description of the subsoils is provided below.

- **Topsoil.** Topsoil was encountered within every exploratory hole ranging depth between 0.2- 0.3 m.
- **Non-engineered fill.** Non-engineered fill material was present in some locations with intermixed clays and gravels to a depth of 0.6 m.
- **Tupou Complex.** Weathered Tupou Complex was encountered within all test locations underlying topsoil/fill. The subsoils comprised stiff to very stiff fine grained silty clay. Corrected vane shear strengths recorded within the soil were greater than 100 kPa i.e. very stiff. The natural soil during the investigation was logged as moist with medium to high plasticity.
- **Groundwater Table.** Groundwater was not encountered during the fieldwork period. Groundwater is subject to rise and fall based on seasonal effects.

4 Retaining Wall Design

4.1 General

As part of building platform construction, cutting and filling is expected. The maximum cut retained height based on site measurements is in the order of 1.5 m and the maximum fill retained height to be in the order 2.0 m (however this may be subject to final geometry of the building platform). To provide further allowance, the cut wall is designed for a maximum retained height of up to 2.0 m. Sloping ground above the cut wall and below the fill wall are considered in design. The surcharge of the future pole shed is also considered within the fill wall design.

Based on conversation with the client it is expected a portion of the fill to consist of site won material and deemed as engineered fill in our wall design. Due to the topography of the site, it is expected the fill material amount needed to construct the building platform to exceed the cut material volume and therefore the remainder of filling is to consist of hardfill.

4.2 Geotechnical Ground Model

A ground model was developed from the available site investigation data and is presented in Appendix A. The geotechnical design parameters recommended in Table 3 are based on the interpretation of the results of the investigations carried out onsite.

Table 3 - Geotechnical Design Parameters

Material Unit	Unit Weight, γ (kN/m³)	Effective cohesion, c' (kPa)	Effective Friction Angle, φ' (degrees)	Young's Modulus, E' (MPa)
Hardfill	18	0	38	25
Engineered Clay Fill	18	5	30	25
Weathered Tupou Complex	18	3	28	25

4.3 Seismic Coefficient

Seismic design acceleration has been determined using the New Zealand Transport Agency Bridge Manual (NZBM, Version 3.3) and Module 6 – Earthquake resistant retaining wall design (NZGS, MBIE, May 2017).

$$C_o g = C_h(T_0) Z R_u g$$

Parameter	Value
$C_h(T_0)$	1.33 – Class C
Z	0.06 (Paihia/Russell/Kaitaia) – Min. ZRu = 0.13
R_u	1.0 (1/500)
$C_o g$	0.17

4.4 Retaining Wall Design Parameters

The timber pole retaining wall has been designed considering the following failure modes:

- Kick-out (factor of safety of 1.5).
- Yielding of structural elements.

4.5 Retaining Wall Design Criteria

The design criteria for the retaining walls are shown in Table 4.

Table 4 - Retaining wall design criteria.

Retaining Wall No.	Design Height (m)	Surcharge
RW01 – Timber Pole retaining cut wall	1.0 to 2.0 m	Sloping ground above the wall is considered.
RW02 – Timber Pole retaining fill wall	1.0 to 2.0 m	Sloping ground below the wall and surcharge of the future shed is considered.

4.6 Timber Pole Wall Design

The retaining wall has been designed using Wallap (Version 6.06), with bending moment and shear forces being calculated using subgrade reaction model. A maximum design height of 2.0 m has been allowed for within the retaining wall calculations. Sloping ground and the future pole shed have been modelled as a surcharge. A summary

of the design is presented in Table 5 and Table 6. Design drawings and detailed calculations for the critical static cases (elevated groundwater) are provided in Appendix A and Appendix C, respectively.

The retaining wall is composed of high-density timber poles encased in 20 MPa of concrete with rough sawn 150 x 50 mm H4 treated lagging. Lagging details are provided on the typical sections within Appendix A.

Table 5 – RW01 Cut Retaining Wall Design Summary

Wall Properties	RW01		
Maximum Height (H)	0 – 1.0 m	1.0 – 1.5 m	1.5 – 2.0 m (max.)
Pile Spacing (c/c)	1.2 m	1.2 m	1.2 m
Pole type	High Density, 200 mm SED, H5 treated	High Density, 225 mm SED, H5 treated	High Density, 300 mm SED, H5 treated
Embedment Length (L)	2.5 m	3.5 m	4.0 m
Encasement (m)	0.45 m bored pile, encased in 20 MPa concrete	0.45 m bored pile, encased in 20 MPa concrete	0.60 m bored pile, encased in 20 MPa concrete
Timber rails / lagging	Refer appended drawings (Appendix A)		

Table 6 – RW02 Fill Retaining Wall Design Summary

Wall Properties	RW02		
Maximum Height (H)	0 – 1.0 m	1.0 – 1.5 m	1.5 – 2.0 m (max.)
Pile Spacing (c/c)	1.2 m	1.2 m	1.2 m
Pole type	High Density, 200 mm SED, H5 treated	High Density, 225 mm SED, H5 treated	High Density, 300 mm SED, H5 treated
Embedment Length (L)	2.5 m	3.5 m	4.5 m
Encasement (m)	0.45 m bored pile, encased in 20 MPa concrete	0.45 m bored pile, encased in 20 MPa concrete	0.60 m bored pile, encased in 20 MPa concrete
Timber rails / lagging	Refer appended drawings (Appendix A)		

5 Earthworks

5.1 General

Earthworks with cuts of up to 1.5 m -2 m and filling of up to 2.0 m are expected as part of construction of the building platform for the future pole shed. Engineered fill from site won material and hardfill are adopted in the wall design as fill strata and therefore the filling operations must be constructed to their respective specifications. Drainage gravel behind the wall is required composing of 40/20 or other approved free draining material.

As seen in the site plan in Appendix A, cutting and filling operations at the extremities of the walls may be battered at a maximum gradient of (1V:3H) to complete the construction of the building platform.

Due to the proximity of the sceptic to the Cut Wall RW01, care should be taken during construction to avoid any works that may compromise its integrity and functionality.

6 Observation of Construction

If required by the regulatory authority, site observations for the retaining wall shall be carried out by a geotechnical engineer familiar with the findings of this report, to confirm soil and foundation conditions are consistent with those adopted within this report. Site observations cannot be undertaken during construction (temporary or permanent) that do not have a valid Consent. The Client is required to investigate which types of Consents are required prior to construction of the wall. We require a minimum 48 hours' notice for inspections. All works undertaken prior to our first inspection will be excluded from the Producer Statement (PS4).

Groundwater may accumulate in the pile holes during construction and must be pumped out prior to concreting. The Contractor is expected to have a sump pump onsite if water is encountered to keep the pile holes free of water before concrete pour. Provided the construction methodology is continuous and the pile holes are not left open for extended periods, the holes are not expected to require casing. If the ground conditions vary outside those assumed in this report, then the design may need to be changed or altered to ensure adequate performance.

Construction monitoring of the retaining wall construction is recommended to ensure the walls are built to the design. Construction observations will be required at the following points:

- Placement of fill compacted to an engineered standard.
- Bored holes prior to timber poles being put in and concrete poured. Inspection of the poles and timber rails before placement.
- Concrete dockets to be provided to Engineer.
- Inspection of the drainage coil and drainage material before it is placed.

All holes must be clear of water prior to pouring concrete. The Contractor should have a pump onsite and be ready to pump the holes dry.

6.1 Safety in Design

A tabulated Safety in Design register is provided in Table 7. This safety in design risk register should be updated and kept live during construction.

Table 7 - Safety in design risk register

Issue	Risk	Proposed mitigation measure
Excavations	Collapse of material and potential to strike people	Earthworks to be staged where possible and cuts to remain open for the smallest possible duration. No one to work immediately adjacent to the cut or during poor weather conditions.
Open auger holes	Falling from height	No holes to remain open overnight. No one allowed to walk around the construction site, other than those who understand site hazards. Holes should be backfilled with concrete as soon as possible.
Lifting poles into ground	Falling poles from height	Lifting gear (straps and chains) to be in good condition. All chains and lifting hooks to be certified.
Cutting poles and timber lagging	Cuts to self	Only staff who are appropriate trained with the gear to cut timber. When chainsaws and other saws are being used staff should keep away from the work area.
Groundwater	If encountered, groundwater will make constructability difficult.	We expect holes to remain free of groundwater in the short term. Holes not to remain open overnight and should be backfilled as soon as possible with concrete. Pumping may be required.

7 Limitations

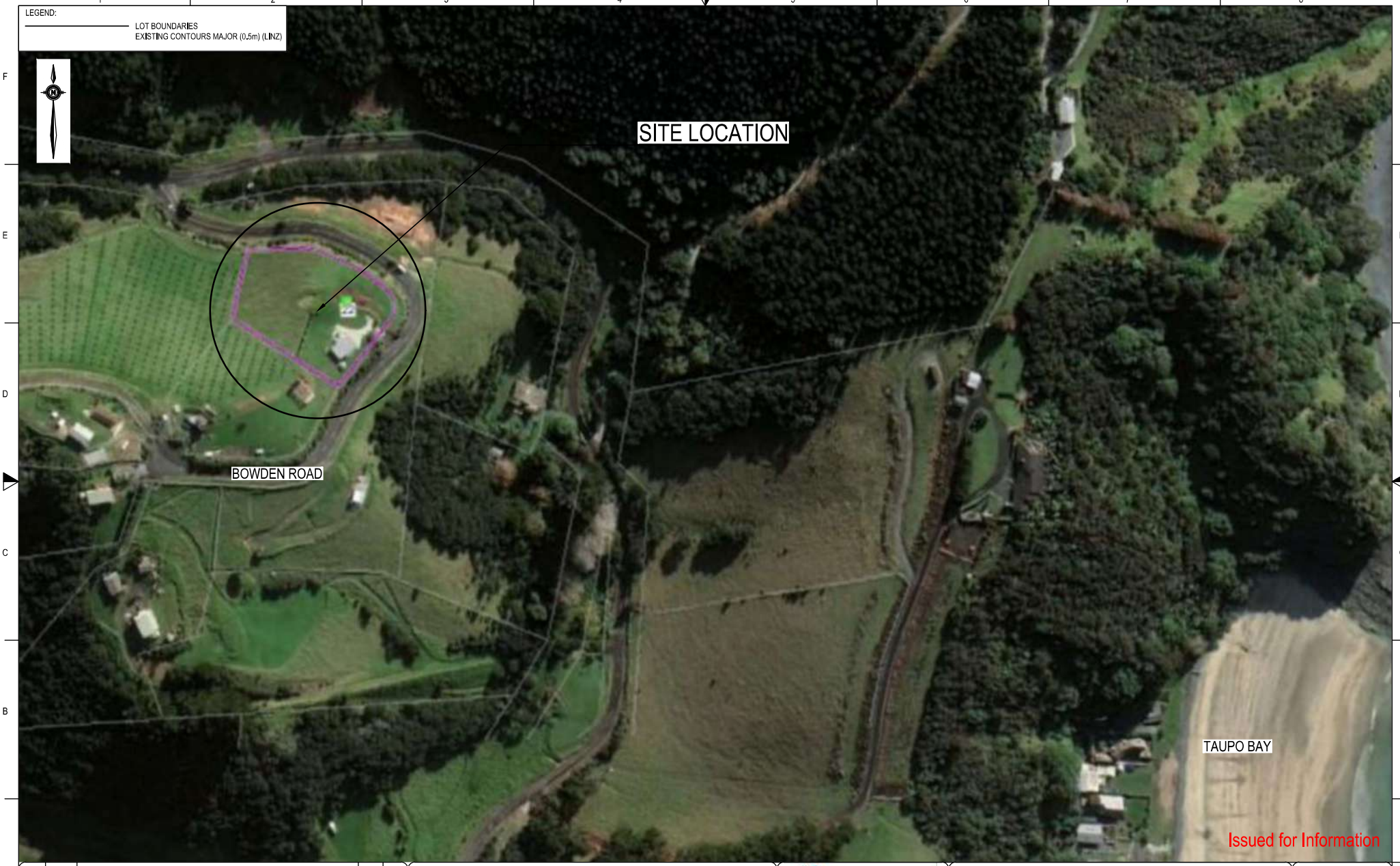
This report has been prepared for the use of Treston Laybourn with respect to the brief outlined to us. This report is to be used by our Client and their Consultants and may be relied upon when considering geotechnical advice. Furthermore, this report may be utilised in the preparation of building and/or resource consent applications with local authorities. The information and opinions contained within this report shall not be used in other context for any other purpose without prior review and agreement by Haigh Workman Ltd.

The recommendations given in this report are based on site data from discrete locations and prepared specifically for the structures shown on the attached drawings. If any changes are made, we must be allowed to review the new development proposal to ensure that the recommendations of this report remain valid. Inferences about the subsoil conditions away from the test locations have been made but cannot be guaranteed. We have inferred an appropriate geotechnical model that can be applied for our analyses. However, variations in ground conditions from those described in this report could exist across the site. Should conditions encountered differ to those outlined in this report we ask that we be given the opportunity to review the continued applicability of our recommendations.

Appendix A – Drawings

LEGEND:

LOT BOUNDARIES
EXISTING CONTOURS MAJOR (0.5m) (LINZ)



Issued for Information

Rev	Date	Description	By	Checked
A	24/01/2025	Issued for Information	WT	JP

DWG SITE LOCATION PLAN

A3 Scale 1: 2000 0 40 100 Date 24/01/2025

Drawn WT Checked JP Approved JP

File T:\CLIENTS\TRESTON E LAYBOURN\25 005 - 22 BOWDEN ROAD, TAUPO BAY\ENGINEERING\DRAWINGS\25 005_GEO DRAWINGS.DWG

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Project 22 BOWDEN ROAD
TAUPO BAY

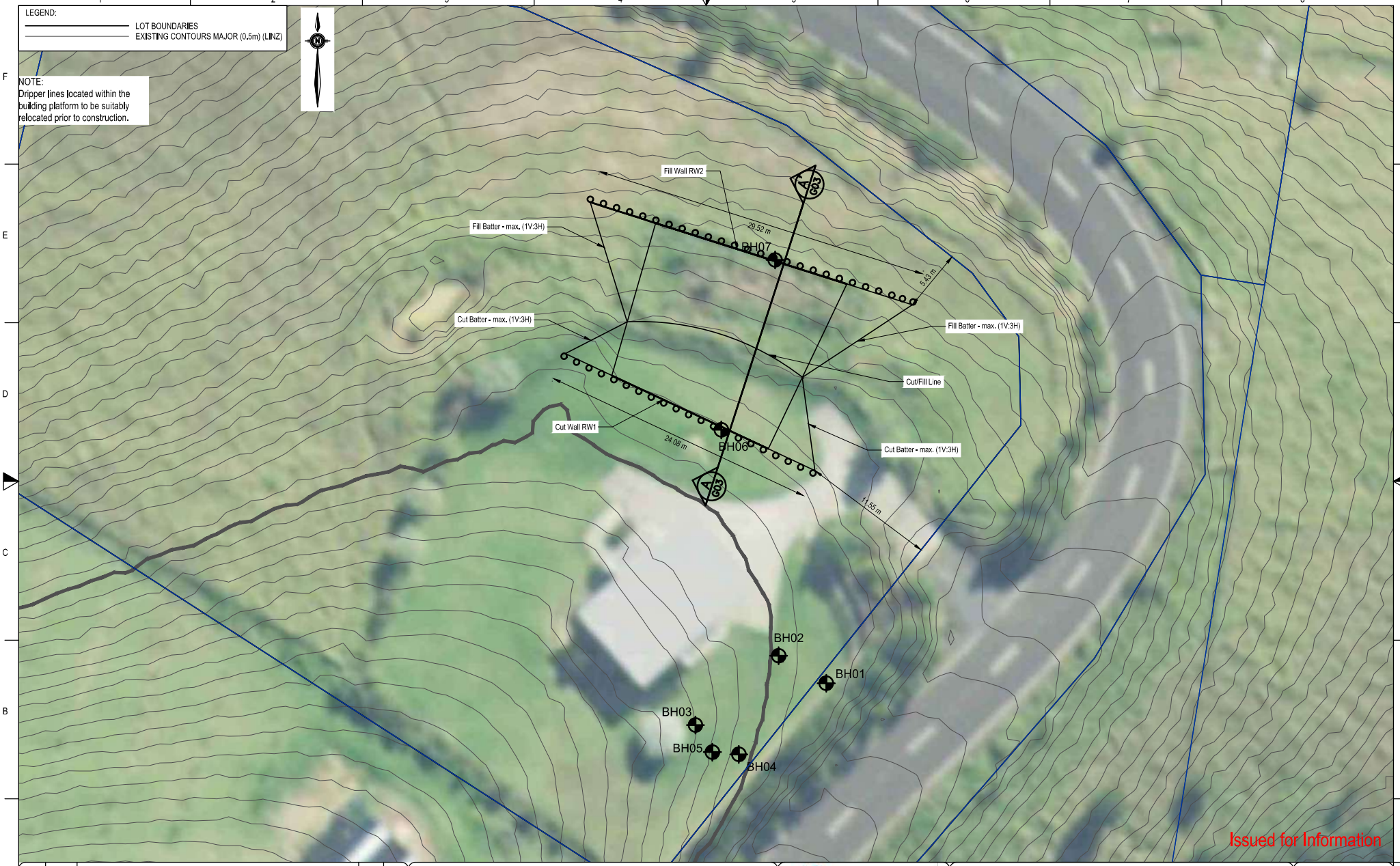
Client TRESTON LAYBOURNE

Project No. 25 005 RC no.

Stage

Dwg No. G01

Sheet No. 1 OF 3



Rev	Date	Description	By	Checked
A	10/03/2025	Issued for Information	PS	WT

DWG GEOTECHNICAL INVESTIGATION PLAN

A3 Scale 1: 300 (0, 6, 15)

Date 10/03/2025

Drawn PS | Checked WT | Approved WT

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Project 22 BOWDEN ROAD
TAUPO BAY

Client TRESTON LAYBOURNE

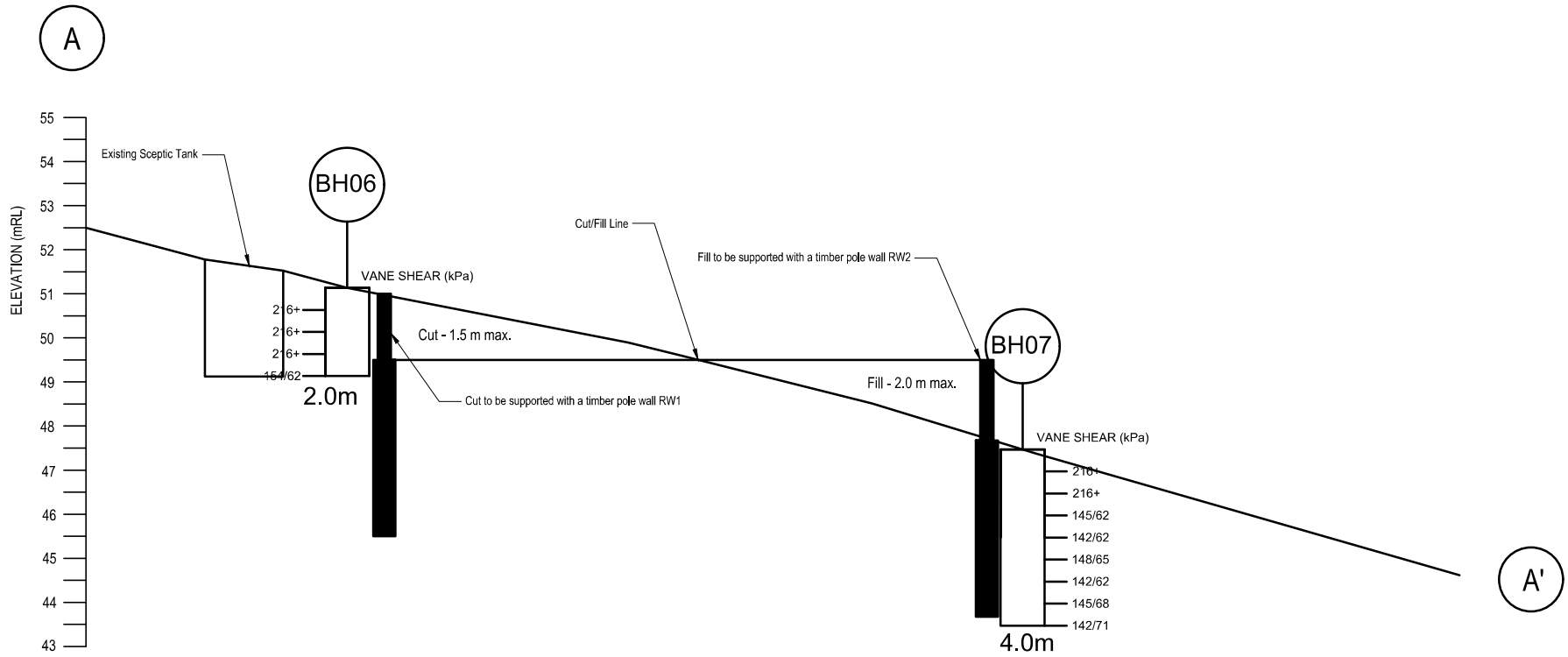
Project No. 25 005

RC no.

Stage

Dwg No. G02

Sheet No. 2 OF 3



Issued for Information

Rev	Date	Description	By	Checked
A	10/03/2025	Issued for Information	PS	WT

DWG CROSS SECTION A-A'

A3 Scale 1: 100 (0 2 5)

Date 10/03/2025

Drawn PS | Checked WT | Approved WT

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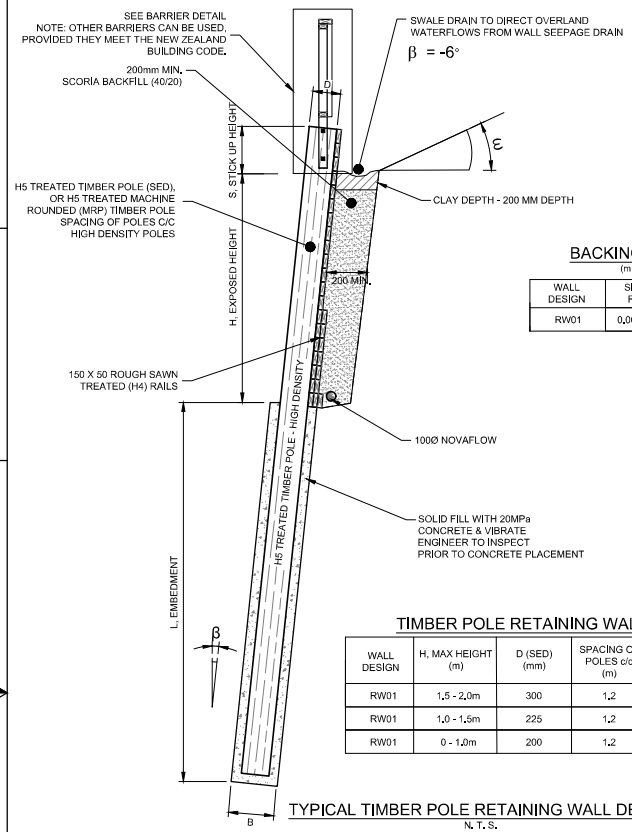
Project	22 BOWDEN ROAD TAUPO BAY
Client	TRESTON LAYBOURNE
Project No.	25 005
RC no.	
Stage	
Dwg No.	G03
Sheet No.	3 OF 3



TYPICAL TIMBER POLE RETAINING WALL DETAIL
N. T. S.

NOTE:

1. TO BE CONSTRUCTED IN ACCORDANCE WITH B1 GUIDANCE ON BARRIER DESIGN (MARCH 2012).
2. BARRIER DETAILS SUITABLE FOR BARRIERS SERVING ONE DWELLING UNIT ONLY.

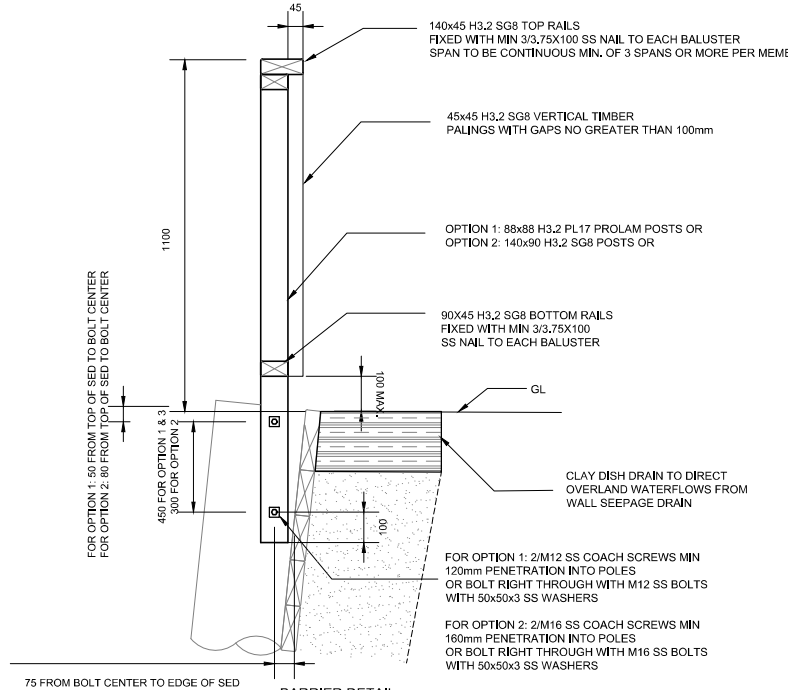
BACKING BOARD DETAILS

(m FROM TOP OF WALL)

WALL DESIGN	SINGLE RAILS	DOUBLE RAILS	TRIPLE RAILS
RW01	0.00 - 1.2 m	1.2-2.0 m	-

TIMBER POLE RETAINING WALL DETAILS

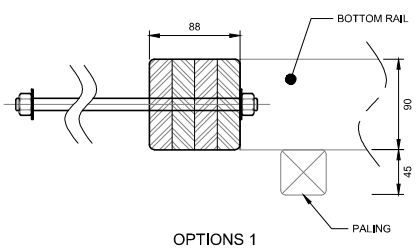
WALL DESIGN	H, MAX HEIGHT (m)	D (SED) (mm)	SPACING OF POLES c/c (m)	S, STICK UP HEIGHT (m)	L, EMBEDMENT (m)	B, BORED Ø (mm)	ω, MAXIMUM BACKSLOPE ANGLE (°)
RW01	1.5 - 2.0m	300	1.2	0.0	4.0 m	600	15
RW01	1.0 - 1.5m	225	1.2	0.0	3.5 m	450	15
RW01	0 - 1.0m	200	1.2	0.0	2.5 m	450	15



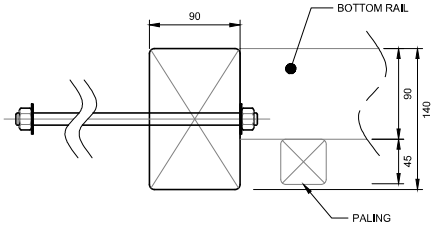
BARRIER DETAIL
N. T. S.

IMPORTANT NOTE:

1. PROLAM GRADE: PL17 H3.2 88x88
   RADIATA PINE: SG8 H3.2 140x90
2. BOTTOM RAIL, PALING AND POST CONFIGURATION SHOULD BE AS PER DETAIL SHOWN BELOW
3. SED POLE NOT SHOWN FOR CLARITY
4. PROLAM LAMINATION MUST BE PERPENDICULAR TO BOLT



OPTIONS 1



OPTION 2

TIMBER SPECIFICATION NOTES:

1. CAUTION:
   DEEP EXCAVATIONS UNSUPPORTED DURING CONSTRUCTION MAY BE HAZARDOUS PARTICULARLY WHEN WORKING IN CONFINED SPACES. THE DEPARTMENT OF LABOUR'S EXCAVATION GUIDE GIVES RECOMMENDED SAFETY PROCEDURES FOR SUCH SITUATIONS. THE EXCAVATION AND EARTHWORKS CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT ADEQUATELY ALL PERSONS AND PROPRETY LIABLE TO THE BE AFFECTED BY THE EXCAVATION AND EARTHWORKS OPERATIONS.
2. MATERIALS:
   TIMBER:
   TIMBER POLES SHALL BE PEELED RADIATA PINE LOGS COMPLYING WITH THE REQUIREMENT OF NZS 3605 "LOAD BEARING ROUND TIMBER PILES AND POLES" TREATED TO TPA COMMODITY SPECIFICATION H5. ALL TIMBER POLES TO BE HIGH DENSITY.
   DIMENSIONS OF POLES ARE SPECIFIED AS MINIMUM SMALL END DIAMETERS.
   ACTUAL DIAMETERS WILL BE GREATER DUE TO TAPER AND TIMBER GRADING. SAWN TIMBER IN GROUND CONTACT SHALL BE RADIATA PILE TREATED TO SPECIFICATION H4.
   ALL TIMBER SHALL HAVE TPA IDENTIFICATION BRANDS VISIBLE WHEN DELIVERED TO THE SITE AND SHALL BE PROTECTED AGAINST DAMAGE DURING STORAGE AND HANDLING
3. CONCRETE:
   CONCRETE FOR FOUNDATION BACKFILL SHALL BE ORDINARY GRADE CONCRETE COMPLYING WITH NZS 3109 'SPECIFICATION FOR CONCRETE', AND WITH A 28-DAY STRENGTH OF 20 MPa.
   CONCRETE SHALL BE PLACED UNDER AND AROUND POLES AND WELL COMPACTED BY VIBRATING. POLES SHALL BE TEMPORARILY PROPPED AND PROTECTED AGAINST DISTURBANCE FOR AT LEAST TWO DAYS AFTER PLACEMENT OF CONCRETE
4. EXCAVATION:
   EXCAVATION IN STAGES TO ALLOW FOR TEMPORARY SUPPORT DURING CONSTRUCTION IS REQUIRED. NO MORE THAN 3.0m OF UNSUPPORTED SLOPE SHALL EXIST AT ANY ONE TIME.
   EXCAVATION FOR POLES SHALL BE TAKEN OUT BY AUGERING TO THE DIMENSIONS DETAILED, WITH ALL SURPLUS SOIL BEING DISPOSED OF AWAY FROM THE SITE.
   ALLOWANCE SHALL BE MADE IN POSITIONING AUGERED HOLES FOR THE SLOPE OF THE WALL AND FOR CONCRETE TO SURROUND THE POLES. DRIVING OF POLES IS NOT ACCEPTABLE AS AN ALTERNATIVE TO AUGERING. POLES SHALL BE INSTALLED AS SOON AS POSSIBLE AFTER EXCAVATION. EXCAVATIONS FOR POLES SHALL BE FREE OF WATER AND LOOSE MATERIAL BEFORE CONCRETING. IF NECESSARY THE CONTRACTOR SHALL ALLOW FOR HANDCLEANING AND PUMPING OF EXCAVATION.
5. INSTALLATION:
   DRIVING OF POLES IS NOT ACCEPTABLE AS AN ALTERNATIVE TO AUGERING. FIXING OF HORIZONTAL TIMBERS TO POLES SHALL UTILISE GALVANISED NAILS AS DETAILED. TIMBERS SHALL BE LAYED IN POSITION COMMENCING AT THE BOTTOM OF THE WALL WITH JOINTS BETWEEN TIMBERS STAGGERED BETWEEN THE POLES BY USE OF SHORT TIMBERS AT ENDS OF ALTERNATIVE ROWS. IF CUTTING IS NECESSARY THE EXPOSED SURFACES SHALL BE FLOODED WITH A COPPER NAPTHENATE TYPE OF WOOD PRESERVATIVE.
   CARE SHALL BE TAKEN IN SELECTING AND LAYING HORIZONTAL TIMBERS TO MAINTAIN THE SPECIFIED MINIMUM THICKNESS OF TIMBERS, PARTICULARLY NEAR THE BASE OF THE WALL AND TO ACHIEVE NEAT STRAIGHT LINES AT THE TOP OF THE WALL.
6. BACKFILLING:
   A PERFORATED OR OPEN JOINTED SUBSOIL DRAIN SHALL BE LAID AND SURROUNDED IN FINE GRANULAR MATERIAL WITH THE INVERT BELOW LOWER GROUND LEVELS AND LED TO A FREE OUTLET AT A POINT OF SAFE DISCHARGE.
   REMAINING BACKFILL TO WITHIN 300mm OF FINISHED SURFACE LEVEL SHALL BE DRAINED COMPACTED GRANULAR FILL NOT LARGER THAN 65mm DIMENSIONS (eg RUN OF PIT SCORIA OR SIMILAR).
   THE FINISHED SURFACE OF BACKFILL SHALL BE SEALED AGAINST ENTRY OF SURFACE WATER WITH A LAYER OF TOPSOIL, CLAY OR CONCRETE.

Issue	Date	Revision
A	18/03/2025	FIRST ISSUE

DWG: Typical Timber Pole Wall Detail RW01

Scale: N. T. S. | Date: 18/03/2025

Drawn: PS | Checked: WT | Approved: WT

File: T:\CLIENTS\TRESTON E LAYBOURN\25 005 - 22 BOWDEN ROAD, TAUPO BAY\ENGINEERING\DRAWINGS\25 005 CUT WALL_RW SECTION.DWG

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Project: 22 Bowden Road, Taupo Bay

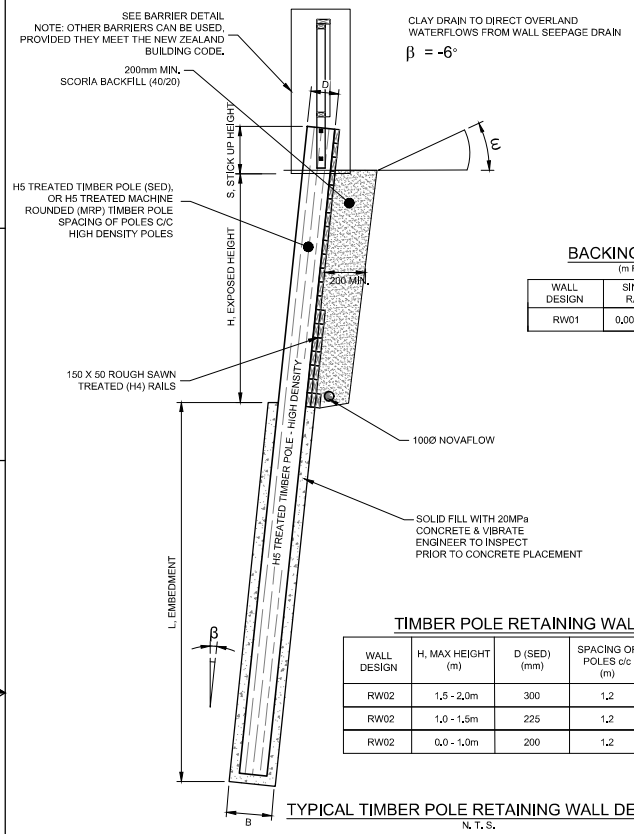
Client: Treston Laybourn

Project No.: 24 228 | RC no.:

DWG No.: 1

Sheet No.: 01 of 02

Plotted By Philippe Szyncel at 18/03/2025 3:13:31 pm



TYPICAL TIMBER POLE RETAINING WALL DETAIL
N. T. S.

NOTE:

1. TO BE CONSTRUCTED IN ACCORDANCE WITH B1 GUIDANCE ON BARRIER DESIGN (MARCH 2012).
2. BARRIER DETAILS SUITABLE FOR BARRIERS SERVING ONE DWELLING UNIT ONLY.

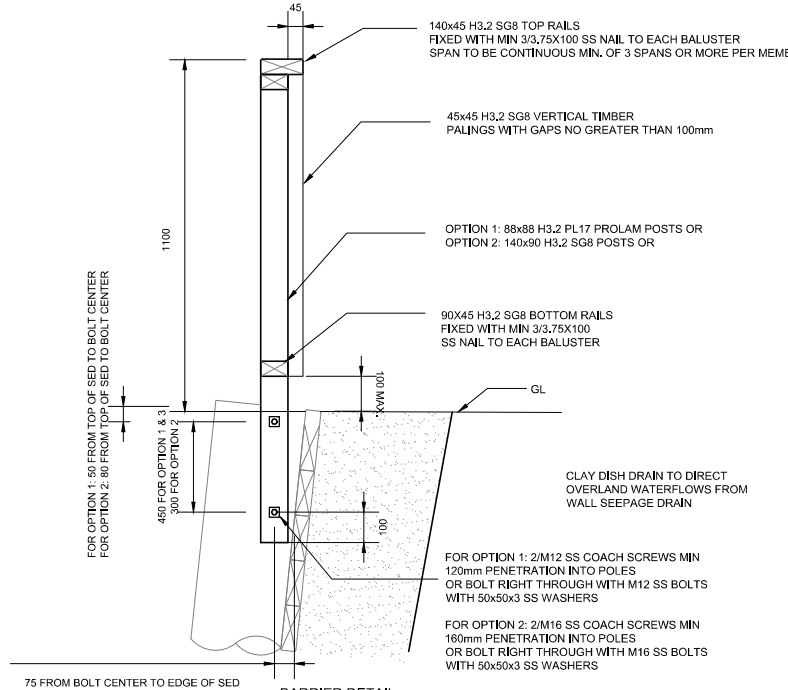
BACKING BOARD DETAILS

(m FROM TOP OF WALL)

WALL DESIGN	SINGLE RAILS	DOUBLE RAILS	TRIPLE RAILS
RW01	0.00 - 1.2 m	1.2-2.0 m	-

TIMBER POLE RETAINING WALL DETAILS

WALL DESIGN	H, MAX HEIGHT (m)	D (SED) (mm)	SPACING OF POLES c/c (m)	S, STICK UP HEIGHT (m)	L, EMBEDMENT (m)	B, BORED Ø (mm)	ω, MAXIMUM BACKSLOPE ANGLE (°)
RW02	1.5 - 2.0m	300	1.2	0.0	4.5 m	600	0
RW02	1.0 - 1.5m	225	1.2	0.0	3.5 m	450	0
RW02	0.0 - 1.0m	200	1.2	0.0	2.5 m	450	0



BARRIER DETAIL
N. T. S.

IMPORTANT NOTE:

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   RADIATA PINE: SG8 H3.2 140x90
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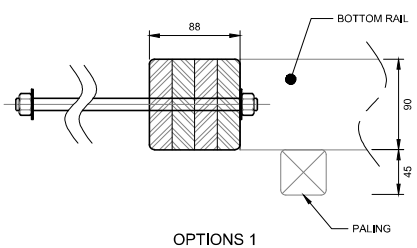
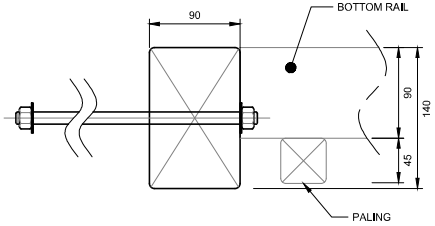
4. PROLAM LAMINATION MUST BE PERPENDICULAR TO BOLT



OPTIONS 1



OPTION 2

TIMBER SPECIFICATION NOTES:

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   THE FINISHED SURFACE OF BACKFILL SHALL BE SEALED AGAINST ENTRY OF SURFACE WATER WITH A LAYER OF TOPSOIL, CLAY OR CONCRETE.

Issue	Date	Revision
A	18/03/2025	FIRST ISSUE

DWG Typical Timber Pole Wall Detail RW02

Scale N. T. S. | Date 18/03/2025

Drawn PS | Checked WT | Approved WT

File T:\CLIENTS\TRESTON E LAYBOURN\25 005 - 22 BOWDEN ROAD, TAUPO BAY\ENGINEERING\DRAWINGS\25 005 FILL WALL_RW SECTION - COPY.DWG

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Project: 22 Bowden Road, Taupo Bay

Client: Treston Laybourn

Project No. 24 228 | RC no.

DWG No. 1

Sheet No. 02 of 02

Plotted By Philippe Szyncel at 18/03/2025 3:17:04 pm

Appendix B – Site Investigation Logs

6 Fairway Drive
Kerikeri
New Zealand

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Civil & Structural Engineers

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Borehole Log - BH#1

Hole Location: Refer to Site Plan

JOB No. 25 005

CLIENT:	Treston Laybourn	**SITE:**	22 Bowden Road, Taupo Bay		
DATE DRILLED:	14/01/2025	**DRILLING METHOD:**	Hand Auger	**LOGGED BY:**	PS
		HOLE DIAMETER (mm)	50	**CHECKED BY:**	WT

Soil Description (Based on NZGS Logging Guidelines 2005)	Depth (m)	Geology	Graphic Log	Water Level	Sensitivity	Vane Shear and Remoulded Vane Shear Strengths (kPa)	Shear Values (kPa)	Scala Penetrometer (blows/100mm)
0.0m: TOPSOIL, dark brown, dry	0.0	Tupou Complex		Groundwater not encountered		0 50 100 150 200 250		
0.3m: silty CLAY, light brown with occasional red streaks, high plastic, moist [Tupou Complex]	0.5						216+	
	1.0						216+	
	1.5				4		123/31	
2.0m: silty CLAY, red with white bands and light brown streaks, medium plastic, moist, presence of black silt clasts [Tupou Complex]	2.0				4		139/37	
	2.5				3		154/59	
3.0 m - End of Bore (target depth achieved)	3.0				2		145/65	
	3.5							
	4.0							
	4.5							

LEGEND:

TOPSOIL | CLAY | SILT | SAND | GRAVEL | FILL | LIMESTONE

Corrected shear vane reading
Remoulded shear vane reading
Scala Penetrometer

Notes:
UTP = Unable to penetrate. mbgl = metres below ground level.
Hand Held Shear Vane S/N: 440

Test Methods:
Shear Strength using a Hand Held Shear Vane, NZ Geotechnical Soc Inc 8/2001

Scala Penetrometer: NZS4402: 1986: 6.5.2 Hand method using a DCP

6 Fairway Drive
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New Zealand

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Borehole Log - BH#2

Hole Location: Refer to Site Plan

JOB No. 25 005

CLIENT:	Treston Laybourn	**SITE:**	22 Bowden Road, Taupo Bay		
DATE DRILLED:	14/01/2025	**DRILLING METHOD:**	Hand Auger	**LOGGED BY:**	PS
		HOLE DIAMETER (mm)	50	**CHECKED BY:**	WT

Soil Description (Based on NZGS Logging Guidelines 2005)	Depth (m)	Geology	Graphic Log	Water Level	Sensitivity	Vane Shear and Remoulded Vane Shear Strengths (kPa)	Shear Values (kPa)	Scala Penetrometer (blows/100mm)
0.0m: TOPSOIL with metal, dry [Fill]	0.0	Fill		Groundwater not encountered		0 50 100 150 200 250		
0.3m: silty CLAY, light brown with occasional red streaks, high plastic, moist [Tupou Complex]	0.5	Tupou Complex					216+	
1.0m: silty CLAY, red with white bands and light brown streaks, medium plastic, moist [Tupou Complex]	1.0						UTP	
1.5 m - End of Bore (target depth achieved)	1.5						216+	
	2.0							
	2.5							
	3.0							
	3.5							
	4.0							
	4.5							

LEGEND:

TOPSOIL | CLAY | SILT | SAND | GRAVEL | FILL | LIMESTONE

Corrected shear vane reading
Remoulded shear vane reading
Scala Penetrometer

Notes:
UTP = Unable to penetrate. mbgl = metres below ground level.
Hand Held Shear Vane S/N: 440

Test Methods:
Shear Strength using a Hand Held Shear Vane, NZ Geotechnical Soc Inc 8/2001

Scala Penetrometer: NZS4402: 1986: 6.5.2 Hand method using a DCP

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Borehole Log - BH#3

Hole Location: Refer to Site Plan

JOB No. 25 005

CLIENT:	Treston Laybourn	**SITE:**	22 Bowden Road, Taupo Bay		
DATE DRILLED:	14/01/2025	**DRILLING METHOD:**	Hand Auger	**LOGGED BY:**	WT
		HOLE DIAMETER (mm)	50	**CHECKED BY:**	PS

Soil Description (Based on NZGS Logging Guidelines 2005)	Depth (m)	Geology	Graphic Log	Water Level	Sensitivity	Vane Shear and Remoulded Vane Shear Strengths (kPa)	Shear Values (kPa)	Scala Penetrometer (blows/100mm)
0.0m: silty TOPSOIL, dark brown, dry, non plastic presence of rootlets	0.0	Tupou Complex		Groundwater not encountered				
0.2m: silty CLAY, light orange/brown, very stiff, moist, meidum plastic [Tupou Complex]	0.5				7		211/32	
From 0.8m: brown streaks								
1.0m: clayey SILT, reddish brown with yellow mottles, very stiff, moist, medium plastic [Tupou Complex]	1.0				3		211/84	
	1.5				3		186/70	
From 2.0m: becomes wet	2.0				3		158/63	
From 2.5m: orange/brown mottled grey	2.5				3		123/49	
From 3.0m: becomes grey and reddish/brown with red and brown streaks	3.0				4		123/35	
	3.5				2		113/47	
4.0 m - End of Bore (target depth achieved)	4.0				3		197/70	
	4.5							

LEGEND:

TOPSOIL | CLAY | SILT | SAND | GRAVEL | FILL | LIMESTONE

Corrected shear vane reading
Remoulded shear vane reading
Scala Penetrometer

Notes:
UTP = Unable to penetrate. mbgl = metres below ground level.
Hand Held Shear Vane S/N: 3422

Test Methods:
Shear Strength using a Hand Held Shear Vane, NZ Geotechnical Soc Inc 8/2001

Scala Penetrometer: NZS4402: 1986: 6.5.2 Hand method using a DCP

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Borehole Log - BH#4

Hole Location: Refer to Site Plan

JOB No. 25 005

CLIENT:	Treston Laybourn	**SITE:**	22 Bowden Road, Taupo Bay		
DATE DRILLED:	14/01/2025	**DRILLING METHOD:**	Hand Auger	**LOGGED BY:**	PS
		HOLE DIAMETER (mm)	50	**CHECKED BY:**	WT

Soil Description (Based on NZGS Logging Guidelines 2005)	Depth (m)	Geology	Graphic Log	Water Level	Sensitivity	Vane Shear and Remoulded Vane Shear Strengths (kPa)	Shear Values (kPa)	Scala Penetrometer (blows/100mm)
0.0m: TOPSOIL, dark brown, dry	0.0							
0.35m: silty CLAY, light brown with red streaks, high plastic, moist [Tupou Complex]	0.5	Tupou Complex		Groundwater not encountered			216+	
	1.0						216+	
1.3m: silty CLAY, red with white and pink bands and light brown streaks, medium plastic, moist	1.5				3		169/59	
2.0 m - End of Bore (target depth achieved)	2.0				3		145/52	
	2.5							
	3.0							
	3.5							
	4.0							
	4.5							

LEGEND:

TOPSOIL | CLAY | SILT | SAND | GRAVEL | FILL | LIMESTONE

Corrected shear vane reading
Remoulded shear vane reading
Scala Penetrometer

Notes:
UTP = Unable to penetrate. mbgl = metres below ground level.
Hand Held Shear Vane S/N: 440

Test Methods:
Shear Strength using a Hand Held Shear Vane, NZ Geotechnical Soc Inc 8/2001

Scala Penetrometer: NZS4402: 1986: 6.5.2 Hand method using a DCP

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Borehole Log - BH#5

Hole Location: Refer to Site Plan

JOB No. 25 005

CLIENT:	Treston Laybourn	**SITE:**	22 Bowden Road, Taupo Bay		
DATE DRILLED:	14/01/2025	**DRILLING METHOD:**	Hand Auger	**LOGGED BY:**	WT
		HOLE DIAMETER (mm)	50	**CHECKED BY:**	PS

Soil Description (Based on NZGS Logging Guidelines 2005)	Depth (m)	Geology	Graphic Log	Water Level	Sensitivity	Vane Shear and Remoulded Vane Shear Strengths (kPa)	Shear Values (kPa)	Scala Penetrometer (blows/100mm)
0.0m: silty TOPSOIL, brown and orange brown, presence of rootlets [FILL]	0.0	Fill		Groundwater not encountered		0 50 100 150 200 250		
From 0.2m: buried topsoil, dark brown, dry								
	0.5				6		229/39	
0.6m: silty CLAY, orange/brown, very stiff, moist, medium plastic [Tupou Complex]		Tupou Complex						
1.0 m - End of Bore (target depth achieved)	1.0				3		229/70	
	1.5							
	2.0							
	2.5							
	3.0							
	3.5							
	4.0							
	4.5							

LEGEND:

TOPSOIL | CLAY | SILT | SAND | GRAVEL | FILL | LIMESTONE

Corrected shear vane reading
Remoulded shear vane reading
Scala Penetrometer

Notes:
UTP = Unable to penetrate. mbgl = metres below ground level.
Hand Held Shear Vane S/N: 3422

Test Methods:
Shear Strength using a Hand Held Shear Vane, NZ Geotechnical Soc Inc 8/2001

Scala Penetrometer: NZS4402: 1986: 6.5.2 Hand method using a DCP

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Borehole Log - BH#6

Hole Location: Refer to Site Plan

JOB No. 25 005

CLIENT:	Treston Laybourn	**SITE:**	22 Bowden Road, Taupo Bay		
DATE DRILLED:	11/02/2025	**DRILLING METHOD:**	Hand Auger	**LOGGED BY:**	PS
		HOLE DIAMETER (mm)	50	**CHECKED BY:**	WT

Soil Description (Based on NZGS Logging Guidelines 2005)	Depth (m)	Geology	Graphic Log	Water Level	Sensitivity	Vane Shear and Remoulded Vane Shear Strengths (kPa)	Shear Values (kPa)	Scala Penetrometer (blows/100mm)
0.0m: TOPSOIL, dark brown, moist	0.0	Tupou Complex		Groundwater not encountered		0 50 100 150 200 250		
0.3m: silty CLAY, light brown with red streaks, high plastic, moist [Tupou Complex]	0.5						216+	
	1.0						216+	
From 1.3m: red with occasional ligt brown streaks and white mottles, medium plastic	1.5						216+	
2.0 m - End of Bore (target depth achieved)	2.0				3		154/62	
	2.5							
	3.0							
	3.5							
	4.0							
	4.5							

LEGEND:

TOPSOIL | CLAY | SILT | SAND | GRAVEL | FILL | LIMESTONE

Corrected shear vane reading
Remoulded shear vane reading
Scala Penetrometer

Notes:
UTP = Unable to penetrate. mbgl = metres below ground level.
Hand Held Shear Vane S/N: 440

Test Methods:
Shear Strength using a Hand Held Shear Vane, NZ Geotechnical Soc Inc 8/2001

Scala Penetrometer: NZS4402: 1986: 6.5.2 Hand method using a DCP

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Borehole Log - BH#7

Hole Location: Refer to Site Plan

JOB No. 25 005

CLIENT:	Treston Laybourn	**SITE:**	22 Bowden Road, Taupo Bay		
DATE DRILLED:	11/02/2025	**DRILLING METHOD:**	Hand Auger	**LOGGED BY:**	PS
		HOLE DIAMETER (mm)	50	**CHECKED BY:**	WT

Soil Description (Based on NZGS Logging Guidelines 2005)	Depth (m)	Geology	Graphic Log	Water Level	Sensitivity	Vane Shear and Remoulded Vane Shear Strengths (kPa)	Shear Values (kPa)	Scala Penetrometer (blows/100mm)
0.0m: TOPSOIL, dark brown, moist	0.0							
0.2m: silty CLAY, light brown with occasional light grey and red streaks, high plastic, moist [Tupou Complex]	0.5	Tupou Complex		Groundwater not encountered			216+	
	1.0						216+	
From 1.4m: red with occasional white streaks, medium plastic	1.5				2		145/62	
From 2.0m: red and purple with light brown and light grey streaks	2.0				2		142/62	
	2.5				2		148/65	
	3.0				2		142/62	
	3.5				2		145/68	
4.0 m - End of Bore (target depth achieved) 	4.0				2		142/71	
	4.5							

LEGEND:

TOPSOIL | CLAY | SILT | SAND | GRAVEL | FILL | LIMESTONE

Corrected shear vane reading
Remoulded shear vane reading
Scala Penetrometer

Notes:
UTP = Unable to penetrate. mbgl = metres below ground level.
Hand Held Shear Vane S/N: 440

Test Methods:
Shear Strength using a Hand Held Shear Vane, NZ Geotechnical Soc Inc 8/2001

Scala Penetrometer: NZS4402: 1986: 6.5.2 Hand method using a DCP

Appendix C –Retaining Wall Design Calculations

Timber pole wall design calculations.

Project Name:

22 Bowden Road, Taupo Bay

Doc No: 25 005

Subject: 22 Bowden Road, Taupo Bay

By: P. Szyncel Date: 18/03/2025

Input parameters for Wallap

Verified By: W. Thorburn Date: 18/03/2025

Material Properties for Timber Pole

8.70E+06

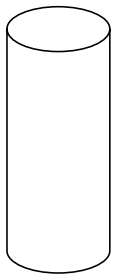
E = 8.70 GPa (Young Modulus) [NZS3603, Table 7.1]

8.70E+06 kPa

ρ = 450 kg/m^3 (Density)

S = 1.2 m c/c (Spacing between piles)

0.300 m ϕ



A = 0.071 m^2 (Sectional Area)

I = 3.97608E-04 m^4 (Area Moment of Inertia) per pile

EA = **5.125E+05** kN/m = [kN/m^2][m^2]/[m]

EI = **2882.66** kNm^2/m = [kN/m^2][m^4]/[m]

w = **0.260** kN/m/m = [kg/m^3][m/s^2][m^2]/[m]

I 3.313E-04 m^4/m per unit length of wall

EI 2882.66 kNm^2/m = [kN/m^2][m^4]/[m] per unit length of wall

Wallap Stage	Max Height (m)	(kNm/m) BM	(kN/m) SF	fos	mm Disp	c/c (m)	Load factor	
2	2	12.9	9.9	1.74	50	1.2	1.5	STATIC
3	2	15.9	10.8	1.34	82	1.2	1.3	ELEVATED
7	2	29.7	20.5	1.52	142	1.2	1	SEISMIC

DESIGN

Wallap Stage	(kNm) BM	(kN) SF	fos	disp (mm)	pole size (mm)	Embedment (m)	Total length (m)	
2	23	18	1.74	50	300	4	6	STATIC
3	25	17	1.34	82	300	4	6	ELEVATED
7	36	25	1.52	142	300	4	6	SEISMIC

pole design (maximum)	
(kNm) BM	(kN) SF
42	78
OK	OK

Units: kN,m

INPUT DATA

SOIL PROFILE

Stratum no.	Elevation of top of stratum	Soil types Left side	Soil types Right side
1	48.00	2 Disturbed Tupou Comp	2 Disturbed Tupou Comp
2	47.00	1 Tuou Complex	1 Tuou Complex
3	46.00	1 Tuou Complex	2 Disturbed Tupou Comp
4	45.50	1 Tuou Complex	1 Tuou Complex

SOIL PROPERTIES

-- Soil type -- No.	Description (Datum elev.)	Bulk density kN/m3	Young's Modulus Eh,kN/m2 (dEh/dy)	At rest coeff. Ko (dKo/dy)	Consol state. NC/OC (Nu)	Active limit Ka (Kac)	Passive limit Kp (Kpc)	Cohesion kN/m2 (dc/dy)
1	Tuou Complex	18.00	25000	0.530	OC (0.350)	0.311 (1.295)	3.477 (4.658)	3.000d
2	Disturbed Tupou Comp	18.00	25000	0.530	OC (0.350)	0.311 (1.295)	3.477 (4.658)	0.0d

Additional soil parameters associated with Ka and Kp

------- Soil type ------- No.	Description	--- parameters for Ka --- Soil friction angle	Wall adhesion coeff.	Back-fill angle	--- parameters for Kp --- Soil friction angle	Wall adhesion coeff.	Back-fill angle
1	Tuou Complex	28.00	0.624	0.00	28.00	0.302	0.00
2	Disturbed Tupou Comp	28.00	0.624	0.00	28.00	0.302	0.00

GROUND WATER CONDITIONS

Density of water = 10.00 kN/m3

	Left side	Right side
Initial water table elevation	44.00	44.00

Automatic water pressure balancing at toe of wall : No

Water press. profile no.	Left side Point no.	Elev. m	Piezo elev. m	Water press. kN/m2	Right side Point no.	Elev. m	Piezo elev. m	Water press. kN/m2
1	1	46.00	46.00	0.0	1	46.00	46.00	0.0
2	1	44.00	44.00	0.0	1	44.00	44.00	0.0

WALL PROPERTIES

Type of structure = Soldier Pile Wall
Soldier Pile width = 0.30 m
Soldier Pile spacing = 1.20 m
Passive mobilisation factor = 3.00
Elevation of toe of wall = 42.00
Maximum finite element length = 0.30 m
Youngs modulus of wall E = 8.7000E+06 kN/m2
Moment of inertia of wall I = 3.3134E-04 m4/m run
= 3.9761E-04 m4 per pile
E.I = 2882.7 kN.m2/m run
Yield Moment of wall = Not defined

HORIZONTAL and MOMENT LOADS/RESTRAINTS

Load no.	Elevation	Horizontal load kN/m run	Moment load kN.m/m run	Moment restraint kN.m/m/rad	Partial factor (Category)
1	47.56	1.180	0	0	n/a
2	46.96	3.550	0	0	n/a
3	46.31	5.910	0	0	n/a

SURCHARGE LOADS

Surcharge no.	Elev.	Distance from wall	Length parallel to wall	Width perpend. to wall	Surcharge(kN/m2) Near edge	Far edge	Soil Cat.	type	Part fact.	Short Q reduc. fact.
1	48.00	0.00(L)	20.00	6.50	0.00	32.00	--	--	--	--

Note: L = Left side, R = Right side
A ramp surcharge is defined by two values:
N = at edge near to wall, F = at edge far from wall

CONSTRUCTION STAGES

Construction stage no.	Stage description
1	Excavate to elevation 46.00 on RIGHT side
2	Apply surcharge no.1 at elevation 48.00
3	Apply water pressure profile no.1
4	Apply water pressure profile no.2
	No analysis at this stage
5	Apply load no.1 at elevation 47.56
6	Apply load no.2 at elevation 46.96
7	Apply load no.3 at elevation 46.31

FACTORS OF SAFETY and ANALYSIS OPTIONS

Stability analysis:
Method of analysis - Strength Factor method
Factor on soil strength for calculating wall depth = 1.50

Parameters for undrained strata:
Minimum equivalent fluid density = 5.00 kN/m3
Maximum depth of water filled tension crack = 0.00 m

Bending moment and displacement calculation:
Method - 2-D finite element model
Open Tension Crack analysis? - No
Active limit arching modelled? - No
Non-linear Modulus Parameter (L) = 0 m

Boundary conditions:
Length of wall (normal to plane of analysis) = 20.00 m

Width of excavation/fill on Left side of wall = 20.00 m
Width of excavation/fill on Right side of wall = 20.00 m

Distance to rigid boundary on Left side = 20.00 m
Distance to rigid boundary on Right side = 20.00 m
Elevation of rigid lower boundary = 40.00

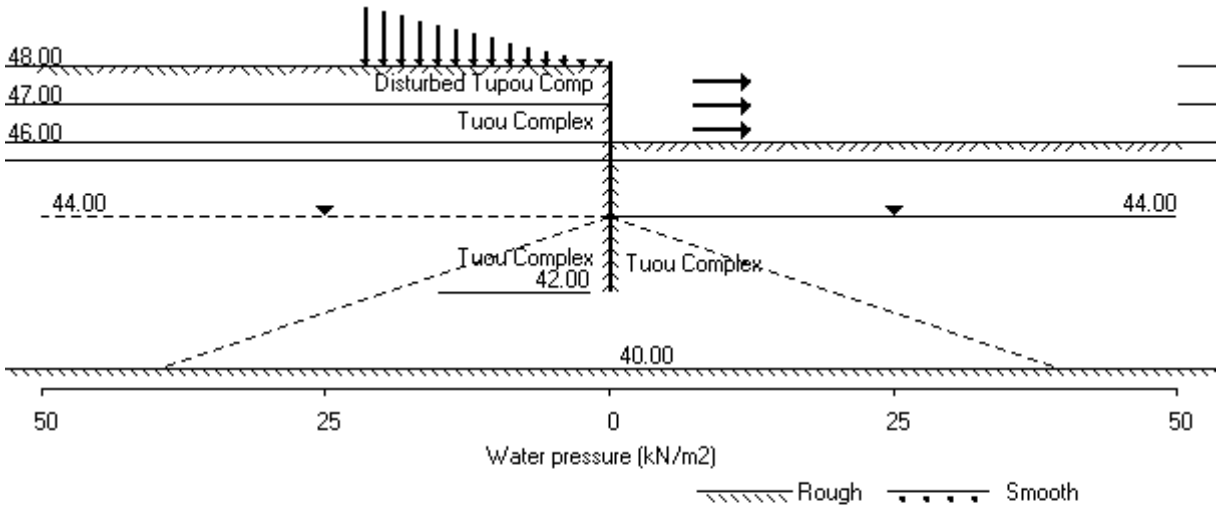
Lower rigid boundary at elevation 40.00 - Rough
Rigid boundary on Left side - Smooth
Rigid boundary on Right side - Smooth
Soil-wall interface - Rough

OUTPUT OPTIONS

Stage no.	Stage description	Output options: Displacement, Bending mom., Shear force	Active, Passive pressures	Graph. output
1	Excav. to elev. 46.00 on RIGHT side	Yes	Yes	Yes
2	Apply surcharge no.1 at elev. 48.00	Yes	Yes	Yes
3	Apply water pressure profile no.1	No	No	No
4	Apply water pressure profile no.2	No	No	No
5	Apply load no.1 at elev. 47.56	No	No	No
6	Apply load no.2 at elev. 46.96	No	No	No
7	Apply load no.3 at elev. 46.31	No	No	No
*	Summary output	Yes	-	Yes

Units: kN,m

Stage No.7 Apply load no.3 at elev. 46.31



Units: kN,m

Stage No. 2 Apply surcharge no.1 at elevation 48.00

STABILITY ANALYSIS of Soldier Pile Wall according to Strength Factor method

Factor of safety on soil strength

Stage No.	Ground level Act.	Ground level Pass.	Prop Elev.	FoS for toe elev. = 42.00 Factor of Safety	FoS for toe elev. = 42.00 Moment equilib. at elev.	Toe elev. for FoS = 1.500 Toe elev.	Wall Penetr-ation	Direction of failure
2	48.00	46.00	Cant.	1.737	42.45	42.82	3.18	L to R

BENDING MOMENT and DISPLACEMENT ANALYSIS of Soldier Pile Wall

Analysis options

Soldier Pile width = 0.30m; spacing = 1.20m

Passive mobilisation factor = 3.000

2-D finite element model. Active limit arching not modelled.

Soil deformations are elastic until the active or passive limit is reached

All soil moduli were factored to take account of

3-D effects due to the finite length of wall:

Modulus factors - Left side = 1.06

Right side = 1.05

Length of wall perpendicular to section = 20.00m

Rigid boundaries:		
Left side 20.00m from wall		Smooth
Right side 20.00m from wall		Smooth
Lower boundary at elevation 40.00m		Rough
Soil-wall interface		Rough

Node no.	Y coord	Nett pressure kN/m2	Wall disp. m	Wall rotation rad.	Shear force kN/m	Bending moment kN.m/m	Prop forces kN/m
1	48.00	0.00	0.050	1.23E-02	0.0	0.0	
2	47.78	1.45	0.048	1.23E-02	0.2	0.0	
3	47.56	2.89	0.045	1.23E-02	0.6	0.1	
4	47.28	4.73	0.042	1.22E-02	1.7	0.4	
5	47.00	6.56	0.038	1.22E-02	3.3	1.1	
		2.67	0.038	1.22E-02	3.3	1.1	
6	46.96	2.93	0.038	1.22E-02	3.4	1.3	
7	46.80	3.99	0.036	1.21E-02	4.0	1.9	
8	46.64	5.04	0.034	1.19E-02	4.7	2.6	
9	46.47	6.08	0.032	1.18E-02	5.6	3.4	
10	46.31	7.13	0.030	1.16E-02	6.7	4.4	
11	46.16	8.12	0.028	1.13E-02	7.8	5.5	
12	46.00	9.10	0.026	1.10E-02	9.2	6.9	
13	45.75	-3.73	0.024	1.02E-02	9.9	9.4	
14	45.50	-14.29	0.021	9.37E-03	7.6	11.8	
		-24.77	0.021	9.37E-03	7.6	11.8	
15	45.25	-21.83	0.019	8.30E-03	1.8	12.9	
16	45.00	-22.41	0.017	7.19E-03	-3.8	12.7	
17	44.70	-5.68	0.015	5.98E-03	-8.0	10.5	
18	44.40	3.51	0.013	5.02E-03	-8.3	7.9	
19	44.20	6.41	0.013	4.53E-03	-7.3	6.3	
20	44.00	6.56	0.012	4.14E-03	-6.0	5.0	
21	43.75	5.55	0.011	3.76E-03	-4.5	3.7	
22	43.50	4.08	0.010	3.48E-03	-3.3	2.7	
23	43.20	2.45	0.009	3.24E-03	-2.3	1.9	
24	42.90	1.07	0.008	3.07E-03	-1.8	1.3	
25	42.60	0.22	0.007	2.95E-03	-1.6	0.9	

(continued)

Stage No.2 Apply surcharge no.1 at elevation 48.00

Node no.	Y coord	Nett pressure	Wall disp.	Wall rotation	Shear force	Bending moment	Prop forces
		kN/m2	m	rad.	kN/m	kN.m/m	kN/m
26	42.30	0.82	0.006	2.89E-03	-1.4	0.4	
27	42.00	6.55	0.005	2.87E-03	-0.3	-0.0	
28	41.90	0.00	0.005	0	0.0	0.0	
29	41.70	0.04	0.004	0	0.0	0.0	
30	40.85	0.02	0.002	0	0.0	0.0	
31	40.00	-0.09	0.000	0	0.0	0.0	

LEFT side

Node no.	Y coord	Water press.	Effective stresses: Vertic-al	Active limit	Passive limit	Earth press.	Total earth press.	Adjusted soil modulus
		kN/m2	kN/m2	kN/m2	kN/m2	kN/m2	kN/m2	kN/m2
1	48.00	0.00	0.00	0.00	0.00	0.00	0.00	26539
2	47.78	0.00	4.65	1.45	16.16	1.45	1.45a	26539
3	47.56	0.00	9.29	2.89	32.31	2.89	2.89a	26539
4	47.28	0.00	15.19	4.73	52.81	4.73	4.73a	26539
5	47.00	0.00	21.06	6.56	73.22	6.56	6.56a	26539
		0.00	21.06	2.67	87.20	2.67	2.67a	26539
6	46.96	0.00	21.90	2.93	90.11	2.93	2.93a	26539
7	46.80	0.00	25.29	3.99	101.89	3.99	3.99a	26539
8	46.64	0.00	28.66	5.04	113.64	5.04	5.04a	26539
9	46.47	0.00	32.03	6.08	125.33	6.08	6.08a	26539
10	46.31	0.00	35.38	7.13	136.97	7.13	7.13a	26539
11	46.16	0.00	38.55	8.12	148.02	8.12	8.12a	26539
12	46.00	0.00	41.71	9.10	159.01	9.10	9.10a	26539
		0.00	41.71	9.10	119.26	9.10	9.10a	26539
13	45.75	0.00	46.78	10.68	132.81	10.68	10.68a	26539
14	45.50	0.00	51.80	12.24	146.25	12.24	12.24a	26539
		0.00	51.80	12.24	145.55	12.24	12.24a	26539
15	45.25	0.00	56.77	13.79	158.60	27.30	27.30	26539
16	45.00	0.00	61.70	15.32	171.81	38.84	38.84	26539
17	44.70	0.00	67.56	17.14	187.49	45.47	45.47	26539
18	44.40	0.00	73.34	18.95	203.00	48.13	48.13	26539
19	44.20	0.00	77.17	20.14	213.25	48.32	48.32	26539
20	44.00	0.00	80.97	21.32	223.44	47.97	47.97	26539
21	43.75	2.50	83.18	22.01	229.36	46.41	48.91	26539
22	43.50	5.00	85.35	22.68	235.18	44.74	49.74	26539
23	43.20	8.00	87.91	23.48	242.05	43.45	51.45	26539
24	42.90	11.00	90.43	24.26	248.80	42.50	53.50	26539
25	42.60	14.00	92.90	25.03	255.44	42.08	56.08	26539
26	42.30	17.00	95.34	25.79	261.98	42.60	59.60	26539
27	42.00	20.00	97.74	26.54	268.43	46.04	66.04	26539
		20.00	97.74	26.54	353.79	46.04	66.04	26539
28	41.90	21.00	98.53	26.79	356.55	42.66	63.66	26539
29	41.70	23.00	100.11	27.28	362.04	42.78	65.78	26539
30	40.85	31.50	106.70	29.33	384.96	45.37	76.87	26539
31	40.00	40.00	113.16	31.34	407.40	48.27	88.27	26539

(continued)

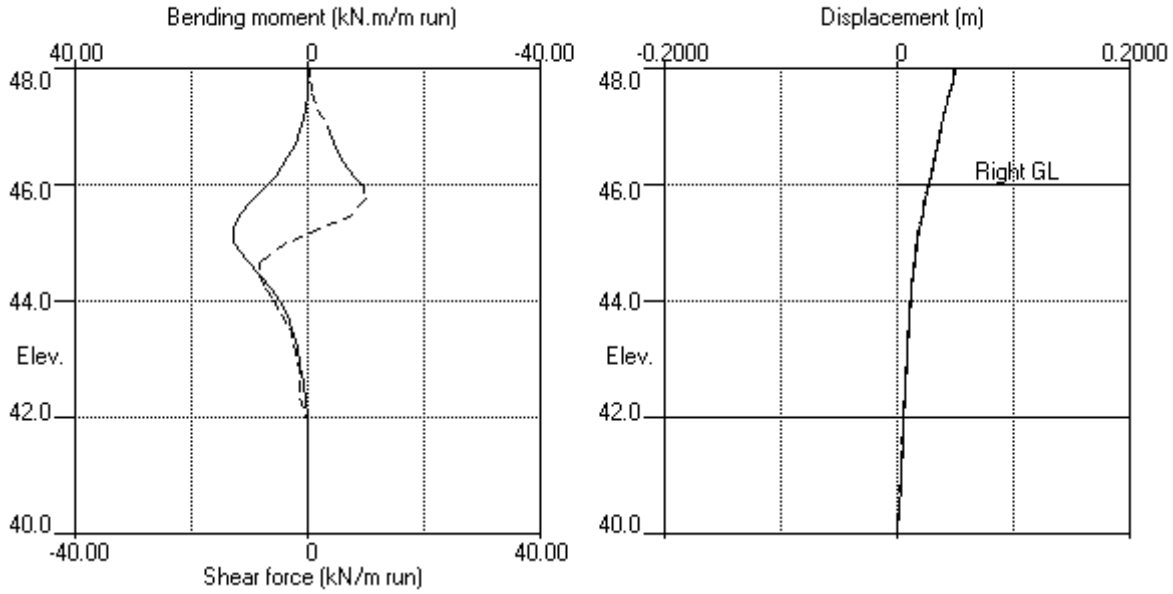
Stage No.2 Apply surcharge no.1 at elevation 48.00

		RIGHT side						
			Effective stresses				Total	Adjusted
Node no.	Y coord	Water press.	Vertic -al	Active limit	Passive limit	Earth press.	earth press.	soil modulus
		kN/m2	kN/m2	kN/m2	kN/m2	kN/m2	kN/m2	kN/m2
1	48.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
2	47.78	0.00	0.00	0.00	0.00	0.00	0.00	0.0
3	47.56	0.00	0.00	0.00	0.00	0.00	0.00	0.0
4	47.28	0.00	0.00	0.00	0.00	0.00	0.00	0.0
5	47.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
6	46.96	0.00	0.00	0.00	0.00	0.00	0.00	0.0
7	46.80	0.00	0.00	0.00	0.00	0.00	0.00	0.0
8	46.64	0.00	0.00	0.00	0.00	0.00	0.00	0.0
9	46.47	0.00	0.00	0.00	0.00	0.00	0.00	0.0
10	46.31	0.00	0.00	0.00	0.00	0.00	0.00	0.0
11	46.16	0.00	0.00	0.00	0.00	0.00	0.00	0.0
12	46.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
		0.00	0.00	0.00	0.00	0.00	0.00	26317
13	45.75	0.00	4.50	1.40	14.40	14.40	14.40p	26317
14	45.50	0.00	9.00	2.80	26.53	26.53	26.53p	26317
		0.00	9.00	0.00	37.01	37.01	37.01p	26317
15	45.25	0.00	13.50	0.32	49.13	49.13	49.13p	26317
16	45.00	0.00	18.00	1.72	61.25	61.25	61.25p	26317
17	44.70	0.00	23.40	3.40	75.80	51.15	51.15	26317
18	44.40	0.00	28.81	5.08	90.34	44.62	44.62	26317
19	44.20	0.00	32.41	6.20	100.03	41.91	41.91	26317
20	44.00	0.00	36.02	7.33	109.72	41.41	41.41	26317
21	43.75	2.50	38.02	7.95	115.13	40.86	43.36	26317
22	43.50	5.00	40.03	8.57	120.53	40.66	45.66	26317
23	43.20	8.00	42.44	9.33	127.02	41.00	49.00	26317
24	42.90	11.00	44.86	10.08	133.51	41.43	52.43	26317
25	42.60	14.00	47.27	10.83	140.01	41.86	55.86	26317
26	42.30	17.00	49.69	11.58	146.51	41.78	58.78	26317
27	42.00	20.00	52.12	12.34	153.01	39.49	59.49	26317
		20.00	52.12	12.34	195.17	39.49	59.49	26317
28	41.90	21.00	52.93	12.59	197.98	42.66	63.66	26317
29	41.70	23.00	54.54	13.09	203.61	42.73	65.73	26317
30	40.85	31.50	61.44	15.24	227.59	45.35	76.85	26317
31	40.00	40.00	68.37	17.40	251.69	48.35	88.35	26317

Note: 12.24 a Soil pressure at active limit
61.25 p Soil pressure at passive limit

Units: kN,m

Stage No.2 Apply surcharge no.1 at elev. 48.00



Units: kN,m

Stage No. 3 Apply water pressure profile no.1

STABILITY ANALYSIS of Soldier Pile Wall according to Strength Factor method

Factor of safety on soil strength

Stage No.	Ground level Act.	Pass.	Prop Elev.	**FoS for toe elev. = 42.00** Factor of Safety	Moment equilib. at elev.	**Toe elev. for FoS = 1.500** Toe elev.	Wall Penetr -ation	Direction of failure
3	48.00	46.00	Cant.	1.335	42.35	***	***	L to R

Legend: *** Result not found

BENDING MOMENT and DISPLACEMENT ANALYSIS of Soldier Pile Wall

Analysis options

Soldier Pile width = 0.30m; spacing = 1.20m
Passive mobilisation factor = 3.000
2-D finite element model. Active limit arching not modelled.
Soil deformations are elastic until the active or passive limit is reached
All soil moduli were factored to take account of
3-D effects due to the finite length of wall:
Modulus factors - Left side = 1.06
Right side = 1.05

Length of wall perpendicular to section = 20.00m

Rigid boundaries:		
Left side 20.00m from wall	Smooth
Right side 20.00m from wall	Smooth
Lower boundary at elevation 40.00m	Rough
Soil-wall interface	Rough

Node no.	Y coord	Nett pressure kN/m2	Wall disp. m	Wall rotation rad.	Shear force kN/m	Bending moment kN.m/m	Prop forces kN/m
1	48.00	0.00	0.082	1.84E-02	0.0	0.0	
2	47.78	1.45	0.078	1.84E-02	0.2	0.0	
3	47.56	2.90	0.074	1.83E-02	0.6	0.1	
4	47.28	4.73	0.069	1.83E-02	1.7	0.4	
5	47.00	6.56	0.063	1.82E-02	3.3	1.1	
		2.67	0.063	1.82E-02	3.3	1.1	
6	46.96	2.93	0.063	1.82E-02	3.4	1.3	
7	46.80	3.99	0.060	1.81E-02	4.0	1.9	
8	46.64	5.04	0.057	1.80E-02	4.7	2.6	
9	46.47	6.08	0.054	1.78E-02	5.6	3.4	
10	46.31	7.13	0.051	1.76E-02	6.7	4.4	
11	46.16	8.12	0.048	1.74E-02	7.9	5.5	
12	46.00	9.10	0.046	1.70E-02	9.2	6.8	
13	45.75	2.94	0.041	1.63E-02	10.7	9.5	
14	45.50	-2.42	0.037	1.54E-02	10.8	12.3	
		-12.90	0.037	1.54E-02	10.8	12.3	
15	45.25	-17.54	0.034	1.42E-02	7.0	14.6	
16	45.00	-21.22	0.030	1.29E-02	2.1	15.9	
17	44.70	-12.08	0.027	1.13E-02	-2.9	15.3	
18	44.40	-9.35	0.023	9.79E-03	-6.1	13.8	
19	44.20	-7.67	0.022	8.88E-03	-7.8	12.4	
20	44.00	0.41	0.020	8.07E-03	-8.5	10.7	
21	43.75	4.27	0.018	7.24E-03	-7.9	8.6	
22	43.50	5.27	0.016	6.58E-03	-6.8	6.7	
23	43.20	4.04	0.014	5.97E-03	-5.4	4.9	

(continued)

Stage No.3 Apply water pressure profile no.1

Node no.	Y coord	Nett pressure	Wall disp.	Wall rotation	Shear force	Bending moment	Prop forces
		kN/m2	m	rad.	kN/m	kN.m/m	kN/m
24	42.90	2.02	0.013	5.53E-03	-4.4	3.5	
25	42.60	0.39	0.011	5.23E-03	-4.1	2.2	
26	42.30	2.11	0.010	5.06E-03	-3.7	1.0	
27	42.00	17.09	0.008	5.01E-03	-0.8	-0.0	
28	41.90	0.00	0.008	0	0.0	0.0	
29	41.70	0.04	0.007	0	0.0	0.0	
30	40.85	0.02	0.003	0	0.1	0.0	
31	40.00	-0.09	0.000	0	0.0	0.0	

LEFT side

Node no.	Y coord	Water press.	Effective stresses: Vertic-al	Active limit	Passive limit	Earth press.	Total earth press.	Adjusted soil modulus
		kN/m2	kN/m2	kN/m2	kN/m2	kN/m2	kN/m2	kN/m2
1	48.00	0.00	0.00	0.00	0.00	0.00	0.00	26539
2	47.78	0.00	4.65	1.45	16.16	1.45	1.45	26539
3	47.56	0.00	9.29	2.89	32.31	2.90	2.90a	26539
4	47.28	0.00	15.19	4.73	52.81	4.73	4.73a	26539
5	47.00	0.00	21.06	6.56	73.22	6.56	6.56a	26539
		0.00	21.06	2.67	87.20	2.67	2.67a	26539
6	46.96	0.00	21.90	2.93	90.11	2.93	2.93a	26539
7	46.80	0.00	25.29	3.99	101.89	3.99	3.99a	26539
8	46.64	0.00	28.66	5.04	113.64	5.04	5.04a	26539
9	46.47	0.00	32.03	6.08	125.33	6.08	6.08a	26539
10	46.31	0.00	35.38	7.13	136.97	7.13	7.13a	26539
11	46.16	0.00	38.55	8.12	148.02	8.12	8.12a	26539
12	46.00	0.00	41.71	9.10	159.01	9.10	9.10a	26539
		0.00	41.71	9.10	119.26	9.10	9.10a	26539
13	45.75	2.50	44.28	9.90	126.10	9.90	12.40a	26539
14	45.50	5.00	46.80	10.68	132.83	10.68	15.68a	26539
		5.00	46.80	10.68	132.52	10.68	15.68a	26539
15	45.25	7.50	49.27	11.45	138.97	11.45	18.95a	26539
16	45.00	10.00	51.70	12.21	145.30	13.18	23.18	26539
17	44.70	13.00	54.56	13.10	152.74	28.81	41.81	26539
18	44.40	16.00	57.34	13.96	160.04	38.02	54.02	26539
19	44.20	18.00	59.17	14.53	164.92	42.06	60.06	26539
20	44.00	20.00	60.97	15.09	169.73	43.16	63.16	26539
21	43.75	22.50	63.18	15.78	175.65	42.72	65.22	26539
22	43.50	25.00	65.35	16.46	181.48	41.03	66.03	26539
23	43.20	28.00	67.91	17.25	188.34	38.82	66.82	26539
24	42.90	31.00	70.43	18.04	195.09	36.57	67.57	26539
25	42.60	34.00	72.90	18.81	201.73	34.94	68.94	26539
26	42.30	37.00	75.34	19.57	208.27	35.34	72.34	26539
27	42.00	40.00	77.74	20.31	214.72	42.98	82.98	26539
		40.00	77.74	20.31	284.26	42.98	82.98	26539
28	41.90	41.00	78.53	20.56	287.02	33.80	74.80	26539
29	41.70	43.00	80.11	21.05	292.51	33.47	76.47	26539
30	40.85	51.50	86.70	23.10	315.43	35.46	86.96	26539
31	40.00	60.00	93.16	25.11	337.87	37.85	97.85	26539

(continued)

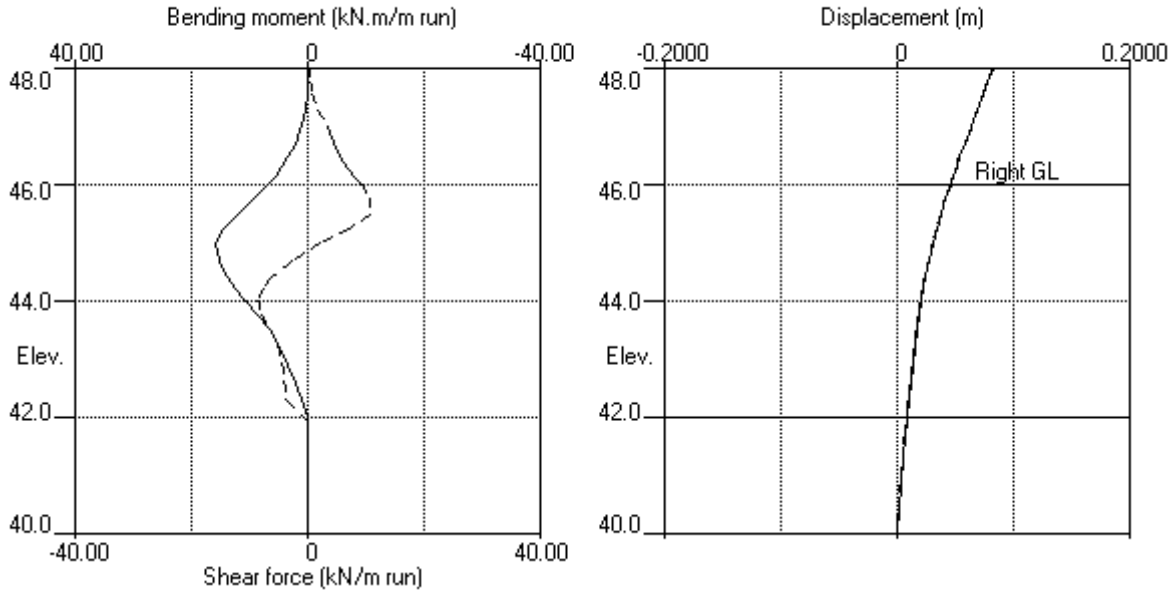
Stage No.3 Apply water pressure profile no.1

		RIGHT side						
			Effective stresses				Total	Adjusted
Node no.	Y coord	Water press.	Vertic -al	Active limit	Passive limit	Earth press.	earth press.	soil modulus
		kN/m2	kN/m2	kN/m2	kN/m2	kN/m2	kN/m2	kN/m2
1	48.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
2	47.78	0.00	0.00	0.00	0.00	0.00	0.00	0.0
3	47.56	0.00	0.00	0.00	0.00	0.00	0.00	0.0
4	47.28	0.00	0.00	0.00	0.00	0.00	0.00	0.0
5	47.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
6	46.96	0.00	0.00	0.00	0.00	0.00	0.00	0.0
7	46.80	0.00	0.00	0.00	0.00	0.00	0.00	0.0
8	46.64	0.00	0.00	0.00	0.00	0.00	0.00	0.0
9	46.47	0.00	0.00	0.00	0.00	0.00	0.00	0.0
10	46.31	0.00	0.00	0.00	0.00	0.00	0.00	0.0
11	46.16	0.00	0.00	0.00	0.00	0.00	0.00	0.0
12	46.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
		0.00	0.00	0.00	0.00	0.00	0.00	26317
13	45.75	2.50	2.00	0.62	6.95	6.95	9.45p	26317
14	45.50	5.00	4.00	1.25	13.10	13.10	18.10p	26317
		5.00	4.00	0.00	23.58	23.58	28.58p	26317
15	45.25	7.50	6.00	0.00	28.99	28.99	36.49p	26317
16	45.00	10.00	8.00	0.00	34.40	34.40	44.40p	26317
17	44.70	13.00	10.40	0.00	40.88	40.88	53.88p	26317
18	44.40	16.00	12.81	0.10	47.37	47.37	63.37p	26317
19	44.20	18.00	14.41	0.60	51.69	49.73	67.73	26317
20	44.00	20.00	16.02	1.10	56.01	42.74	62.74	26317
21	43.75	22.50	18.02	1.72	61.42	38.45	60.95	26317
22	43.50	25.00	20.03	2.35	66.82	35.76	60.76	26317
23	43.20	28.00	22.44	3.10	73.31	34.78	62.78	26317
24	42.90	31.00	24.86	3.85	79.80	34.54	65.54	26317
25	42.60	34.00	27.27	4.60	86.30	34.55	68.55	26317
26	42.30	37.00	29.69	5.36	92.80	33.24	70.24	26317
27	42.00	40.00	32.12	6.11	99.31	25.89	65.89	26317
		40.00	32.12	6.11	125.64	25.89	65.89	26317
28	41.90	41.00	32.93	6.36	128.45	33.80	74.80	26317
29	41.70	43.00	34.54	6.87	134.08	33.43	76.43	26317
30	40.85	51.50	41.44	9.01	158.06	35.44	86.94	26317
31	40.00	60.00	48.37	11.17	182.15	37.94	97.94	26317

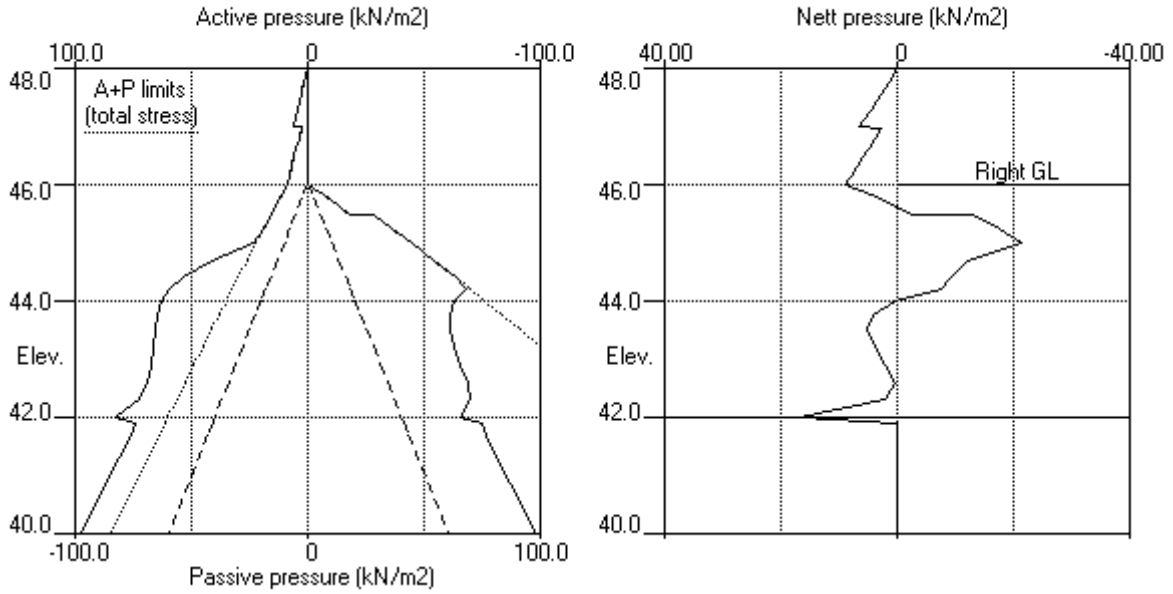
Note: 18.95 a Soil pressure at active limit
63.37 p Soil pressure at passive limit

Units: kN,m

Stage No.3 Apply water pressure profile no.1



Stage No.3 Apply water pressure profile no.1



Units: kN,m

Stage No. 7 Apply load no.3 at elevation 46.31

STABILITY ANALYSIS of Soldier Pile Wall according to Strength Factor method

Factor of safety on soil strength

Stage No.	Ground level Act.	Ground level Pass.	Prop Elev.	**FoS for toe elev. = 42.00** Factor of Safety	Moment equilib. at elev.	**Toe elev. for FoS = 1.500** Toe elev.	Wall Penetr-ation	Direction of failure
7	48.00	46.00	Cant.	1.522	42.51	42.08	3.92	L to R

BENDING MOMENT and DISPLACEMENT ANALYSIS of Soldier Pile Wall

Analysis options

Soldier Pile width = 0.30m; spacing = 1.20m
Passive mobilisation factor = 3.000
2-D finite element model. Active limit arching not modelled.
Soil deformations are elastic until the active or passive limit is reached
All soil moduli were factored to take account of
3-D effects due to the finite length of wall:
Modulus factors - Left side = 1.06
Right side = 1.05

Length of wall perpendicular to section = 20.00m

Rigid boundaries:		
Left side 20.00m from wall		Smooth
Right side 20.00m from wall		Smooth
Lower boundary at elevation 40.00m		Rough
Soil-wall interface		Rough

Node no.	Y coord	Nett pressure kN/m2	Wall disp. m	Wall rotation rad.	Shear force kN/m	Bending moment kN.m/m	Prop forces kN/m
1	48.00	0.00	0.142	3.31E-02	0.0	0.0	
2	47.78	1.46	0.135	3.31E-02	0.2	0.0	
3	47.56	2.89	0.128	3.30E-02	0.6	0.1	
		2.89	0.128	3.30E-02	1.8	0.1	
4	47.28	4.73	0.118	3.30E-02	2.9	0.8	
5	47.00	6.56	0.109	3.29E-02	4.5	1.8	
		2.67	0.109	3.29E-02	4.5	1.8	
6	46.96	2.93	0.108	3.29E-02	4.6	2.0	
		2.93	0.108	3.29E-02	8.1	2.0	
7	46.80	3.99	0.102	3.27E-02	8.7	3.3	
8	46.64	5.04	0.097	3.25E-02	9.4	4.8	
9	46.47	6.08	0.092	3.22E-02	10.3	6.4	
10	46.31	7.13	0.087	3.17E-02	11.4	8.2	
		7.13	0.087	3.17E-02	17.3	8.2	
11	46.16	8.12	0.082	3.12E-02	18.5	10.9	
12	46.00	9.10	0.077	3.06E-02	19.8	13.9	
13	45.75	-3.73	0.069	2.91E-02	20.5	19.2	
14	45.50	-14.29	0.062	2.72E-02	18.2	24.3	
		-24.77	0.062	2.72E-02	18.2	24.3	
15	45.25	-35.34	0.056	2.50E-02	10.7	28.1	
16	45.00	-35.86	0.050	2.25E-02	1.8	29.7	
17	44.70	-23.90	0.044	1.94E-02	-7.1	28.4	
18	44.40	-17.60	0.038	1.67E-02	-13.4	25.1	
19	44.20	-6.70	0.035	1.50E-02	-15.8	22.1	
20	44.00	4.93	0.032	1.36E-02	-16.0	18.8	
21	43.75	9.69	0.029	1.21E-02	-14.1	14.9	
22	43.50	10.03	0.026	1.10E-02	-11.7	11.7	

(continued)

Stage No.7 Apply load no.3 at elevation 46.31

Node no.	Y coord	Nett pressure	Wall disp.	Wall rotation	Shear force	Bending moment	Prop forces
		kN/m2	m	rad.	kN/m	kN.m/m	kN/m
23	43.20	7.02	0.023	9.97E-03	-9.1	8.6	
24	42.90	3.01	0.020	9.20E-03	-7.6	6.2	
25	42.60	-0.07	0.017	8.67E-03	-7.2	4.0	
26	42.30	3.19	0.015	8.36E-03	-6.7	1.9	
27	42.00	31.31	0.012	8.26E-03	-1.5	-0.0	
28	41.90	0.00	0.012	0	0.0	0.0	
29	41.70	0.04	0.010	0	0.0	0.0	
30	40.85	0.02	0.005	0	0.1	0.0	
31	40.00	-0.09	0.000	0	0.0	0.0	

LEFT side

Node no.	Y coord	Water press.	Effective stresses: Vertic-al	Active limit	Passive limit	Earth press.	Total earth press.	Adjusted soil modulus
		kN/m2	kN/m2	kN/m2	kN/m2	kN/m2	kN/m2	kN/m2
1	48.00	0.00	0.00	0.00	0.00	0.00	0.00	26539
2	47.78	0.00	4.65	1.45	16.16	1.46	1.46	26539
3	47.56	0.00	9.29	2.89	32.31	2.89	2.89a	26539
4	47.28	0.00	15.19	4.73	52.81	4.73	4.73a	26539
5	47.00	0.00	21.06	6.56	73.22	6.56	6.56a	26539
		0.00	21.06	2.67	87.20	2.67	2.67a	26539
6	46.96	0.00	21.90	2.93	90.11	2.93	2.93a	26539
7	46.80	0.00	25.29	3.99	101.89	3.99	3.99a	26539
8	46.64	0.00	28.66	5.04	113.64	5.04	5.04a	26539
9	46.47	0.00	32.03	6.08	125.33	6.08	6.08a	26539
10	46.31	0.00	35.38	7.13	136.97	7.13	7.13a	26539
11	46.16	0.00	38.55	8.12	148.02	8.12	8.12a	26539
12	46.00	0.00	41.71	9.10	159.01	9.10	9.10a	26539
		0.00	41.71	9.10	119.26	9.10	9.10a	26539
13	45.75	0.00	46.78	10.68	132.81	10.68	10.68a	26539
14	45.50	0.00	51.80	12.24	146.25	12.24	12.24a	26539
		0.00	51.80	12.24	145.55	12.24	12.24a	26539
15	45.25	0.00	56.77	13.79	158.60	13.79	13.79a	26539
16	45.00	0.00	61.70	15.32	171.81	25.39	25.39	26539
17	44.70	0.00	67.56	17.14	187.49	51.89	51.89	26539
18	44.40	0.00	73.34	18.95	203.00	66.73	66.73	26539
19	44.20	0.00	77.17	20.14	213.25	72.50	72.50	26539
20	44.00	0.00	80.97	21.32	223.44	73.50	73.50	26539
21	43.75	2.50	83.18	22.01	229.36	70.83	73.33	26539
22	43.50	5.00	85.35	22.68	235.18	66.28	71.28	26539
23	43.20	8.00	87.91	23.48	242.05	60.95	68.95	26539
24	42.90	11.00	90.43	24.26	248.80	55.76	66.76	26539
25	42.60	14.00	92.90	25.03	255.44	51.80	65.80	26539
26	42.30	17.00	95.34	25.79	261.98	51.66	68.66	26539
27	42.00	20.00	97.74	26.54	268.43	65.00	85.00	26539
		20.00	97.74	26.54	353.79	65.00	85.00	26539
28	41.90	21.00	98.53	26.79	356.55	48.11	69.11	26539
29	41.70	23.00	100.11	27.28	362.04	46.83	69.83	26539
30	40.85	31.50	106.70	29.33	384.96	47.59	79.09	26539
31	40.00	40.00	113.16	31.34	407.40	49.16	89.16	26539

(continued)

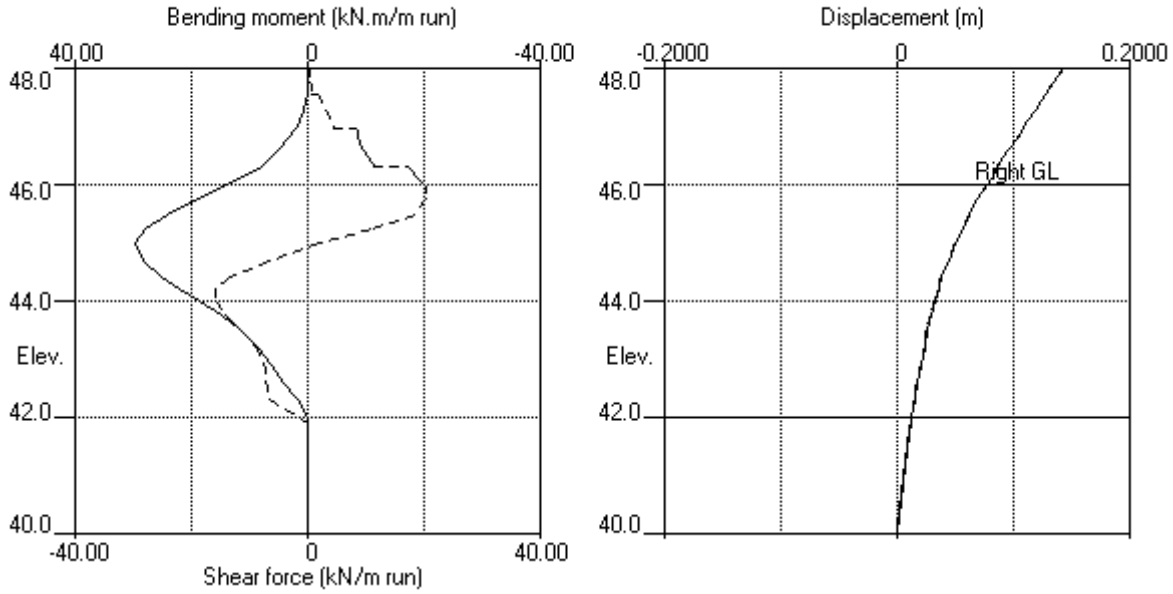
Stage No.7 Apply load no.3 at elevation 46.31

		RIGHT side						
			Effective stresses				Total	Adjusted
Node no.	Y coord	Water press.	Vertic -al	Active limit	Passive limit	Earth press.	earth press.	soil modulus
		kN/m2	kN/m2	kN/m2	kN/m2	kN/m2	kN/m2	kN/m2
1	48.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
2	47.78	0.00	0.00	0.00	0.00	0.00	0.00	0.0
3	47.56	0.00	0.00	0.00	0.00	0.00	0.00	0.0
4	47.28	0.00	0.00	0.00	0.00	0.00	0.00	0.0
5	47.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
6	46.96	0.00	0.00	0.00	0.00	0.00	0.00	0.0
7	46.80	0.00	0.00	0.00	0.00	0.00	0.00	0.0
8	46.64	0.00	0.00	0.00	0.00	0.00	0.00	0.0
9	46.47	0.00	0.00	0.00	0.00	0.00	0.00	0.0
10	46.31	0.00	0.00	0.00	0.00	0.00	0.00	0.0
11	46.16	0.00	0.00	0.00	0.00	0.00	0.00	0.0
12	46.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
		0.00	0.00	0.00	0.00	0.00	0.00	26317
13	45.75	0.00	4.50	1.40	14.40	14.40	14.40p	26317
14	45.50	0.00	9.00	2.80	26.53	26.53	26.53p	26317
		0.00	9.00	0.00	37.01	37.01	37.01p	26317
15	45.25	0.00	13.50	0.32	49.13	49.13	49.13p	26317
16	45.00	0.00	18.00	1.72	61.25	61.25	61.25p	26317
17	44.70	0.00	23.40	3.40	75.80	75.79	75.79p	26317
18	44.40	0.00	28.81	5.08	90.34	84.34	84.34	26317
19	44.20	0.00	32.41	6.20	100.03	79.20	79.20	26317
20	44.00	0.00	36.02	7.33	109.72	68.57	68.57	26317
21	43.75	2.50	38.02	7.95	115.13	61.14	63.64	26317
22	43.50	5.00	40.03	8.57	120.53	56.25	61.25	26317
23	43.20	8.00	42.44	9.33	127.02	53.93	61.93	26317
24	42.90	11.00	44.86	10.08	133.51	52.75	63.75	26317
25	42.60	14.00	47.27	10.83	140.01	51.87	65.87	26317
26	42.30	17.00	49.69	11.58	146.51	48.46	65.46	26317
27	42.00	20.00	52.12	12.34	153.01	33.69	53.69	26317
		20.00	52.12	12.34	195.17	33.69	53.69	26317
28	41.90	21.00	52.93	12.59	197.98	48.11	69.11	26317
29	41.70	23.00	54.54	13.09	203.61	46.79	69.79	26317
30	40.85	31.50	61.44	15.24	227.59	47.57	79.07	26317
31	40.00	40.00	68.37	17.40	251.69	49.24	89.24	26317

Note: 13.79 a Soil pressure at active limit
75.79 p Soil pressure at passive limit

Units: kN,m

Stage No.7 Apply load no.3 at elev. 46.31



Units: kN,m

Summary of results

STABILITY ANALYSIS of Soldier Pile Wall according to Strength Factor method
Factor of safety on soil strength

Stage No.	Ground level Act.	Ground level Pass.	Prop Elev.	FoS for toe elev. = 42.00: Factor of Safety	FoS for toe elev. = 42.00: Moment equilib. at elev.	Toe elev. for FoS = 1.500	Wall Penetr-ation	Direction of failure
1	48.00	46.00	Cant.	1.903	42.50	43.18	2.82	L to R
2	48.00	46.00	Cant.	1.737	42.45	42.82	3.18	L to R
3	48.00	46.00	Cant.	1.335	42.35	***	***	L to R
4	48.00	46.00		No analysis at this stage				
5	48.00	46.00	Cant.	1.704	42.47	42.71	3.29	L to R
6	48.00	46.00	Cant.	1.625	42.49	42.43	3.57	L to R
7	48.00	46.00	Cant.	1.522	42.51	42.08	3.92	L to R

Legend: *** Result not found

Units: kN,m

Summary of results

BENDING MOMENT and DISPLACEMENT ANALYSIS of Soldier Pile Wall

Analysis options

Soldier Pile width = 0.30m; spacing = 1.20m
Passive mobilisation factor = 3.000
2-D finite element model. Active limit arching not modelled.
Soil deformations are elastic until the active or passive limit is reached
All soil moduli were factored to take account of
3-D effects due to the finite length of wall:
Modulus factors - Left side = 1.06
Right side = 1.05

Length of wall perpendicular to section = 20.00m

Rigid boundaries:	Left side 20.00m from wall	Smooth
	Right side 20.00m from wall	Smooth
	Lower boundary at elevation 40.00m	Rough
	Soil-wall interface	Rough

Bending moment, shear force and displacement envelopes

Node no.	Y coord	Displacement maximum	Displacement minimum	Bending moment maximum	Bending moment minimum	Shear force maximum	Shear force minimum
		m	m	kN.m/m	kN.m/m	kN/m	kN/m
1	48.00	0.142	0.000	0.0	0.0	0.0	0.0
2	47.78	0.135	0.000	0.0	0.0	0.2	0.0
3	47.56	0.128	0.000	0.1	0.0	1.8	0.0
4	47.28	0.118	0.000	0.8	0.0	2.9	0.0
5	47.00	0.109	0.000	1.8	0.0	4.5	0.0
6	46.96	0.108	0.000	2.0	0.0	8.1	0.0
7	46.80	0.102	0.000	3.3	0.0	8.7	0.0
8	46.64	0.097	0.000	4.8	0.0	9.4	0.0
9	46.47	0.092	0.000	6.4	0.0	10.3	0.0
10	46.31	0.087	0.000	8.2	0.0	17.3	0.0
11	46.16	0.082	0.000	10.9	0.0	18.5	0.0
12	46.00	0.077	0.000	13.9	0.0	19.8	0.0
13	45.75	0.069	0.000	19.2	0.0	20.5	0.0
14	45.50	0.062	0.000	24.3	0.0	18.2	0.0
15	45.25	0.056	0.000	28.1	0.0	10.7	0.0
16	45.00	0.050	0.000	29.7	0.0	2.1	-4.4
17	44.70	0.044	0.000	28.4	0.0	0.0	-8.0
18	44.40	0.038	0.000	25.1	0.0	0.0	-13.4
19	44.20	0.035	0.000	22.1	0.0	0.0	-15.8
20	44.00	0.032	0.000	18.8	0.0	0.0	-16.0
21	43.75	0.029	0.000	14.9	0.0	0.0	-14.1
22	43.50	0.026	0.000	11.7	0.0	0.0	-11.7
23	43.20	0.023	0.000	8.6	0.0	0.0	-9.1
24	42.90	0.020	0.000	6.2	0.0	0.0	-7.6
25	42.60	0.017	0.000	4.0	0.0	0.0	-7.2
26	42.30	0.015	0.000	1.9	0.0	0.0	-6.7
27	42.00	0.012	0.000	0.0	-0.0	0.0	-1.5
28	41.90	0.012	0.000	0.0	0.0	0.0	0.0
29	41.70	0.010	0.000	0.0	0.0	0.0	0.0
30	40.85	0.005	0.000	0.0	0.0	0.1	0.0
31	40.00	0.000	0.000	0.0	0.0	0.0	0.0

Summary of results (continued)

Maximum and minimum bending moment and shear force at each stage

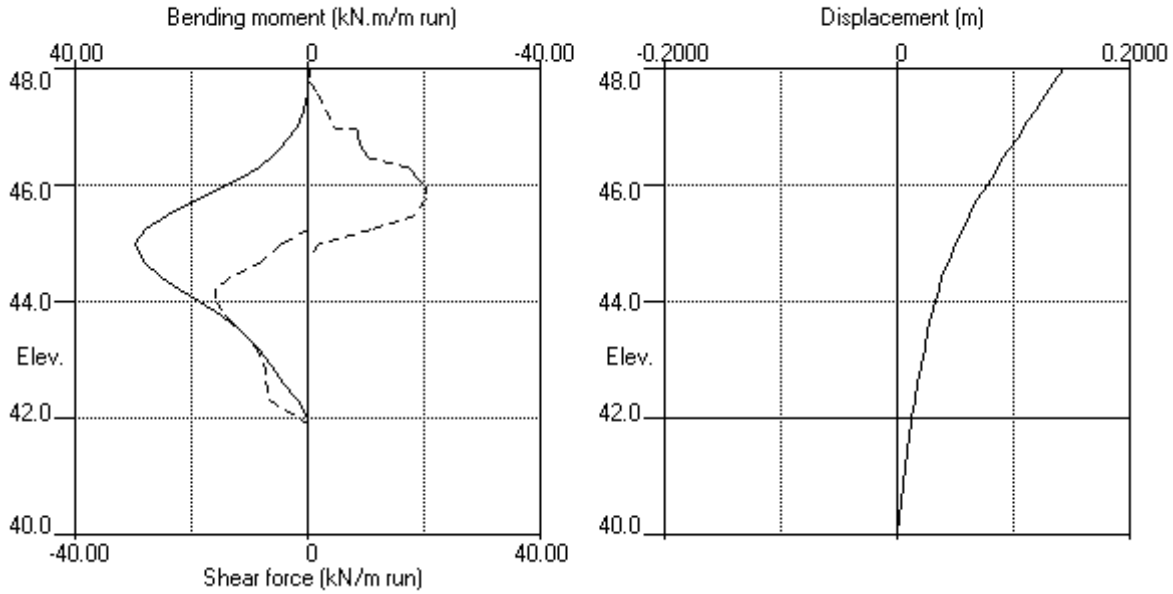
Stage	Bending moment				Shear force			
no.	maximum	elev.	minimum	elev.	maximum	elev.	minimum	elev.
	kN.m/m		kN.m/m		kN/m		kN/m	
1	10.1	45.25	-0.0	42.00	7.6	45.75	-6.7	44.70
2	12.9	45.25	-0.0	42.00	9.9	45.75	-8.3	44.40
3	15.9	45.00	-0.0	42.00	10.8	45.50	-8.5	44.00
4	No calculation at this stage							
5	17.3	45.00	-0.0	42.00	11.3	45.75	-9.0	44.00
6	22.8	45.00	-0.0	42.00	14.6	45.75	-11.5	44.20
7	29.7	45.00	-0.0	42.00	20.5	45.75	-16.0	44.00

Maximum and minimum displacement at each stage

Stage	Displacement				
no.	maximum	elev.	minimum	elev.	Stage description
	m		m		
1	0.037	48.00	0.000	48.00	Excav. to elev. 46.00 on RIGHT side
2	0.050	48.00	0.000	48.00	Apply surcharge no.1 at elev. 48.00
3	0.082	48.00	0.000	48.00	Apply water pressure profile no.1
4	No calculation at this stage				Apply water pressure profile no.2
5	0.087	48.00	0.000	48.00	Apply load no.1 at elev. 47.56
6	0.107	48.00	0.000	48.00	Apply load no.2 at elev. 46.96
7	0.142	48.00	0.000	48.00	Apply load no.3 at elev. 46.31

Units: kN,m

Bending moment, shear force, displacement envelopes



Project	22 Bowden Road, Taupo Bay
Client	Treston Laybourn
Job No	25 005
Date	18/03/2025
Calculated by:	P. Szyncel
Reviewed by:	W. Thorburn
Comments	Lagging Desing - Cut Wall

Factored load on the plank at the base of the wall = **13.65** **kPa**

From Wallap

2	Height (m)
9.1	kPa
1.5	Load factor
2	Rails Required

Structural Design of Lagging to NZS 3603:1993

Timber Lagging: Structural actions

Lagging width b =	50	50		Height (m)
Lagging depth d =	150	150		kPa
For a maximum soil pressure of 13.65 kPa. The UDL on lagging "d" =	2.05	kN/m		Load factor
Lagging Span "L" =	1.2	m		Rails Required
Maximum factored moment $M^* = 1/8\ dL^2$	**0.369**	**kNm**		

Under Flexure, calculate the minimum lagging depth for moment capacity

			Rails	Height	Approx. No.
Bending Stress, f_b =	11.7	MPa	Single	0 to 1.2	8
Shear Stress, f_s =	2.4	MPa	Double	1.2 to 2.0	6
No of parallel support elements, n =	2				
Strength Reduction Factor, ϕ =	0.8				
Duration Factor, k_1 =	0.6				
Parallel Support Factor , k_4 =	1.00				
Grid System Factor, k_5 =	1.00				
Section modulus of lagging, $Z = bd^2/6$ =	125000	mm^3			
$\phi M_n = \phi k_1 k_4 k_5 f_b Z$ =	**0.702**	**kNm**			
Percentage of lagging moment capacity utilised	53%				

Lagging OK for Moment Capacity!

Check for Shear Capacity

For 150 x 50 lagging. Shear surface area = 5000.0 mm^2

$\phi V_n = \phi k_1 k_4 k_5 f_s A_s$ =	**5.760**	**kN**
Compare with V* =	**1.536**	**kN**
Percentage of Shear capacity utilised	27%	

$$V^* = 0.625wL$$

Lagging OK for Shear Capacity!

Use 150 x 100 lagging, spanning continuously across a minimum of 2 pole spacings

Project Name:

22 Bowden Road, Taupo Bay

Doc No: 25 005

Subject: 22 Bowden Road, Taupo Bay

By: P. Szyncel Date: 18/03/2025

Input parameters for Wallap

Verified By: W. Thorburn Date: 18/03/2025

Material Properties for Timber Pole

8.70E+06

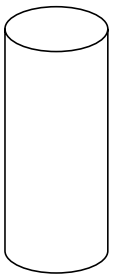
E = 8.70 GPa (Young Modulus) [NZS3603, Table 7.1]

8.70E+06 kPa

ρ = 450 kg/m^3 (Density)

S = 1.2 m c/c (Spacing between piles)

0.300 m ϕ



A = 0.071 m^2 (Sectional Area)

I = 3.97608E-04 m^4 (Area Moment of Inertia) per pile

EA = **5.125E+05** kN/m = [kN/m^2][m^2]/[m]

EI = **2882.66** kNm^2/m = [kN/m^2][m^4]/[m]

w = **0.260** kN/m/m = [kg/m^3][m/s^2][m^2]/[m]

I 3.313E-04 m^4/m per unit length of wall

EI 2882.66 kNm^2/m = [kN/m^2][m^4]/[m] per unit length of wall

Wallap Stage	Max Height (m)	(kNm/m) BM	(kN/m) SF	fos	mm Disp	c/c (m)	Load factor	
2	2	8.4	8.1	1.81	34	1.2	1.5	STATIC
3	2	10.1	8.1	1.32	53	1.2	1.3	ELEVATED
7	2	15.4	12.8	1.71	71	1.2	1	SEISMIC

DESIGN

Wallap Stage	(kNm) BM	(kN) SF	fos	disp (mm)	pole size (mm)	Embedment (m)	Total length (m)	
2	15	15	1.81	34	300	4.5	6.5	STATIC
3	16	13	1.32	53	300	4.5	6.5	ELEVATED
7	18	15	1.71	71	300	4.5	6.5	SEISMIC

pole design (maximum)	
(kNm)	(kN)
BM	SF
41	77
OK	OK

Units: kN,m

INPUT DATA

SOIL PROFILE

Stratum no.	Elevation of top of stratum	Soil types Left side	Soil types Right side
1	44.50	1 Tuou Complex	1 Tuou Complex

SOIL PROPERTIES

-- Soil type -- No.	Description (Datum elev.)	Bulk density kN/m3	Young's Modulus Eh,kN/m2 (dEh/dy)	At rest coeff. Ko (dKo/dy)	Consol state. NC/OC (Nu)	Active limit Ka (Kac)	Passive limit Kp (Kpc)	Cohesion kN/m2 (dc/dy)
1	Tuou Complex	18.00	25000	0.530	OC (0.350)	0.311 (1.295)	3.477 (4.658)	3.000d
2	Hardfill	20.00	25000	0.384	OC (0.350)	0.199 (0.000)	6.319 (0.000)	
3	Engineered Clay	18.00	25000	0.500	OC (0.350)	0.286 (1.237)	3.877 (4.983)	2.000d

Additional soil parameters associated with Ka and Kp

------- Soil type ------- No.	Description	--- parameters for Ka --- Soil friction angle	Wall adhesion coeff.	Back-fill angle	--- parameters for Kp --- Soil friction angle	Wall adhesion coeff.	Back-fill angle
1	Tuou Complex	28.00	0.624	0.00	28.00	0.302	0.00
2	Hardfill	38.00	0.624	0.00	38.00	0.302	0.00
3	Engineered Clay	30.00	0.624	0.00	30.00	0.302	0.00

GROUND WATER CONDITIONS

Density of water = 10.00 kN/m3

	Left side	Right side
Initial water table elevation	42.50	42.50

Automatic water pressure balancing at toe of wall : No

Water press. profile no.	Left side Point no.	Elev. m	Piezo elev. m	Water press. kN/m2	Right side Point no.	Elev. m	Piezo elev. m	Water press. kN/m2
1	1	44.50	44.50	0.0	1	44.50	44.50	0.0
2	1	42.50	42.50	0.0	1	42.50	42.50	0.0

WALL PROPERTIES

Type of structure = Soldier Pile Wall
Soldier Pile width = 0.30 m
Soldier Pile spacing = 1.20 m
Passive mobilisation factor = 3.00
Elevation of toe of wall = 40.00
Maximum finite element length = 0.40 m
Youngs modulus of wall E = 8.7000E+06 kN/m2
Moment of inertia of wall I = 3.3134E-04 m4/m run
= 3.9761E-04 m4 per pile
E.I = 2882.7 kN.m2/m run
Yield Moment of wall = Not defined

HORIZONTAL and MOMENT LOADS/RESTRAINTS

Load no.	Elevation	Horizontal load kN/m run	Moment load kN.m/m run	Moment restraint kN.m/m/rad	Partial factor (Category)
1	46.06	0.5200	0	0	n/a
2	45.46	1.570	0	0	n/a
3	44.81	2.610	0	0	n/a

SURCHARGE LOADS

Surcharge no.	Elev.	Distance from wall	Length parallel to wall	Width perpend. to wall	Surcharge(kN/m2) Near edge	Far edge	Soil Cat.	type	Part fact.	Short Q reduc. fact.
1	44.50	-0.00(R)	20.00	15.00	0.00	-77.40	--	--	--	--
2	46.50	2.00(L)	20.00	10.00	8.00	=	--	--	--	--

Note: L = Left side, R = Right side
A ramp surcharge is defined by two values:
N = at edge near to wall, F = at edge far from wall

CONSTRUCTION STAGES

Construction stage no.	Stage description
1	Change EI of wall to 2883 kN.m2/m run
	No adjustments to wall displacements
2	Fill to elevation 45.50 on LEFT side with soil type 3
3	Fill to elevation 46.50 on LEFT side with soil type 2
4	Apply surcharge no.1 at elevation 44.50
5	Apply surcharge no.2 at elevation 46.50
6	Apply water pressure profile no.1
7	Apply water pressure profile no.2
	No analysis at this stage
8	Apply load no.1 at elevation 46.06
9	Apply load no.2 at elevation 45.46
10	Apply load no.3 at elevation 44.81

FACTORS OF SAFETY and ANALYSIS OPTIONS

Stability analysis:
Method of analysis - Strength Factor method
Factor on soil strength for calculating wall depth = 1.50

Parameters for undrained strata:
Minimum equivalent fluid density = 5.00 kN/m3
Maximum depth of water filled tension crack = 0.00 m

Bending moment and displacement calculation:
Method - 2-D finite element model
Open Tension Crack analysis? - No
Active limit arching modelled? - No
Non-linear Modulus Parameter (L) = 0 m

Boundary conditions:
Length of wall (normal to plane of analysis) = 20.00 m

Width of excavation/fill on Left side of wall = 20.00 m
Width of excavation/fill on Right side of wall = 20.00 m

Distance to rigid boundary on Left side = 20.00 m
Distance to rigid boundary on Right side = 20.00 m
Elevation of rigid lower boundary = 35.00

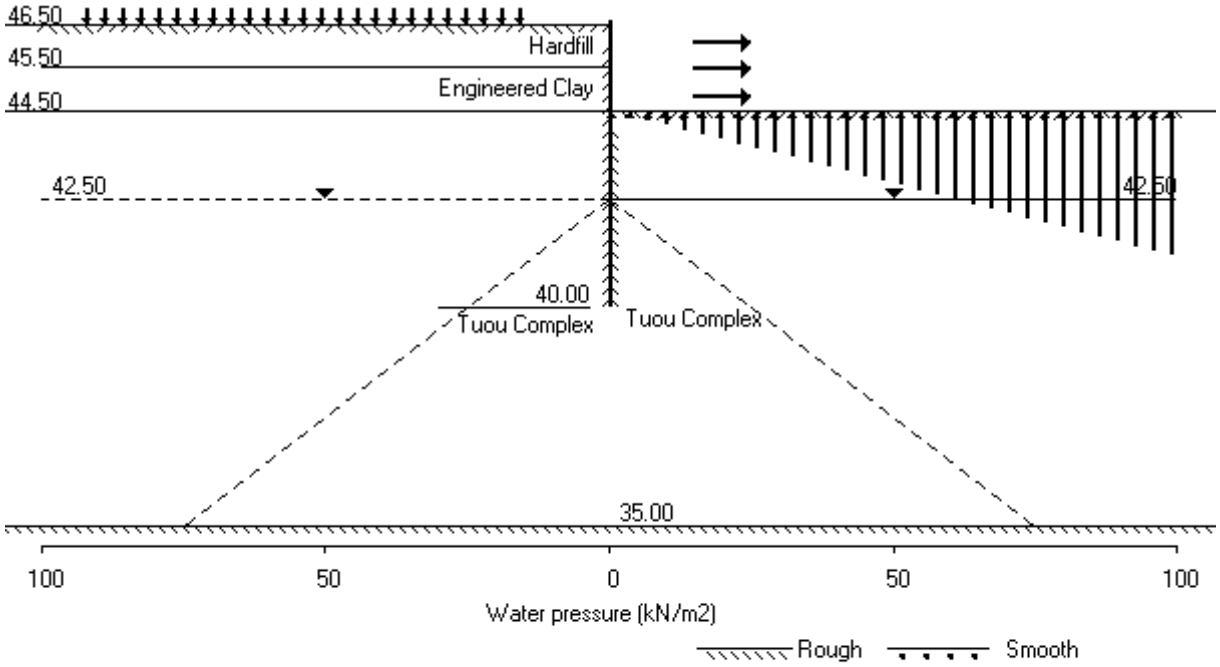
Lower rigid boundary at elevation 35.00 - Rough
Rigid boundary on Left side - Smooth
Rigid boundary on Right side - Smooth
Soil-wall interface - Rough

OUTPUT OPTIONS

Stage no.	Stage description	Output options: Displacement, Bending mom., Shear force	Active, Passive pressures	Graph. output
1	Change EI of wall to 2883kN.m2/m run	No	No	No
2	Fill to elev. 45.50 on LEFT side	No	No	No
3	Fill to elev. 46.50 on LEFT side	No	No	No
4	Apply surcharge no.1 at elev. 44.50	No	No	No
5	Apply surcharge no.2 at elev. 46.50	Yes	Yes	Yes
6	Apply water pressure profile no.1	Yes	Yes	Yes
7	Apply water pressure profile no.2	No	No	No
8	Apply load no.1 at elev. 46.06	No	No	No
9	Apply load no.2 at elev. 45.46	No	No	No
10	Apply load no.3 at elev. 44.81	Yes	Yes	Yes
*	Summary output	Yes	-	Yes

Units: kN,m

Stage No.10 Apply load no.3 at elev. 44.81



Units: kN,m

Stage No. 5 Apply surcharge no.2 at elevation 46.50

STABILITY ANALYSIS of Soldier Pile Wall according to Strength Factor method

Factor of safety on soil strength

Stage No.	Ground level Act.	Ground level Pass.	Prop Elev.	FoS for toe elev. = 40.00 Factor of Safety	FoS for toe elev. = 40.00 Moment equilib. at elev.	Toe elev. for FoS = 1.500 Toe elev.	Wall Penetr-ation	Direction of failure
5	46.50	44.50	Cant.	1.807	40.37	41.40	3.10	L to R

BENDING MOMENT and DISPLACEMENT ANALYSIS of Soldier Pile Wall

Analysis options

Soldier Pile width = 0.30m; spacing = 1.20m
Passive mobilisation factor = 3.000
2-D finite element model. Active limit arching not modelled.
Soil deformations are elastic until the active or passive limit is reached
All soil moduli were factored to take account of
3-D effects due to the finite length of wall:
Modulus factors - Left side = 1.06
Right side = 1.06

Length of wall perpendicular to section = 20.00m

Rigid boundaries:		
Left side 20.00m from wall		Smooth
Right side 20.00m from wall		Smooth
Lower boundary at elevation 35.00m		Rough
Soil-wall interface		Rough

Node no.	Y coord	Nett pressure kN/m2	Wall disp. m	Wall rotation rad.	Shear force kN/m	Bending moment kN.m/m	Prop forces kN/m
1	46.50	0.00	0.034	7.39E-03	0.0	0.0	
2	46.28	0.88	0.032	7.39E-03	0.1	0.0	
3	46.06	1.76	0.030	7.39E-03	0.4	0.1	
4	45.78	2.90	0.028	7.37E-03	1.0	0.3	
5	45.50	4.05	0.026	7.32E-03	2.0	0.7	
		3.33	0.026	7.32E-03	2.0	0.7	
6	45.46	3.54	0.026	7.31E-03	2.1	0.8	
7	45.14	5.30	0.024	7.16E-03	3.6	1.8	
8	44.81	7.08	0.021	6.88E-03	5.6	3.3	
9	44.50	8.78	0.019	6.41E-03	8.1	5.4	
		-4.19	0.019	6.41E-03	8.1	5.4	
10	44.25	-12.66	0.018	5.86E-03	5.9	7.3	
11	44.00	-12.91	0.016	5.18E-03	2.8	8.4	
12	43.60	-15.82	0.015	4.01E-03	-3.0	8.4	
13	43.20	0.90	0.013	3.01E-03	-6.0	6.0	
14	42.85	4.76	0.012	2.41E-03	-5.0	4.0	
15	42.50	4.42	0.011	2.01E-03	-3.4	2.5	
16	42.25	3.36	0.011	1.83E-03	-2.4	1.8	
17	42.00	2.23	0.011	1.69E-03	-1.7	1.3	
18	41.60	1.25	0.010	1.54E-03	-1.0	0.8	
19	41.20	0.52	0.009	1.44E-03	-0.7	0.6	
20	40.80	0.13	0.009	1.38E-03	-0.5	0.3	
21	40.40	0.17	0.008	1.34E-03	-0.5	0.2	
22	40.00	1.74	0.008	1.33E-03	-0.1	0.0	
23	39.90	-0.04	0.007	0	-0.0	0.0	
24	39.70	-0.40	0.007	0	-0.0	0.0	
25	38.25	0.10	0.005	0	-0.3	0.0	

(continued)

Stage No.5 Apply surcharge no.2 at elevation 46.50

Node no.	Y coord	Nett pressure	Wall disp.	Wall rotation	Shear force	Bending moment	Prop forces
		kN/m2	m	rad.	kN/m	kN.m/m	kN/m
26	36.80	0.14	0.003	0	-0.1	0.0	
27	35.90	0.03	0.002	0	-0.0	0.0	
28	35.00	0.03	0.000	0	0.0	0.0	

LEFT side

Node no.	Y coord	Water press.	Effective stresses: Vertic-al	Active limit	Passive limit	Earth press.	Total earth press.	Adjusted soil modulus
		kN/m2	kN/m2	kN/m2	kN/m2	kN/m2	kN/m2	kN/m2
1	46.50	0.00	0.00	0.00	0.00	0.00	0.00	26590
2	46.28	0.00	4.40	0.88	27.83	0.88	0.88a	26590
3	46.06	0.00	8.83	1.76	55.82	1.76	1.76a	26590
4	45.78	0.00	14.54	2.90	91.84	2.90	2.90a	26590
5	45.50	0.00	20.32	4.05	128.40	4.05	4.05a	26590
		0.00	20.32	3.33	88.75	3.33	3.33a	26590
6	45.46	0.00	21.07	3.54	91.67	3.54	3.54a	26590
7	45.14	0.00	27.24	5.30	115.58	5.30	5.30a	26590
8	44.81	0.00	33.46	7.08	139.71	7.08	7.08a	26590
9	44.50	0.00	39.42	8.78	162.82	8.78	8.78a	26590
		0.00	39.42	8.39	113.28	8.39	8.39a	26590
10	44.25	0.00	44.23	9.88	125.81	9.88	9.88a	26590
11	44.00	0.00	49.02	11.37	138.31	19.60	19.60	26590
12	43.60	0.00	56.65	13.75	158.27	31.43	31.43	26590
13	43.20	0.00	64.24	16.11	178.51	37.14	37.14	26590
14	42.85	0.00	70.83	18.16	196.10	38.58	38.58	26590
15	42.50	0.00	77.38	20.20	213.59	39.30	39.30	26590
16	42.25	2.50	79.54	20.87	219.31	38.18	40.68	26590
17	42.00	5.00	81.68	21.54	224.99	37.29	42.29	26590
18	41.60	9.00	85.07	22.60	233.99	37.08	46.08	26590
19	41.20	13.00	88.42	23.64	242.89	37.12	50.12	26590
20	40.80	17.00	91.74	24.67	251.71	37.56	54.56	26590
21	40.40	21.00	95.03	25.70	260.47	38.39	59.39	26590
22	40.00	25.00	98.30	26.71	269.16	40.25	65.25	26590
		25.00	98.30	26.71	355.73	40.25	65.25	26590
23	39.90	26.00	99.11	26.97	358.55	39.46	65.46	26590
24	39.70	28.00	100.73	27.47	364.19	39.51	67.51	26590
25	38.25	42.50	112.35	31.09	404.60	44.47	86.97	26590
26	36.80	57.00	123.81	34.66	444.45	49.62	106.62	26590
27	35.90	66.00	130.88	36.86	469.01	53.05	119.05	26590
28	35.00	75.00	137.92	39.05	493.51	56.85	131.85	26590

RIGHT side

Node no.	Y coord	Water press.	Effective stresses: Vertic-al	Active limit	Passive limit	Earth press.	Total earth press.	Adjusted soil modulus
		kN/m2	kN/m2	kN/m2	kN/m2	kN/m2	kN/m2	kN/m2
1	46.50	0.00	0.00	0.00	0.00	0.00	0.00	0.0
2	46.28	0.00	0.00	0.00	0.00	0.00	0.00	0.0
3	46.06	0.00	0.00	0.00	0.00	0.00	0.00	0.0
4	45.78	0.00	0.00	0.00	0.00	0.00	0.00	0.0
5	45.50	0.00	0.00	0.00	0.00	0.00	0.00	0.0
6	45.46	0.00	0.00	0.00	0.00	0.00	0.00	0.0
7	45.14	0.00	0.00	0.00	0.00	0.00	0.00	0.0
8	44.81	0.00	0.00	0.00	0.00	0.00	0.00	0.0
9	44.50	0.00	0.00	0.00	0.00	0.00	0.00	0.0
		0.00	0.00	0.00	12.58	12.58	12.58p	26376

(continued)

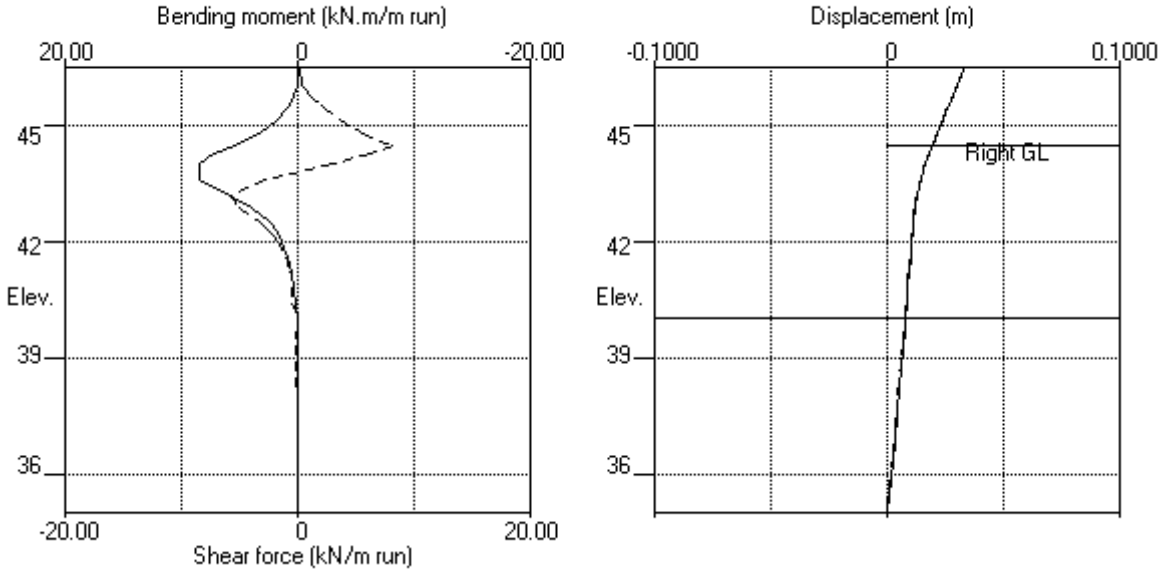
Stage No.5 Apply surcharge no.2 at elevation 46.50

		RIGHT side						
			Effective stresses				Total	Adjusted
Node no.	Y coord	Water press.	Vertic -al	Active limit	Passive limit	Earth press.	earth press.	soil modulus
		kN/m2	kN/m2	kN/m2	kN/m2	kN/m2	kN/m2	kN/m2
10	44.25	0.00	3.68	0.00	22.54	22.54	22.54p	26376
11	44.00	0.00	7.36	0.00	32.51	32.51	32.51p	26376
12	43.60	0.00	13.25	0.24	48.48	47.25	47.25	26376
13	43.20	0.00	19.16	2.08	64.48	36.24	36.24	26376
14	42.85	0.00	24.35	3.70	78.53	33.82	33.82	26376
15	42.50	0.00	29.56	5.32	92.62	34.88	34.88	26376
16	42.25	2.50	30.80	5.70	96.01	34.82	37.32	26376
17	42.00	5.00	32.05	6.09	99.45	35.06	40.06	26376
18	41.60	9.00	34.09	6.73	105.03	35.83	44.83	26376
19	41.20	13.00	36.18	7.38	110.74	36.60	49.60	26376
20	40.80	17.00	38.33	8.05	116.59	37.43	54.43	26376
21	40.40	21.00	40.53	8.73	122.60	38.23	59.23	26376
22	40.00	25.00	42.81	9.44	128.78	38.51	63.51	26376
		25.00	42.81	9.44	162.80	38.51	63.51	26376
23	39.90	26.00	43.38	9.62	164.81	39.50	65.50	26376
24	39.70	28.00	44.55	9.98	168.88	39.92	67.92	26376
25	38.25	42.50	53.56	12.79	200.20	44.38	86.88	26376
26	36.80	57.00	63.49	15.88	234.72	49.49	106.49	26376
27	35.90	66.00	70.07	17.93	257.60	53.02	119.02	26376
28	35.00	75.00	76.93	20.06	281.44	56.82	131.82	26376

Note: 9.88 a Soil pressure at active limit
32.51 p Soil pressure at passive limit

Units: kN,m

Stage No.5 Apply surcharge no.2 at elev. 46.50



Units: kN,m

Stage No. 6 Apply water pressure profile no.1

STABILITY ANALYSIS of Soldier Pile Wall according to Strength Factor method

Factor of safety on soil strength

Stage No.	Ground level Act.	Pass.	Prop Elev.	**FoS for toe elev. = 40.00** Factor of Safety	Moment equilib. at elev.	**Toe elev. for FoS = 1.500** Toe elev.	Wall Penetr-ation	Direction of failure
6	46.50	44.50	Cant.	1.321	40.25	***	***	L to R

Legend: *** Result not found

BENDING MOMENT and DISPLACEMENT ANALYSIS of Soldier Pile Wall

Analysis options

Soldier Pile width = 0.30m; spacing = 1.20m
Passive mobilisation factor = 3.000
2-D finite element model. Active limit arching not modelled.
Soil deformations are elastic until the active or passive limit is reached
All soil moduli were factored to take account of
3-D effects due to the finite length of wall:
Modulus factors - Left side = 1.06
Right side = 1.06

Length of wall perpendicular to section = 20.00m

Rigid boundaries:		
Left side 20.00m from wall	Smooth
Right side 20.00m from wall	Smooth
Lower boundary at elevation 35.00m	Rough
Soil-wall interface	Rough

Node no.	Y coord	Nett pressure	Wall disp.	Wall rotation	Shear force	Bending moment	Prop forces
		kN/m2	m	rad.	kN/m	kN.m/m	kN/m
1	46.50	0.00	0.053	1.09E-02	0.0	0.0	
2	46.28	0.88	0.051	1.09E-02	0.1	0.0	
3	46.06	1.76	0.049	1.09E-02	0.4	0.1	
4	45.78	2.90	0.046	1.09E-02	1.0	0.3	
5	45.50	4.05	0.043	1.08E-02	2.0	0.7	
		3.33	0.043	1.08E-02	2.0	0.7	
6	45.46	3.54	0.042	1.08E-02	2.1	0.8	
7	45.14	5.30	0.039	1.07E-02	3.6	1.8	
8	44.81	7.08	0.035	1.04E-02	5.6	3.3	
9	44.50	8.78	0.032	9.97E-03	8.1	5.4	
		-4.19	0.032	9.97E-03	8.1	5.4	
10	44.25	-6.73	0.030	9.42E-03	6.7	7.3	
11	44.00	-9.27	0.027	8.71E-03	4.7	8.9	
12	43.60	-11.81	0.024	7.39E-03	0.5	10.1	
13	43.20	-4.77	0.021	6.07E-03	-2.8	8.9	
14	42.85	-3.72	0.019	5.06E-03	-4.3	7.7	
15	42.50	0.32	0.018	4.24E-03	-4.9	5.9	
16	42.25	3.06	0.017	3.78E-03	-4.5	4.7	
17	42.00	3.38	0.016	3.42E-03	-3.7	3.7	
18	41.60	2.52	0.015	2.99E-03	-2.5	2.5	
19	41.20	1.27	0.013	2.70E-03	-1.8	1.7	
20	40.80	0.18	0.012	2.51E-03	-1.5	1.1	
21	40.40	0.21	0.011	2.40E-03	-1.4	0.5	
22	40.00	5.43	0.010	2.36E-03	-0.3	0.0	
23	39.90	-0.04	0.010	0	0.0	0.0	

(continued)

Stage No.6 Apply water pressure profile no.1

Node no.	Y coord	Nett pressure	Wall disp.	Wall rotation	Shear force	Bending moment	Prop forces
		kN/m2	m	rad.	kN/m	kN.m/m	kN/m
24	39.70	-0.40	0.010	0	-0.0	0.0	
25	38.25	0.10	0.007	0	-0.3	0.0	
26	36.80	0.14	0.004	0	-0.1	0.0	
27	35.90	0.03	0.002	0	-0.0	0.0	
28	35.00	0.03	0.000	0	0.0	0.0	

LEFT side

Node no.	Y coord	Water press.	Effective stresses: Vertic-al	Active limit	Passive limit	Earth press.	Total earth press.	Adjusted soil modulus
		kN/m2	kN/m2	kN/m2	kN/m2	kN/m2	kN/m2	kN/m2
1	46.50	0.00	0.00	0.00	0.00	0.00	0.00	26590
2	46.28	0.00	4.40	0.88	27.83	0.88	0.88a	26590
3	46.06	0.00	8.83	1.76	55.82	1.76	1.76a	26590
4	45.78	0.00	14.54	2.90	91.84	2.90	2.90a	26590
5	45.50	0.00	20.32	4.05	128.40	4.05	4.05a	26590
		0.00	20.32	3.33	88.75	3.33	3.33a	26590
6	45.46	0.00	21.07	3.54	91.67	3.54	3.54a	26590
7	45.14	0.00	27.24	5.30	115.58	5.30	5.30a	26590
8	44.81	0.00	33.46	7.08	139.71	7.08	7.08a	26590
9	44.50	0.00	39.42	8.78	162.82	8.78	8.78a	26590
		0.00	39.42	8.39	113.28	8.39	8.39a	26590
10	44.25	2.50	41.73	9.10	119.29	9.10	11.60a	26590
11	44.00	5.00	44.02	9.82	125.27	9.82	14.82a	26590
12	43.60	9.00	47.65	10.95	134.74	12.50	21.50	26590
13	43.20	13.00	51.24	12.06	144.09	24.81	37.81	26590
14	42.85	16.50	54.33	13.03	152.15	30.49	46.99	26590
15	42.50	20.00	57.38	13.98	160.11	32.24	52.24	26590
16	42.25	22.50	59.54	14.65	165.73	32.12	54.62	26590
17	42.00	25.00	61.68	15.31	171.31	31.20	56.20	26590
18	41.60	29.00	65.07	16.37	180.28	30.31	59.31	26590
19	41.20	33.00	68.42	17.41	189.18	29.42	62.42	26590
20	40.80	37.00	71.74	18.45	198.01	28.98	65.98	26590
21	40.40	41.00	75.03	19.47	206.76	29.39	70.39	26590
22	40.00	45.00	78.30	20.49	215.45	32.81	77.81	26590
		45.00	78.30	20.49	286.19	32.81	77.81	26590
23	39.90	46.00	79.11	20.74	289.02	22.68	68.68	26590
24	39.70	48.00	80.73	21.24	294.65	24.31	72.31	26590
25	38.25	62.50	92.35	24.86	335.06	31.56	94.06	26590
26	36.80	77.00	103.81	28.43	374.91	38.37	115.37	26590
27	35.90	86.00	110.88	30.63	399.48	42.34	128.34	26590
28	35.00	95.00	117.92	32.82	423.97	46.12	141.12	26590

RIGHT side

Node no.	Y coord	Water press.	Effective stresses: Vertic-al	Active limit	Passive limit	Earth press.	Total earth press.	Adjusted soil modulus
		kN/m2	kN/m2	kN/m2	kN/m2	kN/m2	kN/m2	kN/m2
1	46.50	0.00	0.00	0.00	0.00	0.00	0.00	0.0
2	46.28	0.00	0.00	0.00	0.00	0.00	0.00	0.0
3	46.06	0.00	0.00	0.00	0.00	0.00	0.00	0.0
4	45.78	0.00	0.00	0.00	0.00	0.00	0.00	0.0
5	45.50	0.00	0.00	0.00	0.00	0.00	0.00	0.0
6	45.46	0.00	0.00	0.00	0.00	0.00	0.00	0.0
7	45.14	0.00	0.00	0.00	0.00	0.00	0.00	0.0
8	44.81	0.00	0.00	0.00	0.00	0.00	0.00	0.0

(continued)

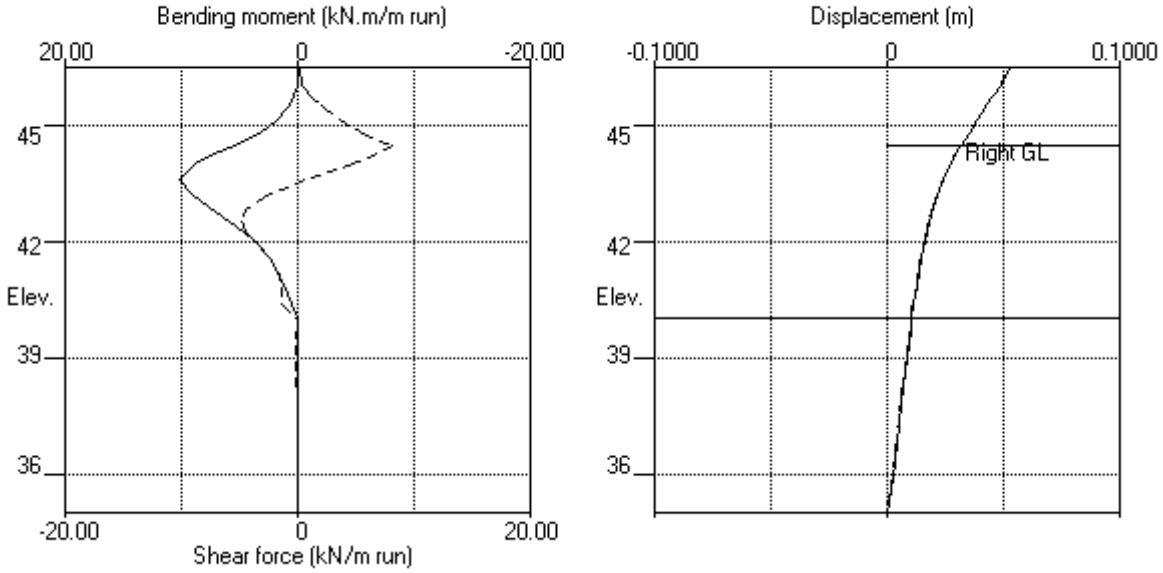
Stage No.6 Apply water pressure profile no.1

		RIGHT side						
			Effective stresses				Total	Adjusted
Node no.	Y coord	Water press.	Vertic -al	Active limit	Passive limit	Earth press.	earth press.	soil modulus
		kN/m2	kN/m2	kN/m2	kN/m2	kN/m2	kN/m2	kN/m2
9	44.50	0.00	0.00	0.00	0.00	0.00	0.00	0.0
		0.00	0.00	0.00	12.58	12.58	12.58p	26376
10	44.25	2.50	1.18	0.00	15.83	15.83	18.33p	26376
11	44.00	5.00	2.36	0.00	19.09	19.09	24.09p	26376
12	43.60	9.00	4.25	0.00	24.31	24.31	33.31p	26376
13	43.20	13.00	6.16	0.00	29.57	29.57	42.57p	26376
14	42.85	16.50	7.85	0.00	34.22	34.22	50.72p	26376
15	42.50	20.00	9.56	0.00	38.91	31.92	51.92	26376
16	42.25	22.50	10.80	0.00	42.31	29.06	51.56	26376
17	42.00	25.00	12.05	0.00	45.74	27.82	52.82	26376
18	41.60	29.00	14.09	0.50	51.32	27.79	56.79	26376
19	41.20	33.00	16.18	1.15	57.03	28.15	61.15	26376
20	40.80	37.00	18.33	1.82	62.88	28.80	65.80	26376
21	40.40	41.00	20.53	2.51	68.89	29.18	70.18	26376
22	40.00	45.00	22.81	3.21	75.07	27.38	72.38	26376
		45.00	22.81	3.21	93.26	27.38	72.38	26376
23	39.90	46.00	23.38	3.39	95.27	22.72	68.72	26376
24	39.70	48.00	24.55	3.76	99.34	24.72	72.72	26376
25	38.25	62.50	33.56	6.56	130.67	31.47	93.97	26376
26	36.80	77.00	43.49	9.65	165.19	38.24	115.24	26376
27	35.90	86.00	50.07	11.70	188.07	42.32	128.32	26376
28	35.00	95.00	56.93	13.84	211.90	46.09	141.09	26376

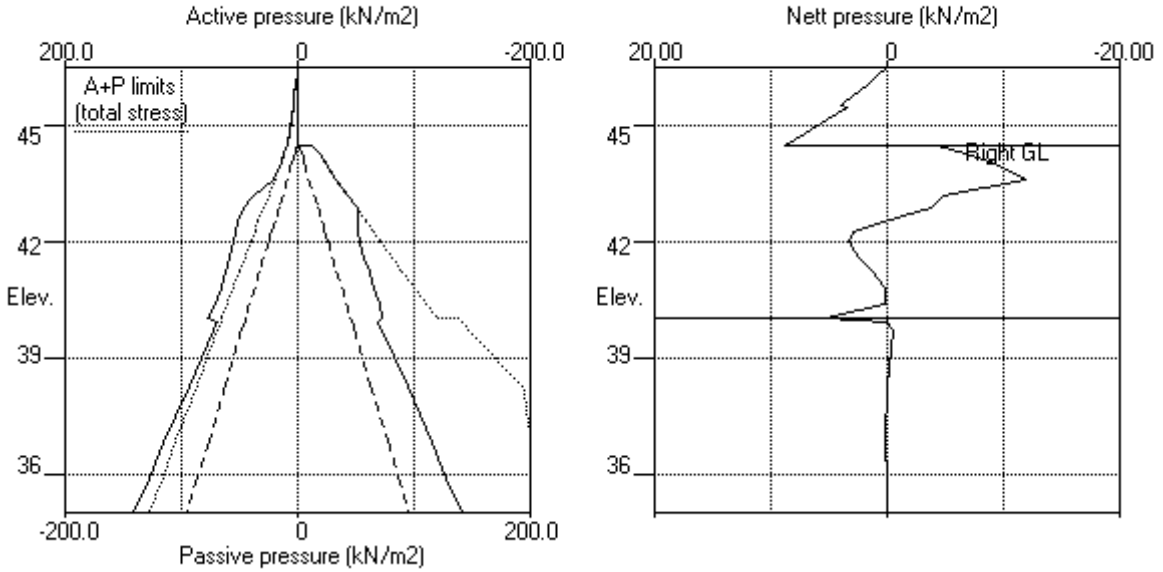
Note: 14.82 a Soil pressure at active limit
50.72 p Soil pressure at passive limit

Units: kN,m

Stage No.6 Apply water pressure profile no.1



Stage No.6 Apply water pressure profile no.1



Units: kN,m

Stage No. 10 Apply load no.3 at elevation 44.81

STABILITY ANALYSIS of Soldier Pile Wall according to Strength Factor method

Factor of safety on soil strength

Stage No.	Ground level Act.	Ground level Pass.	Prop Elev.	FoS for toe elev. = 40.00 Factor of Safety	FoS for toe elev. = 40.00 Moment equilib. at elev.	Toe elev. for FoS = 1.500 Toe elev.	Wall Penetr-ation	Direction of failure
10	46.50	44.50	Cant.	1.712	40.40	40.98	3.52	L to R

BENDING MOMENT and DISPLACEMENT ANALYSIS of Soldier Pile Wall

Analysis options

Soldier Pile width = 0.30m; spacing = 1.20m
Passive mobilisation factor = 3.000
2-D finite element model. Active limit arching not modelled.
Soil deformations are elastic until the active or passive limit is reached
All soil moduli were factored to take account of
3-D effects due to the finite length of wall:
Modulus factors - Left side = 1.06
Right side = 1.06

Length of wall perpendicular to section = 20.00m

Rigid boundaries:		
Left side 20.00m from wall		Smooth
Right side 20.00m from wall		Smooth
Lower boundary at elevation 35.00m		Rough
Soil-wall interface		Rough

Node no.	Y coord	Nett pressure kN/m2	Wall disp. m	Wall rotation rad.	Shear force kN/m	Bending moment kN.m/m	Prop forces kN/m
1	46.50	0.00	0.071	1.54E-02	0.0	0.0	
2	46.28	0.88	0.068	1.54E-02	0.1	0.0	
3	46.06	1.76	0.064	1.54E-02	0.4	0.1	
		1.76	0.064	1.54E-02	0.9	0.1	
4	45.78	2.90	0.060	1.54E-02	1.6	0.4	
5	45.50	4.05	0.056	1.53E-02	2.5	1.0	
		3.33	0.056	1.53E-02	2.5	1.0	
6	45.46	3.54	0.055	1.53E-02	2.7	1.1	
		3.54	0.055	1.53E-02	4.2	1.1	
7	45.14	5.30	0.050	1.50E-02	5.7	2.8	
8	44.81	7.08	0.045	1.46E-02	7.7	4.9	
		7.08	0.045	1.46E-02	10.3	4.9	
9	44.50	8.78	0.041	1.39E-02	12.8	8.5	
		-4.19	0.041	1.39E-02	12.8	8.5	
10	44.25	-12.66	0.037	1.30E-02	10.6	11.6	
11	44.00	-17.90	0.034	1.19E-02	6.8	14.0	
12	43.60	-21.80	0.030	9.91E-03	-1.1	15.4	
13	43.20	-4.46	0.026	7.95E-03	-6.4	12.8	
14	42.85	-0.92	0.024	6.56E-03	-7.3	10.3	
15	42.50	2.94	0.022	5.47E-03	-6.9	7.7	
16	42.25	5.10	0.020	4.87E-03	-5.9	6.0	
17	42.00	4.79	0.019	4.41E-03	-4.7	4.7	
18	41.60	3.23	0.018	3.86E-03	-3.1	3.2	
19	41.20	1.44	0.016	3.48E-03	-2.2	2.2	
20	40.80	-0.03	0.015	3.22E-03	-1.9	1.5	
21	40.40	0.08	0.014	3.07E-03	-1.9	0.7	
22	40.00	7.53	0.012	3.02E-03	-0.4	0.0	

(continued)

Stage No.10 Apply load no.3 at elevation 44.81

Node no.	Y coord	Nett pressure	Wall disp.	Wall rotation	Shear force	Bending moment	Prop forces
		kN/m2	m	rad.	kN/m	kN.m/m	kN/m
23	39.90	-0.04	0.012	0	0.0	0.0	
24	39.70	-0.40	0.011	0	-0.0	0.0	
25	38.25	0.10	0.008	0	-0.3	0.0	
26	36.80	0.14	0.004	0	-0.1	0.0	
27	35.90	0.03	0.002	0	-0.0	0.0	
28	35.00	0.03	0.000	0	0.0	0.0	

LEFT side

Node no.	Y coord	Water press.	Effective stresses: Vertic-al	Active limit	Passive limit	Earth press.	Total earth press.	Adjusted soil modulus
		kN/m2	kN/m2	kN/m2	kN/m2	kN/m2	kN/m2	kN/m2
1	46.50	0.00	0.00	0.00	0.00	0.00	0.00	26590
2	46.28	0.00	4.40	0.88	27.83	0.88	0.88a	26590
3	46.06	0.00	8.83	1.76	55.82	1.76	1.76a	26590
4	45.78	0.00	14.54	2.90	91.84	2.90	2.90a	26590
5	45.50	0.00	20.32	4.05	128.40	4.05	4.05a	26590
		0.00	20.32	3.33	88.75	3.33	3.33a	26590
6	45.46	0.00	21.07	3.54	91.67	3.54	3.54a	26590
7	45.14	0.00	27.24	5.30	115.58	5.30	5.30a	26590
8	44.81	0.00	33.46	7.08	139.71	7.08	7.08a	26590
9	44.50	0.00	39.42	8.78	162.82	8.78	8.78a	26590
		0.00	39.42	8.39	113.28	8.39	8.39a	26590
10	44.25	0.00	44.23	9.88	125.81	9.88	9.88a	26590
11	44.00	0.00	49.02	11.37	138.31	14.62	14.62	26590
12	43.60	0.00	56.65	13.75	158.27	24.71	24.71	26590
13	43.20	0.00	64.24	16.11	178.51	40.67	40.67	26590
14	42.85	0.00	70.83	18.16	196.10	47.36	47.36	26590
15	42.50	0.00	77.38	20.20	213.59	49.57	49.57	26590
16	42.25	2.50	79.54	20.87	219.31	48.26	50.76	26590
17	42.00	5.00	81.68	21.54	224.99	46.30	51.30	26590
18	41.60	9.00	85.07	22.60	233.99	44.36	53.36	26590
19	41.20	13.00	88.42	23.64	242.89	42.57	55.57	26590
20	40.80	17.00	91.74	24.67	251.71	41.45	58.45	26590
21	40.40	21.00	95.03	25.70	260.47	41.51	62.51	26590
22	40.00	25.00	98.30	26.71	269.16	45.81	70.81	26590
		25.00	98.30	26.71	355.73	45.81	70.81	26590
23	39.90	26.00	99.11	26.97	358.55	33.96	59.96	26590
24	39.70	28.00	100.73	27.47	364.19	35.44	63.44	26590
25	38.25	42.50	112.35	31.09	404.60	42.46	84.96	26590
26	36.80	57.00	123.81	34.66	444.45	49.11	106.11	26590
27	35.90	66.00	130.88	36.86	469.01	53.04	119.04	26590
28	35.00	75.00	137.92	39.05	493.51	56.85	131.85	26590

RIGHT side

Node no.	Y coord	Water press.	Effective stresses: Vertic-al	Active limit	Passive limit	Earth press.	Total earth press.	Adjusted soil modulus
		kN/m2	kN/m2	kN/m2	kN/m2	kN/m2	kN/m2	kN/m2
1	46.50	0.00	0.00	0.00	0.00	0.00	0.00	0.0
2	46.28	0.00	0.00	0.00	0.00	0.00	0.00	0.0
3	46.06	0.00	0.00	0.00	0.00	0.00	0.00	0.0
4	45.78	0.00	0.00	0.00	0.00	0.00	0.00	0.0
5	45.50	0.00	0.00	0.00	0.00	0.00	0.00	0.0
6	45.46	0.00	0.00	0.00	0.00	0.00	0.00	0.0
7	45.14	0.00	0.00	0.00	0.00	0.00	0.00	0.0

(continued)

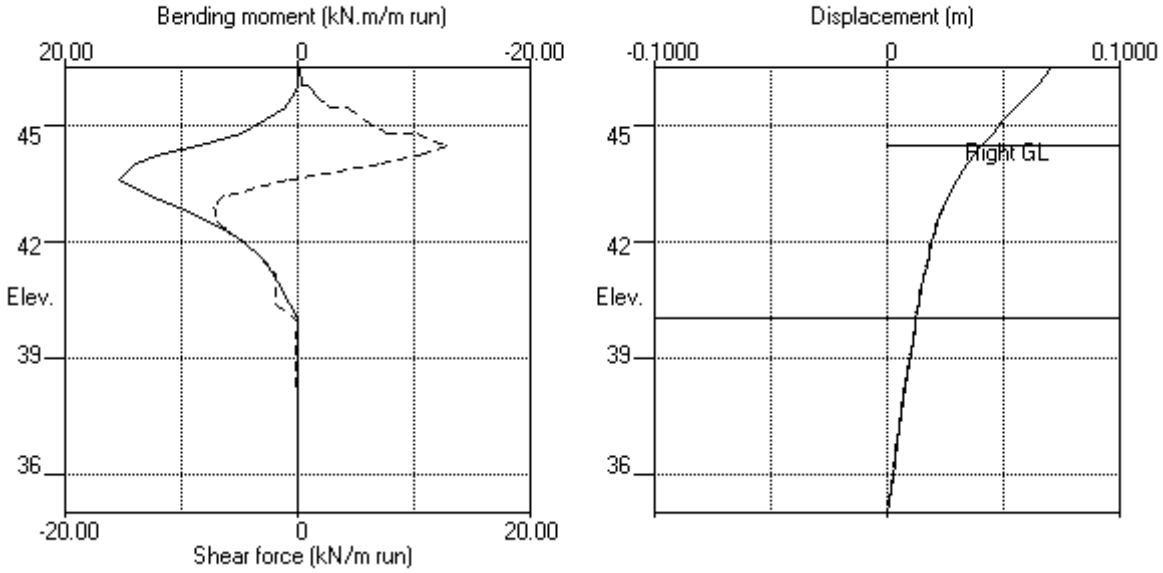
Stage No.10 Apply load no.3 at elevation 44.81

		RIGHT side						
			Effective stresses				Total	Adjusted
Node no.	Y coord	Water press.	Vertic -al	Active limit	Passive limit	Earth press.	earth press.	soil modulus
		kN/m2	kN/m2	kN/m2	kN/m2	kN/m2	kN/m2	kN/m2
8	44.81	0.00	0.00	0.00	0.00	0.00	0.00	0.0
9	44.50	0.00	0.00	0.00	0.00	0.00	0.00	0.0
		0.00	0.00	0.00	12.58	12.58	12.58p	26376
10	44.25	0.00	3.68	0.00	22.54	22.54	22.54p	26376
11	44.00	0.00	7.36	0.00	32.51	32.51	32.51p	26376
12	43.60	0.00	13.25	0.24	48.48	46.51	46.51	26376
13	43.20	0.00	19.16	2.08	64.48	45.13	45.13	26376
14	42.85	0.00	24.35	3.70	78.53	48.27	48.27	26376
15	42.50	0.00	29.56	5.32	92.62	46.63	46.63	26376
16	42.25	2.50	30.80	5.70	96.01	43.16	45.66	26376
17	42.00	5.00	32.05	6.09	99.45	41.51	46.51	26376
18	41.60	9.00	34.09	6.73	105.03	41.13	50.13	26376
19	41.20	13.00	36.18	7.38	110.74	41.13	54.13	26376
20	40.80	17.00	38.33	8.05	116.59	41.48	58.48	26376
21	40.40	21.00	40.53	8.73	122.60	41.43	62.43	26376
22	40.00	25.00	42.81	9.44	128.78	38.28	63.28	26376
		25.00	42.81	9.44	162.80	38.28	63.28	26376
23	39.90	26.00	43.38	9.62	164.81	34.00	60.00	26376
24	39.70	28.00	44.55	9.98	168.88	35.85	63.85	26376
25	38.25	42.50	53.56	12.79	200.20	42.37	84.87	26376
26	36.80	57.00	63.49	15.88	234.72	48.97	105.97	26376
27	35.90	66.00	70.07	17.93	257.60	53.01	119.01	26376
28	35.00	75.00	76.93	20.06	281.44	56.82	131.82	26376

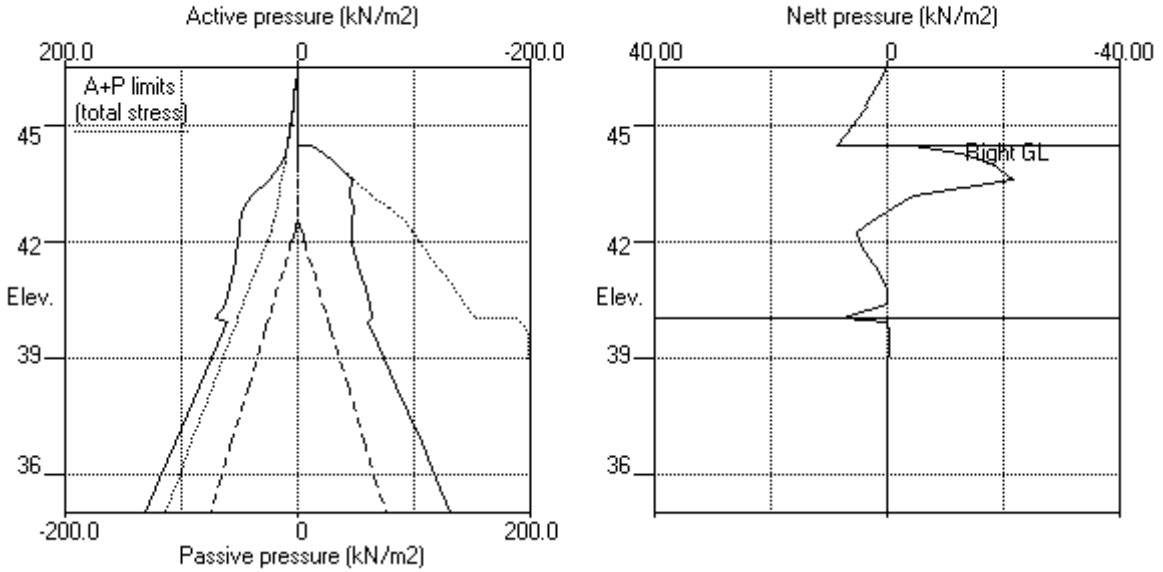
Note: 9.88 a Soil pressure at active limit
32.51 p Soil pressure at passive limit

Units: kN,m

Stage No.10 Apply load no.3 at elev. 44.81



Stage No.10 Apply load no.3 at elev. 44.81



Units: kN,m

Summary of results

STABILITY ANALYSIS of Soldier Pile Wall according to Strength Factor method
Factor of safety on soil strength

Stage No.	Ground level Act.	Ground level Pass.	Prop Elev.	**FoS for toe elev. = 40.00** Factor of Safety	Moment equilib. at elev.	**Toe elev. for FoS = 1.500** Toe elev.	Wall Penetr-ation	Direction of failure
1	44.50	44.50	Cant.	Conditions not suitable for FoS calc.				
2	45.50	44.50	Cant.	3.990	40.51	43.75	0.75	L to R
3	46.50	44.50	Cant.	2.064	40.53	41.82	2.68	L to R
4	46.50	44.50	Cant.	1.850	40.39	41.51	2.99	L to R
5	46.50	44.50	Cant.	1.807	40.37	41.40	3.10	L to R
6	46.50	44.50	Cant.	1.321	40.25	***	***	L to R
7	46.50	44.50		No analysis at this stage				
8	46.50	44.50	Cant.	1.794	40.37	41.33	3.17	L to R
9	46.50	44.50	Cant.	1.759	40.38	41.18	3.32	L to R
10	46.50	44.50	Cant.	1.712	40.40	40.98	3.52	L to R

Legend: *** Result not found

Units: kN,m

Summary of results

BENDING MOMENT and DISPLACEMENT ANALYSIS of Soldier Pile Wall

Analysis options

Soldier Pile width = 0.30m; spacing = 1.20m
Passive mobilisation factor = 3.000
2-D finite element model. Active limit arching not modelled.
Soil deformations are elastic until the active or passive limit is reached
All soil moduli were factored to take account of
3-D effects due to the finite length of wall:
Modulus factors - Left side = 1.06
Right side = 1.06

Length of wall perpendicular to section = 20.00m

Rigid boundaries:	Left side 20.00m from wall	Smooth
	Right side 20.00m from wall	Smooth
	Lower boundary at elevation 35.00m	Rough
	Soil-wall interface	Rough

Bending moment, shear force and displacement envelopes

Node no.	Y coord	Displacement maximum	Displacement minimum	Bending moment maximum	Bending moment minimum	Shear force maximum	Shear force minimum
		m	m	kN.m/m	kN.m/m	kN/m	kN/m
1	46.50	0.071	0.000	0.0	-0.0	0.0	0.0
2	46.28	0.068	0.000	0.0	-0.0	0.1	0.0
3	46.06	0.064	0.000	0.1	-0.0	0.9	0.0
4	45.78	0.060	0.000	0.4	-0.0	1.6	0.0
5	45.50	0.056	0.000	1.0	-0.0	2.5	0.0
6	45.46	0.055	0.000	1.1	-0.0	4.2	0.0
7	45.14	0.050	0.000	2.8	-0.0	5.7	0.0
8	44.81	0.045	0.000	4.9	-0.0	10.3	0.0
9	44.50	0.041	0.000	8.5	-0.0	12.8	0.0
10	44.25	0.037	0.000	11.6	-0.0	10.6	-0.0
11	44.00	0.034	0.000	14.0	-0.0	6.8	-0.4
12	43.60	0.030	0.000	15.4	-0.0	0.5	-3.6
13	43.20	0.026	0.000	12.8	-0.0	0.0	-6.4
14	42.85	0.024	0.000	10.3	-0.1	0.0	-7.3
15	42.50	0.022	0.000	7.7	-0.1	0.0	-6.9
16	42.25	0.020	0.000	6.0	-0.1	0.0	-5.9
17	42.00	0.019	0.000	4.7	-0.1	0.0	-4.7
18	41.60	0.018	0.000	3.2	-0.1	0.0	-3.1
19	41.20	0.016	0.000	2.2	-0.1	0.0	-2.2
20	40.80	0.015	0.000	1.5	-0.1	0.1	-1.9
21	40.40	0.014	0.000	0.7	-0.0	0.1	-1.9
22	40.00	0.012	0.000	0.0	-0.0	0.0	-0.4
23	39.90	0.012	0.000	0.0	0.0	0.0	-0.0
24	39.70	0.011	0.000	0.0	0.0	0.0	-0.0
25	38.25	0.008	0.000	0.0	0.0	0.0	-0.3
26	36.80	0.004	0.000	0.0	0.0	0.0	-0.1
27	35.90	0.002	0.000	0.0	0.0	0.0	-0.0
28	35.00	0.000	0.000	0.0	0.0	0.0	-0.0

Summary of results (continued)

Maximum and minimum bending moment and shear force at each stage

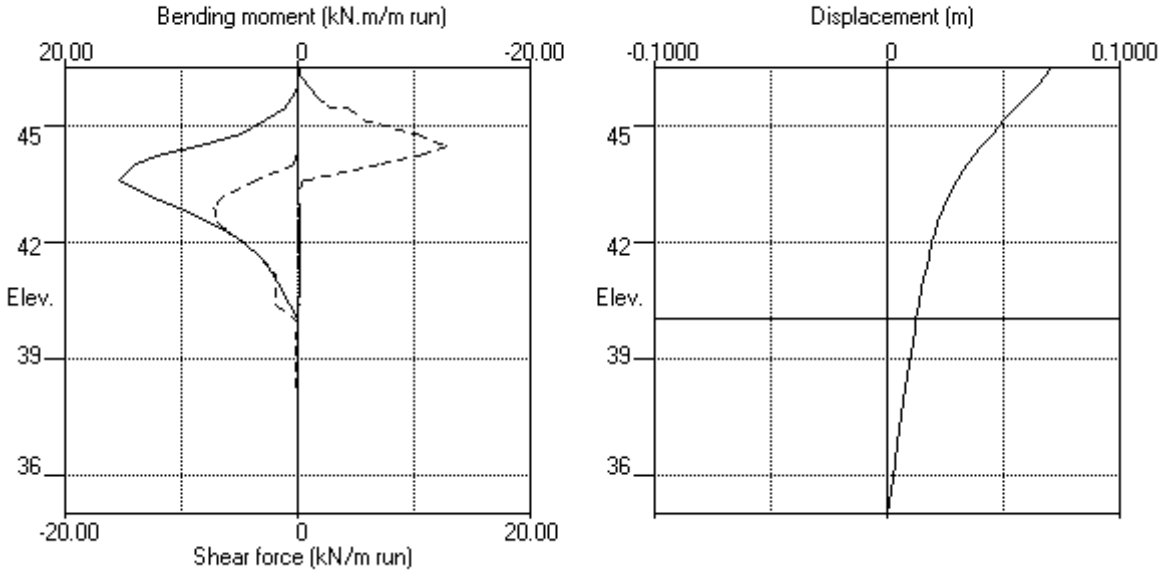
Stage	Bending moment				Shear force			
no.	maximum	elev.	minimum	elev.	maximum	elev.	minimum	elev.
	kN.m/m		kN.m/m		kN/m		kN/m	
1	0.0	42.00	-0.0	40.80	0.0	46.50	-0.0	44.25
2	0.3	44.25	-0.1	41.60	1.1	44.50	-0.4	44.00
3	7.9	44.00	0.0	46.50	7.8	44.50	-5.4	43.20
4	8.1	44.00	0.0	46.50	7.8	44.50	-5.7	43.20
5	8.4	43.60	0.0	46.50	8.1	44.50	-6.0	43.20
6	10.1	43.60	0.0	46.50	8.1	44.50	-4.9	42.50
7	No calculation at this stage							
8	10.7	43.60	0.0	46.50	8.6	44.50	-5.1	42.50
9	12.7	43.60	0.0	46.50	10.1	44.50	-5.8	42.50
10	15.4	43.60	0.0	46.50	12.8	44.50	-7.3	42.85

Maximum and minimum displacement at each stage

Stage	Displacement				
no.	maximum	elev.	minimum	elev.	Stage description
	m		m		
1	0.000	36.80	0.000	46.50	Change EI of wall to 2883kN.m2/m run
2	0.002	46.50	0.000	46.50	Fill to elev. 45.50 on LEFT side
3	0.029	46.50	0.000	46.50	Fill to elev. 46.50 on LEFT side
4	0.032	46.50	0.000	46.50	Apply surcharge no.1 at elev. 44.50
5	0.034	46.50	0.000	46.50	Apply surcharge no.2 at elev. 46.50
6	0.053	46.50	0.000	46.50	Apply water pressure profile no.1
7	No calculation at this stage				Apply water pressure profile no.2
8	0.056	46.50	0.000	46.50	Apply load no.1 at elev. 46.06
9	0.062	46.50	0.000	46.50	Apply load no.2 at elev. 45.46
10	0.071	46.50	0.000	46.50	Apply load no.3 at elev. 44.81

Units: kN,m

Bending moment, shear force, displacement envelopes



Project	22 Bowden Road, Taupo Bay
Client	Treston Laybourn
Job No	25 005
Date	18/03/2025
Calculated by:	P. Szyncel
Reviewed by:	W. Thorburn
Comments	Lagging Desing - Fill Wall

Factored load on the plank at the base of the wall = **13.20** **kPa**

From Wallap

2	Height (m)
8.8	kPa
1.5	Load factor
2	Rails Required

Structural Design of Lagging to NZS 3603:1993

Timber Lagging: Structural actions

Lagging width b =	50	50		Height (m)
Lagging depth d =	150	150		kPa
For a maximum soil pressure of 13.2 kPa. The UDL on lagging "d" =	1.98	kN/m		Load factor
Lagging Span "L" =	1.2	m		Rails Required
Maximum factored moment $M^* = 1/8\ dL^2$	**0.356**	**kNm**		

Under Flexure, calculate the minimum lagging depth for moment capacity

			Rails	Height	Approx. No.
Bending Stress, f_b =	11.7	MPa	Single	0 to 1.2	8
Shear Stress, f_s =	2.4	MPa	Double	1.2 to 2.0	6
No of parallel support elements, n =	2				
Strength Reduction Factor, ϕ =	0.8				
Duration Factor, k_1 =	0.6				
Parallel Support Factor , k_4 =	1.00				
Grid System Factor, k_5 =	1.00				
Section modulus of lagging, $Z = bd^2/6$ =	125000	mm^3			
$\phi M_n = \phi k_1 k_4 k_5 f_b Z$ =	**0.702**	**kNm**			
Percentage of lagging moment capacity utilised	51%				

Lagging OK for Moment Capacity!

Check for Shear Capacity

For 150 x 50 lagging. Shear surface area = 5000.0 mm^2

$\phi V_n = \phi k_1 k_4 k_5 f_s A_s$ =	**5.760**	**kN**
Compare with V* =	**1.485**	**kN**
Percentage of Shear capacity utilised	26%	

$$V^* = 0.625wL$$

Lagging OK for Shear Capacity!

Use 150 x 100 lagging, spanning continuously across a minimum of 2 pole spacings