Far North District Council

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Office Use Only
Application Number:

APPLICATION FOR RESOURCE CONSENT OR FAST-TRACK RESOURCE CONSENT

(Or Associated Consent Pursuant to the Resource Management Act 1991 (RMA))
(If applying for a Resource Consent pursuant to Section 87AAC or 88 of the RMA, this form can be used to satisfy the requirements of Form 9)

Prior to, and during, completion of this application form, please refer to Resource Consent Guidance Notes and Schedule of Fees and Charges – both available on the Council's web page.

1. Pre-Lodgement Meeting

Have you met with a Council Resource Consent representative to discuss this application prior to lodgement? Yes / No

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

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

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

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

4. Applicant Details:

Name/s: William John McCarthy & [redacted]

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

Phone Numbers: [redacted]

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

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

Name/s: Alister Hartstone

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

Phone Numbers: [redacted]

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

Post Code: [redacted]

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

6. **Details of Property Owner/s and Occupier/s:** *Name and Address of the Owner/Occupiers of the land to which this application relates (where there are multiple owners or occupiers please list on a separate sheet if required)*

Name/s: See applicant details

Property Address/: Location

7. **Application Site Details:**

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

Site Address/ Location: Lot 10 Ocean Vista Way (319 Aucks Road)
Okiato

Legal Description: Lot 10 DP 595923 Val Number:

Certificate of Title: Id 1151169

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

Site Visit Requirements:

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

Is there a dog on the property? ~~Yes~~ / No

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

Please contact the applicant before visiting the site

8. **Description of the Proposal:**

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

Construct a dwelling and ancillary shed and retaining walls

If this is an application for an Extension of Time (s.125); Change of Consent Conditions (s.127) or Change or Cancellation of Consent Notice conditions (s.221(3)), please quote relevant existing Resource Consents and Consent Notice identifiers and provide details of the change(s) or extension being sought, with reasons for requesting them.

9. **Would you like to request Public Notification** ~~Yes~~/No

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

☑ Building Consent (BC ref # if known) ☑ Regional Council Consent (ref # if known)

O National Environmental Standard consent O Other (please specify)

Type text here

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

The site and proposal may be subject to the above NES. In order to determine whether regard needs to be had to the NES please answer the following (further information in regard to this NES is available on the Council's planning web pages):

Is the piece of land currently being used or has it historically ever been used for an activity or industry on the Hazardous Industries and Activities List (HAIL) O yes ☑ no O don't know

Is the proposed activity an activity covered by the NES? (If the activity is any of the activities listed below, then you need to tick the 'yes' circle). O yes O no O don't know

O Subdividing land O Changing the use of a piece of land

O Disturbing, removing or sampling soil O Removing or replacing a fuel storage system

12. Assessment of Environmental Effects:

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

Please attach your AEE to this application.

13. Billing Details:

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

Name/s: (please write all names in full) William John McCarthy & Tayla Jean McCarthy

Email:

Postal Address:

Phone Numbers:

[redacted]

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

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

Name: Tayla Jean McCarthy (please print)

Signature: [redacted] (signature of bill payer – mandatory) Date: 22/8/24

14. Important Information:

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

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

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

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

Name: Alister Hartstone (please print)

Signatur[redacted] (signature) Date: 3 September 2024

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

Checklist (please tick if information is provided)

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

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

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

UNBOUND **SINGLE SIDED** **NO LARGER THAN A3 in SIZE**

Resource Consent Application for

W McCarthy

Ocean Vista Way (319 Aucks Road), Russell

Resource Consent Application – W McCarthy

Application Details

Applicant:	William McCarthy
Location:	Lot 10 Ocean Vista Way, Russell
Legal Description:	Lot 10 DP 595923
Proposal:	Land use consent under the Operative Far North District Plan to construct a residential unit and ancillary garage/office/studio with associated earthworks and retaining structures on a vacant allotment that infringes the visual amenity, stormwater management, and setback from boundary rules in the Coastal Living Zone, fire risk to residential units under the Natural Hazards Chapter, and earthworks in the Coastal Living Zone under the Soils and Minerals Chapter, and; Consent under the proposed Far North District Plan Rule IB-R4 PER-2 for indigenous vegetation clearance exceeding 100m2 in a calendar year Consent under Section 221(3) to vary existing consent notice conditions as it relates to a defined bush protection area marked 'T' on the site, and a restriction on building roof colours.
Zoning and Resources:	ODP - Coastal Living with no resources PDP – Rural Lifestyle, Coastal Environment and High Natural Character (#457)
Application Status:	Discretionary Activity

Attachments

Attachment A	**Building plans**
Attachment B	**Certificate of Title and consent notice**
Attachment C	**Geotechnical Report by Core Engineering Limited**
Attachment D	**Stormwater Report by Core Engineering Limited**
Attachment E	**Ecological Report by EcoLogical Solutions Limited**
Attachment F	**Landscape Architect advice re roof colour**
Attachment G	**FENZ advice**
Attachment H	**Written approval**
Attachment I	**District Plan maps**

Address for Service

Alister Hartstone BREP (Hons) MNZPI
Set Consulting Limited
Ph 0277555607
E-mail alister@setconsulting.co.nz

1.0 The Proposal

1.1 The proposal involves the construction of a new residential dwelling and ancillary buildings and structures located on a new site created by subdivision (FNDC ref RC2220804-RMACOM) located at Ocean Vista Way, Okiato[1]. Plans of the proposed development are contained in Attachment A.

1.2 The development design adheres to the identified building site and development guidelines specified as part of the subdivision consent, subject to the changes requested in this application. The proposed works are a response to difficult site topography, where the siting of proposed access, services, and buildings require significant earthworks in order to achieve a practical and usable layout. The notable components requiring resource consent are the bulk earthworks and retaining structures, including the proposed future parking deck.

1.3 Part of the proposed works and buildings shown on the plans in Attachment A lie inside the western edge of an existing bush protection area marked as 'T' on the site that is subject to consent notice Condition a.vi. as provided in Attachment B. In order to rectify this matter, an application pursuant to Section 221(3) is included which seeks to amend the covenant area 'T' boundary so that it does not include any built structures.

1.4 Consent notice condition a. vii. refers to compliance with the recommendations and conclusions contained in Section 8 of a Landscape and Visual Effects Assessment prepared by Hawthorn Landscape Architects Limited that supported the subdivision application ('Landscape report'). Included in Section 8 of the Landscape report is a recommendation that includes the following:

Vegetation Clearance
The area of vegetation clearance on each lot is between 1,040m² and 1670m² as shown on the Williams & King Plan contained in Appendix 2.

Building Materials and Finishes
The visual effects of the building sites will be lessened if recessive colours from the A and B Group of the BS 5252 colour chart are used. The light reflectance values for the exterior roof colours shall not exceed 30% and the exterior walls shall not exceed 40%.

1.5 The applicant is seeking that the extent of vegetation clearance on the subject site exceeds that identified on the Williams & King Plan contained in Appendix 2 of the Landscape Report. In addition, the proposed roof colour for the buildings is a Colorsteel product 'Sandbar' which has a LRV of 34% which exceeds the 30% specified in the Landscape report. An amendment to Consent notice condition a.vii. is therefore sought pursuant to Section 221(3) as part of this application.

1.6 It should be noted that an application has been made to Northland Regional Council for resource consent for the proposed on-site effluent disposal system under the Regional Plan for Northland.

[1] A new address has yet to be allocated for the subject site.

2.0 Site and Surrounding Environment

2.1 The subject site (Lot 10 DP 595923) is a currently vacant property containing 8387m^2 of land located via Ocean Vista Way off Aucks Road adjacent to the residential area of Okiato. The property falls away steeply to the south, with the area intended to be occupied by the development previously cleared of vegetation and levelled for use as a forestry landing / skid site. The development location does have an elevated view back across the Veronica Channel towards Opua.

2.2 The site has been subject to some recent minor earthworks with a single large timber retaining wall partially constructed and two water tanks in place adjacent to the western boundary. The access and building pad for the proposed shed / studio had been undertaken at the time of preparing this application. A large area of established native bush covers the southern portion of the property as recognised by the bush covenant marked 'T' registered on the title contained in Attachment B.

2.3 The surrounding area consists of more residential scale development to the west associated with Deeming Road as part of the Okiato settlement, while rural residential and rural lifestyle blocks are predominant to the east and north. The extensive vegetation cover on the southern slopes of the area extending down to the MHWS along this portion of properties along Aucks Road is a notable feature. The value of this area is recognised by way of the High Natural Character designation identified in the Regional Policy Statement for Northland and incorporated into the proposed Far North District Plan.

2.4 A copy of the record of title and associated consent notice are provided in Attachment B. Reliance is placed on some of the restrictions in the consent notice to address infringements identified and applied for in this application.

Aerial photo illustrating site location (circled).

3.0 District Plan Rules

3.1 The subject site is located in the Coastal Living Zone in the Operative District Plan. No resources are identified that affect the site.

3.2 An assessment of the relevant provisions of the District Plan as they relate to the activity follows.

Coastal Living Zone

Rule	Compliance	Activity Status
10.7.5.1.1 Visual Amenity	The proposal cannot comply as a permitted or controlled activity as the proposed buildings will not be located entirely within the approved building envelope defined as part of the underlying subdivision through the consent notice conditions	Restricted Discretionary
10.7.5.1.2 Residential Intensity	N/a	
10.7.5.1.3 Scale of Activities	N/a	
10.7.5.1.4 Building Height	Complies – see plans	Permitted
10.7.5.1.5 Sunlight	Complies – see plans	Permitted
10.7.5.1.6 Storm water Management	The total area of impermeable surfaces proposed for the building footprint and access will be 838.6m^2 or 9.9% This exceeds the permitted maximum of 600m^2 but will comply with the restricted discretionary standard of 15% specified under Rule 10.7.5.3.8 Stormwater Management.	Restricted Discretionary
10.7.5.1.7 Setback from Boundaries	Several proposed retaining walls and the proposed future parking deck[2] will be within 10 metres of the western boundary	Restricted Discretionary
10.7.5.1.8 Screening For Neighbours Non-Residential Activities	N/a	
10.7.5.1.9 Transportation	N/a	
10.7.5.1.10 Hours Of Operation Non-Residential Activities	N/a	
10.7.5.1.11 Keeping of Animals	N/a	
10.7.5.1.12 Noise	N/a	
10.7.5.1.13 Helicopter Landing Area	N/a	

Natural Hazards

Rule	Compliance	Activity Status
12.4.6.1.1 Coastal Hazard 2 Areas	N/a	N/a
12.4.6.1.2 Fire Risk to Residential Units	The proposed dwelling will not comply with Clause (a) where existing vegetation on the site will be within 20 metre of the proposed building extension	Discretionary

Natural and Physical Resources

Rule	Compliance	Activity Status
12.1 Landscape and Natural Features	N/a	

[2] Which includes any retaining wall exceeding 1.5 metres in height.

12.2 Indigenous Flora and Fauna	The total clearance on the site to accommodate the proposed development equates to approximately 3000m^2 of which at least 500m^2 of indigenous vegetation clearance is likely required / been undertaken. This infringes Rule 12.2.6.1.4 and requires consideration under Rule 12.2.6.2.2	Restricted Discretionary
12.3 Soils and Minerals	Earthworks required to site the development will exceed the permitted standard under Rule 12.3.6.1.2, and the retained fill face height will exceed that specified as a restricted discretionary activity under 12.3.6.2.1(b).	Discretionary
12.4 Natural Hazards	The proposed dwelling will not comply with Rule 12.4.6.1.2 (a) where existing vegetation on the site will be within 20 metres of the proposed building extension	Discretionary
12.5 Heritage / Heritage Precincts	N/a	
12.7 Lakes, Rivers, Wetlands, and the Coastline	N/a	
Hazardous Substances	N/a	
Renewable Energy and Energy Efficiency	N/a	

Transportation Rules

Rule	Compliance	Activity Status
Traffic, Parking, and Access	The development will provide for a minimum of two carparks to be provided on the site with manoeuvring space provided in accordance with Rule 15.1.6B.1.5.	Permitted

3.3 In summary the application requires consent as a discretionary activity on the basis of the following District Plan infringements:

- Rule 10.7.5.1.1 Visual Amenity where the proposed dwelling is located within the Coastal Living Zone and exceeds 50m^2 gross floor area. The proposed buildings will not be entirely within any approved building envelope defined as part of the underlying subdivision through the consent notice conditions. The proposal is therefore assessed as a restricted discretionary activity under Rule 10.7.5.3.1 Visual Amenity.
- 10.7.5.1.6 Stormwater Management where the total impermeable surfaces on the site will exceed the permitted standard. Total impermeable surfaces will be 839m^2 or 9.9% which is assessed as a restricted discretionary activity as per Rule 10.7.5.3.8 Stormwater Management.
- Rule 10.7.5.1.7 Setback from boundaries where retaining walls exceeding 1.5 metres in height and a proposed parking deck will be located within the 10 metre setback from site boundaries. The infringements are identified on the plans provided and require consideration as a restricted discretionary activity under Rule 10.7.5.3.6.
- Rule 12.3.6.1.2 Excavation and/or filling in the Coastal Living Zone, where the proposed earthworks require 650m^3 of excavation and creation of a retained fill face up to 2.8 metres in height, requiring assessment as a discretionary activity under Rule 10.3.6.3.
- Rule 12.4.6.1.2 Fire Risk to Residential Units, where the proposed building will be within 20 metres of the dripline of existing trees and scrub located above the building site and on adjoining properties. Discretionary consent is required as per Rule 10.4.6.3.

3.4 Overall, the proposal is assessed as a discretionary activity under the Far North District Plan.

Proposed Far North District Plan

3.5 The Far North District Council released its proposed District Plan on the 27th July 2022. The majority of rules have no legal effect at the time of notification, while consideration of and weighting to be given to objectives and policies in the proposed Plan is required under Section 104(1)(b)(iv) when determining a decision.

3.6 A review of the relevant rules that have immediate legal effect has been undertaken in relation to the proposed activity. The site is located within the Rural Lifestyle Zone and is subject to Coastal Environment and High Natural Character overlays. Of the rules that have immediate legal effect, those rules relating to earthworks and indigenous vegetation clearance are relevant and are addressed as follows:

- Rule EW-R12 Earthworks and the discovery of suspected sensitive material, where earthworks comply with the Accidental Discovery Protocol. The proposed earthworks will be undertaken in accordance with EW-S3 which repeats a legal requirement under Section 42 of the Heritage New Zealand Pouhere Taonga Act 2014.
- Rule EW-R13 Earthworks and erosion and sediment control requires compliance with EW-S5 Erosion and Sediment Control. EW-S5 Erosion and Sediment Control refers to compliance with *Erosion and Sediment Control Guidelines for Land Disturbing Activities in the Auckland Region 2016* to prevent silt or sediment from entering water bodies, coastal marine and stormwater system, overland flow paths or roads. The proposed earthworks will be overseen by an engineer in accordance with the Building Act and are subject to compliance with the rules in the Regional Plan for Northland – Operative in Part 2023, notably Rule C.8.3.1 Earthworks – Permitted Activity, Clauses 1) – 10). Those Clauses include the following:

  '….3) except for coastal dune restoration activities, good management practice erosion and sediment control measures equivalent to those set out in the Erosion and Sediment Control Guidelines for Land Disturbing Activities in the Auckland Region 2016 (Auckland Council Guideline Document GD2016/005), are implemented for the duration of the activity, and

  4) batters and side castings are stabilised to prevent slumping, and

  5) exposed earth is stabilised upon completion of the earthworks to minimise erosion and avoid slope failure, and

  6) earth and debris are not deposited into, or in a position where they can enter, a natural wetland, a continually or intermittently flowing river, a lake, an artificial watercourse, or the coastal marine, and….'

  Compliance with the permitted standards specified by the Regional Plan will ensure compliance with the rule in the proposed District Plan as a permitted activity.
- Clause PER-2 specified under Rule IB-R4 'Indigenous vegetation clearance and any associated land disturbance outside a Significant Natural Area' is relevant to the proposal where an ecologist report is provided as part of this application but the clearance of indigenous vegetation is assessed as exceeding 100m^2. This requires consideration as a discretionary activity.

3.7 On the basis of the above assessment, the application requires consent due to an infringement of PER-2 under Rule IB-R4 for indigenous vegetation clearance exceeding 100m^2 in a calendar year as a discretionary activity.

Section 221(3) Application

3.8 Due to the existing and proposed footprint of intended development, existing consent notice conditions imposed as part of the underlying subdivision consent require amendment.

3.9 Condition a. vi. of the consent notice Instrument no. 12935249.2 contained in Attachment B states as follows:

'vi. Indigenous Vegetation Protection

The indigenous vegetation within areas H, I, J, K, L, M, N, 0, P, Q, R, S & T shall not be cut down, damaged, or destroyed without prior written consent of the Council. Such consent may be given in the form of resource consent. The owner shall be deemed to be not in breach of this prohibition if any such vegetation dies from natural causes which are not attributable to any act or default by or on behalf of the owner or for which the owner is responsible.'

3.10 The subject site contains the area marked 'T' which is subject to this condition. As set out on the site plan provided in Attachment A, some of the earthworks and buildings will intrude into the area defined as 'T'. On this basis, the Section 221(3) application does not seek to amend the wording of the consent notice condition. Rather, it seeks to amend the boundaries of area 'T' to exclude the area affected by earthworks and buildings. This will require a re-survey of the covenant boundary on completion of the works and an amendment to the survey plan attached to the record of title to update the covenant boundary.

3.11 Condition a. vii. of the consent notice Instrument no. 12935249.2 contained in Attachment B states as follows:

'vii. Building and Landscape Design

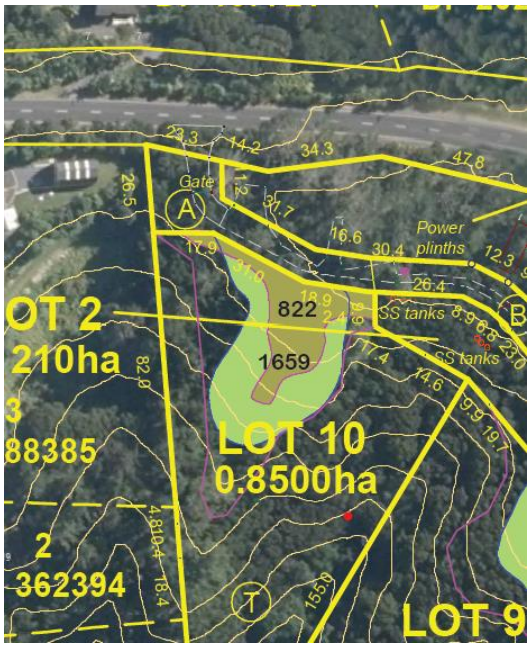
Any proposed building or development of the lot shall adhere to the building and landscape design guidelines set out in Section 8.0 of the Hawthorn Landscape Architects Landscape & Visual Effects Assessment dated 22 April 2022.

A design statement from a registered architect confirming that the building is in accordance with these guidelines shall be provided to accompany any resource consent or building consent application.'

3.12 The Landscape and Visual Effects Assessment ('Landscape report') referred to in the condition is provided as part of the consent notice in Attachment B. One of the limitations specified in Section 8.1 of the Landscape report states as follows:

'The area of vegetation clearance on each lot is between 1,040m² and 1670m² as shown on the Williams & King Plan contained in Appendix 2.'

The Williams and King plan contained in Appendix 2 illustrates the following dimensions for vegetation clearance as they relate to the subject site:



3.13 Part of the proposed development undertaken to date has resulted in clearance outside the defined area. A site plan illustrating the location of the proposed development in relation to the Williams and King plan is provided in Attachment A. As the proposed resource consent application intends to directly address infringements associated with vegetation clearance as well as amending the covenant area 'T" to exclude areas of proposed development, this particular requirement is considered superfluous for the purpose of addressing adverse effects.

3.14 In addition, the Landscape report specifies a maximum Light Reflectance Value ('LRV') for building colours, which is 30% for roof colour. As stated previously, the applicant wishes to use a Colorsteel product 'Sandbar' which has a LRV of 34%. This request is supported by advice received from Christie Hawthorn Landscape Architect.

3.15 Given the above, the proposed wording of the consent notice conditions is sought to be changed to read as follows:

'vii. Building and Landscape Design
*Any proposed building or development of the lot shall adhere to the building and landscape design guidelines set out in Section 8.0 of the Hawthorn Landscape Architects Landscape & Visual Effects Assessment dated 22 April 2022**, unless otherwise approved by way of resource consent**.*
A design statement from a registered architect confirming that the building is in accordance with these guidelines shall be provided to accompany any resource consent or building consent application.'

3.16 Any application made under Section 221(3) requires consideration as a discretionary activity.

NES Requirements

3.17 The National Environmental Standards for Assessing and Managing Contaminants in Soil to Protect Human Health 2012 (the 'NES') is relevant to the application as earthworks are required as part of the development. However, this matter is understood to have been addressed as part of the subdivision consent which confirmed that there are no HAIL sites located within the development.

3.18 No other National Environmental Standards are required to be assessed as part of the proposal.

4.0 Section 95A – 95G Assessment

4.1 The following assessment addresses those matters considered relevant under Section 95, Section 104, and the Fourth Schedule of the Act. The assessment addresses both the land use infringements identified under the Operative and proposed District Plan, as well as the Section 221(3) matters sought in this application.

None of the criteria under Section 95A(3) are triggered by the proposal. For clarity, the applicant is not requesting public notification.

The criteria under Section 95A(5) are addressed as follows:

- The activity is not subject to a rule or national environmental standard that precludes public notification.
- The activity is not precluded from public notification under Section 95A(5)(a) or (b).
- The activity is not subject to any rule or standard that requires public notification under Section 95A(8)(a)
- An assessment of effects as required under Section 95A(8)(b) is provided further in this report. That assessment has been undertaken in accordance with Section 95D supported by technical reports, and concludes that any adverse effects of the proposal will be minor or less than minor in all respects.
- No special circumstances are considered to exist that warrant public notification as per Section 95A(9).

For the purposes of Section 95B:

- There are no protected customary rights groups or affected customary marine title groups.
- The proposal does not fall under the criteria specified in Section 95B(6)..
- The proposal does not involve a boundary activity or prescribed activity as specified in Section 95B(7).
- Consideration has been given to the extent of adverse effects on any person on land located adjacent to the proposal. Written approval has been obtained from one adjacent owner who may be adversely affected to a minor extent by the granting of consent to the proposal. In all other respects, it is considered that no persons will be adversely affected to a minor or more than minor extent by the proposal in accordance with Section 95E.
- No special circumstances are known to exist that warrants notification of the application to any other persons as per Section 95B(10).

4.2 Given the above, it is respectfully considered that the application should proceed on a non-notified basis.

5.0 Assessment of Effects – Section 95D

5.1 The following assessment of effects is undertaken in accordance with Section 95D. For the purpose of Section 95D(a), the effects on the following persons who occupy or own adjacent land must be disregarded:

- 335 Aucks Road (Lot 3 DP 188385)
- 5A Deeming Road (Lot 2 DP 362394)
- 5B Deeming Road (Lot 3 DP 362394)
- 5C Deeming Road (Lot 4 DP 362394)
- Lot 9 Ocean Vista Way (Lot 9 DP 595923)
- 7 Ocean Vista Way (Lots 1 and 2 DP 595923)

5.2 Section 95D(b) and Section 104(2) provide for consideration of the permitted baseline, being activities that *'…a consent authority may disregard an adverse effect of the activity on the environment if a national environmental standard or the plan permits an activity with that effect.'* The permitted baseline includes any activities that are lawfully established on the site at the time any application is made. The site is currently vacant and contains some earthworks, vegetation clearance, and retaining walls, some of which fall under this consent application.

5.3 Taking into account the limitations imposed as part of the subdivision, inclusive of vegetation clearance and the bush protection area, any permitted baseline that may be applicable is limited to construction of a garage or shed where the gross floor area does not exceed 50m^2 and earthworks to site the building do not exceed 300m^3 and a cut or filled face not exceeding 1.5 metres in height. The siting of such a building could be achieved on the site with minimal vegetation clearance, but is not readily comparable to what is proposed.

In addition to a garage or shed, water tanks less than 2.7 metres in height above ground level could be sited on the property within area 'T' and adhering to the building and landscape design guidelines specified in the consent notice conditions.

5.4 Given the above, a credible and non-fanciful permitted of a single building not exceeding 50m^2 gross floor area and one or more water tanks on the site can be adopted but is not particularly helpful in considering the extent of actual and potential adverse effects arising from the proposal.

5.6 There are no known granted but as yet unexercised resource consents associated with the site or surrounding area that are relevant to the proposal.

5.7 For the purpose of addressing Section 95D(c) and 95D(d), the application is assessed as a discretionary activity and there are no trade competition effects requiring consideration.

5.8 A written approval has been obtained from the owner of 335 Aucks Road (Lot 3 DP 188385), being the property adjacent to the development site directly to the west. The approval received is

contained in Attachment H. This approval is treated as a written approval for the purpose of Section 95D(e).

5.9 The written advice from FENZ is not treated as a written approval as per Section 95D(e) as FENZ is not an adjacent person as per Section 95D(a), nor is FENZ identified as an affected person in any Rule in the District Plan.

5.10 The following assessment is provided on the basis that the application is a discretionary activity. In relation to the zone rule infringements, the relevant matters identified in Chapter 11 of the District Plan are addressed. In relation to the vegetation clearance, earthworks, and fire risk to residential units, the relevant matters identified under Chapters 12.2.7, 12.3.7, and 12.4.7 are addressed. It should be noted that the effects associated with the proposed District Plan rule infringement and Section 221(3) matters are addressed under the relevant assessment criteria set out below.

11.3 Stormwater Management

5.11 The proposed buildings and associated access will cover 838.6m^2 of site area in impermeable surfaces, or 9.9%. An engineering report entitled 'Stormwater Disposal Report' prepared by Core Engineering Limited has been prepared for the purpose of addressing stormwater management and is provided at Attachment D.

5.12 That report confirms that stormwater can be collected and suitably attenuated so as to avoid any downstream adverse effects. Disposal will ultimately be to dispersal trenches within the southern portion of the site allowing for natural dispersal and soakage within the existing contours and natural vegetation.

5.13 As a result, there will be no additional stormwater generated that cannot be adequately managed and disposed of once works are completed, and no adverse off-site effects are anticipated. On this basis, any adverse effects associated with additional impermeable surfaces is considered to be negligible.

11.5 Visual Amenity In The General Coastal, South Kerikeri Inlet And Coastal Living Zones

5.14 The proposal is assessed as a restricted discretionary activity under Rule 10.7.5.3.1 as the buildings will be located partially outside a building envelope that has been approved under a resource consent. It is noted that there is no area specifically defined as a 'building envelope' on the site despite the extensive information provided supporting the subdivision application. The extent of a building envelope is defined jointly by the area excluded from Area 'T' as a bush covenant, and by the area of vegetation clearance defined in the Landscape report, both of which are imposed as consent notice conditions. Regardless, it is apparent that built development in the area now proposed to be developed was anticipated at the time of the subdivision consent being granted, and that earthworks and vegetation clearance would necessarily precede construction of any buildings due to the topography.

5.15 Compliance with the Landscape report provisions specified in the consent notice condition is treated as compliance with the matters of discretion listed as (i) – (xii) under the rule, with the exception of those matters related to vegetation clearance and earthworks. Notably, those matters under (ii) and (iii) as they relate to building colours and mitigation planting respectively are addressed directly by the information in this application. It is noted that the proposed buildings themselves are of a simple single level gable design and, at approximately 290m^2 of combined floor space, are smaller than many of the buildings located within the vicinity of the site. The extent of earthworks and retaining structures is solely a response to the difficult topography and is needed to provide suitable access, private parking, and services.

5.16 All of the existing and proposed works have been undertaken below the ridgeline which is defined by the formation of Ocean Vista Way as part of the subdivision. The nature of the site is such that none of the proposed works are readily visible from Aucks Road or any surrounding properties – the works are effectively being undertaken in a south-facing gulley with distant sea views (with intervening native bush) over Opua and the Kawakawa River.

5.17 On completion of the works, the applicant is offering to implement a replanting strategy as set out in the Ecological Report provided at Attachment E. The areas to be subject to replanting are identified in Figure 4 of the report.

5.18 Given the extent of anticipated built development as part of the subdivision, general compliance with the specified building and landscape controls and provision of landscape planning offered, inclusive of the proposed amendments to the consent notice conditions, will ensure that any visual amenity effects associated with the proposed development are less than minor.

11.6 Setback From Boundaries

5.17 Portions of the existing and proposed retaining walls exceeding 1.5 metres in height and the proposed future parking deck, are intended to extend into the 10 metre boundary setback.

5.18 As written approval has been obtained from the adjacent owner of 335 Aucks Road, any adverse effects on that person must be disregarded as per Section 95D(e). Due to the written approval being provided and no other person/s being considered adversely affected by the yard setback infringement, this addresses the assessment criteria (a) – (e).

5.19 It is noted that the infringement relates solely to retaining structures and a parking platform rather than any building that might otherwise affect amenity or outlook values associated with any adjacent property and none of the proposed works are readily visible from any public road or viewing point.

12.2.7 Assessment Criteria (Indigenous Flora and Fauna)

5.20 The proposal involves the clearance of approximately 3000m^2 of vegetation clearance, of which it is assumed more than 500m^2 is likely to be indigenous vegetation. The extent and nature of the affected vegetation that has been and will be removed is described in Section 2.2.2 of the Ecological report provided at Attachment E. Notably, the Ecological report records that the site forms part of a larger mapped Significant Natural Area ('SNA') referred to as Site FN082

(Edwards/Tikitikioure Coastal Habitat) as part of the (then) draft Far North District Plan. While the SNA's have not been retained as part of the District Plan process, the ecological values are recognised and are relevant in considering the extent of adverse effects and relevant provisions of the NPS-IB addressed further in this application.

5.21 It is noted that the Landscape report specifically identifies an area of vegetation clearance (including indigenous vegetation) by way of the Williams and King plan as referred to in the consent notice condition. However, there is no land use consent that appears to have been sought or granted as part of the subdivision consent under the Operative District Plan to provide for such clearance where it contains indigenous vegetation. In addition, it appears that the extent of covenant area 'T' prescribed at the time of subdivision includes areas described in the Ecological report as *'….low quality weedy vegetation….'* This includes the areas of clearance within area 'T' along the western side of the site included as part of this application.

5.22 The Ecological report provided assesses the ecological values on the site, the extent and value of vegetation to be cleared, and concludes that *'Given the low quality of the vegetation (weedy, young), the overall level of effects would be very low, i.e., less than minor adverse effects which are discernible, but will not cause any significant adverse impacts of the wider habitats of which the area is a part.'* This conclusion is reached subject to implementation of the replanting proposed which is set out in the Ecological report and offered as part of this application.

5.23 An infringement of the proposed District Plan Rule Per-2 under Rule IB-R4 'Indigenous vegetation clearance and any associated land disturbance outside a Significant Natural Area' is included as part of this application as it has immediate legal effect from the date the Plan was notified. The assessment and conclusion provided in the Ecological report is considered to be appropriate to address any adverse effects associated with this proposed Plan rule infringement.

12.3.7 Assessment Criteria (Soils and Minerals)

5.24 The proposed development requires approximately 645m^3 of material to be excavated and used as fill for retaining to form suitable building platforms and access/manoeuvring. The maximum retaining wall height is 2.8 metres above existing ground level, which will effectively retain a maximum face of 2.8 metres of fill material.

5.25 The extent of works required occupies a footprint consisting of all the access, manoeuvring space and building footprints. The geotechnical and structural design of the retaining walls and buildings is addressed in the Geotechnical Report prepared by Core Engineering Solutions Limited provided at Attachment C. Compliance with the detailed engineering design requirements as part of the building consent process will address any risk of instability or natural hazards through the building consent process, and careful management will ensure erosion and sediment control in compliance with the Northland Regional Council rules can be achieved. No significant indigenous vegetation, water courses, habitats or heritage sites will be affected by the proposed works.

5.26 The extent of any visual amenity or landscape effects is limited due to the relatively enclosed nature of the topography of the site. The site is not readily visible from any coastal or public

vantage point and any localised visual amenity effects that do arise will be temporary and mitigated by the intended planting programme.

5.27 With specific reference to historic heritage and archaeological sites, it is understood that the extent of any cultural or heritage effects was carefully assessed as part of the subdivision application and informed the identification of building sites. The proposed development is generally within the defined building platform and of a scale anticipated at the time of subdivision. On this basis, there is no evidence to suggest that the extent of proposed earthworks and associated vegetation clearance will result in any adverse cultural or heritage effects.

12.4.7 Assessment Criteria (Fire Risk)

5.28 It is noted that a number of the assessment criteria listed under 12.4.7 do not relate directly to natural hazards (including Clauses b, c, d, f, g, h, and k.)

5.29 Clause (j) relates directly to the issue of fire risk for residential units. In this case, there are areas of existing native vegetation that will be retained both on the site and on adjoining properties that will be within 20 metres of the proposed building. Advice has been sought and obtained from FENZ regarding the fire risk and mitigation options available. The FENZ advice contained in Attachment G records agreement with the approach to provide a suitable coupling for access to the proposed water tanks, noting that this is also required by way of a consent notice condition.

5.30 Based on the above assessment, it is considered that any adverse effects arising from the proposal on the wider environment will be less than minor. Public notification is therefore not required under Section 95A(8)(b).

6.0 Section 95E Assessment – Affected persons

6.1 In undertaking an assessment of the effects of the proposal, due consideration has been given to the extent of actual and potential adverse effects on adjacent landowners.

6.2 Section 95E(2)(a) prescribes that a consent authority *'….may disregard an adverse effect of the activity on the person if a rule or a national environmental standard permits an activity with that effect;'*. A permitted baseline has been assessed as part of the effects assessment above. As a general comment, given the nature of the site as a vacant residential allotment created as part of a previous subdivision consent and serviced via Ocean Vista Way, it is anticipated that a residential dwelling and ancillary buildings may be constructed on the site albeit requiring consent under the current District Plan rules.

6.3 With regard to any adverse effects on the identified adjacent owners, the following is provided:

- Approval has been sought and obtained from the owners of 335 Aucks Road contained in Attachment H. The written approval has been obtained on the basis that the proposal involves specific boundary setback infringements along the western boundary of the site.
- 5A Deeming Road (Lot 2 DP 362394) is located southwest and at a lower elevation to the development site. There is a substantial area of existing indigenous and exotic vegetation

separating the properties, noting that this includes covenant area 'T' on the subject site. This vegetation screens any view of the subject site from the existing dwelling at 5A Deeming Road and no adverse effects are therefore anticipated to arise on that property as a result of the proposed development.

- 5B Deeming Road (Lot 3 DP 362394) is in a similar location and circumstance as 5A Deeming Road and the same reasoning regarding the extent of adverse effects on these adjacent persons applies.
- 5C Deeming Road (Lot 4 DP 362394) is in a similar location and circumstance as 5A Deeming Road and the same reasoning regarding the extent of adverse effects on these adjacent persons applies.
- Lot 9 Ocean Vista Road (Lot 9 DP 595923) is the property directly adjacent to the subject site to the east. This property is currently vacant, having been created as a separate allotment as part of the underlying subdivision and subject to similar conditions to the subject site. Notably, the building area defined for this property is located in the eastern corner, with a bush covenant marked 'S' separating the building area from the common boundary with the subject site. The retention of the existing vegetation contained in area 'T' on the subject site, along with the vegetation within area 'S' on this adjacent site, will result in a physical separation between development sites of approximately 100 metres. On this basis, no adverse effects are expected to arise on this property as a result of the proposal.
- 7 Ocean Vista Way (Lots 1 and 2 DP 595923) consists of the adjacent properties to the north of the subject site. It is noted that Lot 2 DP 595923 is not afforded any permitted development rights on the basis that it is amalgamated with Lot 1 DP 595923 which contains a number of existing buildings and access / parking. It is understood that Lot 2 DP 595923 contains services and tanks that service development on Lot 1 DP 595923. While there is no screening vegetation or significant separation between the properties, the topography is such that the existing development at 7 Ocean Vista Way looks out over the subject site and will have minimal visibility of any of the proposed works. No other adverse effects are identified as arising that may affect 7 Ocean Vista Way as a result of the proposed works because of the topography. On this basis, no adverse effects are expected to arise on this property as a result of the proposal.

6.4 In accordance with Section 95E(3), the owners of 335 Aucks Road are not an affected person. It is considered that no other persons will be adversely affected to a minor or more than minor extent by the granting of consent to the proposal, particularly where the development of the site for residential purposes is anticipated and generally in accordance with the consent notice documents.

6.5 The matters prescribed under Section 95E(2)(b) and (c) are not relevant to the proposal.

7.0 Section 104 Assessment

Assessment of Effects

7.1 Section 104(1)(a) requires consideration of any actual and potential effects on the environment of allowing the activity. An assessment of effects carried out in accordance with Section 95D has

been provided above. That assessment and the conclusion that any adverse effects arising from the proposal will be minor or less than minor informs an assessment of effects under Section 104(1)(a).

7.2 There will be some minor positive effects for the property owner in terms of allowing development as generally anticipated by the subdivision, on what is a difficult site.

7.3 Conditions of consent are offered, including undertaking the planting as set out in the Ecological report, management of stormwater in accordance with the Stormwater report, and compliance with the existing consent notice conditions including the Landscape report, with a condition expressly identifying the proposed roof colour. A majority of these conditions can be addressed as part of the building consent process which requires *inter alia* evidence of compliance with the consent notice conditions, rather than through specific land use consent conditions.

7.4 Overall, the effects associated with the proposal are considered to be acceptable within the receiving environment.

National and Regional Planning Documents

7.5 The following documents are considered to contain relevant provisions at a national and regional level that the consent authority must have regard to:

- National Policy Statement on Indigenous Biodiversity ('NPS-IB')
- New Zealand Coastal Policy Statement 2010 ('NZCPS')
- Regional Policy Statement for Northland ('RPS')

7.6 The NPS-IB sets out objectives and policies as well as implementation provisions relating to indigenous biodiversity in the terrestrial environment. The proposal requires specific consideration under Section 3.10 Managing adverse effects on SNAs of new subdivision, use, and development. While Section 3.11(2) provides for exceptions, in this case the subject site was created after the commencement date of the NPS-IB, with the record of title issued in March 2024. The exception therefore does not apply in this case.

7.7 Section 3.10(2) states as follows:

'Each of the following adverse effects on an SNA of any new subdivision, use, or development must be avoided, except as provided in clause 3.11:

a) loss of ecosystem representation and extent:
b) disruption to sequences, mosaics, or ecosystem function:
c) fragmentation of SNAs or the loss of buffers or connections within an SNA:
d) a reduction in the function of the SNA as a buffer or connection to other important habitats or ecosystems:
e) a reduction in the population size or occupancy of Threatened or At Risk (declining) species that use an SNA for any part of their life cycle.'

7.8 Section 2.2 of the Ecological Report sets out the current ecological values associated with the site and more particularly the area to be cleared for development. The report states that *'Given the low quality and young age of the vegetation to be removed, and the existing edge effects, the*

proposed indigenous vegetation planting provides an opportunity to restore a more appropriate edge to the buffer the taller vegetation and improve the ecological quality of the vegetation overall. Provided that weed control is effectively implemented, the ecological integrity of the remainder of the site will be improved and the connectivity across the wider site will be maintained. Effects on threatened and at risk species will be avoided.' This statement is considered to address and satisfy the matters listed as a) – e) under Section 3.10 set out above.

7.9 The site is defined as being located within the coastal environment and is identified as an area of High Natural Character as defined in the Regional Policy Statement for Northland ('RPS'). Policy 13 of the New Zealand Coastal Policy Statement ('NZCPS') addresses the preservation of the natural character of the coastal environment. The objectives and policies of the NZCPS 2010 have been carried directly through and incorporated into the RPS.

7.10 It is understood that the extent to which the RPS provisions apply to the site was considered in detail at the time that the subdivision consent was determined. The identification and location of building areas and the controls imposed as conditions of the subdivision consent were a response to the RPS provisions, including the area of High Natural Character, indigenous vegetation, cultural and heritage values, and natural hazards, all of which are addressed by provisions in the RPS. The proposed building development does not require further consideration of these provisions, given it is development that is generally anticipated by the granting of consent to the subdivision.

7.11 It is noted that consent is being sought from the Northland Regional Council for on-site wastewater disposal under the Regional Plan for Northland Operative in Part 2023.

Operative Far North District Plan

7.12 Section 104(1)(b)(vi) requires consideration of the relevant objectives and policies contained in any operative and proposed district plan. The relevant provisions contained in the Far North District Plan are contained within the Coastal Living Zone, Indigenous Flora and Fauna, Soils and Minerals, and Natural Hazards Chapters.

7.13 The relevant objectives and policies contained in Chapter 10.7 Coastal Living Zone are therefore assessed as follows:

- Policies 10.7.4.1, 10.7.4.2 and 10.7.4.3 set out the directives for development in the Coastal Living Zone. It is considered that the proposal will be consistent with these provisions on the basis that there will be no adverse effects on the coastal environment, particularly in terms of character or amenity. The proposed development on completion will not be readily visible from the coastal marine area or any public viewing point and compliance with the Landscape report as a consent notice condition will incorporate suitable mitigation measures.
- Policy 10.7.4.3(d) and (e) refer to cultural and historic heritage values which are acknowledged as prevalent in coastal areas in the Bay of Islands and Russell area. Reliance has been placed on information forming part of the underlying subdivision consent to confirm that there are no cultural or historic heritage effects arising from development of the site.
- Objectives 10.7.3.1 and 10.7.3.2 will be met on the basis that the proposed development does not adversely affect the well-being of people living in the coastal environment, and does not result in adverse effects on the natural character of the coastal environment.

7.14 Chapter 12.2 Indigenous Flora and Fauna is relevant to due to the extent of indigenous vegetation clearance. The relevant objectives and policies area addressed as follows:

- Policy 12.2.4.3 is the most directly relevant provision as it addresses effects on significant indigenous flora and fauna by *'….managing the scale, intensity, type and location of subdivision, use and development in a way that avoids, remedies or mitigates adverse ecological effects.'* The assessment and resulting decision with conditions imposed as part of the subdivision consent informs compliance with this Policy. While the application seeks some minor changes to those controls as they relate to the Section 221(3) applications, the Ecological report provided in support of this application confirms that suitable avoidance and mitigation measures already exist (such as weed and pest control) or can be imposed (additional landscape planting). The matters listed under 12.2.4.3(c) are addressed by the Ecological report and compliance with the existing consent notice conditions imposed as part of the subdivision.
- Based on the above comments, the proposal is considered to be consistent with Objectives 12.2.3.1 and 12.2.3.2.

7.15 Chapter 12.3 Soils and Minerals is relevant due to the extent of earthworks, in terms of both volume of material and extent of cut face, required to site the proposed buildings and access on a difficult site. The relevant objectives and policies are addressed as follows:

- Objective 12.3.3.3 requires that adverse effects associated with earthworks be avoided, remedied or mitigated. In this case, specific geotechnical engineering detail is required to confirm the extent of earthworks and ultimately the stability of the site. As part of any resulting building consent, specific foundation and retaining structure design will be required. All of the proposed earthworks can be carried out on site using the existing access, and such works will be similar in scale and duration as works required for other dwellings in the area.
- Policy 12.3.4.4. will be addressed by the engineering design required as part of the building and construction process which will be mainly controlled under the building consent process.

7.16 Chapter 12.4 is relevant as the proposal involves construction of a residential dwelling within 20 metres of existing indigenous vegetation. The relevant objectives and policies are addressed as follows:

- Objective 2.4.3.7 and Policy 12.4.4.7 are specific to fire risk and, more specifically, both refer to avoidance of risk. In this case, advice has been obtained from FENZ addressing the potential risk and options for risk mitigation.

7.17 On the basis of the above, it is considered that the proposed development on the site will be appropriate and consistent with the relevant District Plan provisions.

Proposed Far North District Plan

7.12 The proposed Far North District Plan ('proposed Plan') was released for submissions on the 27th July 2022 and is now progressing through the hearing process. No recommendations have been issued by the Hearings Panel at the time of preparing this application. The subject site is identified as being in the Rural Lifestyle Zone, with Coastal Environment and High Natural Character overlays as defined in the proposed Plan. While only specific rules have been identified as having immediate legal effect, the objectives and policies of the proposed Plan must be considered in accordance with Section 104(1)(b)(vi).

7.13 The Zone objectives and policies are contained in Part 3 – Area Specific Matters. It is noted that the proposed Rural Lifestyle Zone is intended to provide for low density residential activities and small-scale farming activities compatible with rural character and amenity. The proposal complies with all of the relevant Zone rules with the exception of RLZ-S3 Setbacks. Policy RLZ-P4 is relevant in addressing the setback requirement – given the written approval provided from the adjacent affected neighbour, the proposal is considered to be consistent with the Zone provisions.

7.14 Part 2 – District Wide Matters includes Chapters addressing ecosystems and indigenous biodiversity, natural hazards, coastal environment, and earthworks. It is noted that the development requires consent under the various proposed District Wide rules for similar reasons to those infringements specified under the Operative District Plan. The assessment of objectives and policies of the Operative Plan provisions applies equally to the relevant objectives and policies in the identified chapters of the proposed District Plan.

Weighting to be given to Proposed District Plan

7.15 As the proposed District Plan has only recently been publicly notified, with no decisions yet made on contents, the Plan is only in its formative stages. Minimal weighting is therefore given to the objectives and policies of the proposed Plan in assessing the proposal.

Other Matters

7.17 There are no known relevant or reasonably necessary matters that require consideration under Section 104(1)(c).

8.0 Part 2 Assessment

8.1 As per current case law[3], an assessment of matters under Part 2 is only required where there is invalidity, incomplete coverage or uncertainty in the planning provisions. The Operative Plan contains provisions that are relevant to the proposal, and there is no evidence to suggest the relevant provisions are invalid, incomplete or present uncertainty in making any decision. No assessment of the Part 2 provisions is therefore required.

9.0 Conclusion

9.1 The application provides for the construction of a new residential dwelling and ancillary buildings and structures located on a new site created by subdivision (FNDC ref RC2220804-RMACOM) located at Ocean Vista Way, Okiato. The infringements that form the application relate to yard setback, visual amenity, and impermeable surfaces rules for the Zone, and earthworks, vegetation clearance, and fire risk for residential units in the District-Wide rules. In addition, consent is sought to change two consent notice conditions pursuant to Section 221(3) and consent required under the proposed Far North District Plan as it relates to indigenous vegetation clearance.

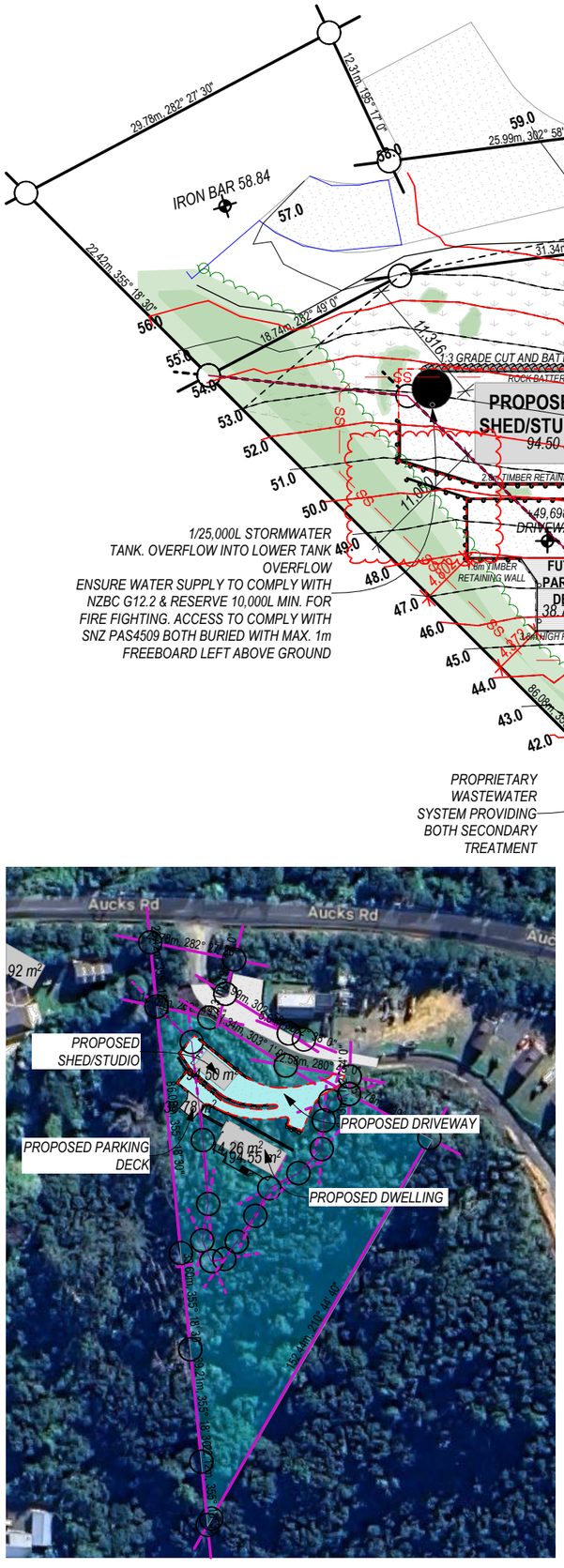
[3] R J Davidson Family Trust v Marlborough DC [2017] NZHC 52

9.2 An assessment of the provisions under Section 95A and 95B has determined that public and limited notification is not required and the application meets the relevant provisions under Section 104 of the Act. Therefore, consent can be granted pursuant to Section 104 and 104B for both the land use consent and Section 221(3) applications on the basis of the information provided with this application.

9.3 It is respectfully suggested that conditions of consent required pursuant to Sections 108 for any approval may include:

- A 'general accordance' condition to ensure that the subdivision is carried out in accordance with the application as presented.
- Implementation of the Planting Plan specified in the Ecological report prior to the issuing of a Code of Compliance certificate for the buildings on the site.
- Compliance with the recommendations in the engineering reports provided, noting that detailed engineering design of all components of the works will be required as part of the building consent process.
- Provision of a suitable water tank coupling for fire fighting purposes to be provided
- Specified building roof colour of Colorsteel 'SandBar'

Attachment A Building plans



SITE LOCALITY PLAN
1:2000

SITE PLAN
1:500

SITE NOTES:

LEGAL DESCRIPTION
LOT 10, D.P. 595923
PHYSICAL ADDRESS
319 AUCKS ROAD, RUSSELL, NORTHLAND

SITE AREA:	*8387m² (2.75Ha)*
WIND ZONE (TO NZS3604:2011):	*HIGH*
ENVIRONMENT:	*COASTAL LIVING*
OVERLAY/NOTABLE AREA:	*NA*
EXPOSURE ZONE:	*D*
EARTHQUAKE ZONE:	*1*
FLOOD SUSCEPTIBLITY	*NA*
SITE COVERAGE:	***(3.97%)***
SHED SIZE:	*57.15m²*
STUDIO SIZE:	*37.35m²*
FUTURE DWELLING SIZE:	*185.55m²*
FUTURE COVERED AREA:	*14.26m²*
PARKING DECK:	*38.78m²*
TOTAL COVERAGE:	***333.09m²***
IMPERVIOUS AREAS:	***(9.99%)***
ROOF AREAS:	*296.92m²*
DRIVEWAY AREAS:	*541.68m²*
TOTAL IMPERVIOUS AREA:	***838.6m²***
CONTOURS: CONTOUR LINES	*1m*
EXCAVATION REQUIRED:	*APPROX CUT 645m³.*

SITE WORKS:

READ 'CORE ENGINEERING ON SITE WASTEWATER MANAGEMENT REPORT FULLY PRIOR TO UNDERTAKING ANY SITE WORKS. ALL SITE WORKS TO COMPLY WITH REPORTS RECOMENDATIONS AND CONCLUSIONS.

POWER SUPPLY:

POWER SUPPLY LOCATION TO BE CONFIRMED ONSITE

POTABLE WATER SUPPLY:

WATER SUPPLY MUST BE POTABLE AND COMPLY WITH NZBC G12, BY WAY OF WATER TREATMENT OR FILTRATION
OR OTHER SYSTEM, AND MAINTAINED AS REQUIRED BY THE MANUFACTURER

DOORS > 190mm DROP C.G.L

ALL EXTERNAL DOORS WITH MORE THAN 190mm STEP TO BE TEMPORARILY BOLTED/SCREWED SHUT UNTIL DECK IS COMPLETE

IMPORTANT:

THIS SET OF DRAWINGS MUST BE READ IN CONJUNCTION WITH ATTACHED,

1) ENGINEERING CALCULATIONS/REPORTS.
2) MANUFACTURER'S LITERATURE.
3) SPECIFICATIONS.

1. ALL CONSTRUCTION TO COMPLY WITH NZS 3604 2011 AND LOCAL TERRITORIAL AUTHORITY BYLAWS.
2. ALL INTERNAL DOOR SIZES SHOWN ARE FOR THE ACTUAL DOOR AND ARE NOT THE TRIM SIZE.
3. ALL DIMENSIONS & UNDERGROUND SERVICES TO BE CHECKED ON SITE BY CONTRACTORS BEFORE COMMENCEMENT OF ANY WORK.
4. CONTRACTOR TO ENSURE ALL GROUND LEVELS & HEIGHT RESTRICTIONS ARE CORRECT AND COMPLY WITH TERRITORIAL AUTHORITY BYLAWS THROUGHOUT CONSTRUCTION.
5. DO NOT SCALE FROM DRAWINGS & WORK FROM DIMENSIONS SHOWN.

PLUMBING & DRAINAGE NOTES:

1. *ALL SANITARY PLUMBING AND DRAINAGE WORK MUST COMPLY WITH NZ BUILDING CODE ACCEPTABLE SOLUTION, NZ STANDARD - AS/NZS 3500 PART 2.2*
2. *ALL STORMWATER DRAINAGE WORK MUST COMPLY WITH NZ BUILDING CODE ACCEPTABLE SOLUTION E1/AS1.*
REFER TO SHEET 12 FOR TRENCH DETAILS
3. *ALL GAS WORKS MUST COMPLY WITH NZ BUILDING CODE ACCEPTABLE SOLUTION G11/AS1*
4. *ALL HOT & COLD POLYBUTYLENE PIPEWORK MUST COMPLY WITH G12/AS1,*

MINIMUM GRADIENT RATIO OF SANITARY DISCHARGE PIPES AND DRAINS:
1. AS/NZS 3500 PART 2 *DISCHARGE PIPES AND DRAINS.*
Ø65-1:40 FALL
Ø100-1:60 FALL

MINIMUM GRADIENT RATIO OF STORMWATER DRAINS: NZBC E1/AS1
Ø100 - 1:60

-SEDIMENT CONTROL/MANAGEMENT TO BE CARRIED OUT ONSITE TO PREVENT ADVERSE EFFECTS TO NEIGHBOURING PROPERTIES (IF REQUIRED BY LOCAL AUTHORITIES)

REV.	DATE	DESCRIPTION	DRAWN
A	19/08/24	ADJUST SITE PLAN FOR RC	CC

MCCARTHY FORDE SHED

319, AUCKS ROAD, RUSSELL

SITE PLAN

BC SET

JOB NO:	0271
REVISION:	A
SHEET SIZE:	A3
PAGE:	**01** OF **12**
DATE:	19/08/2024
DRAWN:	DF

CLAYTON ARCHITECTURE LTD
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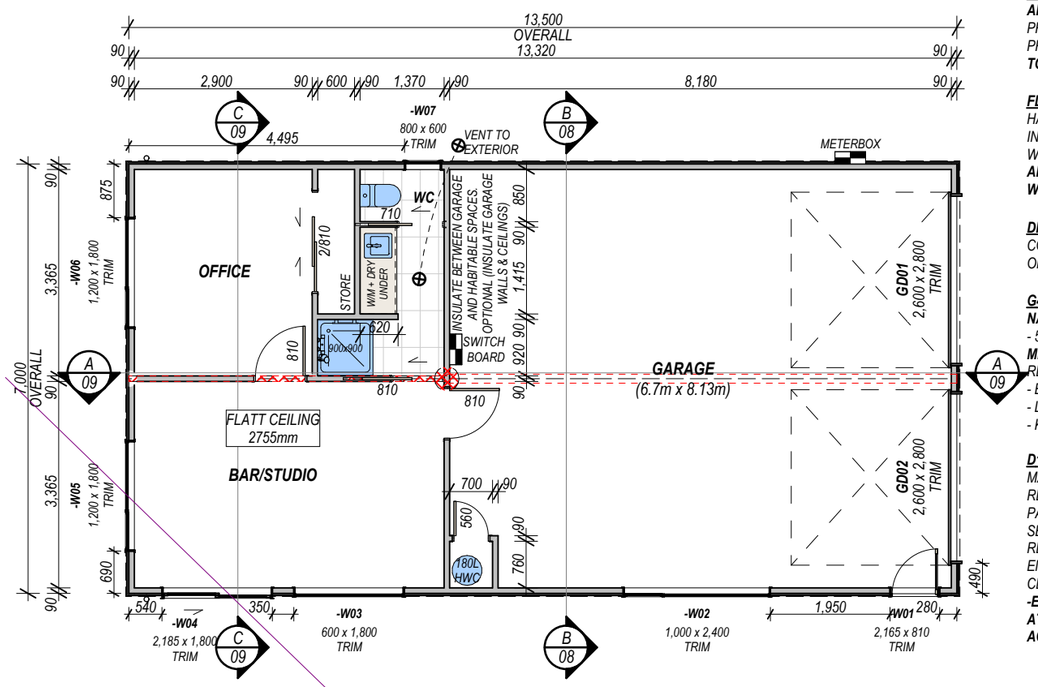
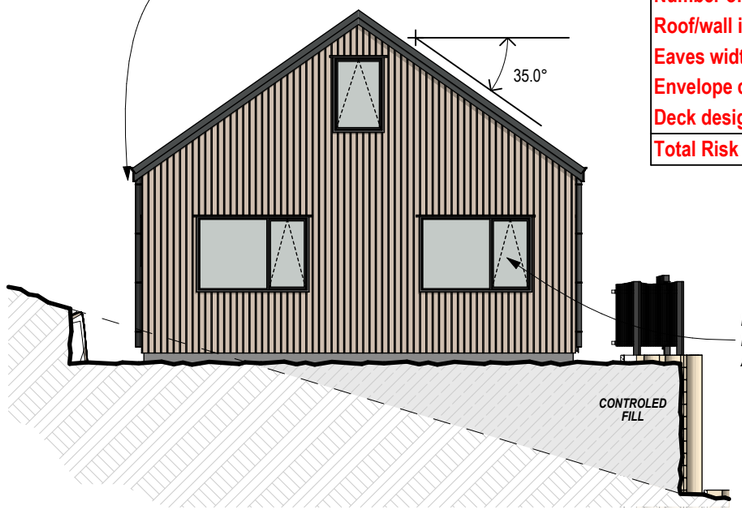


SHED FLOOR PLAN

1:100



(GUTTER/FASCIA)
CONTINUOUS HALF ROUND SPOUTING ON MIN 180mm HERMPAC FASICA, WITH Ø80 COLORSTEEL DOWNPIPES (COLOUR MATCHED).

NEW JOINERY)
DOUBLE GLAZED CLEAR LOW 'E' ARGON R0.37, ALUMINIUM POWDERCOATED JOINERY.

MCCARTHY FORDE SHED

AREA *(TO FRAMING LINE)*

PROPOSED STUDIO:	*37.35m²*
PROPOSED SHED:	*57.15m²*
TOTAL:	***94.50m²***

FLOOR FINISHES:
HATCHING SHOWN INDICATING FLOORING FINISH INDICATIVE ONLY. CONFIRM LOCATION AND EXTENT WITH OWNER
ALL TILING IN WET AREAS TO HAVE FULL WATERPROOF MEMBRANE BENEATH

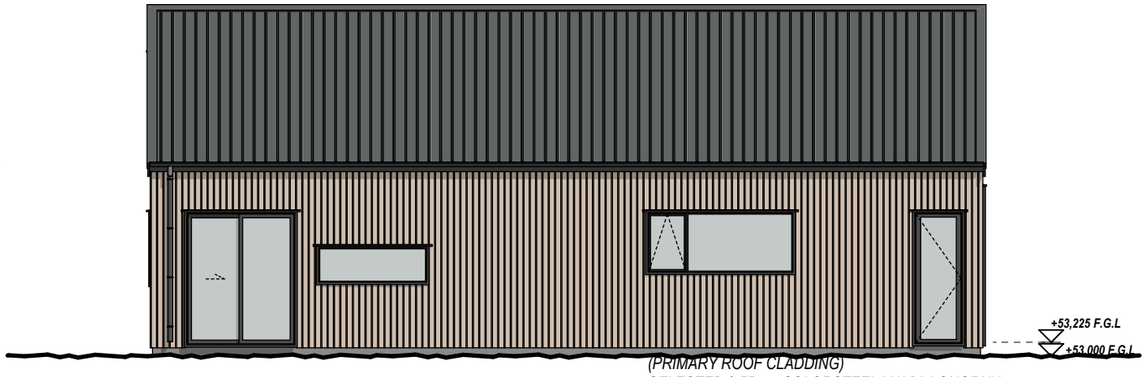
DIMENSIONS:
CONTRACTOR IS TO CONFIRM ALL DIMENSIONS ONSITE BEFORE COMMENCING ANY WORKS

G4 VENTILATION:
NATURAL VENTILATION =
- 5% OF FLOOR AREA (OPENABLE WINDOW)
MECHANICAL VENTILATION =
REFERENCE AS1668.2 TABLE B1 EXTRACT RATES

- BATHROOM/TOILETS:	*MIN. 25L/S*
- LAUNDRIES:	*MIN. 20L/S*
- KITCHENS:	*MIN. 50L/S*

D1 ACCESS/ DECKS:
MAIN ENTRY DECKING & STEPS TO HAVE SLIP RESISTANT COATING 'RESENE NON-SKID DECK & PATH' PRODUCT OR EQUIVALENT TO COMPLY WITH SECTION 2 NZBC D1/AS1
REMAINDER OF DECKING TO BE SMOOTH SIDE UP. ENSURE 12mm CLEARANCE FROM DECK TO CLADDING AS PER NZBC E2/AS1
-ENGINEER TO COMMENT ON PILE FOOTING DEPTHS AT TIME OF CONSTRUCTION OF DECK. IN ACCORANCE WITH GEOTECHNICAL REPORT.

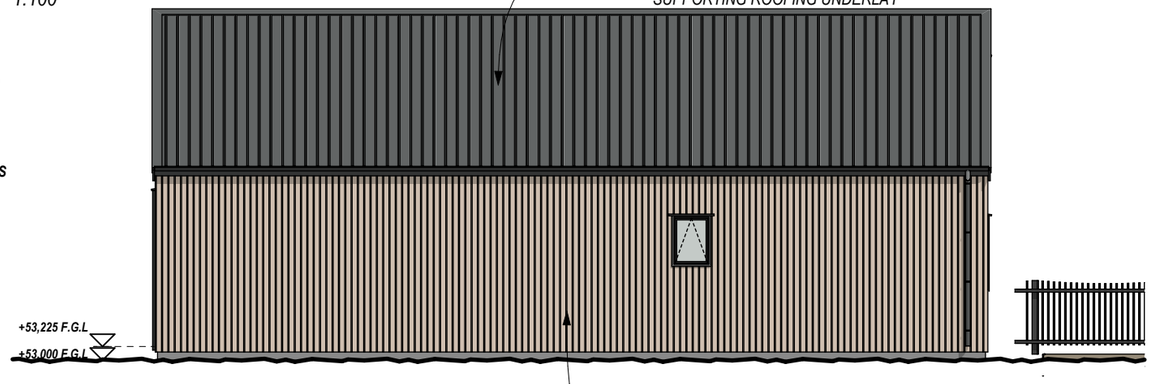
BUILDING ENVELOPE RISK MATRIX		
ALL ELEVATIONS		
Risk Factor	**Risk Severity**	**Risk Score**
Wind zone (per NZS 3604)	High risk	1
Number of storeys	Low risk	0
Roof/wall intersection design	Medium risk	1
Eaves width	Very high risk	5
Envelope complexity	Low risk	0
Deck design	Low risk	0
Total Risk Score:		**7**



SOUTHELEVATION

1:100

(PRIMARY ROOF CLADDING)
SELECTED 0.55mm COLORSTEEL MAXX. LONGRUN TRAPEZOIDAL PROFILED METAL ROOFING (ROOFING INDUSTRIES TRIMRIB OR SIM) ON H1.2 SG8 TIMBER PURLINS ON THERMAKRAFT COVERTEK 407 SELF SUPPORTING ROOFING UNDERLAY



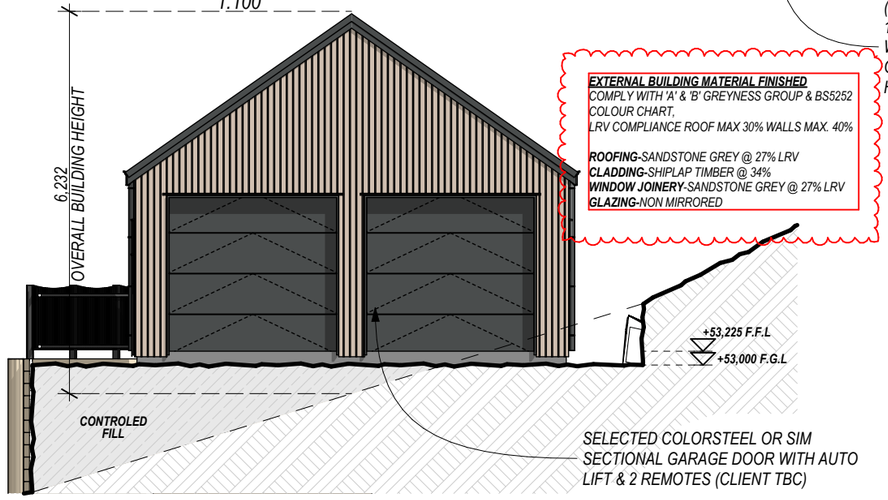
NORTH ELEVATION

1:100

(CLADDING)
110x30mm LARCH VERTICAL SHIPLAP WEATHERBOARDS WITH SELECTED DRYDENS FINISH OVER H3.1 TIMBER CAVITY BATTENS ON JAMES HARDIES 6mm RAB BOARD OVER H1.2 SG8 STUDS.

EXTERNAL BUILDING MATERIAL FINISHED
COMPLY WITH 'A' & 'B' GREYNESS GROUP & BS5252 COLOUR CHART,
LRV COMPLIANCE ROOF MAX 30% WALLS MAX. 40%

ROOFING*-SANDSTONE GREY @ 27% LRV*
CLADDING*-SHIPLAP TIMBER @ 34%*
WINDOW JOINERY*-SANDSTONE GREY @ 27% LRV*
GLAZING*-NON MIRRORED*



SELECTED COLORSTEEL OR SIM SECTIONAL GARAGE DOOR WITH AUTO LIFT & 2 REMOTES (CLIENT TBC)

WEST ELEVATION

1:100

EAST ELEVATION

1:100

EXPOSURE ZONE D: *FIXINGS ARE TO COMPLY WITH NZBC B2 DURABILITY AND NZS 3604:2011 SECTION 4 - DURABILITY ALL STRUCTURAL FIXINGS TO BE MIN. TYPE 304 STAINLESS STEEL (EXPOSED & SHELTERED).*

NOTE
ALL BOLTS SHALL HAVE 50SQ X 3MM WASHERS TO TIMBER FACES

FLASHING AND WRAP SYSTEMS
ALL FLASHINGS, FLASHING TAPES, WRAPS, UNDERLAYS AND ASSOCIATED ACCESSORIES ARE TO BE INSTALLED STRICTLY IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS.

LIGHTING
ARTIFICIAL LIGHTING TO COMPLY WITH NZBC G8/AS1

SMOKE ALARMS.
SMOKE ALARMS SHALL COMPLY WITH APPROVED DOCUMENT F7 WARNING SYSTEMS. (SD)

CONFIRM THE LOCATION OF THE FOLLOWING WITH OWNER PRIOR TO INSTALLATION:
- *CEILING HATCH/ACCESS (IF AVAILABLE) - CHECK HEAD HEIGHT FOR ACCESS*
- *FLOOR COVERINGS - CONFIRM LOCATION, EXTENT AND DIRECTION OF FLOOR COVERINGS SHOWN*
- *METER BOX & DISTRIBUTION BOARD*
- *EXTERIOR TAPS*

WET AREAS WATERPROOFING SYSTEM OPTIONS.
ALL DETAILS/WINDOWS TO COMPLY WITH NZBC E3 INTERNAL MOISTURE AND MANUFACTURER'S PRODUCT DETAILS.
PROVIDE AN IMPERVIOUS AND EASILY CLEANABLE SURFACE TO ALL WALLS & FLOOR AREAS LIKELY TO BE SPLASHED TO COMPLY WITH E3/AS1.
USE GIB AQUALINE ON WET AREA WALLS & CEILINGS
BATHROOM*-FULL HEIGHT AQUALINE*
LAUNDRY, WC & KITCHEN*- 1200mm DADO*
WET AREA VENTILATION.
TO COMPLY WITH NZBC G4 VENTILATION

INTERIOR DOORS
TYPICAL DOORS:
PAINT QUALITY HOLLOW CORE DOORS WITH 18mm PAINT QUALITY DOOR JAMBS AND SELECTED HANDLESUNLESS STATED OTHERWISE

INSULATION-EXCLUDING GARAGE
CEILING INSULATION: R3.6 GREENSTUF INSULATION ON CEILING BATTENS BETWEEN JOISTS
WALL INSULATION: R2.5 GREENSTUF WALL BATTS TO SELECTED WALLS
WALL INSULATION: EXPOL SLABX200 R2.2 75mm UNDERSLAB INSULATION

TIMBER TREATMENT:
TREATMENT LEVELS TO COMPLY WITH NZBC CLAUSE B2/AS1 DURABILITY, NZS3602. TIMBER AND WOOD BASED PRODUCTS FOR USE IN BUILDING AND NZS3640 CHEMICAL PRESERVATION OF ROUND AND SAWN TIMBER.

H1.2*-ALL WALL FRAMING AND ASSOCIATED MEMBERS*
ROOF FRAMING, TRUSSES AND CEILING JOISTS
ENCLOSED FRAMING WITHIN SKILLION / FLAT ROOFS

H3.1*-CLADDING CAVITY BATTENS*

STUD GRADE
UNLESS SPECIFIED OTHERWISE WALL FRAMING IS GRADED TO SG8 AS PER NZS3604:2011

REV.	DATE	DESCRIPTION	DRAWN
A	19/08/24	ADJUST SITE PLAN FOR RC	CC

MCCARTHY FORDE SHED

319, AUCKS ROAD, RUSSELL

SHED FLOOR PLAN

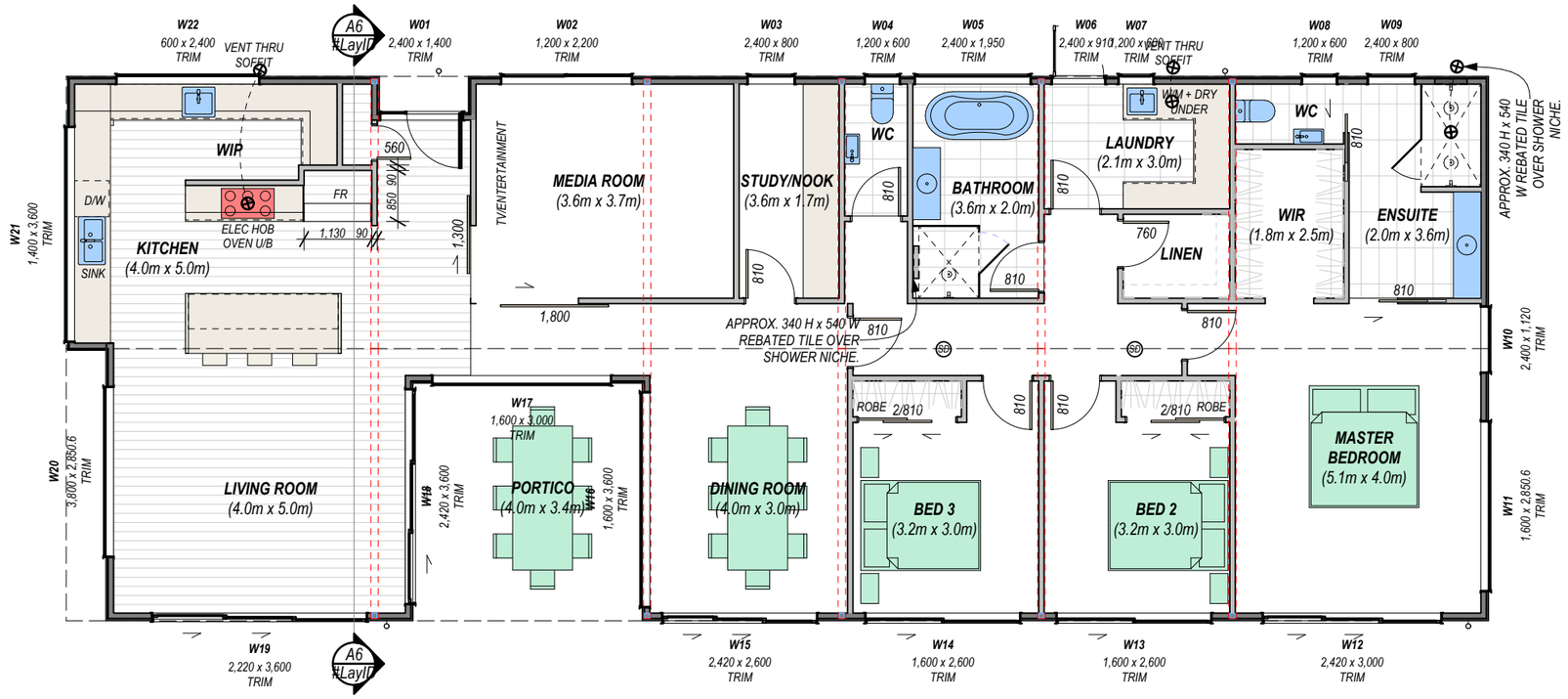
BC SET

JOB NO:	0271
REVISION:	A
SHEET SIZE:	A3
PAGE:	**02** OF **12**
DATE:	19/08/2024
DRAWN:	DF

CLAYTON
ARCHITECTURE LTD
office@claytonarchitecture.co.nz PH: 021589219

ONLY COUNCIL STAMPED PLANS TO BE USED FOR CONSTRUCTION.
DO NOT SCALE OFF PLANS.

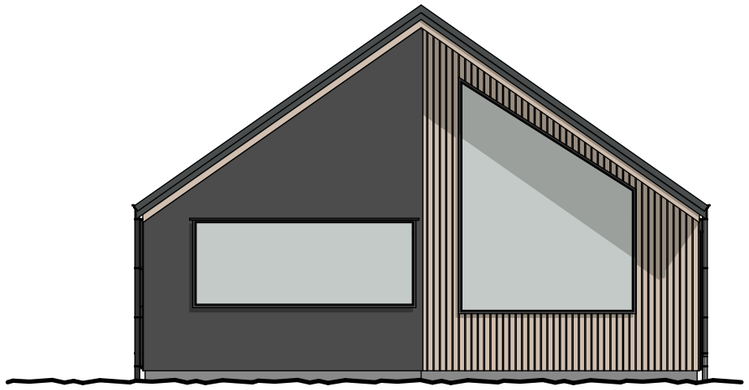
0271-MCARTHY-(BC-A)-140824.pln



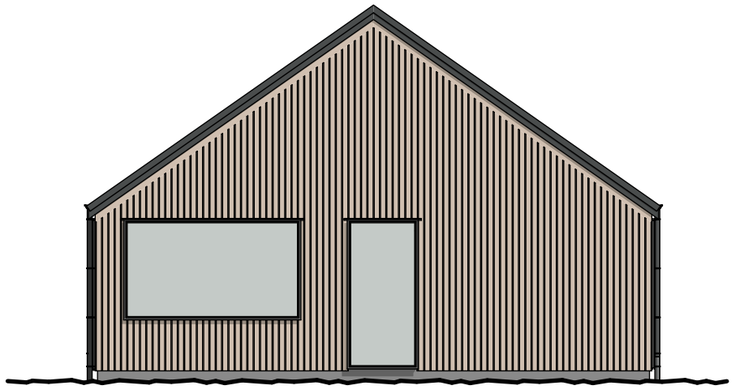
FLOOR PLAN
1:100

SOUTH ELEVATION
1:100

NORTH ELEVATION
1:100



WEST ELEVATION
1:100



EAST ELEVATION
1:100

-	-	-	-
REV.	DATE	DESCRIPTION	DRAWN

PROPOSED MCCARTHY RESIDENCE

-, OCEAN VISTA WAY, RUSSELL

FLOOR PLAN

SK01 SET

JOB NO:	0271
REVISION:	-
SHEET SIZE:	A3
PAGE:	OF **23**
DATE:	3/09/2024
DRAWN:	DF

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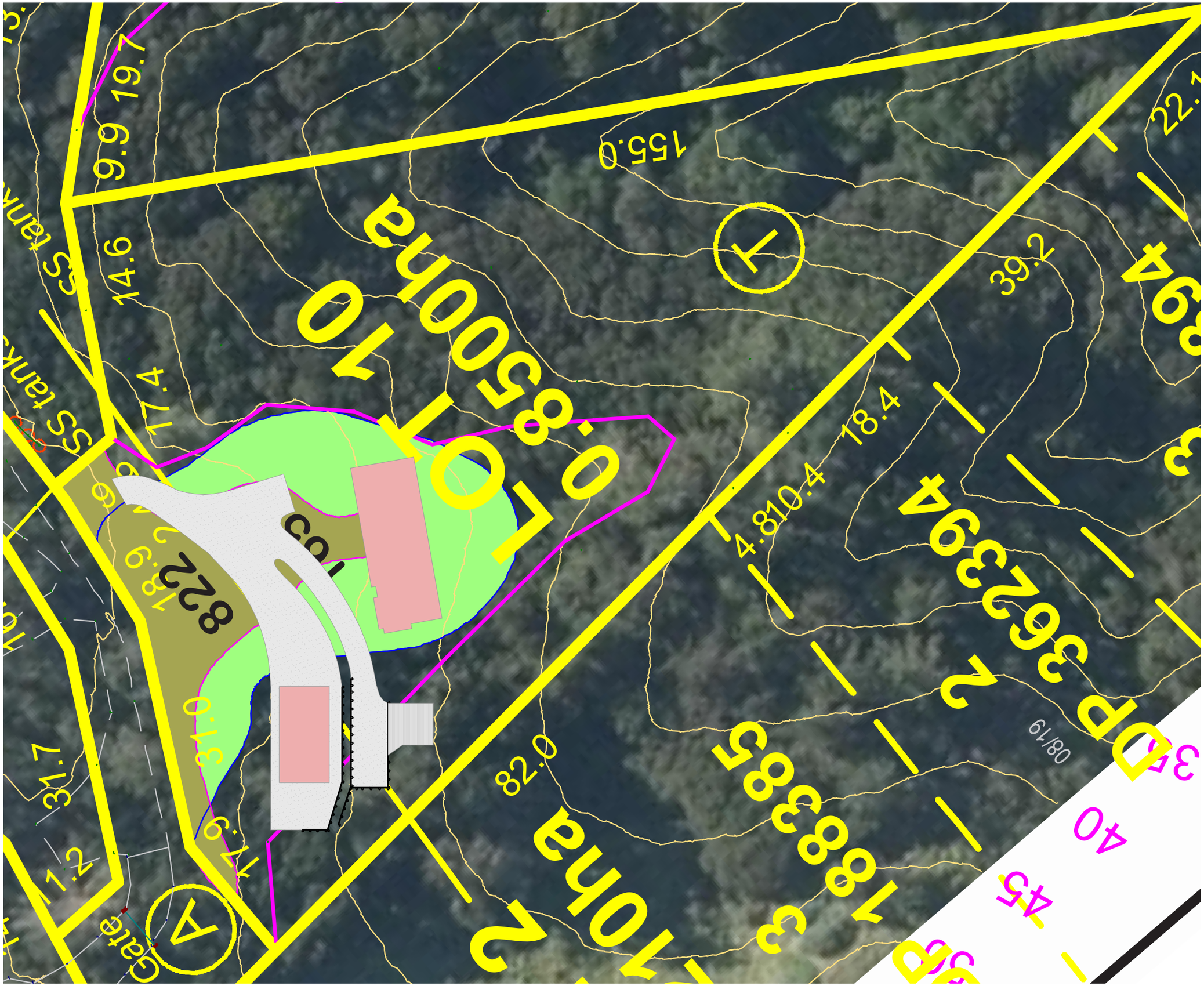
office@claytonarchitecture.co.nz PH: 021589219

ONLY COUNCIL STAMPED PLANS TO BE USED FOR CONSTRUCTION.
DO NOT SCALE OFF PLANS.

0271-MCARTHY-(HOUSE SK01-1)-140823.pln



A	19/08/24	ADJUST SITE PLAN FOR RC	CC
REV.	DATE	DESCRIPTION	DRAWN

MCCARTHY FORDE SHED

319, AUCKS ROAD, RUSSELL

SITE PLAN

BC SET

JOB NO:	0271
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DRAWN:	DF

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ARCHITECTURE LTD
office@claytonarchitecture.co.nz PH: 021589219

0271-MCARTHY-(BC-A)-140824.pln

Attachment B Certificate of Title and consent notice

RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD

Search Copy

R.W. Muir
Registrar-General
of Land

Identifier	**1151169**
Land Registration District	**North Auckland**
Date Issued	19 March 2024

Prior References
NA62/76

Estate	Fee Simple
Area	8387 square metres more or less
Legal Description	Lot 10 Deposited Plan 595923
Registered Owners	

McCarthyForde Trustees Limited

Interests

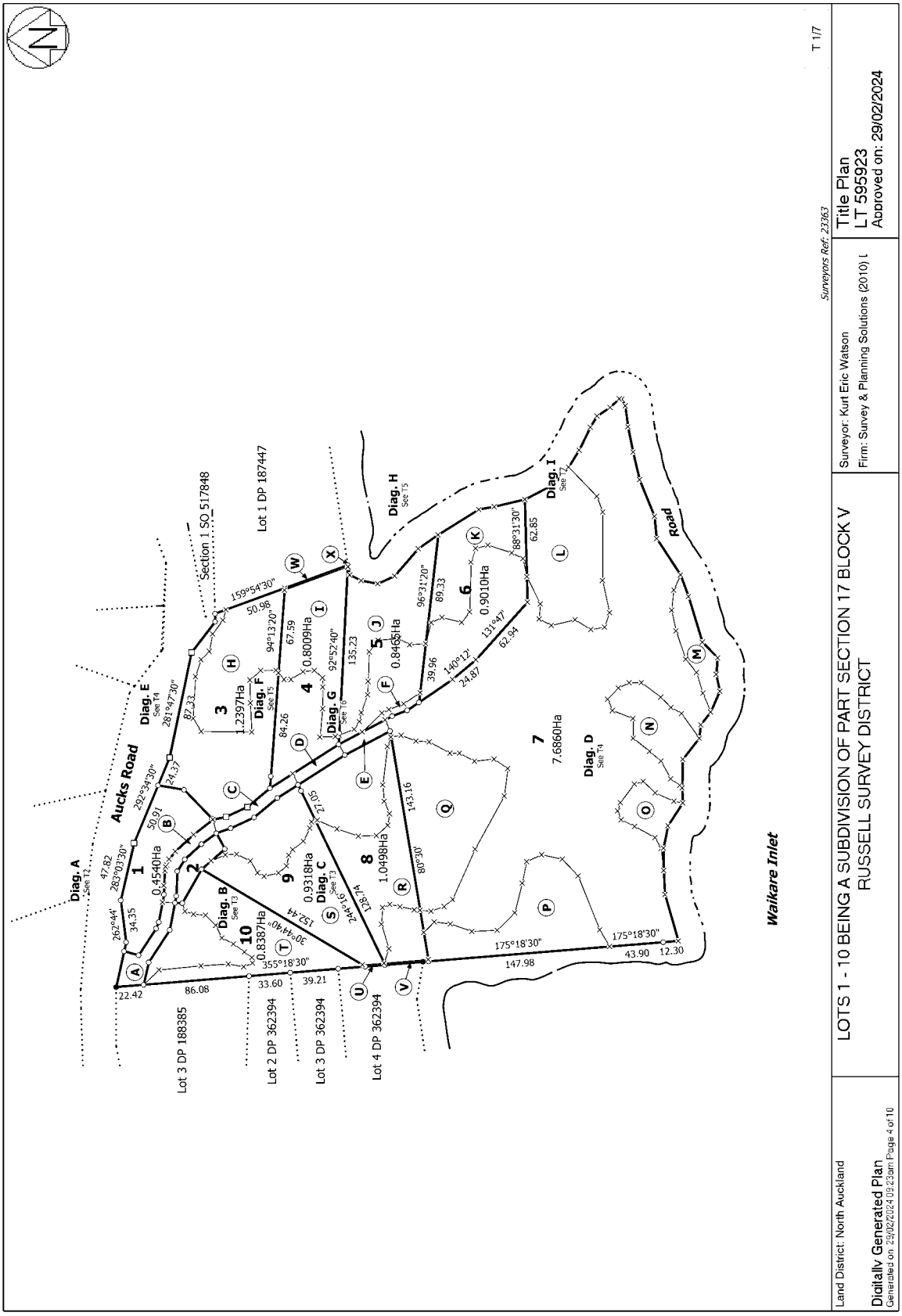
12935249.2 Consent Notice pursuant to Section 221 Resource Management Act 1991 - 19.3.2024 at 12:13 pm

Appurtenant hereto is a right of way, right to convey water, electricity & telecommunications and a right of way (pedestrian) created by Easement Instrument 12935249.5 - 19.3.2024 at 12:13 pm

Some of the easements created by Easement Instrument 12935249.5 are subject to Section 243 (a) Resource Management Act 1991(see DP 595923)

Land Covenant in Covenant Instrument 12935249.6 - 19.3.2024 at 12:13 pm (Limited as to duration)

12976271.3 Mortgage to ASB Bank Limited - 11.4.2024 at 2:34 pm


N
T 1/7
Surveyors Ref: 23363
Aucks Road
Diag. A
Diag. B
Diag. C
Diag. D
Diag. E
Diag. F
Diag. G
Diag. H
Diag. I
Section 1 SO 517848
Lot 1 DP 187447
Lot 3 DP 188385
Lot 2 DP 362394
Lot 3 DP 362394
Lot 4 DP 362394
Waikare Inlet
Road
1 0.4540Ha
2
3 1.2397Ha
4 0.8009Ha
5 0.8465Ha
6 0.9010Ha
7 7.6860Ha
8 1.0498Ha
9 0.9318Ha
10 0.8387Ha
22.42
86.08
33.60
39.21
147.98
43.90
12.30
Land District: North Auckland
Digitally Generated Plan
Generated on 29/02/2024 09:23am Page 4 of 10
LOTS 1 - 10 BEING A SUBDIVISION OF PART SECTION 17 BLOCK V
RUSSELL SURVEY DISTRICT
Surveyor: Kurt Eric Watson
Firm: Survey & Planning Solutions (2010) L
Title Plan
LT 595923
Approved on: 29/02/2024

View Instrument Details

Instrument No	12935249.2
Status	Registered
Date & Time Lodged	19 March 2024 12:13
Lodged By	Pellow, Tiffany Eden
Instrument Type	Consent Notice under s221(4)(a) Resource Management Act 1991

Affected Records of Title	Land District
1151161	North Auckland
1151162	North Auckland
1151163	North Auckland
1151164	North Auckland
1151165	North Auckland
1151166	North Auckland
1151167	North Auckland
1151168	North Auckland
1151169	North Auckland

Annexure Schedule Contains 4 Pages.

Signature

Signed by Michael John Hockly as Territorial Authority Representative on 25/03/2024 05:25 PM

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

Far North District Council
Te Kaunihera o Tai Tokerau ki te Raki

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CREATING GREAT PLACES
Supporting our people

THE RESOURCE MANAGEMENT ACT 1991

SECTION 221: CONSENT NOTICE

REGARDING **RC-2220804-RMACOM**
Being the Subdivision of Pt Sec 17 Blk V Russell SD
North Auckland Registry

PURSUANT to Section 221 and for the purpose of Section 224 (c) (ii) of the Resource Management Act 1991, this Consent Notice is issued by the **FAR NORTH DISTRICT COUNCIL** to the effect that conditions described in the schedule below are to be complied with on a continuing basis by the subdividing owner and the subsequent owners after the deposit of the survey plan, and these are to be registered on the titles of the allotments specified below.

SCHEDULE

All Lots DP 595923

i. The site at 319 Aucks Road, Russell (Pt Sec 17 Blk V Russell SD) is identified as being within a kiwi high density zone. On all lots, no occupier of, or visitor to the site, shall keep or introduce to the site carnivorous or omnivorous animals (such as cats, dogs or mustelids) which have the potential to be kiwi predators except that this consent notice does not apply to the existing dogs, registered with council in accordance with condition 20 of resource consent 2220804.

i. Where external lights are necessary, downward-facing lamps with hoods must be used to limit light spillage and limit adverse effects on nocturnal wildlife outside the site.

ii. The lot owner shall continue to implement the approved weed management plan with annual reporting to be provided to Council.

iii. The lot owner shall continue to implement the pest control management plan targeting rodents, possums and mustelids. The animal pest and control management plan may either be implemented as part of Russell Landcare or Russell Kiwi Protection groups or under the guidance of a pest control plan prepared by a suitably qualified and experienced ecologist. Note that it is recommended that the unformed legal road should also be managed in conjunction with the adjoining lot. Any indigenous revegetation should use ecologically appropriate species sourced from the Whangaruru Ecological District and in accordance with a planting plan prepared by a suitably qualified and experienced ecologist.

Far North District Council
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These habitats are to be protected by way of the following methods:

- There shall be no intrusion of grazing stock (including horses, cows, sheep, goats, and pigs) into any areas of indigenous vegetation on the site.
- Exotic vegetation which could adversely affect natural regeneration or local forest health is not to be introduced on the site. This includes the introduction of invasive plant species, including those currently listed on the nationally-banned-for-sale list (see Northland Regional Pest Management Strategy). Planting of other exotic species should be confirmed to the immediate vicinity of dwellings. And species with berry-type fruits are to be grown within netting to prevent seed spread by birds.
- Dead wood may be removed by the owners for their own use on the site,
- Any predator / pest control work carried out is to be done in a manner which will not endanger kiwi.

iv. The lot owner shall maintain the planting established around the edge of the cleared areas. Any plants that die shall be replaced in the next planting season (May – September).

a. <u>Lots 3-10 DP 595923</u>

i. Access

At the time of building on the lot, the lot owner shall provide a formed and metalled entrance crossing, from the right of way to the lot, which complies with the Councils Engineering Standard FNDC/S/6, 6B and section 3.3.7.1 of the Engineering Standards and NZS4404:2004.

ii. Geotechnical

At the time of lodging an application for a Building Consent for a dwelling on the lot, the lot owner shall submit a report from a Chartered Professional Engineer experienced in geotechnical matters on any ground stabilisation measures required to make the building site stable, the design of foundations, earthworks and retaining in accordance with the recommendations of the "Site Suitability Assessment Preliminary Geotechnical Report" from GWE Consulting Engineers, ref: J3146 and dated September 2021as submitted with Resource Consent 2220804.

iii. Wastewater

In conjunction with the construction of any building on the lot requiring a wastewater disposal system the lot owner shall obtain a Building Consent and install a wastewater treatment and effluent disposal system designed generally as detailed in the "Subdivision Resource Consent Site Suitability Report" Revision 2 from GWE Consulting Engineers, ref:J3146 and dated September 2021, as submitted with Resource Consent 2220804.

Far North District Council
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iv. Stormwater

In conjunction with the construction of any building on the lot and together with an application for Building Consent, the lot owner shall submit for the approval of Council a report prepared by a suitably qualified Chartered Professional Engineer, detailing the control and disposal of stormwater runoff from impermeable areas such as driveways, the disposal of water tank overflow and the avoidance of building either in or close to an overland flowpath. The report shall provide a detailed flood assessment carried out to ensure the habitable floor level of any dwelling is situated a minimum height of 0.5 m above any 1:100 yr flood level and that building footprint is not within overland flow paths. The report shall be prepared in accordance with the recommendations of the "Subdivision Resource Consent Site Suitability Report" from GWE, ref: J3146 and dated September 2021, as submitted with Resource Consent 2220804.

v. Water for Fire Fighting

In conjunction with the construction of any dwelling, and in addition to a potable water supply, a water collection system with sufficient supply for firefighting purposes is to be provided by way of tank or other approved means and is to be positioned so that it is safely accessible for this purpose. These provisions will be in accordance with the New Zealand Fire Fighting Water Supply Code of Practice SNZ PAS 4509.

vi. Indigenous Vegetation Protection

The indigenous vegetation within areas H, I, J, K, L, M, N, O, P, Q, R, S & T shall not be cut down, damaged, or destroyed without prior written consent of the Council. Such consent may be given in the form of resource consent. The owner shall be deemed to be not in breach of this prohibition if any such vegetation dies from natural causes which are not attributable to any act or default by or on behalf of the owner or for which the owner is responsible.

vii. Building and Landscape Design

Any proposed building or development of the lot shall adhere to the building and landscape design guidelines set out in Section 8.0 of the Hawthorn Landscape Architects Landscape & Visual Effects Assessment dated 22 April 2022.

A design statement from a registered architect confirming that the building is in accordance with these guidelines shall be provided to accompany any resource consent or building consent application.

Far North District Council
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b. Lot 6 DP 595923

Archaeological site Q05/1549 (Terraces / Pits) is located within the lot and is protected pursuant to Section 42 of the Heritage New Zealand Pouhere Taonga Act 2014. Unless an authority is granted under section 48, 56(1)(b) or 62 of the Heritage New Zealand Pouhere Taonga Act 2014 (or superseding legislation) in respect of an archaeological site, no person may modify or destroy, or cause to be modified or destroyed, the whole or any part of the recorded archaeological site.
The boundary of archaeological site Q05/1549 must be marked with wooden stakes or battens prior to the construction of any building on Lot 6.

SIGNED:

Ms Patricia (Trish) Routley - Authorised Officer
By the FAR NORTH DISTRICT COUNCIL
Under delegated authority:
MANAGER – RESOURCE CONSENTS

DATED at **KERIKERI** this 25th day of January 2024.

HAWTHORN
Landscape Architects

Landscape and Visual Effects Assessment

Proposed Subdivision of Pt Sec 17 Blk V Russell SD

319 Aucks Road, Okiato

P & L Maloney

22nd April 2022

Hawthorn Landscape Architects Ltd
537 Kerikeri Road, Kerikeri P. 09 407 6448 M. 021 407649 info@hawthornlandscapes.co.nz

TABLE OF CONTENTS

APPENDICES:

Hawthorn Landscape Architects Ltd
537 Kerikeri Road, Kerikeri P. 09 407 6448 M. 021 407649 info@hawthornlandscapes.co.nz

1. INTRODUCTION

Hawthorn Landscape Architects Ltd have been engaged by P and L Maloney (applicant) to undertake a landscape and visual impact assessment of the proposed subdivision of their property located at 319 Aucks Road.

The applicants propose to subdivide their 14.3218ha site to create 10 allotments ranging in size from 1,210m^2 to 7.3860ha within the Coastal Living zone. Lots 1 and 2 will be held in the same legal title. The land is legally described as Pt Section 17 Block V Russell Survey District.

This report provides a description of the site and proposal and analysis of the landscape character of the site and surrounding landscape.

The visibility of the site is assessed, and the potentially affected parties are identified. The overall potential landscape and visual effects of the development have been determined and are reported here.

A landscape plan has been prepared that illustrates the location the areas that can be cleared for the building sites. It also illustrates the areas of vegetation to be retained for landscape and visual effects mitigation purposes.

Bush covenants are proposed to protect some areas of the existing indigenous forest on the property.

The report provides an analysis of the proposal against the relevant landscape provisions of the Far North District Plan.

2. METHODOLOGY

The following methodology was used in the preparation of this landscape and visual effects assessment.

- Desktop review of the relevant statutory documents (Regional and District Plan text and mapping);
- Site visit and filed survey of the local area;
- Identification of the visual catchment and viewing audiences;
- Description of the site and existing landscape character, visual/aesthetic quality and amenity values of the surrounding environment;
- Identification and description of the nature of the proposed development;
- Assessment of anticipated character, landscape and visual effects;
- Ranking of landscape and visual effects;
- Review of the relevant planning documentation and reports;
- Identification of the proposed landscape and visual mitigation approach, options considered and recommendations.

This assessment has been prepared by a qualified Landscape Architect and in accordance with the NZILA (New Zealand Institute of Landscape Architects) Code of Conduct and with reference to the Quality Planning Guidelines Note[1].

[1] http://qualityplanning.org.nz/index.php/planning-tools/land/landscape

To determine the overall nature and significance of the landscape and visual effects, an understanding of the sensitivity of the landscape and viewing audience has been combined with an assessment of the magnitude of the change resulting from the proposal in order to determine the overall significance of effects.

3.0 THE SITE AND ITS LANDSCAPE CONTEXT

3.1 Location

The application site is accessible via an existing driveway at 319 Aucks Road near Okiato, Russell. The site is located on the southern facing hill slopes overlooking the Waikare Inlet.

The site is located approximately 800m to the east of the Opua car ferry ramp at Okiato Point, and approximately 7km to the southwest of Russell.

Refer to the Location Map contained within Appendix 1 and the On Site Photographs contained in Appendix 3.

3.2 Application Site

The site comprises a spur ridge the slopes southwards towards the Waikare Inlet from Aucks Road. The topography of the site is made up of moderately steeply sloping spurs that extend towards the coast with steep gullies in between forming a sinuous pattern of topography. The highest knoll that is located on proposed Lot 7 is approx. RL 70. The Engineering report prepared by GWE provides further details about the hydrology and geology site.

The site is predominately covered in native forest, with some areas along the main spur that have recently been cleared when the old pine trees were felled. Refer to the On Site Photographs contained in Appendix 3.

The ecological report prepared by The Ecology Company dated 6th February 2022 describes the vegetation cover on the property as comprising "*Kanuka (_Kunzea robusta) dominated shrubland at least 70 years old and typically around 12 - 15m tall surrounding smaller areas of remnant broadleaf forest located within gullies. The vegetation meets the criteria for ecological significance set out in the relevant district plan and is of moderate – high quality.*". Refer to this report for further descriptions of the ecological diversity of the indigenous forest and the history of the property.

There is an existing 4-wheel drive track that extends from the existing metaled driveway near the start of proposed Lot 4 out to the knoll on proposed Lot 7. This access will be utilised for the main road within the subdivision, from which driveways will extend to the individual building sites.

There are a number of existing buildings on the property including 3 chalets and a small dwelling located on proposed Lot 1. There are a couple of shipping contained and a shade house located on proposed Lot 3.

Hawthorn Landscape Architects Ltd
537 Kerikeri Road, Kerikeri P. 09 407 6448 M. 021 407649 info@hawthornlandscapes.co.nz

3.3 Neighbourhood Character and Context

The property is located in a transition area between the more developed areas of Opua and Okiato, and the more natural untouched areas further up the Waikare Inlet. The southern side of the Waikare inlet is more remote and less developed than the northern side of the inlet where the application site is located. The northern side has better vehicular access from Aucks and Russell Roads and is close to the residential area of Okiato.

The bush canopy that covers the landscape surrounding the Waikare Inlet is a distinctive feature of this area. The vegetation is dominated by Kanuka and other canopy trees, with Pohutukawa and Mangroves lining the coastal edge. The native vegetation pattern is broken up in places by areas of pasture and pockets of exotic pine plantations.

The close proximity of the site to Opua and Okiato contributes to its overall character. The residential area backing Opua, its wharf, car ferry, the industrial area and the marina are very distinctive features of this area.

Built development varies in density from the coastal residential areas to the general coastal areas. Most built development is set into the landscape well due to the presence of an interconnecting network of Manuka/Kanuka vegetation. Within the coastal residential areas built form tends to be more visually obvious due to the often high reflectivity of the exterior walls of the buildings.

The areas of the landscape that have minimal built development and farming present are the areas that exhibit the highest degree of natural character. The application site is one of these areas as is the landscape extending up the Waikare Inlet.

Overall, the character of the neighbourhood is predominantly characterised by the Opua and Okiato settlements, sheltered coastal setting of Veronica Chanel and Waikare Inlet, the marina within the Kawakawa River and the bush clad landscape surrounding all of this.

4.0 THE PROPOSAL

4.1 Proposed Subdivision

The applicant proposes to subdivide the site to create 10 lots. Refer to the Scheme Plan attached in Appendix 2.

Proposed Lot 1 will contain the existing managers house and chalets. Lot 2 will contain the existing wastewater disposal and will be held in the same title as Lot 1.

Proposed Lots 3 – 10 will accommodate new future residential dwellings.

The Ecology Company report provides some background on the application site and previous consents. It details that:

> *Mr and Mrs Maloney have owned the property since 2016, and in 2017 were granted resource consent (subject to conditions) in order to construct five accommodation chalets and one managers dwelling as well as retrospective*

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resource consents to allow 4,920m2 of earthworks and 3,500m2 of indigenous vegetation clearance at the site. As well as indigenous vegetation removed, substantial areas of mature pine trees growing on the ridgelines with regenerating indigenous vegetation underneath were also removed. Elsewhere some mature pine trees have been poisoned and allowed to decay in situ.
The conditions of the 2017 resource consent included mitigation planting (to be completed within two years of the consents being granted), ongoing mammalian pest control, resident dogs to be micro-chipped and contained, along with a restriction on the keeping of other carnivorous animals, so as to protect kiwi (Apteryx mantelli) and installation of silt traps at the outlet of all culverts. To date three of the chalets and a (relocatable) Managers residence have been established. The owners are currently living in the Managers accommodation.

The main access road into the subdivision will be via the existing driveway access off Aucks Road. This will extend past the end of the driveway that provides access to the chalets. The new access road will extend to Lot 7. Individual driveways to the lots will extend off this main accessway. The general formation of this road has already been formed with a rough track being present.

The building development zones on each lot will be set within the existing canopy of indigenous vegetation. There are some existing cleared areas, and additional vegetation clearance will be required for the building sites. Vegetation clearance of areas between 1,040m² and 1670m² as shown on the Williams & King Plan are proposed.

The most sensitive and highly valued areas of the existing bush on the site will be protected by bush covenants. These areas are the forest remnants and are labeled H to T on the Survey Plan and Landscape Plan.

4.2 Ecological Protection

An ecological report has been prepared by The Ecology Company and provides a comprehensive ecological and natural character assessment of the property in its current state and the potential impacts of the proposed subdivision and associated development.

The ecological report recommends a number of methods to minimise the potential adverse effects of the development and preserving and restoring ecological and natural character values. These include:

- *Continuing control of possums, rodents and mustelids across the site to assist in restoring and maintaining ecological function.*
- *Protecting, via covenanting, all of the forest remnants and sufficient shrubland around them to connect the habitats and buffer the forest areas. Slightly more than 40% of the property is proposed for covenanting.*
- *Managing earthworks and stormwater so as to avoid mobilisation of sediment*
- *Restricting the extent of vegetation clearance*

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- *Careful vegetation clearance be timed to avoid breeding by native fauna.*
- *Ongoing weed control to reduce the potential for weeds to establish and spread.*
- *A ban on keeping cats.*
- *A restriction on the number of dogs (to one per lot) and all dogs to be kiwi aversion trained and required to be kept within an enclosed and secure yard.*

If these actions are implemented as part of the suite of conditions applying to the proposed development, then the effects of the proposed subdivision and resulting vegetation clearance on terrestrial ecological values can be regarded as low and the adverse effects on threatened species known to be present will have been avoided or substantially mitigated.

4.3 Building Design Guidelines

A set of building design guidelines are proposed for each of the building sites to assist with enabling future built development to be set into the landscape with the least amount of visual intrusion.

The building design guidelines will control aspects such as building height, colours, reflectivity, design style and form and scale.

4.4 Landscape Design Guidelines

Landscape design guidelines are proposed to direct future owners on how to landscape around the house site to assist with minimising potential adverse visual, landscape and ecological effects.

5. STATUTORY CONTEXT

5.1 Far North District Plan (FNDP)

The application site is zoned Coastal Living and is not subject to any Resource Features. The land located directly to the west of the application site is zoned Coastal Residential.

The objectives and policies of the Coastal Living Zone and Subdivision Sections of the District Plan are relevant to this proposal.

Chapter 10.7 Coastal Living Zone

10.7.3 Objectives
10.7.3.1
To provide for the well-being of people by enabling low density residential development to locate in coastal areas where any adverse effects on the environment of such development are able to be avoided, remedied or mitigated.
10.7.3.2
To preserve the overall natural character of the coastal environment by providing for an appropriate level of subdivision and development in this zone.

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10.7.4 Policies
10.7.4.1
That the adverse effects of subdivision, use, and development on the coastal environment are avoided, remedied or mitigated.
10.7.4.2
That standards be set to ensure that subdivision, use or development provides adequate infrastructure and services and maintains and enhances amenity values and the quality of the environment.
10.7.4.3
Subdivision, use and development shall preserve and where possible enhance, restore and rehabilitate the character of the zone in regards to s6 matters, and 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;

(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;

Comment:
This development will enable low density residential living within this coastal environment. The potential adverse effects of the development will be mitigated through the ecological proposals and the landscape and building design guidelines.

The proposal will result in a level of development that is appropriate for this site and locality. The design guidelines and ecological proposals will ensure that the natural character of the coastal environment is maintained.

The retention of the bush areas outside of the areas that can be cleared for building development will retain the existing native bush on the property, so to protect the existing indigenous vegetation and natural character and visual amenity values of the site and surrounding landscape.

The protection of the existing bush outside of the building development areas will minimise the potential visual impact of earthworks and future buildings on the lots as seen from public roads and the CMA.

The ecological proposal includes methods to exclude pests.

Chapter 13 Subdivision

Following are the relevant landscape policies found in Chapter 13 Subdivision.

Policy 13.4.1

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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;
(c) landscape values;
(d) amenity values; and
(g) existing land uses.

Policy 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.

Comment:
The subdivision layout utilises the ridgeline and existing modified and cleared areas for the building development zones and accessways. This then protects the more sensitive parts of the site and will minimise potential effects upon natural character, landscape and amenity values.

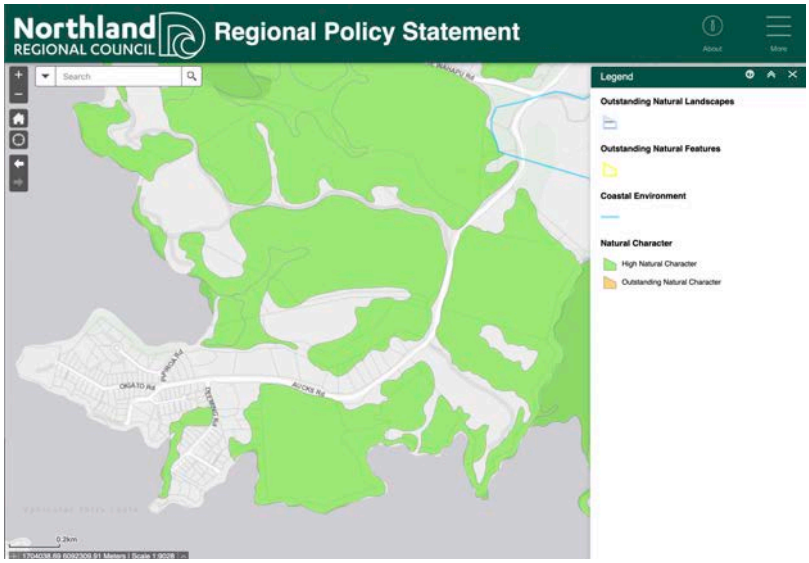
5.2 Regional Policy Statement for Northland (RPS)

In 2012, the Northland Regional Mapping Project ("Mapping Project") was undertaken by the Northland Mapping Group (on behalf of the NRC). The purpose of the Mapping Project was to determine the delineation of the Coastal Environment, and the natural heritage areas within the region comprising Outstanding Natural Landscapes ("ONL").

Within the RPS the site is identified as being within the Coastal Environment.

The property has no recorded Outstanding Natural Landscape, Outstanding Natural Features, or areas of Outstanding Natural Character. The entire site is identified as having High Natural Character.

Figure 1: NRC High Natural Character area



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Policy 4.6.1 Managing effects on the characteristics and qualities natural character, natural features and landscape.

(1) In the coastal environment:

a) Avoid adverse effects of subdivision use and development on the characteristics and qualities which make up the outstanding values of areas of outstanding natural character, outstanding natural features and outstanding natural landscapes.

b) Where (a) does not apply, avoid significant adverse effects and avoid, remedy or mitigate other adverse effects of subdivision, use and development on natural character, natural features and natural landscapes.

Methods which may achieve this include:

(i) Ensuring the location, intensity, scale and form of subdivision and built development is appropriate having regard to natural elements, landforms and processes, including vegetation patterns, ridgelines, headlands, peninsulas, dune systems, reefs and freshwater bodies and their margins; and

(ii) In areas of high natural character, minimising to the extent practicable indigenous vegetation clearance and modification (including earthworks/disturbance, structures, discharges and extraction of water) to natural wetlands, the beds of lakes, rivers and the coastal marine area and their margins; and

(iii) Encouraging any new subdivision and built development to consolidate within and around existing settlements or where natural character and landscape has already been compromised.

Comment:

The site has not been identified as having any Outstanding Natural Landscapes, Natural Features or Outstanding Natural Character. The whole of the site is covered by a High Natural Character area.

The proposal will not result in any significant adverse effects on the High Natural Charter area. The amount of vegetation removal and earthworks will be minimised. The subdivision has been designed to utilise the most modified parts of the site and to protect the most sensitive parts of the site. This will protect the existing natural elements, patterns and processes, thus protecting the natural character of the coastal environment.

5.3 New Zealand Coastal Policy Statement

As the site is located within the Coastal Environment the following policies are of relevance. Policy 6 - Activities in the coastal environment, Policy 13 - Preservation of natural character, and Policy 15 Natural features and natural landscapes.

Policy 6 Activities in the coastal environment

(1) In relation to the coastal environment:

(f) consider where development that maintains the character of the existing built development should be encouraged, and where

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development resulting in a change in character would be acceptable;
(i) set back development from the coastal marine area and other water bodies, where practicable and reasonable, to protect the natural character, open space, public access and amenity values of the coastal environment;

Policy 13 Preservation of natural character
(1) To preserve the natural character of the coastal environment and to protect it from inappropriate subdivision, use, and development:
(a) avoid adverse effects of activities on natural character in areas of the coastal environment with outstanding natural character; and
(b) avoid significant adverse effects and avoid, remedy or mitigate other adverse effects of activities on natural character in all other areas of the coastal environment;

(2) Recognise that natural character is not the same as natural features and landscapes or amenity values and may include matters such as:
(a) natural elements, processes and patterns;
(b) biophysical, ecological, geological and geomorphological aspects;
(c) natural landforms such as headlands, peninsulas, cliffs, dunes, wetlands, reefs, freshwater springs and surf breaks;
(d) the natural movement of water and sediment;
(e) the natural darkness of the night sky;
(f) places or areas that are wild or scenic;
(g) a range of natural character from pristine to modified; and
(h) experiential attributes, including the sounds and smell of the sea; and their context or setting.

Policy 15 Natural Features and natural landscapes
To protect the natural features and natural landscapes (including Seascapes) of the coastal environment from inappropriate subdivision, use and development.

(a) avoid adverse effects of activities on outstanding natural features and outstanding natural landscapes in the coastal environment; and
(b) avoid significant adverse effects and avoid, remedy, or mitigate other adverse effects of activities on other natural features and natural landscapes in the coastal environment;

Comment:
The proposed subdivision is located within the Coastal Living zone which enables low density residential living in this area. The proposal will maintain the existing character of the area through the ecological protection proposals and building design guidelines. Built development will be located in the most modified parts of the site and will be set back from the coastal edge and not clearly visible due to the retention of the existing bush outside of the building development zones.

The ecological protection proposals and building design guidelines and the design layout of the subdivision will protect the natural character values of the coastal environment.

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6.0 ASSESSEMNT OF LANDSCAPE AND VISUAL EFFECTS

6.1 Introduction

The landscape and visual effects assessment process provides a framework for assessing and identifying the nature and significance of potential landscape and visual effects that may result from the proposed development. Such effects can occur in relation to changes to physical elements and existing character of the landscape and Impacts on viewing audiences and visual amenity.

The existing landscape and it's a visual context form the baseline for landscape and visual effects assessments. The assessment of visual effects considers how changes to the physical landscape affect the viewing audience.

In assessing effects on landscape there is a distinction made between landscape effects (effects on the character and amenity of a landscape, this may not be visible to the general public), and visual effects (the response of a viewing audience, principally from public viewing positions, but also surrounding privately owned properties).

These effects are assessed in terms of the degree of change brought about by a development. The degree of landscape and visual effects resulting from a development may be negative (adverse), or positive (beneficial), contributing to the visual character and quality of the environment.

It will also be dependent upon the presence or absence of screening and/or backdrop vegetation, and the characteristics of the future activities associated with the development on the application site.

6.2 Extent of Visibility & Viewing Audience

To evaluate the extent of visibility and assess the potential landscape and visual impact of the proposed development on the surrounding area a number of viewpoints were chosen that are representative of the main viewing positions surrounding the site that will enable views of the proposed development. The viewpoints are illustrated in the attached Off Site Viewpoints contained in Appendix 4.

The main public viewer groups that afford views of the site and future development upon it can be grouped into the following groups:

- Residents around and users of Franklin Road environs at Opua,
- Visitors to the Opua Wharf and environs,
- People upon the Opua car ferry,
- Users of a small stretch of Aucks Road to the east of the site, and the private land within this area.

6.3 Landscape Effects

Landscape is defined in the NZILA Practice Note 10 as:

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'Landscape is the cumulative expression of natural and cultural features, patterns and processes in a geographical area, including human perceptions and associations'

Landscape character is generally considered to comprise a number of components – being

- The elements that make up the landscape. These include:
  - Physical influences – geology, soils, landform, drainage and water bodies;
  - Land cover including different types of vegetation and patterns and types of tree cover;
  - The influence of human activity, including land use and management, the character of settlements and buildings, and patterns and types of fields and enclosures;
  - the aesthetic and perceptual aspects of the landscape – such as its scale and complexity, openness, tranquility or wildness;

Landscape effects take into consideration physical effects to the landscape and the potential changes in landscape values and landscape character, which can affect amenity values, as well as natural character. Direct physical effects of a proposal on the landscape may result from:

- Vegetation removal,
- Construction earthworks,
- Modification of water courses

Physical effects on the landscape have the potential to affect the character and quality of the landscape. Landscape character is influenced by patterns of landscape elements and activities, which together make an area distinctive. This includes built and natural elements, land uses and other more subtle qualities.

The physical elements associated with the proposed subdivision development include vegetation removal, earthworks, subdivision roading, residential dwellings (to be built on the proposed lots at some point), driveways and associated activities related to residential living.

The future built development upon the site and associated use is in context with the existing character of the surrounding landscape directly adjoining the site and the settlement pattern found locally.

The receiving environment within which the development is located exhibits very similar characteristics to the development that is proposed on this site. The nature and scale of the proposed development will not change the key features and attributes of the landscape that currently provides the existing character for this locality. This includes the bush clad hillslopes surrounding the building sites.

The biophysical, sensory or associative aspects and key characteristics of the landscape will remain intact as the proposed development is of a size and scale that can be absorbed on this site and into this landscape through the implementation of the bush protection covenants, and building and landscape design guidelines.

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6.4 Natural Character Effects

The quality a landscape portrays and its resulting "natural" character is dependant upon the degree of cultural modification, and how well the natural processes are functioning.

Natural character is a term used to describe the naturalness of an environment. The degree or level of natural character within an area depends on:

- The extent to which natural elements, patterns and processes are functioning, and
- The nature and extent of modifications to the ecosystems and landscape/ riverscape

The highest degree of natural character occurs where there is least amount of modification. The effect of different types of modification upon the natural character of an area varies with the context and may be perceived differently by different individuals.

Natural elements relate to the presence of unmodified land and water bodies and the lack of built form, while natural patterns relate to the perceived naturalness of the appearance of a landscape, which appears to be a result of nature rather than being man made. Natural processes relate to the ecological workings of a landscape, and how well these processes are functioning to maintain a natural appearance to the landscape.

The natural patterns, elements and processes on the property will be protected through the ecological protection proposals and the bush protection covenants. The indigenous vegetation outside of the building development zones will not be removed, so that this existing vegetation can provide a visual softening of future development placed upon each lot.

The protection of a large proportion of the existing bush areas on the property will retain a high degree of natural character to the site, particularly the areas that will not be modified. These areas are the most sensitive parts of the site and are located closer to the coastal edge of the property. This will maintain the present natural character values of the property.

6.5 Visual Effects Assessment

Visual effects are generated through visual changes to the landscape as a result of a development, with the significance of the effects measured by the response of a particular viewing audience and is influenced by the degree of visibility, whether the proposal is the focal point or part of a wider view, whether the view is transient or permanent and the degree of contrast with the surrounding environment. The second component is perceptions and expectations that people hold about amenity.

Visual impacts are considered to constitute an intrusion into, or change to an existing view, with the significance of the effects measured as the bearing of that impact upon identified viewing audiences.

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Following is an assessment of each of the off-site viewpoints that were chosen to represent a selection of viewing areas that gain views towards the proposed development. Refer to the Location Map contained in Appendix 1 for the location of the viewpoints, while the viewpoints are illustrated in the attached Off Site Viewpoints contained in Appendix 4.

From each of the viewpoint's photographs were taken using a camera with a 50mm lens to illustrate the view of the property and the context of its setting.

This assessment will identify the current landscape character and context the site is located within. It will define the potential effects of the proposal and determine the level of landscape and visual effects generated by the proposal.

Viewpoint 1
This view of the site is from Franklin Road within the residential area of Opua located approximately 1.6km away to the southwest of the site.

This view is obtained by the residents located in this general area and motorists travelling towards Opua along Franklin Road.

The view for motorists will be temporary as they pass by and the future development upon the site will be hardly visible. There will be no adverse visual effects generated upon the passing motorists.

The view for the surrounding residents will be permanent. Their current view takes in the Opua wharf area, car ferry terminal, Veronica Channel and the residential development around Okiato.

The application site forms a part of their view out towards the northeast. The site is currently vegetated and the existing track that will be utilised for the main access to the lots and future house sites is not visible. The existing chalets on Lot 1 are also not visible. The existing caretakers house is just visible through the canopy of trees.

Future development upon the proposed lots is likely to be just visible set within the existing canopy of vegetation. This will be due to the building development zones being cleared of the existing vegetation, which will open up a filtered view of future built form on some of the lots, predominantly the ones that are located on the southern side of the access road (Lots 7 – 10).

The view of future residential built form on the site, which is zoned Coastal Living is an acceptable form of development within this area. The dwellings will be appropriately coloured and of a form that is sympathetic to the landscape setting, visual amenity and natural character values.

The proposed ecological protection measures and bush covenants will retain a large proportion of the existing vegetation on site. This will preserve the current landscape patterns and assist with blending future built form into the landscape.

The built form and associated residential activities on the lots will be viewed by this viewer group as an extension of the existing residential activities that are located within this area. The development proposal will not lower the viewers appreciation levels of the current landscape scene.

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The potential adverse visual and natural character effects of the development upon this viewer group will be less than minor.

Viewpoint 2
This viewing position is located around the Opua wharf area next to the Opua Cruising Club. The site is located approximately 1.1km away and forms the backdrop view of the vegetated headland that is located next to the Coastal Residential area of Okiato.

Visitors will hardly notice future development upon the site providing the building design guidelines and ecological protection measures are implemented. The retention of the existing indigenous vegetation outside of the building development zones plays a key role in minimising potential adverse visual and natural character effects.

With the implementation of these design guidelines and ecological protection measures development on the site will be recessive and the natural character values of the site will be maintained. This will result in less than minor adverse visual effects being generated upon this viewer group.

Viewpoint 3
This viewing position is located on the Opua wharf and has a similar aspect as in Viewpoint 2. The assessment of potential adverse effects is the same as for the view from next to the Cruising Club.

Viewpoint 4
This viewing position is on the car ferry looking east towards the site. The view from the for the passengers on the ferry is constantly changing and momentary as they pass by. They have 360-degree views of the Veronica Chanel and the residential development located within the Opua and Okiato areas and the commercial area and wharf at Opua.

As described for Viewpoints 1 and 2 future development upon the lots will not be readily visible due to the retention of the existing vegetation cover outside of the building development zones.

The future built form on the lots will be visually recessive due to the proposed design guidelines, thus ensuring that the dwellings will blend into the landscape.

The retention of most of the existing indigenous vegetation on the site will result in the current view not changing greatly. This will retain the current visual amenity and natural character values. As a result, the potential adverse visual and natural character effects generated by the development upon this viewer group will be less than minor.

Viewpoint 5
This view depicts what passing motorist on Aucks Road approximately 400m to the east of the site see as they drive towards Okiato. Their view of the site is fleeting as they pass by.

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The future development of dwellings upon proposed Lots 3 and 4 will be partially visible set behind existing vegetation. The dwellings will be viewed with a foreground of other residential houses located within this Coastal Living zone.

Providing the building design guidelines are implemented and future built form is appropriate and recessively coloured, and the existing foreground indigenous vegetation is retained the potential adverse visual effects of development upon this viewer ground will be less than minor.

Viewpoint 6
This view of the site is from a private driveway off Aucks Road, approximately 500m away to the east of the site. This location is the transition between the Coastal Living zone and the General Coastal zone.

The owners of this property will have varying views towards the site. Future development upon Lots 5, 6 and 7 will be partially visible set within the canopy of the existing vegetation. Foreground dwellings are also partially visible set within the existing vegetation.

The density of lots located on the northern side of Aucks Road adjacent to this viewing position and opposite the application site is similar to that proposed in this subdivision.

The view of future development located upon the application site will be in keeping with the present settlement pattern located within the surrounding landscape. Providing the ecological protection measures, bush covenants and building design controls are implemented the proposed subdivision will result in less than minor potential adverse visual and natural character effects upon this viewer group.

Viewpoint 7
This viewing position is located on Aucks Road approximately 700m away to the east of the site. A fleeting view will be obtained as motorists pass by. The assessment of effects for this viewing position and viewer group is the same as for Viewpoint 5.

7.0 Subdivision Landscape Plan

As most of the site is already covered in existing vegetation that can be utilised for visual mitigation there is no need for additional landscape plantings to mitigate potential adverse visual effects.

The existing vegetation will assist with integrating future buildings on the proposed lots to minimise any potential adverse landscape and visual effects of the development and retain natural character and amenity values.

The existing vegetation that has been identified specifically for retention is shown on the Survey Scheme Plan contained in Appendix 2 and on the Landscape Plan contained in Appendix 5. These are the areas of original indigenous forest and will be protected by the Bush Covenants (Areas H – T).

The areas of existing vegetation on the site that can be cleared for building development have been identified on the Landscape Plan and Survey Plan. The

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areas outside of these allowable cleared areas will be retained to provide visual mitigation of the proposed development.

The existing bush will provide a vegetative framework for development to be set within and will assist with minimising any potential adverse landscape and visual effects.

8.0 BUILDING AND LANDSCAPE DESIGN GUIDELINES

The following building and landscape design guidelines have been complied so that future built development on the property can achieve a high level of integration.

This will be achieved through sensitive building design and location and through the use of the existing vegetation to provide a foreground and background context to built development.

The guidelines recognise that it is not necessary to fully screen buildings from public areas, coastal marine area or adjoining properties.

8.1 Building Design Guidelines

A set of building design guidelines are proposed for future built development upon the lots to assist with enabling future development to be set into the landscape with the least amount of visual intrusion therefore minimising potential visual amenity effects.

The building design guidelines will control aspects such as building height, colours, reflectivity, design style, form and scale.

Vegetation Clearance

The area of vegetation clearance on each lot is between 1,040m² and 1670m² as shown on the Williams & King Plan contained in Appendix 2.

Building Form

Building style, colour and form play a significant role in determining how well a building fits into the landscape. Buildings of a similar size, scale and mass to each other and painted recessively appear to belong and are less visually obtrusive.

Similarly, buildings that reflect regional architectural styles appear to belong more readily than 'imported styles'.

Various building styles are possible; however, the following general guidelines will assist in diminishing the visual impact of structures in the landscape:

1. Building form shall flow with and follow the topography of the site,

2. The form of larger buildings shall be broken up or indented to provide visual interest and shadows.

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3. Stepping a building down a slope rather than constructing one single tall downhill façade shall be required.

4. The maximum building height on Lots 3 – 10 shall be 8m above existing ground level.

Building Materials and Finishes

The visual effects of the building sites will be lessened if recessive colours from the A and B Group of the BS 5252 colour chart are used.

The light reflectance values for the exterior roof colours shall not exceed 30% and the exterior walls shall not exceed 40%.

It is recommended to use natural and textural materials, and make use of architectural features such as verandahs, pergolas and large eves to create shadow. These will all cast shadows on windows and ranch sliders thus limiting the reflectivity of the facades of the house.

Ancillary Structures

All ancillary structures which are separate from the primary residence (such as guest quarters, garages, storage sheds) shall be designed to complement and integrate with the primary residence, especially in colour.

Earthworks

Earthworks shall be graded gradually into adjacent contours. Earthworks that create sharp and large batters that are difficult to revegetate should be avoided.

Water tanks

Water tanks, if not placed underground, shall be designed to integrate with the overall design of the main structures. Tanks that are placed above ground shall be screened by the landscape amenity plantings.

Driveways and Parking Areas

Parking areas shall be integrated with the overall design of the residence and landscaping.

If site contours would otherwise require extensive excavation to form parking spaces, vehicle and or boat storage should be separated from the house. Driveways should follow the natural contours of the land and avoid sharp angles or long straight sections.

Driveways shall be designed to suit rural character and formed with dark grey concrete oxide, or use chip seal or loose road metal. The use of swales to provide drainage should be encouraged.

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8.2 Landscape Design Guidelines

To assist with the appropriate landscaping of the outdoor living areas directly around the building footprints the following Landscaping Design Guidelines are recommended.

Landscaping

Any future landscaping by future owners on and around the building shall be compatible with and complementary to the existing natural landscape patterns and elements, and its bush setting.

Outdoor Living Areas

These areas shall be designed to integrate with the overall design of the new residence and other structures around the main dwelling and provide a flow between indoor and outdoor living areas. The materials used for outdoor areas should be compatible with the materials used for the construction of the main buildings on the site. The use of natural materials such as wood or stone, which enhance the natural landscape are encouraged.

Swimming Pools

Swimming pools, and any associated fencing and infrastructure, are permitted provided they are integrated in an unobtrusive way with the main residence and the rest of the landscaping, and their construction does not involve excessive grading or material alterations to the existing topography.

In addition, all swimming pools must comply with all applicable governmental and local authority regulations concerning swimming pool enclosure, particularly the Fencing of Swimming Pools Act 1987.

Grading and Drainage

All grading and changes to the contours of the house site should blend with its natural form and disturb the existing topography as little as possible. Landscaping should avoid excessive cuts and fills and should not disturb existing natural drainage paths.

In relation to all areas which are graded or altered by landscaping work the new lot owner should control silt run off and the bare areas replanted following the grading or alteration.

Outdoor Lighting

All exterior lighting should be shielded from neighbouring properties. There should be no pole lights or floodlights used. Any lighting on accessways should be ground mounted and no more than 500mm high. Lighting should be subdued.

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Where external lights are necessary, downward-facing lights with hoods should be used to limit light spillage and limit adverse effects on nocturnal wildlife outside the site.

9. CONCLUSION

This subdivision proposal has been designed so it is sensitive to the coastal landscape character whilst providing for the future growth within this area. Any potential adverse visual and landscape effects that may be generated by the development are capable of being avoided, remedied or mitigated through the implementation of the proposed design controls and ecological protection measures. This will maintain the existing visual qualities and natural character values. The bush protection covenants will have positive effects upon natural character and amenity values.

It will be possible to achieve this development proposal whilst not compromising the amenity values and natural character of the property or surrounding landscape so that the potential adverse landscape and visual effects are less than minor. This is primarily due to the visual absorption capability of the property to absorb the addition of new structures without significant detriment to the overriding coastal landscape quality values.

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BLA (Hons.)
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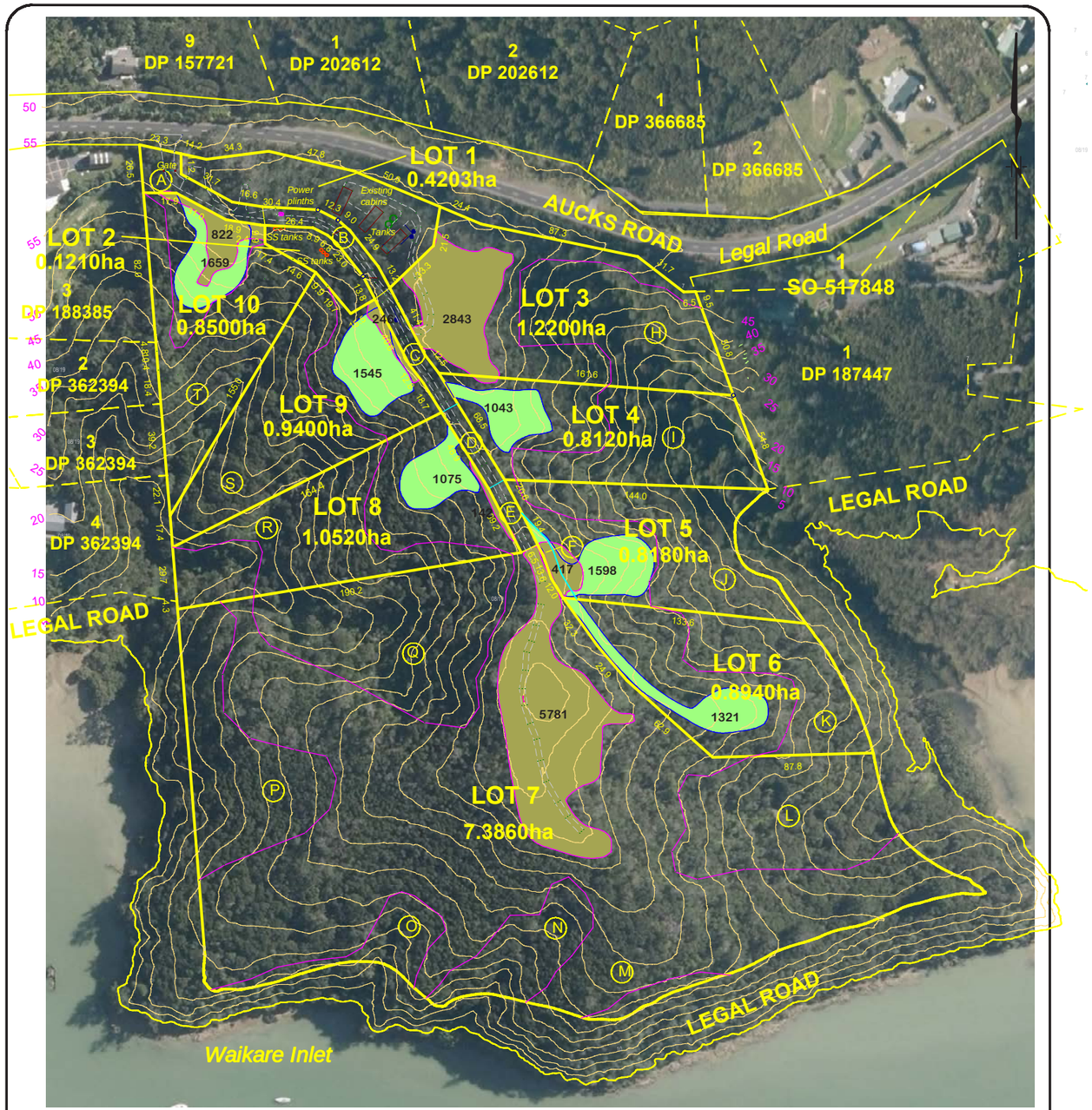
Appendix 1
Location Map

Proposed Subdivision of
Pt Sec 17 Blk V Russell SD
319 Aucks Road, Okiato
P & L Maloney



Memorandum of Proposed Easements

Shown	Purpose	Burdened Land	Benefited Land
A	Right of Way Right to Convey Electricity, Water & Telecommunications.	Lot 7	Lots 1 - 6 & 8 - 10 Hereon
B			Lots 1 - 6 & 8 - 9 Hereon
C			Lots 3 - 6 & 8 - 9 Hereon
D			Lots 4 - 6 & 8 Hereon
E			Lots 5 - 6 & 8 Hereon
F		Lot 5	Lot 6 Hereon

Local Authority: Far North District Council

Total Area: 14.3218ha
Comprised in: NA62/76

Levels in terms of: MSL OTP Datum
Contour interval is: 5.00m

AREAS AND MEASUREMENTS SUBJECT TO FINAL SURVEY

Proposed Covenants

Areas Shown H, I, J, K, L, M, N, O, P, Q, R, S & T are to be subject to Land Covenants

Amalgamation Condition

That Lot 1 and Lot 2 Hereon be held in the same Record of Title See.....

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

0 20 40 60 80 100 120 140 160m

Prepared for: P & L G Maloney

WILLIAMS AND KING
Registered Land Surveyors, Planners & Land Development Consultants
Ph: (09) 407 6030 27 Hobson Ave
Email: kerikeri@saps.co.nz PO Box 937 Kerikeri

Proposed Subdivision of Pt Section 17 BLK V Russell SD

	Name	Date
Survey		
Design		
Drawn		
Rev		Feb 2022

ORIGINAL
SCALE 1:2000
SHEET SIZE A3

23363

Photo 1 - View of the existing access to the existing buildings on site. This access will be upgraded and widened to provide the main access within the subdivision

Photo 2 - View across the building site on Lot 10, and beyond to the water body around the Opua marina

Photo 3 - View of the existing buildings on Lot 1

Photo 4 - View from Lot 3 looking north towards Lot 1

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Appendix 3
On Site Photos

Proposed Subdivision of Pt Sec 17 Blk V Russell SD
319 Aucks Road, Okiato
P & L Maloney

Photo 5 - View of the existing structures on Lot 3

Photo 6 - View of the building site on Lot 3

Photo 7 - View of the location for the building site on Lot 4

Photo 8 - View of the location for the access road to Lots 5 - 8

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Appendix 3
On Site Photos

Proposed Subdivision of Pt Sec 17 Blk V Russell SD
319 Aucks Road, Okiato
P & L Maloney

Photo 8 - View looking south to the knoll upon which the building site on Lot 7 will be located

Photo 9 - View looking north to the knoll upon which the building site on Lot 7 will be located

Photo 10 - View looking east from the knoll upon which the building site on Lot 7 will be located, overlooking the building site location for Lot 6

Photo 11 - View looking south up the Waikare Inlet from the knoll upon which the building site on Lot 7 will be located

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Appendix 3
On Site Photos

Proposed Subdivision of Pt Sec 17 Blk V Russell SD
319 Aucks Road, Okiato
P & L Maloney

Photo 12 - View looking east towards Opua from the knoll upon which the building site on Lot 7 will be located

Photo 13 - View looking north from the knoll upon which the building site on Lot 7 will be located

Photo 14 - View looking towards the main access road from the knoll upon which the building site on Lot 7 will be located

Photo 15 - View of the area where Lot 5 building site will be located

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Appendix 3
On Site Photos

Proposed Subdivision of Pt Sec 17 Blk V Russell SD
319 Aucks Road, Okiato
P & L Maloney

Photo 16 - View of the area where the building site on Lot 8 will be located

Photo 167- View of the area where the building site on Lot 9 will be located

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Appendix 3
On Site Photos

Proposed Subdivision of Pt Sec 17 Blk V Russell SD
319 Aucks Road, Okiato

P & L Maloney

Viewpoint 1 – View from Franklin Road within the residential area of Opua, looking east towards the application site located approximately 1.6km away.

Viewpoint 2 – View from Opua Wharf area, looking towards the site across the Waikare Inlet, approximately 1.1km away

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Appendix 4
Off Site Viewpoints

Proposed Subdivision of Pt Sec 17 Blk V Russell SD
319 Aucks Road, Okiato
P & L Maloney

Viewpoint 3 – Located on the Opua wharf looking towards the application site

Viewpoint 4 - Located on the car ferry looking east towards the site

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Appendix 4
Off Site Viewpoints

Proposed Subdivision of Pt Sec 17 Blk V Russell SD
319 Aucks Road, Okiato
P & L Maloney

Viewpoint 5 - Located on Aucks Road approximately 400m to the east of the site

Viewpoint 6 –Looking towards the site from a private driveway off Aucks Road, approximately 500m away.

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Appendix 4
Off Site Viewpoints

Proposed Subdivision of Pt Sec 17 Blk V Russell SD
319 Aucks Road, Okiato
P & L Maloney

Viewpoint 7 – Located on Aucks Road approximately 700m away

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Appendix 4
Off Site Viewpoints

Proposed Subdivision of Pt Sec 17 Blk V Russell SD
319 Aucks Road, Okiato
P & L Maloney

Access to site

Exisitng Chalets

Main access road

Bush Covenant Areas H - Q

Shrubland, revegetation bush areas post clearing and farming 1900-1960

Areas can be cleared for house development

Existing cleared areas

AUCKS ROAD

WAIKARE INLET

WAIKARE INLET

LOT 1

LOT 10

LOT 3

LOT 9

LOT 4

LOT 8

LOT 5

LOT 7

LOT 6

H

I

J

K

L

M

N

O

P

Q

R

S

T

N

0 50 100 150 200 m

Vegetation Patterns

- Areas of existing vegetation that can be cleared
- Existing cleared areas originally cleared for pine felling and chalet park
- Areas of bush within covenant areas includes all of original indigenous forest
- Shrubland

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13.04.2022

Landscape Plan

Malony
319 Aucks Road, Okiato

Scale	Drawn By
1:2000 @ A3	Cad Design
Drawing #	Rev #
1.0	A

Attachment C Geotechnical Report by Core Engineering Limited

ENGINEERING SOLUTIONS

GEOTECHNICAL REPORT

Sec 17 Blk5 Russell SD Pt Sec 17 Blk V Russell SD
319 Aucks Road, Russell, Bay of Islands

Job Details:	New Dwelling and Shed
Job number:	22-0238
Client:	Clayton Architecture
Site Address:	319 Aucks Road, Russell, Bay of Islands
Legal Description:	Sec 17 Blk5 Russell SD Pt Sec 17 Blk V Russell SD
Date:	25 January 2024
Author:	David Leslie
Author email:	jobs@coreeng.nz
Author Phone No:	09 553 3660

TABLE OF CONTENTS

Core Engineering Solutions Limited

Geotechnical Report for Proposed New Dwelling and Shed at Proposed Lot 10 of Sec 17 Blk5 Russell SD Pt Sec 17 Blk V Russell SD
319 Aucks Road, Russell, Bay of Islands

1. INTRODUCTION

This report was prepared by Core Engineering Solutions (CES) Limited for the Client; Clayton Architecture.

The Client is proposing to construct a New dwelling and shed at: Sec 17 Blk5 Russell SD Pt Sec 17 Blk V Russell SD, 319 Aucks Road, Russell, Bay of Islands.

The purpose of this report is to provide geotechnical guidance to support a Building Consent application for a typical NZS3604 lightweight dwelling designed to an Importance Level 2 building (50-year design life) in accordance with NZS: 1170.

2. SITE DESCRIPTION

The 145,057 m^2 property is located at 319 Aucks Road, Russell and is accessed via a shared right-of-way. The allotment has an irregular square shape. The property has a grade of approximately 6-27 degrees. The property sits on the crest of a hill with a North-westerly aspect at the proposed building site. Site coverage is bush. Council water, sewer and stormwater reticulation connections are not available.

Table 1 - Property Details

Legal Description	Sec 17 Blk5 Russell SD Pt Sec 17 Blk V Russell SD
Area	145,057 m^2
District Council	Far North District Council
Council Services	None
On-site Services Required	Wastewater Stormwater Water Supply
Potable water supply	Rainwater/Tank

Figure 1 – 319 Aucks Road, Russell, site marked approximately, South facing, aerial photo taken 29 November 2022 (Source: CES)

Figure 2 - 319 Aucks Road, Russell, site marked approximately, North facing, aerial photo taken 29 November 2022 (Source: CES)

3. SUPPLIED INFORMATION

The following information has been provided by our Client regarding the proposed development:

Table 2 - Client Supplied Information

Client Supplied Information:	-	Preliminary plans (Clayton Architecture 16/10/2023)
	-	GWE Site Suitability Assessment Preliminary Geotechnical Report (Sep 2021)
	-	Topographical survey (Thomson survey 12/4/2022)

4. PROPOSED DEVELOPMENT

The Client is proposing to construct a single-storey timber-framed dwelling and shed with lightweight cladding and a lightweight roof. The proposed dwelling and shed are to be constructed on a concrete raft floor or a conventional concrete slab.

As council reticulation is unavailable at this site, it is proposed to manage wastewater and potable water on site. On-site rainwater storage tanks are proposed as a potable water supply.

To create level-building platforms, it is proposed to undertake earthwork to form cut and filled platforms with a series of timber pole retaining walls and cut batters.

5. DESKTOP STUDY

5.1 Geology

Local geology at the property is noted on the GNS Science New Zealand Geology Web Map, Scale 1: 250,000 as; Waipapa Group sandstone and siltstone (Waipapa terrane), Massive to thin-bedded, lithic volcaniclastic metasandstone and argillite, with tectonically enclosed basalt, chert and siliceous argillite.

Table 3 - Geology Type

Key name	**Waipapa Group sandstone and siltstone (Waipapa terrane)**
Simple name	Basement (Eastern Province) sedimentary rocks
Main rock name	greywacke
Stratigraphic age	Y-J
Description	Massive to thin bedded, lithic volcaniclastic metasandstone and argillite, with tectonically enclosed basalt, chert and silceou
Subsidiary rocks	argillite chert basalt

Key group	Waipapa composite terrane
Stratigraphic lexicon name	Waipapa Group
Terrane equivalent	Waipapa composite terrane
Absolute age (min)	154.0 million years
Absolute age (max)	270.0 million years
Rock group	greywacke
Rock class	clastic sediment
Code	TrJ.sst
QMAP sheet name	Whangarei

Tonkin and Taylor undertook a report and stability analysis of the Whangarei region titled: "Coastal Structure Plan Slope Instability Hazard Potential And Effluent Disposal Potential Oakura To Langs Beach." August 2005. The report stated the following regarding Waipapa Group:

> *'The Waipapa Group of rocks predominantly comprises shattered Triassic to Jurassic age (140 to 200 million years old) greywacke and argillite. In their unweathered form these rocks are dark bluish grey, and strong (typically with unconfined compressive strength greater than 50 MPa), due to low-grade metamorphism of the sediments.*
>
> *Waipapa Group rockmass generally comprises very closely to extremely closely spaced (<20 mm to 60 mm) joints, present in numerous joint sets at various orientations. The greywacke rockmass also tends to contain many sheared and crushed zones. However, despite the rock being very fractured, the high intact rock strength gives the Waipapa Group a relatively high overall rockmass shear strength.*
>
> *The Waipapa Group usually has a deep weathering profile ranging from unweathered greywacke and argillite at 10 m to 20 m below the surface; through to highly weathered to completely weathered rock close to the surface. The latter materials typically form a soil mass (i.e. a regolith) of very stiff to hard light brown gravelly and clayey silts. Residual soil derived from these materials typically comprises very stiff silty clays and clayey silts, typically containing predominantly non-swelling kaolinitic clays (i.e. not subject to large changes in volume due to changes in moisture content). These soils are generally only present in the top 2 m on low gradient slopes, such as ridgelines and flats, and in the top 1 m on steep slopes. Groundwater is usually deeper than 5 m due to the relatively high fracture permeability of the rockmass, the steepness and the relatively high relief of the slopes.*
>
> *Slopes that are underlain by Waipapa Group materials are generally characterised by moderate to steep sided slopes (15° to >30°) with minor shallow seated slippage and gully erosion within the soil mantle generally only within the steepest slopes (i.e. >30°). The slopes can generally stand at moderately steep gradients due to the relatively high strength of the rockmass and overlying soil mass.'*

The geology at the building site is to be confirmed as part of site investigations.

5.2 Aerial Photography

From a review of aerial photography dating back to 1953, no significant signs of land movement were visible. Housing development in the area began after 1971, but the site itself has not changed noticeably.

Figure 3 – Historical aerial photograph dated 23 October 1953, showing 319 Aucks Road, Russell (Source Retrolens). Please note that the boundary locations marked are approximate.

Figure 4 - Historical aerial photograph dated 22 August 1971, showing 319 Aucks Road, Russell (Source Retrolens). Please note that the boundary locations marked are approximate.

Figure 5 - Historical aerial photograph dated 4 January 1981, showing 319 Aucks Road, Russell (Source Retrolens). Please note that the boundary locations marked are approximate.

5.3 Council Records / Consent Conditions

The property was proposed to be subdivided off the parent allotment during 2021. The following documentation was obtained regarding the property.

- Site Suitability Assessment / Preliminary Geotechnical Report – 319 Aucks Road, Russell, by GWE Consulting Engineers, Ref: J31465 dated: September 2021

Based on a discussion with the developer, the above report is connected to the Consent Notice and, therefore, should be included as part of our assessment of the site. We refer to the following **excerpts** from their report:

'Land stability

At the time of our investigation, we did not observe any sign of recent, major deep-seated instability. Shallow instabilities were observed in the gully areas, where the channels have eroded and steepened over time, then failed during heavy-rainfall events (by rapid increase in pore-pressure in overburden soils). These instability features are localised to the gully areas and were observed between Lots 9 and 10, and within Lot 6. Other small erosional features may be present over the site and would only expect to be encountered within gullies/erosional channels.

No signs of shallow instability or colluvium were encountered within the potential building platforms, and the designated areas were generally on gently to moderately sloping ground (<20°) and set back steep slopes and gully areas. The potential for future shallow or deep-seated instabilities affecting the building platform areas is low.

In addition, where slope inclinations are greater than approximately 12° to 15°, soil creep processes may be operating. Soil creep is the slow, downslope movement of soil, typically confined to the uppermost 0.5 m to 1.5 m, and often characterised by hummocky or stepped terrain. Hummocky and stepped terrain is prevalent below the crest of very steep slopes adjacent to the cliff slopes.

Native vegetation (trees and their roots) assists in stabilisation by root-binding and lowering soil moisture content; therefore, it is recommended that the current downslope vegetation remain to mitigate slope instabilities in the long-term. It is possible that some shallow instability (surface movement processes) could be operating in areas of dense vegetation not easily accessible during our site walkover.

Coastal Erosion Assessment

No formal coastal erosion assessment has been conducted for this report and the Lots for subdivision are adequately setback from coastal slopes that may be affected by coastal inundation and erosion. The recent update to Areas Susceptible to Coastal Inundation and Erosion (ASCIE) prepared by Tonkin and Taylor (2021) for Auckland Council would include an estimated toe erosion over a 100-year period and regression angle for the given geology (and can be applied analogously to Waipapa Group in the Far North.). In Waipapa Group, 3-5 m of toe erosion

could be expected with a positive that the inlet surrounding the site is a low energy environment. A combined soil and rock regression for Waipapa Group is 31°, although, this is a rather conservative estimate.

In conclusion, the building platform areas are setback from any potential coastal regression.

Quantitative Assessment

In order to further assess the stability of these slopes, and to complement our visual assessment of stability, an analytical check of the slope with specific regard to the building platforms based on cross-sections A-A', B-B', C-C', D-D', E-E', and F-F' has been carried out using slope stability analysis software (Slide 2).

The analytical check was based on:

i. *A steady state/normal groundwater table condition, where the 'drained' ground condition was applied to the site, as no groundwater was encountered within any boreholes. This is modelled as a nil to low pore pressure ratio for each corresponding soil/rock layer.*
ii. *An extreme groundwater table condition, where the groundwater has risen above the assumed steady-state/normal groundwater condition to a worst credible condition, modelled at higher level than the "steady-state" groundwater condition. This is calculated as a degree of saturation for each soil layer by applying an Ru value with a partial saturation (see Appendix E). Applying an Ru value simulates more realistic slip circles/failure mechanisms than a water table (given groundwater was no encountered).*
iii. *A seismic condition, based on an ultimate limit state event (1 in 500-year seismic event) for Class C 'Shallow Soil Sites' as described in AS/NZS 1170, where peak ground acceleration is assessed as 0.133 g and a horizontal seismic load coefficient of 0.09 was applied to the model.*

The models incorporate the existing, inferred ground/geological profile with a 12 kPa load applied over the inferred building platform area, with modification to the topographic profile. A load applied over the whole building platform is conversative, accounting for potential development over the whole designated area. In our experience of this geology, instabilities commonly develop along the interface between residual soil profile and the unweathered parent rock, or between the silty clay/clayey silt layers (defined as upper and lower soil layers in profile), failing in a translational mechanism. Further testing would be required to confirm the depth to rock, as the rock depth is modelled at a maximum depth of 10 m below ground level.

Assumed lower bound effective stress shear strength parameters have been used in the Slide stability package for the analyses of the slope, which are based on the site soil descriptions and are typically adopted values for these materials, as indicated in Table 2 below.

Table 2: Assumed Lower Bound Effective Shear Stress Parameters

SOIL TYPE	UNIT WEIGHT (KN/M3)	EFFECTIVE FRICTION ANGLE (PHI)	EFFECTIVE COHESION (KPA)	STATIC PORE PRESSURE RATIO (RU)	EXTREME PORE PRESSURE RATIO (RU)
Inferred Waipapa Group Upper Residual Soil Layer	18	32	7	0	0.35
Inferred Waipapa Group Lower Residual Soil Layer	18.5	32	7	0.1	0.2
Inferred Waipapa Group Less Weathered Layer	20	42	12	0.1	0.1

Figure 6 - table as shown in GWE Consulting Engineers, Ref: J31465 dated: September 2021

Non-circular (translational) failure surfaces were assessed, which are considered appropriate for the site conditions. Deep-seated planar failure modes have not been carried out, as they are considered unlikely to occur in the proposed designated building area.

This quantitative assessment incorporates topographic levels/elevations provided within the potential Lot areas and inferred contours from the Williams and King Consultants Ltd. survey for the site, as shown in Appendix A and B. This quantitative assessment, in combination with the visual assessment, is adequate to draw conclusions on the site development and suitability potential but not for specific stability requirements when development plans become available.

All cross-sections investigated incur less than the minimum required acceptable FoS for each scenario, both downslope and within the designated building platform. Although the designated building platforms are setback from steep slopes, the cross-sections modelled through the steepest terrain show unsatisfactory FoS perpetuating upslope as a result.

Conclusion – Stability

From initial visual inspection and quantitative analysis, the site will be suitable for the proposed development, but require either setback or engineering stabilisation in the form of downslope soldier piles to ensure stability. This can be achieved provided that the recommendations of this report are adhered to, and any further detailed geotechnical recommendations provided at the Building Consent stage following a review of detailed architectural plans.

STABILITY CONTROL BY SOLDIER PILE WALLS

The stability of building platforms can be engineered to be stable, achieving the minimum FoS for each scenario by Soldier piles on the downslope edge of the potential building platforms.

The enclosed soldier pile walls represent a potential engineering solution to protect the building platforms from natural hazards. It is recommended that building consent specific geotechnical assessment and design is undertaken once final development plans are known. It should also be noted that above 200 kN/m soldier pile walls are significant in size and may represent reinforced concrete piles rather than conventional timber pole. For this case, it is recommended that careful consideration is given to development planning at the Building Consent stage and a more economically viable option for the above scenarios may include tie-back cantilever walls or soil nailed slope reinforcement.

A soldier pile wall could be incorporated downslope of the proposed building platforms to provide support for the ground above. A soldier pile wall has been modelled to satisfactory FoS values to abide by Far North District Council minimum requirements. Some of the Lots also require set back along with stabilisation to form a stable building platform. Set back is required to implemented realistic soldier pile wall parameters for the existing slope contours without modification.

When the Lot specific design plans are available at Building Consent stage, then the stability recommendations can be confirmed for the development of each Lot at 319 Aucks Road.

Soldier Pile Wall

A soldier pile wall has been incorporated into the slope stability models. This form of ground support consisted of piles at 1.0 m centres, inserted into the stability model to the minimum required depth for slope stability, used to derive the required shear force per metre run of wall to achieve the suitable FoS against instability for all scenarios.

The installation of the soldier pile wall will provide protection to the proposed development and adjacent amenity land from any potential instability that could occur on the steep slope below the development.

A soldier pile wall situated in front of the proposed building platform, offering a typical stabilising design capacity of the piles and bored piles embedded into less weathered Waipapa Group deposits at a depth below finished ground level shown in Table 4 below. Pile spacing no more than 3 x B.

Some soldier pile wall locations have been moved within the building platform to obtain stable ground behind the Soldier pile wall with realistic soldier pile parameters. Setbacks given in Table 4 are from the downslope edge of the designated building platforms shown in Appendix A.

Table 4: Summary of Conceptual Soldier Pile Wall Design Requirements

LOT NUMBER	SETBACK REQ. WITH STABILISATION	MIN. DESIGN HEIGHT	MIN. PILE LENGTH	SHEAR FORCE
10 (A-A')	No setback required	7.5 m	8.5 m	50 kN/m run
9 (B-B')	8.0 m	6.0 m	9.0 m	200 kN/m run
8 (C-C')	15.0 m	5.5 m	9.0 m	325 kN/m run
4 (D-D')	13.0 m	6.5 m	8.5 m	150 kN/m run
5 (E-E')	14.0 m	8.5 m	9.0 m	450 kN/m run
6 (F-F')	24.0 m	8.5 m	9.0 m	60 kN/m run

Figure 7 - table as shown in GWE Consulting Engineers, Ref: J31465 dated: September 2021

Design parameters for the barrier pile wall are provided below.

i. *Internal friction angle, 32°*
ii. *Unit weight of soils, 18 kN/m3*
iii. *Minimum design height shown in Table 4. Design height measured from existing ground level (indicating the depth of which the lowest FoS values act on the barrier pile wall).*
iv. *Minimum pile embedment depth. Assumes min. and total pile length of 8.5-9.0 m into Waipapa Group deposits; see Table 4 (final embedment depth subject to structural calculation).*
v. *Surcharge from loads above the wall, including sloping ground and/or vehicle or water tank loads where applicable.*
vi. *Ko, at rest soil loads modified for ground slope.*
vii. *Kp, passive resistance modified for ground slope.*
viii. *Soil loads calculated from 3 times the pile diameter: 3 x B, where B = pile diameter, or pile spacing, whichever is smallest.*
ix. *Maximum Pile spacing = 3 x B (3 times the pile diameter centre to centre).*

A reinforced concrete capping beam is recommended to be constructed along the top of the piles to inter-connect the piles at ground level and assist in disturbing displacement loads to adjacent piles. The capping beam ties the piles together and, in the event of a landslip helps mitigate or limit the relative twisting/movement of the piles. The capping beam also serves to minimise relative deflection to mitigate against the development of active earth pressures (i.e. maintain Ko conditions).

Design of the retaining structures can be undertaken using the methods presented in Module 6 – Earthquake Resistant Retaining Wall for Design (MBIE and NZGS), with load factors take from NZS1170 and geotechnical strength reduction factors as per B1/VM4.

Pile hole depths will need to be observed and confirmed on-site at the time of drilling.

General Recommendations

Slopes within the building platforms are generally gentle to moderately sloping and may be eased during any site preparation works to create level building platforms. Moderate to sensitive soil strengths were recorded during our investigation, indicated by a large disparity between peak and residual shear strength readings. Accordingly, caution is required in excavation of foundations due to the deterioration of soil strength when disturbed.

Given the slope of the land, a lightweight, pole-platform structure may be considered the most appropriate method of construction for a dwelling at the site. Benching into the existing slopes to create level building platforms would also be feasible but this method incurs additional earthworks and associated retaining costs. Concrete floors and/or suspended timber floors are considered to be appropriate methods of construction for the future dwellings.

Soil Expansivity

Based on our visual and tactile assessment of the near-surface subsoils, the near-surface site soils lie outside the scope of good ground as specified by NZS3604: 2011, Timber Framed Buildings in terms of expansivity. Soils at the site are of variable plasticity (most commonly moderate or high plasticity), therefore, we recommend for preliminary design purposes, site soils are categorised as Class H1 (Highly Expansive), as defined in Australian Standard AS2870-2011, Residential Slabs and Footings - Construction. Characteristic surface ground movement for Class H1 soils of between 40 mm and 60 mm is indicated in Table 2.3 of AS2870.

However, this designation may be altered to another classification upon further investigation, provided that a Chartered Professional Geotechnical Engineer can demonstrate the designation change with supporting information in the form of relevant testing documentation by an IANZ recognised soil testing laboratory.

The foundation design engineer should refer to the recent MBIE revisions on the Building Code (November 2019) in respect of foundation design on expansive soils.

Right-of-Way/Driveways

It is anticipated that the existing right-of-way will be extended to provide access to each individual Lot. The right-of-ways will be metalled until all building works have been completed.

The natural deposits at the site, underlying any topsoil/fill material, is generally very stiff, providing a suitable subgrade material for the right-of-way. However, all vegetation, topsoil, fill, any weaker subgrade soils, and any deleterious material will need to be sub-excavated from beneath the widened right-of-way areas and replaced with compacted clean hardfill material. Proof rolling can be carried out over the right-of-way subgrade area if required, to establish the extent of any undercutting required.

Based on the subsoils encountered during our investigation work, it is likely that the near surface natural soils will provide typical values of subgrade unsoaked CBR in the order of 4% or greater.

Any hardfill material placed to extend the final driveway area and parking surface should comprise clean, well-graded material that is appropriately compacted in layers no more than 200 mm in thickness (e.g. GAP 40). The design should be in accordance with the relevant Far North District Council standards.

Seismic Hazard

The site soils have been categorised as Class C, 'Shallow Soil Sites' as described in AS/NZS 1170.

GENERAL EARTHWORKS

Specific recommendations for any earthworks (cuts or fills) at the site will need to be confirmed by the Engineer experienced in geomechanics at the Building Consent stage, following a review of architectural plans confirming the nature and extent of any proposed earthworks for any specific development at the site.

If any fill is placed within the right-of-way, fill can be moderately sensitive to disturbance when saturated or when significant vehicle trafficking occurs on site. Accordingly, care should be taken during construction to minimise degradation of any fill due to construction trafficking and minimising the use of heavy machinery on site.

In general, it is considered that no permanent vertical excavations in excess of 0.6 m should be made on the slopes at the site unless they are retained by retaining walls designed by a Chartered Professional Engineer. To reduce the risk of instability of excavations during construction, we recommend that temporary unsupported excavations have a maximum vertical height of 1.0 m, with excavations above 1.5 m battered at 1V:1H (45°) and covered with polythene secured with batons.

All earthworks should be carried out when there is a fine weather forecast for the following days. All work undertaken within or in close proximity to excavations should be undertaken in accordance with Occupational Safety and Health regulations.

GENERAL RETAINING WALLS

For the design of general free-standing cantilevered walls, soil pressures may be determined for 'Active' (Ka) earth pressure conditions as given in Table 4 below.

Any retaining walls that are incorporated into the structure of any future developments (propped cantilevered walls) should be designed for 'at-rest' (Ko) earth pressure conditions where Ko =0.47 (for a level slope above/behind a retaining wall).

The design of general retaining structures should include the following given an undrained shear strength for cantilever pole wall design:

i. Internal friction angle, Ø = 32°
ii. Unit weight of soil, ( ) = 18 kN/m3

iii. *Surcharge from loads above the wall, including sloping ground and/or vehicle or water tank loads where applicable.*

iv. *For masonry retaining walls or gravity type walls, foundation pressures of 100 kPa for Working Load Design, and 150 kPa for Ultimate Limit State Design using a capacity reduction factor of 0.5 are considered appropriate.*

v. *The design height and embedment of any retaining wall with a slope in front should be increased to allow for the reduction in lateral support immediately in front of the toe of the wall.*

vi. *Walls over 1 m in vertical height shall be provisioned for a fall from height barrier in accordance with New Zealand Building Code F4.*

Factors of safety and surcharge loading appropriate to the conditions should be in accordance with AS/NZS 1170. In addition, the relevant sections of the Building Code, Document B1, Structure, should also be adopted. Free-draining granular backfill, accompanied by a perforated pipe drain located at the base of the wall, should be installed behind all retaining walls to reduce the risk of a build-up of hydrostatic pressures.

All masonry walls associated with any future development should be properly waterproofed.

Table 5: Active Earth Pressure Coefficients for Free-standing Retaining Walls

SLOPE ANGLE ABOVE WALL	ACTIVE EARTH PRESSURE COEFFICIENT (K_a)
0°	0.28
5°	0.29
10°	0.31
15°	0.34
20°	0.37
25°	0.43
30°	0.55

Notes:

1. *Earth pressures calculated according to Coulomb theory.*

Figure 8 - table as shown in GWE Consulting Engineers, Ref: J31465 dated: September 2021

STORMWATER CONTROL

Stormwater from paved areas, roofs, driveways/rights-of-ways and all other sources associated with the existing and proposed development at the site should be collected in sealed pipes and discharged into the Council approved stormwater disposal system. Concentrated stormwater flows must not be allowed to run onto or over the slopes or saturate the ground to adversely affect foundations. Adequate drainage should be provided to collect all stormwater run-off from all proposed driveways, paved areas and other impermeable areas.'

It should be noted that the above recommendations are from a preliminary assessment and that a site-specific assessment has not been conducted.

5.4 On-site Services

There is no council stormwater or sewer reticulation located on the property.

5.5 Site Topography / LiDar

The property has a grade of approximately 6-27 degrees across the site, 6 degrees at the North end at the access point from the right of way, quickly increasing to 27 degrees with very few places where it decreases in slope.

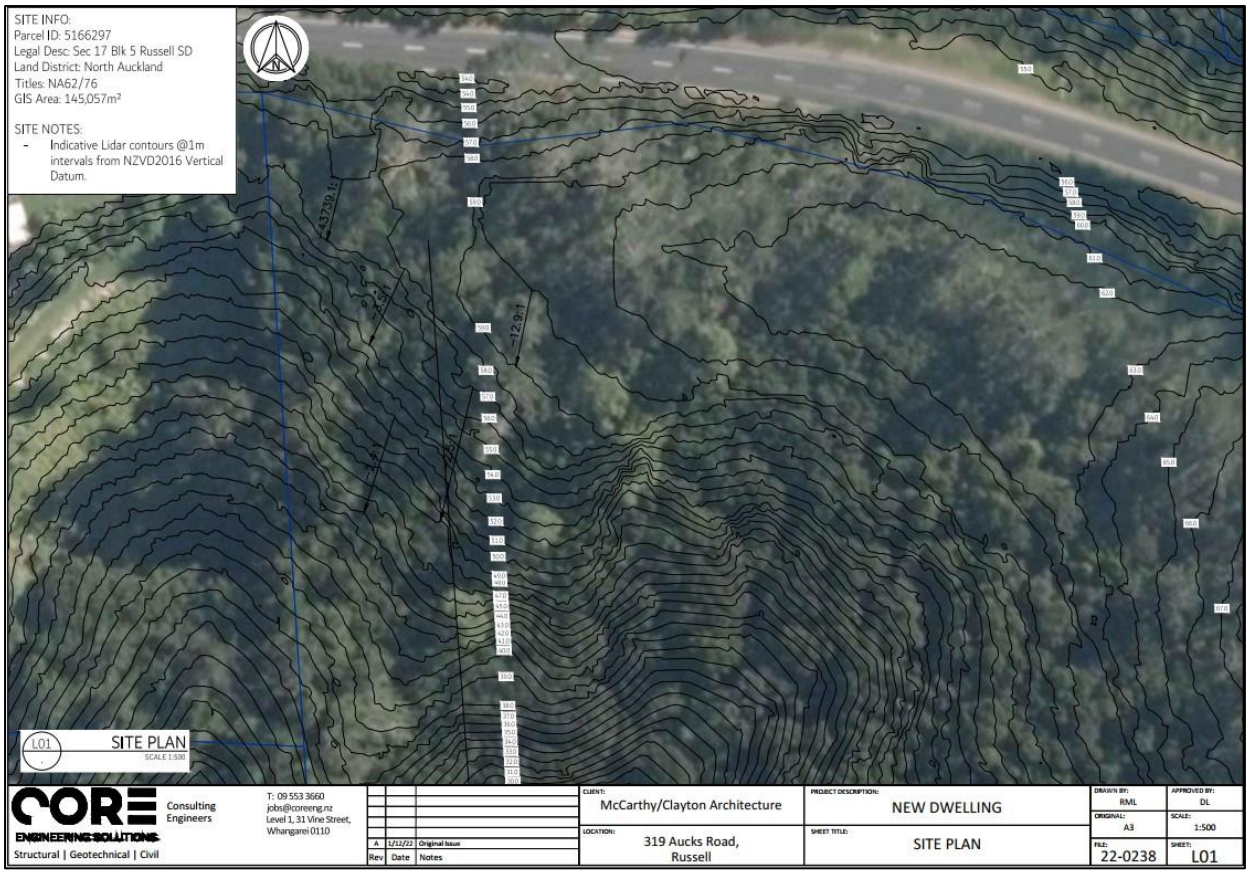


Figure 9 – Site Plan with LiDar Contours

5.6 Natural Hazards

The FNDC GIS hazard maps do not indicate any natural hazards (flood, mines, acid sulphate soils etc) on the site.

The property lies outside of any of the NRC flood hazard zones, and the land is elevated above the minimum floor levels set in the NRC Regional Policy Statements – May 2016.

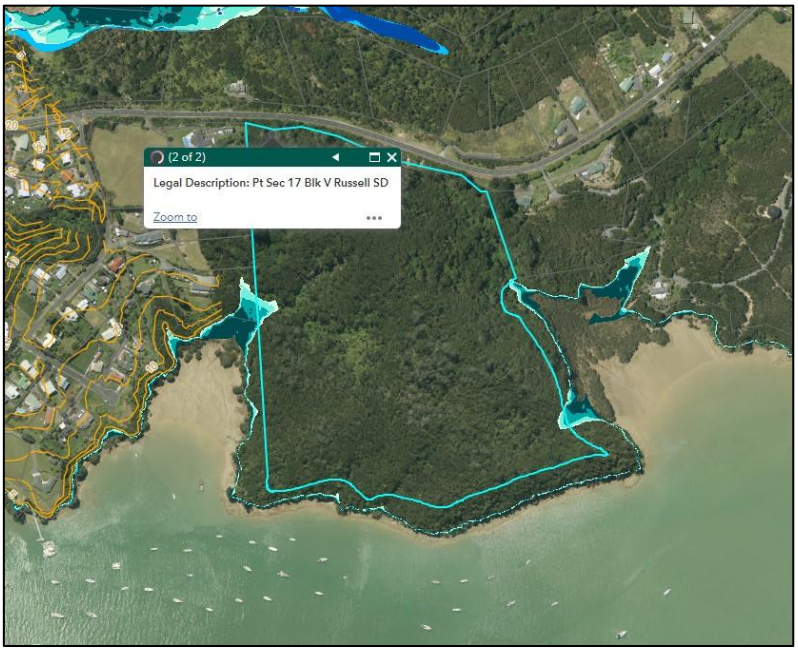


Figure 10 – 319 Aucks Road, Russell, NRC hazard map (Source: NRC GIS maps)

5.7 Soil Liquefaction and Lateral Spreading Assessment

In November 2021, MBIE and NZGS released updated guidelines entitled Earthquake Geotechnical Engineering practice: Module 3 Identification, assessment and mitigation of liquefaction hazards.

Liquefaction is caused by the development of excess porewater pressures triggered by earthquakes and can cause significant ground deformation and lateral spread. Areas particularly at risk of impact from liquefaction include:

- Retaining at waterfront areas
- Dams, embankments and sloping ground near riverbanks
- Areas of sensitive soil
- Sand-like or liquefiable soils, particularly loose to medium-dense sands

In general, clay soils may be classed as being of less risk from liquefaction.

Our desktop assessment of this development, including both the expected soil types on site as classified by GNS Science, FNDC Maps and distance to nearby water bodies, leads us to classify this development as a low risk for liquefaction-prone ground. No further assessment is considered necessary for this site's development.

5.8 Site Risk Assessment Based on Desktop Investigations

The site investigations and geotechnical assessment are primarily based on confirming the following;

- Confirming soil conditions and strength in accordance with NZS: 3604 and NZBC B1.
- Assessment to the satisfaction of local council requirements and risk management practises as outlined by MBIE and AGS.
- Slope Stability Analysis for proposed new dwelling and shed.
- A holistic overview to ensure no unexpected site hazards.
- Review and assesses any proposed earthworks including any requirements for retaining structures etc.

6. SITE INVESTIGATIONS

On 29 November 2022, a walkover inspection and subsoil investigations were undertaken on the site.

6.1 Fieldwork Testing

Subsoil investigations that were conducted over the building sites revealed approximately 0.1m of topsoil overlying silty CLAY residual soils.

A summary of our field investigations is below.

Test (BH)	Location	Termination Depth (m)	Topsoil / Fill Depth (m)	Groundwater depth (m)	In-situ Shear Strengths / Remould Strengths (kPa)
BH1/SC1	Southern end of site	3.1	0.1	-	161kPa to >221kPa
BH2/SC2	Centre of site	2.3	0.1	-	158kPa to >221kPa
BH3/SC3	Northern end of site	2.0	0.1	-	189kPa to >221kPa

Test (SC)	Location	Starting Depth (m)		Termination Depth (m)	Blows per 100mm

BH1/SC1	Southern end of site	3.1		4.7	7-22
BH2/SC2	Centre of site	2.3		3.7	5-9
BH3/SC3	Northern end of site	2.0		3.8	3-13

Refer to the appendices for Site Plan and Bore Logs.

6.2 Groundwater

Groundwater was not encountered in any of the boreholes undertaken on this allotment. The use of drainage control measures is not anticipated to be required during construction.

6.3 Expansive Soils

See Appendix 2 – Definition of Expansive Soils.

The New Zealand Building Code – B1 – Structure includes classifications for expansive soils which will need to be considered and assessed for any structures. From experience within this development and geology, the silt Clay soils can vary in soil expansivity. A conservative approach has been undertaken to classify soil expansivity.

From our site investigations and review of the NZBC – B1, we assess that the soils on-site as being a CLASS H, highly expansive.

7. GEOTECHNICAL ASSESSMENT

7.1 Seismic Subsoil Class

In accordance with Section 3.1.3, NZS1170.5, we assess the site subsoil class as being a Category C – Shallow Soils Site.

7.2 Site Stability

The site stability has been assessed based on the following summary:

Site slope	~6-27 degrees
Geology:	Waipapa Group Sandstone and Siltstone (Waipapa terrane)

Soil Strength:	Site investigations encountered a shear strength minimum of 158kPa, generally >150kPa, a consistent silty CLAY crust with in-situ shear strengths >140kPa to a depth of 3.0m. Indicative Ultimate Bearing Strengths generally >300kPa.
Signs of instability on site:	Steep topography and trees growing on an angle suggest shallow soil creep is present. This is typically expected within the upper residual soils on slopes greater than 20 degrees, which is present at the site. To mitigate the effects of soil creep, it is expected that the retaining wall foundations will need to be well embedded into the underlying soils, and drainage control measures installed as part of the civil design to manage seasonal moisture changes will be managed over the building site.
Slope Stability Assessment	A site-specific stability assessment has been using the parameters and assessment previously undertaken to provide compliance with Section 106 of the RMA. It should be noted that the originally assessed building site was located further downslope in comparison to the proposed building site. For this development, it is proposed to use a series of retaining structures to achieve an acceptable factor of safety. From this assessment, two critical retaining walls are required, both downslope of the proposed building sites. These walls will need to be embedded a minimum of 5.0m below the existing ground level, with a shear capacity of 140kN and well-keyed into the underlying moderately weathered greywacke or as approved by a geotechnical engineer. Refer to the appendices for our stability analysis.
Other concerns	Subsoil testing the soils on-site are clay-rich; therefore, liquefaction at the site is unlikely.

Based on the factors stated above, there is little to no risk of instability on the site. To ensure ground conditions are as anticipated from our subsoil investigations, a site inspection is recommended following the site preparation to confirm ground conditions.

7.3 Foundations

The site will be developed using a series of retaining structures to create a level building site. Retaining structures below both building sites will need to be designed in accordance with Sections 7.2 and 8.1 of this report. The soils encountered on site are considered to have the 300kPa Ultimate Bearing Capacity suitable for NZS 3604:2011 type foundations. The soils are considered to be CLASS H - Highly Expansive in accordance with NZBC – B1; expansive soils will need to be assessed as part of the foundation design. The characteristic surface movement expected from CLASS H soil, according to NZBC - B1, can be up to 78mm. The anticipated movement is considered to fall outside of the NZS 3604:2011 definition of '*good ground*'.

The proposed dwelling and shed are to utilise either a raft floor or conventional slab for the foundations; the following parameters are considered appropriate for design purposes.

Ultimate Bearing Capacity	300 kPa
Allowable Bearing Capacity (F.O.S =3)	100 kPa
Dependable Bearing Capacity (Ø **0.5**)	150 kPa
S_u	60 kPa
Expansive Soils (NZBC-B1)	CLASS H
Minimum foundation embedment for Isolated foundations (Below Cleared Ground Level)	900mm
Angle of Internal Friction	32 degrees
Cohesion	1kPa

It is recommended that the any foundations are specifically designed in accordance with the above and that this be undertaken by a Chartered Professional Engineer.

8. EARTHWORKS ASSESSMENT

For Construction Risk Management General Notes, see Appendix 3.
For General Earthworks Recommendations, see Appendix 4.

Given the steep fall across the site (~ 26°), the site earthworks are expected to include ground clearance, levelling batter slopes, earth filling and retaining. This work is expected to be undertaken in phases to enable safe access to the property. The Contractor should consult the geotechnical Engineer to ensure safe methodology to create access is achieved. Some fill may also be required at the southern end of the building platform.

It is recommended that the ground is benched and the filling is undertaken with a suitable compacted hardfill / earthfill.

All batter slopes should be at a gradient of no steeper than 1V:2H or be suitably retained or reviewed by the geotechnical Engineer. Any cuts greater than 1.0m in height shall be retained and designed in accordance with Section 8.1 of this report.

Measures must be taken to protect the exposed moist soils from drying out. Maintaining the natural moisture content of the subgrade soils may be achieved by fine spraying with water. An impermeable membrane should be placed immediately above the subgrade after the excavation of the topsoil.

8.1 Retaining Walls

For the design of retaining structures, the following soil parameters are recommended:

Material Type	Angle of Internal Friction	Soil Density	Undrained Shear Strength (S_u /C_u)	Cohesion
Natural Soils	32°	18 kN/m³	60kPa	1kPa

Retaining Structures located directly below the proposed shed and dwelling shall be embedded a minimum of 5.0m below the existing ground level, have a minimum shear capacity of 140kN and be well-keyed into the underlying moderately weathered greywacke or as approved by a geotechnical engineer.

Retaining wall designs should be reviewed by a Chartered Professional Geotechnical Engineer prior to construction.

9. GROUNDWATER / STORMWATER MANAGEMENT

For General Stormwater Management Recommendations, see Appendix 5

Due to the site topography, it is recommended that all stormwater run-off from the site be collected and controlled. A suitably sized above-ground dispersal device is recommended to the downslope of the building site to assist with dispersing stormwater to the natural slopes below.

Subsoil testing did not encounter any signs of elevated groundwater levels, the use of drainage control measures is not anticipated to be required during construction.

10. CONSTRUCTION MONITORING / INSPECTIONS

For General Construction Monitoring / Inspections information see Appendix 6.

Depending on the conditions encountered or design changes during construction, additional engineering or specialist inspections may be required during the construction process, and the Engineer or their representative will advise you if these are a requirement.

To ensure that ground conditions align with the findings in this report by Core Engineering Solutions Ltd, it is recommended that at a minimum a cut site and / or foundation inspection is undertaken to confirm the soil conditions.

The following Geotechnical Site Inspections & Testing are anticipated to be required for this development, but are not limited to:

- Subgrade stripping,
- Clayfill testing,
- Pre-pour
- Hardfill testing,
- Foundations
- Retaining Wall Foundations.

Should any of the contractors involved in the project require assistance with methodologies prior to commencement, Core Engineering Solutions Ltd can provide engineering support, especially in regards to geotechnical advice.

11. CONCLUSION

From our assessment above, it is our conclusion that the site is suitable for the above site development provided that the recommendations of this report are implemented.

With regard to the Building Act 2004; Sections 71-72, we believe on reasonable grounds that;

i. The land on which the building work is to take place is neither subject to, nor likely to be subject to subsidence or slippage; and

ii. The building work itself is not likely to accelerate, worsen or result in subsidence or slippage of that land or any other property.

12. LIMITATIONS

This report has been prepared for our Client as stated at the start of the report, as an accompaniment to the Building Consent application. This report is to provide guidance for site works, however should the contractor/owner/developer have any queries regarding either the contents of this report or the construction methodology required, then this consultancy should be contacted before commencement. Alternatively, the assistance of a suitably qualified and experienced person should be sought.

This report may not be read or reproduced other than in its entirety. This report does not address matters relating to the National Environmental Standard for Contaminated Sites. The opinions, recommendations and comments given in this report result from the application of accepted professional industry methods for site investigation and/or relevant standards.

This report is based on factual evidence and supporting information freely available to the public. Site investigations as outlined in this report are specific to this site development. Inferences made about the nature and continuity of subsoils away from and beyond the testing locations cannot be guaranteed. Site inspection / monitoring should be undertaken to verify the ground conditions and provide an opportunity for the Contractor and Engineer to discuss construction methodology for the project.

During construction, a suitably qualified Engineer, competent to judge whether the conditions are compatible with the assumptions made in this report, should examine the site. In all circumstances, if variations in the subsoil occur which differ from that described or assumed to exist, then the matter should be referred to Core Engineering Solutions Ltd or another industry professional immediately.

Yours faithfully,
Core Engineering Solutions Limited.

Prepared by:

Rebecca Leslie
Engineering Technician

Reviewed by:

David Leslie
BEng (Civil), MEMgt (Hons), DipEng(Civil)
CPEng (Geotechnical / Structural)

13. APPENDICES

Appendix 1 - Site Investigations
Appendix 2 - Definition of Expansive Soils
Appendix 3 - Construction Risk Management
Appendix 4 - Earthworks Recommendations
Appendix 5 - Stormwater and Drainage General Recommendations
Appendix 6 - Construction Monitoring / Inspections General Notes
Appendix 7 – Liquefaction and Lateral Spread
Appendix 8 – Stability Assessment

Appendix 1 - Site Investigations

General Notes

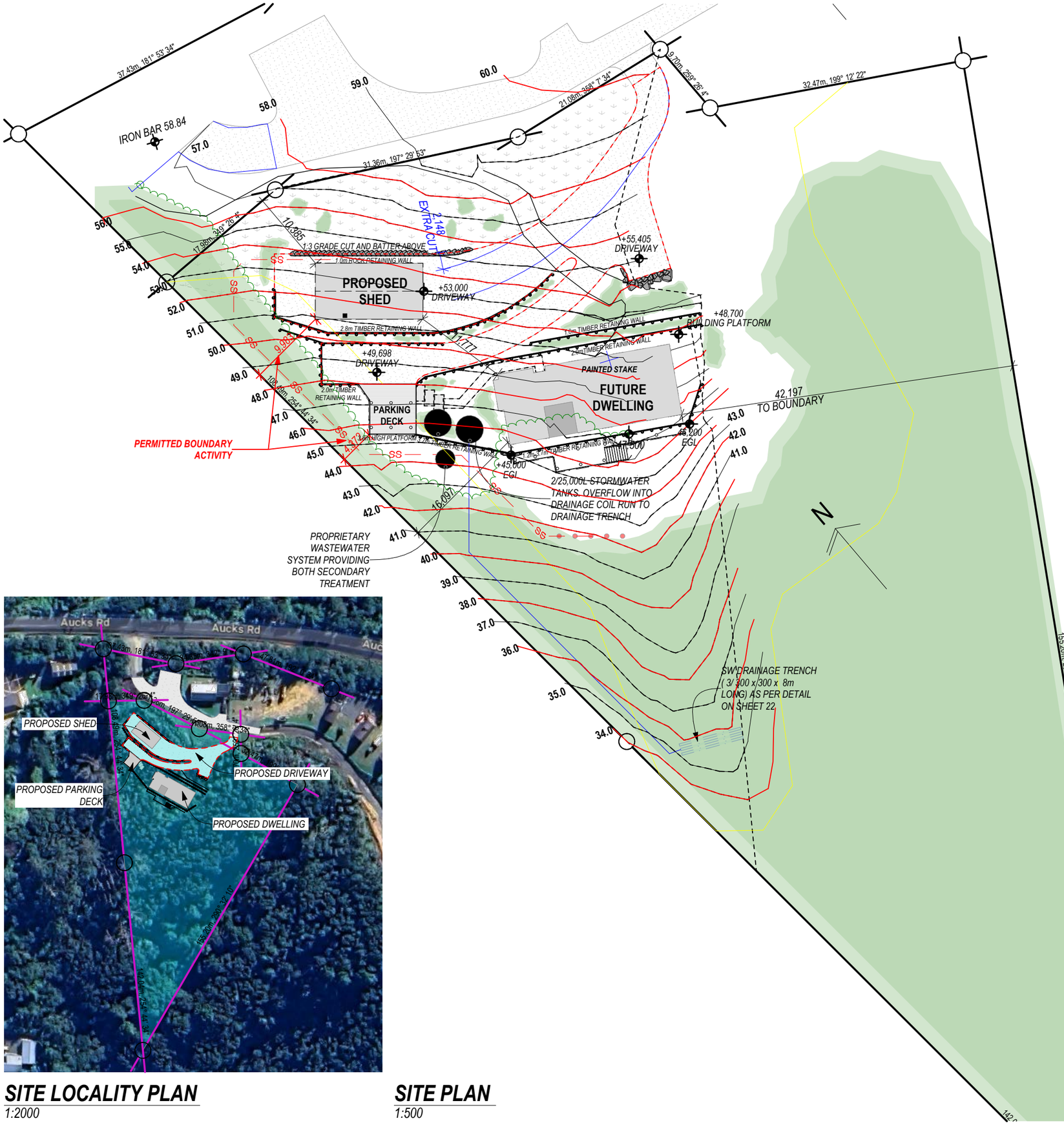
Where possible and in cohesive materials, in-situ hand undrained shear vane tests were carried out at a maximum of 0.5m depth intervals in accordance with the New Zealand Geotechnical Society (NZGS); Guidelines for Hand Held Shear Vane Testing, August 2001, and classified in accordance with the NZGS Field Classification Guidelines; Table 2.10, December 2005.

Classification of the recovered soil from the borehole arisings was carried out in accordance with the "Field Description of Soil and Rock", NZGS, December 2005.

Definition of Good Ground (NZS 3604:2011), Standards New Zealand

3.1.3 Determination of good ground
The soil supporting the footings shall be assumed to be good ground when all the following conditions are met:

(a) Reasonable inquiry, through project information memorandum (PIM) and site observation show no evidence of buried services and none is revealed by excavation for footings;
(b) Reasonable inquiry, of PIM and site observation shows no indication or record of land slips or surface creep having occurred in the immediate locality;
(c) Reasonable inquiry shows no evidence of earth fill on the building site, and no fill material is revealed by the excavation for footings. This shall not apply where a certificate of suitability of earth fill for residential development has been issued in accordance with NZS 4431 for the building site, and any special limitations noted on that certificate are complied with; and
(d) Excavation for footings does not reveal buried organic topsoil, soft peat, very soft clay, soft clay, or expansive clay (see 3.2.1 and 3.3.8);
And any of the following:
(e) Where indicated by specific site investigation, using the test method for soil bearing capacity contained in 3.3;
(f) Where inspection of existing structures on this or neighbouring sites and reasonable enquiry, including territorial authority records, local history of the site, and published geological data such as structural geology where appropriate, shows no evidence of erosion (including coastal erosion, bank erosion, and sheet erosion), surface creep, land slippage, or other falling debris (including soil, rock, snow and ice), uncertified fill, fill over original water course, or subsidence having occurred in the immediate locality;
(g) When geotechnical completion reports in accordance with NZS 4404 identify subsoil class and areas that provide good ground.



SITE LOCALITY PLAN
1:2000

SITE PLAN
1:500

SITE NOTES:

LEGAL DESCRIPTION
LOT ??, D.P. ??
PHYSICAL ADDRESS
319 AUCKS ROAD, RUSSELL, NORTHLAND

SITE AREA:	*??m² (2.75Ha)*
WIND ZONE (TO NZS3604:2011):	*VERY HIGH*
ENVIRONMENT:	*COASTAL LIVING*
OVERLAY/NOTABLE AREA:	*NA*
EXPOSURE ZONE:	*D*
EARTHQUAKE ZONE:	*1*
INSTABILITY AREA:	*??? TBC*
FLOOD SUSCEPTIBLITY	*NA*
SITE COVERAGE:	***(???%)***
SHED SIZE:	*94.50m²*
DWELLING SIZE:	*185.55m²*
COVERED AREA:	*14.26m²*
PARKING DECK:	*41.08m²*
TOTAL COVERAGE:	***335.39m²***
IMPERVIOUS AREAS:	***(#CT No.)***
ROOF AREAS:	*302.57m²*
DRIVEWAY AREAS:	*590.26m²*
TOTAL IMPERVIOUS AREA:	***892.83m²***
CONTOURS: CONTOUR LINES	*1m*
EXCAVATION REQUIRED:	*APPROX CUT 624m³.*

SITE WORKS:
READ 'CORE ENGINEERING ON SITE WASTEWATER MANAGEMENT REPORT FULLY PRIOR TO UNDERTAKING ANY SITE WORKS. ALL SITE WORKS TO COMPLY WITH REPORTS RECOMENDATIONS AND CONCLUSIONS.

POWER SUPPLY:
POWER SUPPLY LOCATION TO BE CONFIRMED ONSITE

POTABLE WATER SUPPLY:
WATER SUPPLY MUST BE POTABLE AND COMPLY WITH NZBC G12, BY WAY OF WATER TREATMENT OR FILTRATION
OR OTHER SYSTEM, AND MAINTAINED AS REQUIRED BY THE MANUFACTURER

DOORS > 190mm DROP C.G.L
ALL EXTERNAL DOORS WITH MORE THAN 190mm STEP TO BE TEMPORARILY BOLTED/SCREWED SHUT UNTIL DECK IS COMPLETE

IMPORTANT:
THIS SET OF DRAWINGS MUST BE READ IN CONJUNCTION WITH ATTACHED,

1) ENGINEERING CALCULATIONS/REPORTS.
2) MANUFACTURER'S LITERATURE.
3) SPECIFICATIONS.

1. ALL CONSTRUCTION TO COMPLY WITH NZS 3604 2011 AND LOCAL TERRITORIAL AUTHORITY BYLAWS.
2. ALL INTERNAL DOOR SIZES SHOWN ARE FOR THE ACTUAL DOOR AND ARE NOT THE TRIM SIZE.
3. ALL DIMENSIONS & UNDERGROUND SERVICES TO BE CHECKED ON SITE BY CONTRACTORS BEFORE COMMENCEMENT OF ANY WORK.
4. CONTRACTOR TO ENSURE ALL GROUND LEVELS & HEIGHT RESTRICTIONS ARE CORRECT AND COMPLY WITH TERRITORIAL AUTHORITY BYLAWS THROUGHOUT CONSTRUCTION.
5. DO NOT SCALE FROM DRAWINGS & WORK FROM DIMENSIONS SHOWN.

PLUMBING & DRAINAGE NOTES:
1. *ALL SANITARY PLUMBING AND DRAINAGE WORK MUST COMPLY WITH NZ BUILDING CODE ACCEPTABLE SOLUTION, NZ STANDARD - AS/NZS 3500 PART 2.2*
2. *ALL STORMWATER DRAINAGE WORK MUST COMPLY WITH NZ BUILDING CODE ACCEPTABLE SOLUTION E1/AS1.*
REFER TO SHEET 12 FOR TRENCH DETAILS
3. *ALL GAS WORKS MUST COMPLY WITH NZ BUILDING CODE ACCEPTABLE SOLUTION G11/AS1*
4. *ALL HOT & COLD POLYBUTYLENE PIPEWORK MUST COMPLY WITH G12/AS1,*

MINIMUM GRADIENT RATIO OF SANITARY DISCHARGE PIPES AND DRAINS:
1. AS/NZS 3500 PART 2 *DISCHARGE PIPES AND DRAINS.*
Ø65-1:40 FALL
Ø100-1:60 FALL

MINIMUM GRADIENT RATIO OF STORMWATER DRAINS: NZBC E1/AS1
Ø100 - 1:60

-SEDIMENT CONTROL/MANAGEMENT TO BE CARRIED OUT ONSITE TO PREVENT ADVERSE EFFECTS TO NEIGHBOURING PROPERTIES (IF REQUIRED BY LOCAL AUTHORITIES)

-	-	-	-
REV.	DATE	DESCRIPTION	DRAWN

MCCARTHY FORDE SHED

319, AUCKS ROAD, RUSSELL

SITE PLAN

PRELIMINARY SET

JOB NO:	0271
REVISION:	-
SHEET SIZE:	A3
PAGE:	**01** OF **15**
DATE:	16/10/2023
DRAWN:	DF

CLAYTON
ARCHITECTURE LTD
office@claytonarchitecture.co.nz PH: 021589219

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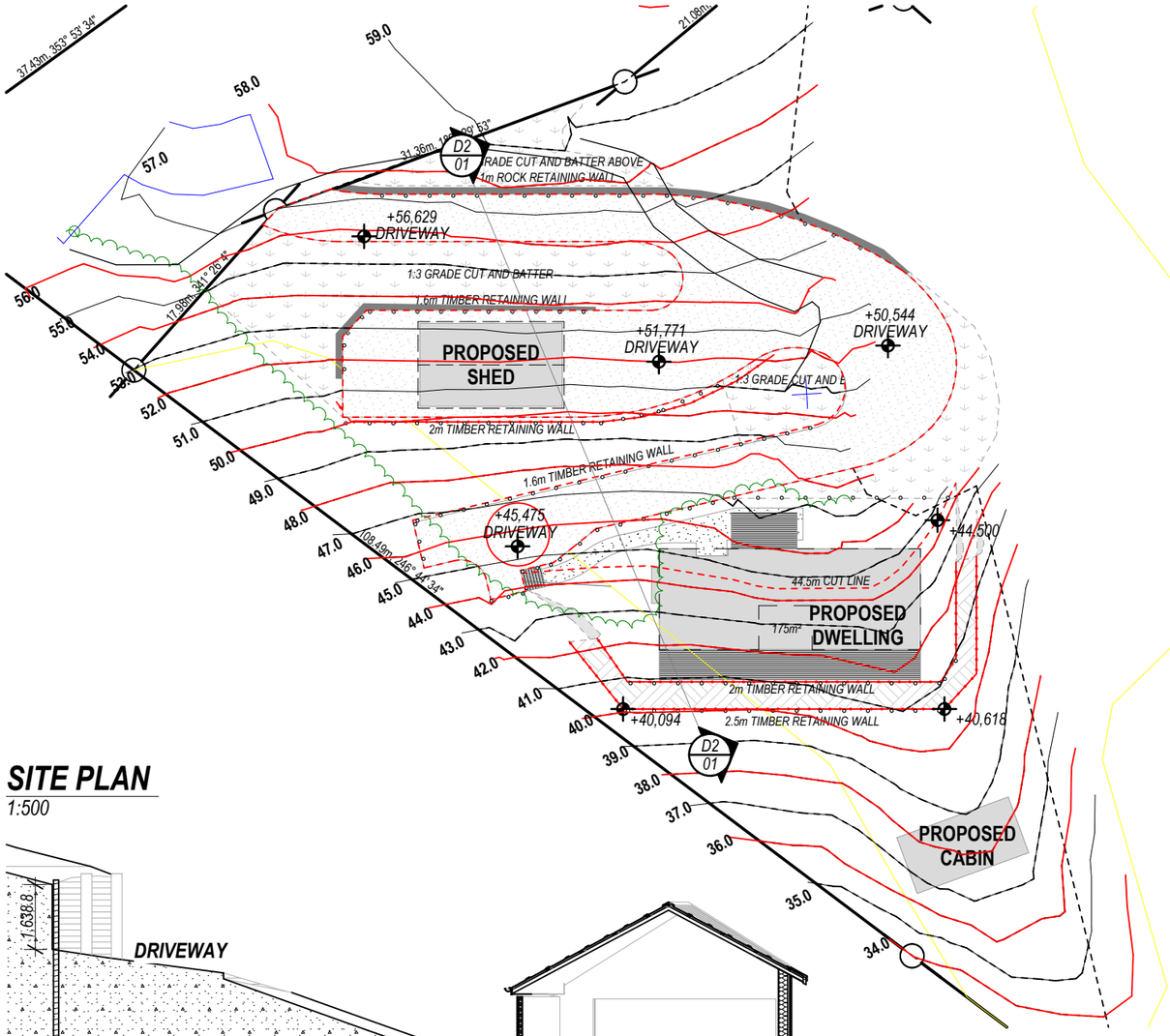
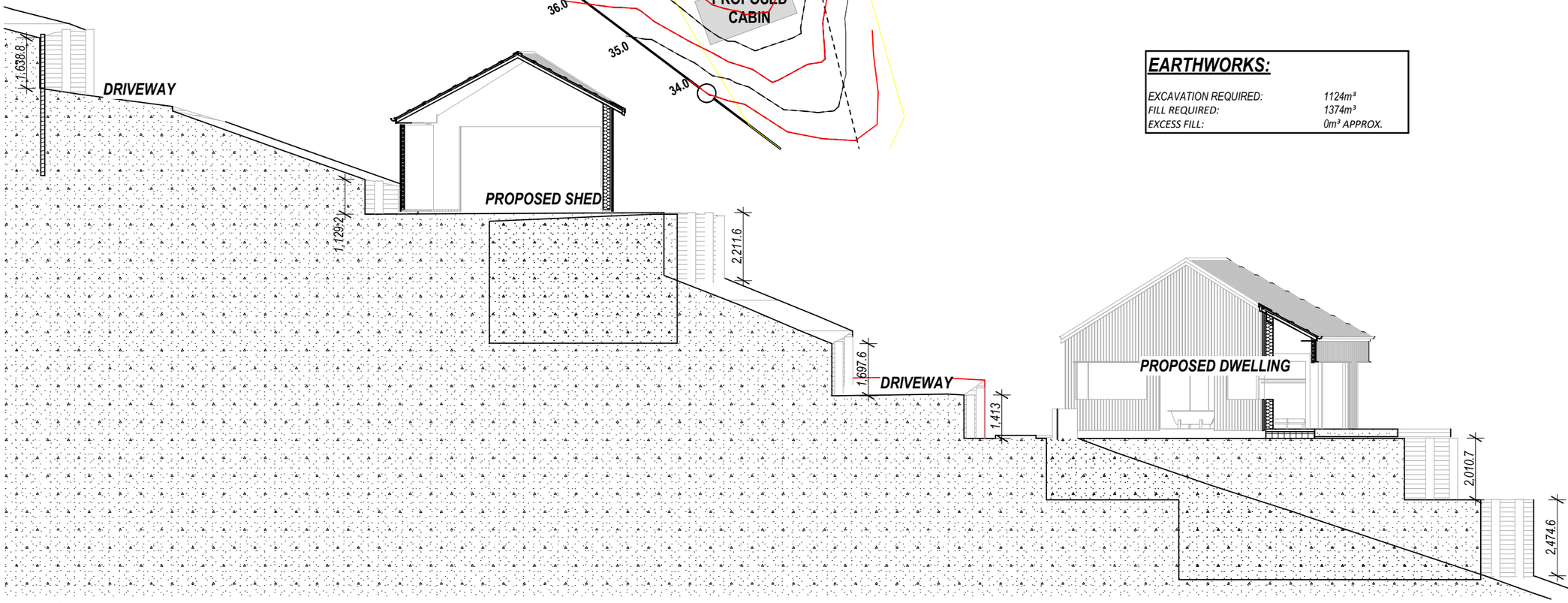


SITE PLAN
1:500

SKETCH: 3D VIEW 04



CROSS SECTION
1:150

EARTHWORKS:

EXCAVATION REQUIRED:	1124m³
FILL REQUIRED:	1374m³
EXCESS FILL:	0m³ APPROX.

REV.	DATE	DESCRIPTION	DRAWN
-	-	-	-

MCCARTHY FORDE RESIDENCE

319, AUCKS ROAD, RUSSELL

SITE PLAN

PRELIMINARY SET

JOB NO:	0271
REVISION:	-
SHEET SIZE:	A3
PAGE:	**01** OF **24**
DATE:	16/02/2023
DRAWN:	DF

CLAYTON
ARCHITECTURE LTD
office@claytonarchitecture.co.nz PH: 021589219

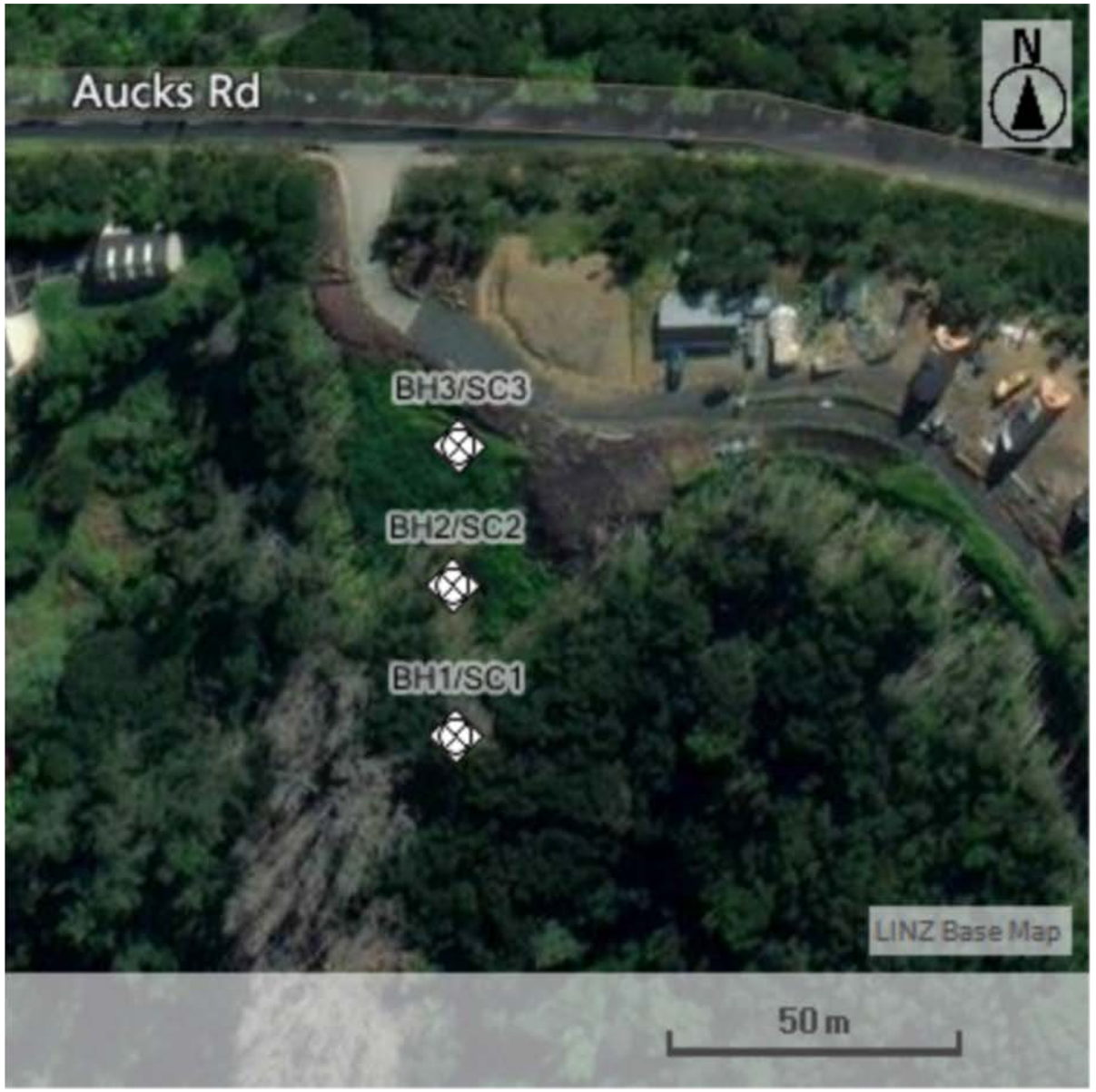
0271-MCARTHY-(BULK3)-320821.pln

CORE ENGINEERING SOLUTIONS

SITE PLAN

JOB NO.: 22-0238

CLIENT:	Clayton Architecture
PROJECT:	New Dwelling & Retaining
LOCATION:	319 Aucks Road, Russell



CORE ENGINEERING SOLUTIONS

INVESTIGATION LOG

HOLE NO.: BH1/SC1

CLIENT: Clayton Architecture

PROJECT: New Dwelling & Retaining

JOB NO.: 22-0238

SITE LOCATION: 319 Aucks Road, Russell

CO-ORDINATES: 1702426mE, 6092595mN

START DATE: 29/11/2022

END DATE: 29/11/2022

LOGGED BY: RL

MATERIAL DESCRIPTION (See Classification & Symbology sheet for details)	SAMPLES	DEPTH (m)	LEGEND	SCALA PENETROMETER (Blows / 100mm)	VANE SHEAR STRENGTH (kPa) Vane: V03	WATER
TOPSOIL; dark brown. Moist; high plasticity; ground cover; moss, bark, and overgrown grass and bush.		0.0	TS			
Silty CLAY; tan brown. Moist; high plasticity; 1.2m Orange flecks and gravel.		0.2			174 / 79	
		0.4			161 / 79	
		0.6			197 / 95	
		0.8			221+ / -	
		1.0			221+ / -	
		1.2			221+ / -	
		1.4			189 / 47	
CLAY & SILT, with some gravel; orange and white/cream. Moist; high plasticity; 3.1m UTP.		1.6			221+ / -	
		1.8			221+ / -	
		2.0			221+ / -	
		2.2				
		2.4				
		2.6				
		2.8				
EOH: 3.10m		3.0				
		3.2		7		
		3.4		10		
		3.6		10		
		3.8		10		
		4.0		11		
		4.2		12		
		4.4		14		
		4.6		11		
		4.8		10		
				12		
				14		
				13		
				15		
				15		
				14		
				22 >>		

Groundwater Not Encountered

PHOTO(S)

REMARKS

WATER

- Standing Water Level
- Out flow
- In flow

INVESTIGATION TYPE

- [x] Hand Auger
- [ ] Test Pit

CORE ENGINEERING SOLUTIONS

INVESTIGATION LOG

HOLE NO.: BH2/SC2

CLIENT: Clayton Architecture

PROJECT: New Dwelling & Retaining

JOB NO.: 22-0238

SITE LOCATION: 319 Aucks Road, Russell

CO-ORDINATES: 1702426mE, 6092620mN

START DATE: 29/11/2022

END DATE: 29/11/2022

LOGGED BY: RL

MATERIAL DESCRIPTION (See Classification & Symbology sheet for details)	SAMPLES	DEPTH (m)	LEGEND	SCALA PENETROMETER (Blows / 100mm)	VANE SHEAR STRENGTH (kPa) Vane: V03	Values	WATER
TOPSOIL; brown. Moist; high plasticity.		0.0					
Silty CLAY; tan brown. Moist; high plasticity.		0.2				205 / 63	
		0.4					
		0.6				158 / 66	
		0.8					
		1.0				174 / 79	
		1.2				197 / 98	
		1.4					
CLAY & SILT; orange and white. Moist; high plasticity; 2.3m UTP.		1.6				213 / 79	
		1.8				221+ / -	
		2.0					
		2.2				221+ / -	
EOH: 2.30m		2.4		6			
		2.6		6, 5			
		2.8		5, 5, 5			
		3.0		5, 5, 5			
		3.2		5, 6, 7			
		3.4		8, 9			
		3.6		9, 8			
		3.8					

Groundwater Not Encountered

PHOTO(S)

REMARKS

WATER

- Standing Water Level
- Out flow
- In flow

INVESTIGATION TYPE

- [x] Hand Auger
- [ ] Test Pit

CORE ENGINEERING SOLUTIONS

INVESTIGATION LOG

HOLE NO.: BH3/SC3

CLIENT: Clayton Architecture

PROJECT: New Dwelling & Retaining

JOB NO.: 22-0238

SITE LOCATION: 319 Aucks Road, Russell

CO-ORDINATES: 1702427mE, 6092644mN

START DATE: 29/11/2022

END DATE: 29/11/2022

LOGGED BY: RL

MATERIAL DESCRIPTION (See Classification & Symbology sheet for details)	SAMPLES	DEPTH (m)	LEGEND	SCALA PENETROMETER (Blows / 100mm)	VANE SHEAR STRENGTH (kPa) Vane: V03	Values	WATER
TOPSOIL; dark brown. Moist; high plasticity.		0.0					
Silty CLAY; tan brown. Moist; high plasticity.		0.2				205	
		0.4				79	
		0.6				189	
		0.8				71	
		1.0				221+	
		1.2				-	
CLAY & SILT; orange and white with pink flecks. Moist; high plasticity; 2m UTP.		1.4				221+	
		1.6				-	
		1.8				221+	
EOH: 2.00m		2.0		4		-	Groundwater Not Encountered
		2.2		4			
		2.4		4			
		2.6		5			
		2.8		5			
		3.0		4			
		3.2		4			
		3.4		3			
		3.6		5			
		3.8		6			
				8			
				10			
				13			
				12			
				11			
				10			
				9			
				11			

PHOTO(S)

REMARKS

WATER

- Standing Water Level
- Out flow
- In flow

INVESTIGATION TYPE

- [x] Hand Auger
- [ ] Test Pit

SCALA PENETROMETER SITE TESTING

JOB NO :	22-0238				
CLIENT :	McCarthy/Clayton Architechture				
SITE :	319 Aucks Road, Russell				
PROJECT :	New dwelling & retaining				
DATE :	29/11/2022	**LOGGED BY:**	RML	**CHECKED BY:**	DAL

All kPa values are Indicative Ultimate Bearing Capacity, refer to Stockwell (1977)

Scala Penetrometer 1

Height (mm)	No. Blows	Depth / blow	Depth Below Ground	Blows per 100mm (Ave)	kPa
1610			3100		
1470	10	14	3240	7	>300
1370	10	10	3340	10	>300
1170	20	10	3540	10	>300
1005	20	8	3705	12	>300
860	20	7	3850	14	>300
650	20	11	4060	10	>300
510	20	7	4200	14	>300
360	20	8	4350	13	>300
230	20	7	4480	15	>300
90	20	7	4620	14	>300
0	20	5	4710	22	>300

Scala Penetrometer 2

Height (mm)	No. Blows	Depth / blow	Depth Below Ground	Blows per 100mm (Ave)	kPa
1410			2300		
1230	10	18	2480	6	>300
1020	10	21	2690	5	>300
820	10	20	2890	5	>300
490	20	17	3220	6	>300
350	10	14	3360	7	>300
230	10	12	3480	8	>300
120	10	11	3590	9	>300
0	10	12	3710	8	>300

Scala Penetrometer 3

Height (mm)	No. Blows	Depth / blow	Depth Below Ground	Blows per 100mm (Ave)	kPa
1875			2000		
1735	5	28	2140	4	>300
1615	5	24	2260	4	>300
1415	10	20	2460	5	>300
1155	10	26	2720	4	>300
985	5	34	2890	3	277
885	5	20	2990	5	>300
765	10	12	3110	8	>300
665	10	10	3210	10	>300
505	20	8	3370	13	>300
325	20	9	3550	11	>300
95	20	12	3780	9	>300
0	10	10	3875	11	>300

Appendix 2 - Definition of Expansive Soils

Expansive soils are soils which experience volume changes upon wetting and drying. Expansion and swelling appears to be the dominant factor under certain conditions with fine grained soil containing considerable amounts of clay. Expansion and swelling may cause distress which is often experienced in light buildings.

In many parts of New Zealand there is a significant hazard to foundations for light buildings including homes with concrete slab floors. The volumetric expansion and contraction can cause houses and other structures to heave or settle resulting in damage that is sometimes severe. Soil movement can occur in both directions (vertical and horizontal) at different rates which results in distress and subsequent damage to the structure.

The extent of the damage varies from relatively minor brick veneer cracking and internal cracking on wall corners with attendant door and windows jamming, through to extensive and severe cracking including cracking of driveways, sidewalks, etc.

Expansive soils such as clay, claystone, mudstone, argillaceous rocks and shale all contain clay minerals. These minerals are very sensitive to changes in humidity. When expansive clayey soils get wet, these minerals absorb water molecules and consequently expand. When dry they shrink, leaving large voids in the soil which result in a reduction in bearing capacity of the soil.

Apart from seasonal moisture changes (wet winters/ dry summer), other factors can influence soil moisture such as:

- Irrigation of garden close to the structure foundation.
- Site drainage close to the structure.
- Plantation of large trees close to building foundations on expansive soils. A wide range of tree and shrub species have high groundwater demands during summer months. The effects of such demands on expansive soils can be substantial and can lead to differential building settlements. Accordingly, it is good housekeeping measure to ensure that high water demand species (such as gum, willow, cypress, etc.) are not planted close to buildings.
- Plumbing leaks.
- Prevalent or initial moisture conditions at construction time.

It should be also noted that the shear strength of expansive soil also changes with variations in humidity, and a stability problem may arise. Expansive soils cause major damage to light foundations and associated structures. Heavy foundations and structures can resist the swelling uplift pressure.

Damage is dependent on the amount of movement experienced by the foundation, the non-uniformity in movement, which are all related to percentage of clay in the expansive soil, variation in moisture content, type of foundation, building construction and materials, etc.

Appendix 3 - Construction Risk Management

All works must be undertaken in accordance with the Health and Safety at Work Act 2015.

Any open excavations should be fenced off or covered, and/or access restricted as appropriate.

The location of all services should be verified at the site prior to the commencement of construction.

With all construction work there is a risk of collapse. Whenever ground conditions are suspect, bad weather conditions are forecast or when there is a risk of damage to adjacent property, excavations should be carried out in a "hit and miss" pattern.

The Contractor is responsible for determining the width of each excavation to suit his plant and construction programme.

Cut faces should not be left unsupported. Similarly, cut faces should not be left uncovered for any length of time, especially during periods of rain.

The Contractor is responsible at all times for ensuring that all necessary precautions are taken to protect all aspects of the works, adjacent buildings and services, etc.

Appendix 4 - Earthworks Recommendations

General

We recommend that all earthworks activities be carried out in full accordance with the following technical publications, in particular:

i. Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region June 2016 Guideline Document 2016/005.

ii. Auckland Council; Building on small sites - Doing it right. BC5850.

Refer for downloads the above Auckland Council documentation as below:

https://ourauckland.aucklandcouncil.govt.nz/articles/news/2017/09/auckland-council-leads-the-way-in-erosion-and-sediment-control/

https://www.aucklandcouncil.govt.nz/building-and-consents/Documents/bc5850-building-small-sites-brochure.pdf

iii. New Zealand Standard Code of Practice for Earthfill for Residential Development, NZS 4431:2022.

iv. Code of Practise for Urban Land Subdivision – NZS 4404:2010, and

v. Any other relevant publications, including any of the above as superseded.

Some general recommendations are provided below, however where possible site-specific advice should be sought from an experienced Geotechnical Engineer.

We recommend that earthworks are not undertaken during wet conditions.

Any uncontrolled fill, vegetation, topsoil, etc. should be removed from the construction site to accord with foundation and earthworks recommendations, or if stockpiled must be well clear of the works and placed appropriately so that land stability and/or existing structures are not compromised.

Wherever any deposits of soft or otherwise unsuitable material is encountered at the surface cut/foundation level, it should in general, be undercut and replaced with approved compacted hardfill, or as otherwise recommended by the Engineer.

Particular care should be taken during the construction phase with respect to excavations to form the building platform, access driveways, etc.

The building site should be shaped to assist in stormwater run-off.

Any excavation left open should be protected and or left in a state as to not pond water.

Saturating site soils may result in a reduction of bearing capacities.

All cuts and fills should be battered back at a gradient no greater than 1V:2.0H or be referred to a Chartered Professional Engineer for advice and/or design.

NZS3604:2011 compliant hardfill should be utilised for all proposed fills.

All exposed soils should be re-grassed and/or planted as soon as practicable.

Appendix 5 - Stormwater and Drainage General Recommendations

Stormwater run-off from the development should be appropriately controlled and managed on-site in accordance with the New Zealand Building Code and as per Council requirements. The Development Designer should confirm compliance with all the above.

Stormwater flows must not be allowed to run onto or over site slopes, or to saturate the ground so as to adversely affect slope stability or foundation conditions.

Run-off from any higher ground should be intercepted by means of shallow surface drains or small bunds to protect the building platforms from both saturation and erosion. Water collected in interceptor drains should be diverted away from the building site to a disposal point as appropriate.

Concentrated stormwater flows from driveways, tanks, roofed and paved areas must be collected and carried in sealed pipes or drains and discharged in a controlled manner.

Appendix 6 - Construction Monitoring / Inspections General Notes

It is increasingly common for the Building Consent Authorities' (BCA) to require a Producer Statement; PS4, from an engineer. The purpose of the PS4 is to confirm the Engineers' professional opinion to the BCA that aspects of a building's design comply with the Building Code, or that elements of construction have been completed in accordance with the approved Building Consent (BC).

For Core Engineering Solution Ltd to issue a PS4 we will need to carry out the site inspections as per the BC and Council requirements.

Site inspections will be undertaken by a Chartered Professional Geotechnical Engineer or their Agent who is familiar with both this site and the contents of this geotechnical report. The site inspections also allow the timely provision of solutions and recommendations should any engineering problems arise.

Prior to works commencement, the above Engineer should be contacted to confirm the construction methodologies, inspection and testing frequency.

Appendix 7 – Liquefaction and Lateral Spread

The frequent seismic activity that occurs throughout New Zealand reminds us that the building we undertake are not just static structures, and that they need to be built to withstand earthquakes of varying size.

No area of New Zealand is completely immune from seismic activity and the large earthquakes that have affected Christchurch and more recently Kaikoura shows that such activity comes without warning. New guidelines have been issued in regards to earthquake design, and in November 2021 new guidelines were issued in relation to liquefaction and lateral spread.

Liquefaction is primarily a building up of porewater pressure caused by earthquakes, with the high porewater pressure expelling material from the ground, causing uneven settlement and leading to building damage and failure.

Lateral spreading refers to earthquake movement causing the land to settle, much like a plate of sand would settle evenly if you shook it back and forth. Lateral spread is particularly evident close to waterways, rivers and retaining walls.

These two factors combined disastrously in Christchurch and this was apparent in areas such as Brooklands, Avondale and Wainoni where a combination of soil types and proximity to rivers combined, leading to large swathes of these suburbs being red zoned and designated as unsuitable for future residential development.

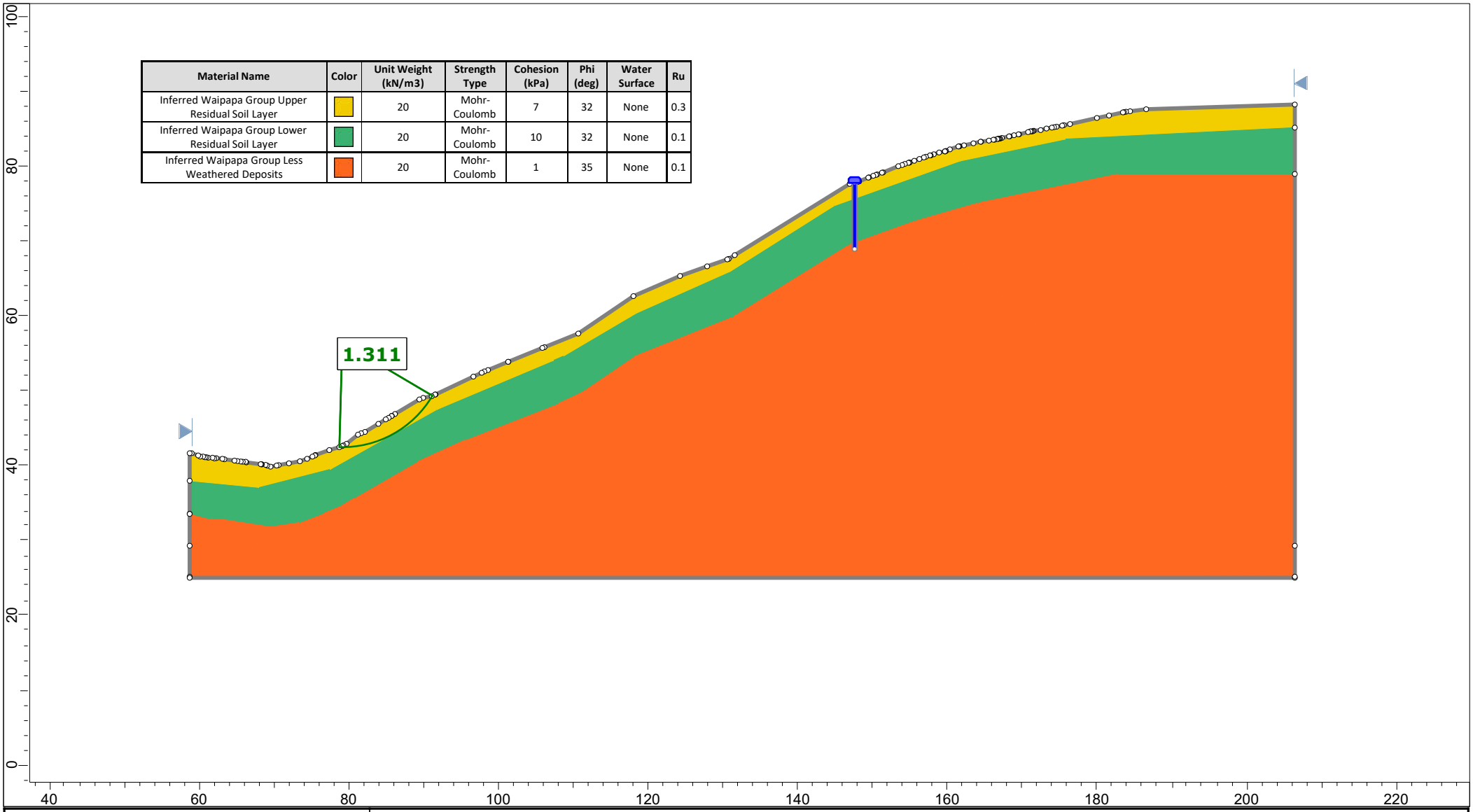
MBIE, in conjunction with the New Zealand Geotechnical Society have issued a number of guides, giving direction on identifying areas at risk of liquefaction, suitable testing methods and guidelines for ground improvement, to mitigate adverse effects. These may be found on the Building.govt.nz website or links to key guides are located below:

The below link is to Module 3 – Identification, assessment and mitigation of liquefaction hazards.
https://www.building.govt.nz/assets/Uploads/building-code-compliance/b-stability/b1-structure/geotechnical-guidelines/module-3-liquefaction-hazards-version-1.pdf

The below link is to Module 5 – Ground improvement of soils prone to liquefaction.
https://www.building.govt.nz/assets/Uploads/building-code-compliance/b-stability/b1-structure/geotechnical-guidelines/module-5-geotech-ground-improvement-version-1.pdf

Appendix 8 – Stability Assessment

Material Name	Color	Unit Weight (kN/m3)	Strength Type	Cohesion (kPa)	Phi (deg)	Water Surface	Ru
Inferred Waipapa Group Upper Residual Soil Layer		20	Mohr-Coulomb	7	32	None	0.3
Inferred Waipapa Group Lower Residual Soil Layer		20	Mohr-Coulomb	10	32	None	0.1
Inferred Waipapa Group Less Weathered Deposits		20	Mohr-Coulomb	1	35	None	0.1

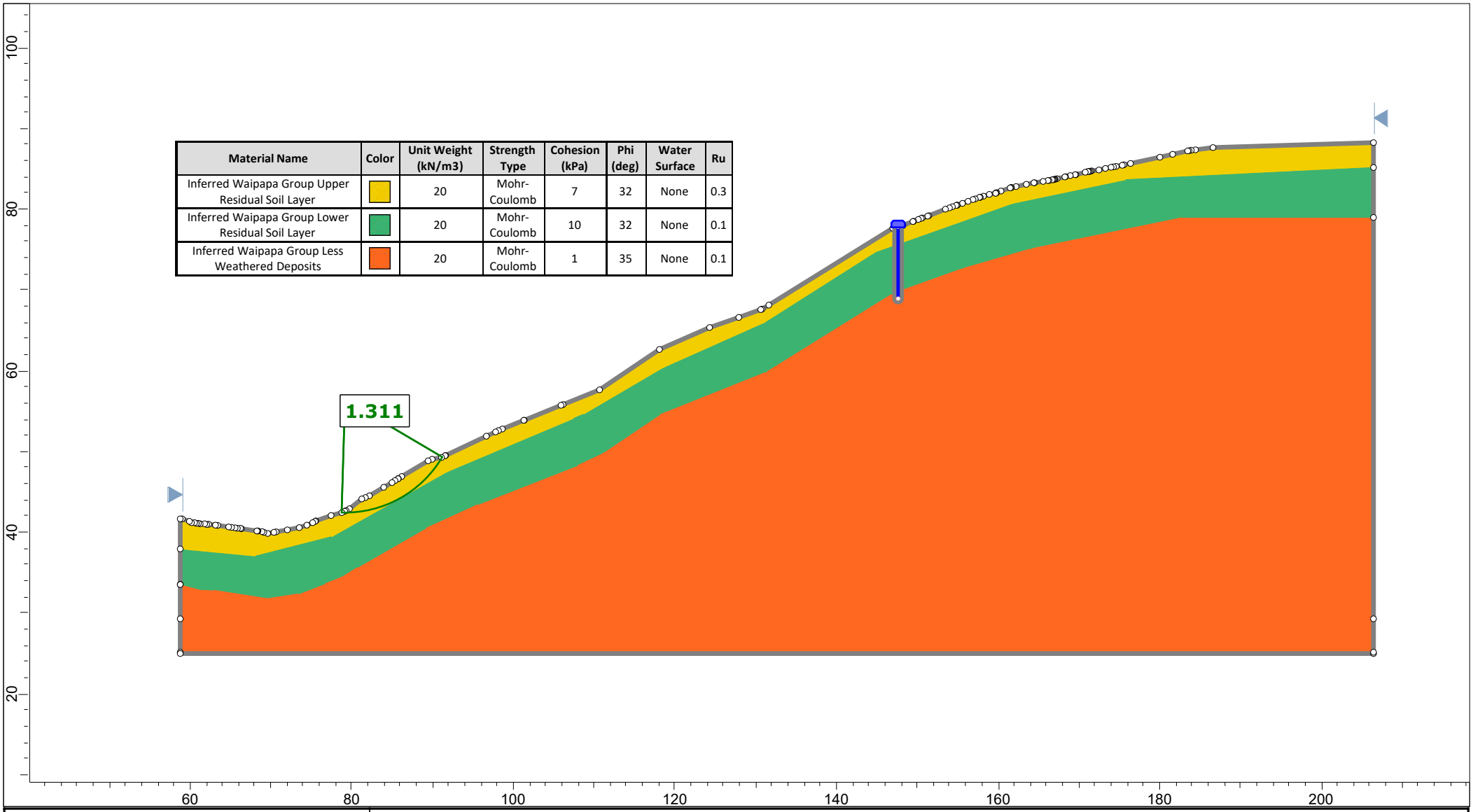


CORE ENGINEERING SOLUTIONS

Project	22-0238 - 319 Aucks Road, Russell		
Group	Pre-Check	*Scenario*	Master Scenario
Drawn By	OPLM	*Company*	Core Engineering Solutions
Date	26/10/2023, 2:45:58 pm	*File Name*	Slide1.slmd

SLIDEINTERPRET 9.019

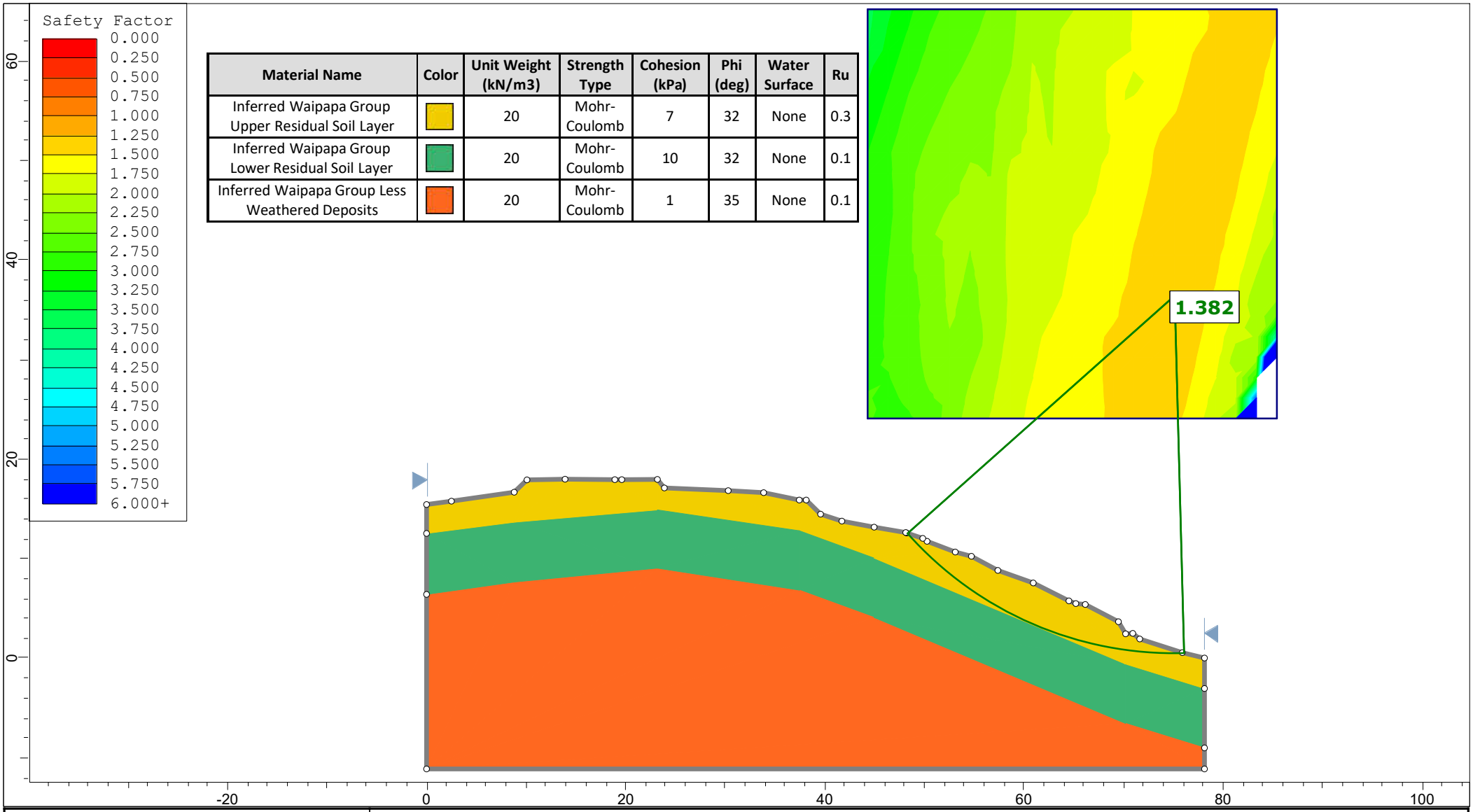
Material Name	Color	Unit Weight (kN/m3)	Strength Type	Cohesion (kPa)	Phi (deg)	Water Surface	Ru
Inferred Waipapa Group Upper Residual Soil Layer		20	Mohr-Coulomb	7	32	None	0.3
Inferred Waipapa Group Lower Residual Soil Layer		20	Mohr-Coulomb	10	32	None	0.1
Inferred Waipapa Group Less Weathered Deposits		20	Mohr-Coulomb	1	35	None	0.1



CORE ENGINEERING SOLUTIONS

Project	22-0238 - 319 Aucks Road, Russell		
Group	Post	Scenario	Master Scenario
Drawn By	OPLM	Company	Core Engineering Solutions
Date	26/10/2023, 2:45:58 pm	File Name	Slide1.slmd

SLIDEINTERPRET 9.019



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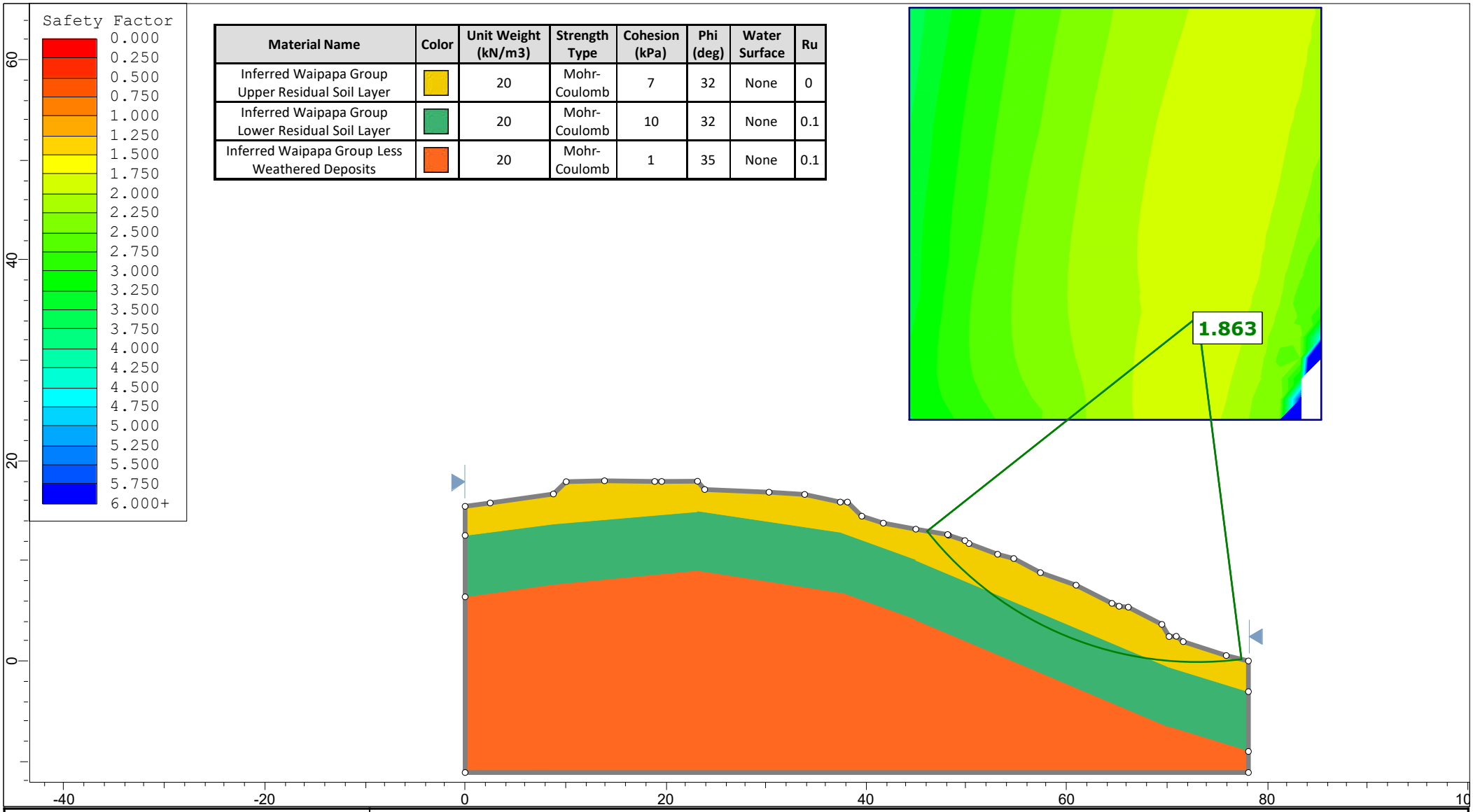
Inferred Waipapa Group Lower Residual Soil Layer		20	Mohr-Coulomb	10	32	None	0.1
Inferred Waipapa Group Less Weathered Deposits		20	Mohr-Coulomb	1	35	None	0.1

CORE ENGINEERING SOLUTIONS

SLIDEINTERPRET 9.019

Project	22-0238 - 319 Aucks Road, Russell		
Group	Pre-shed	*Scenario*	Elevated Groundwater
Drawn By	OPLM	*Company*	Core Engineering Solutions
Date	26/10/2023, 2:45:58 pm	*File Name*	Slide1.slmd



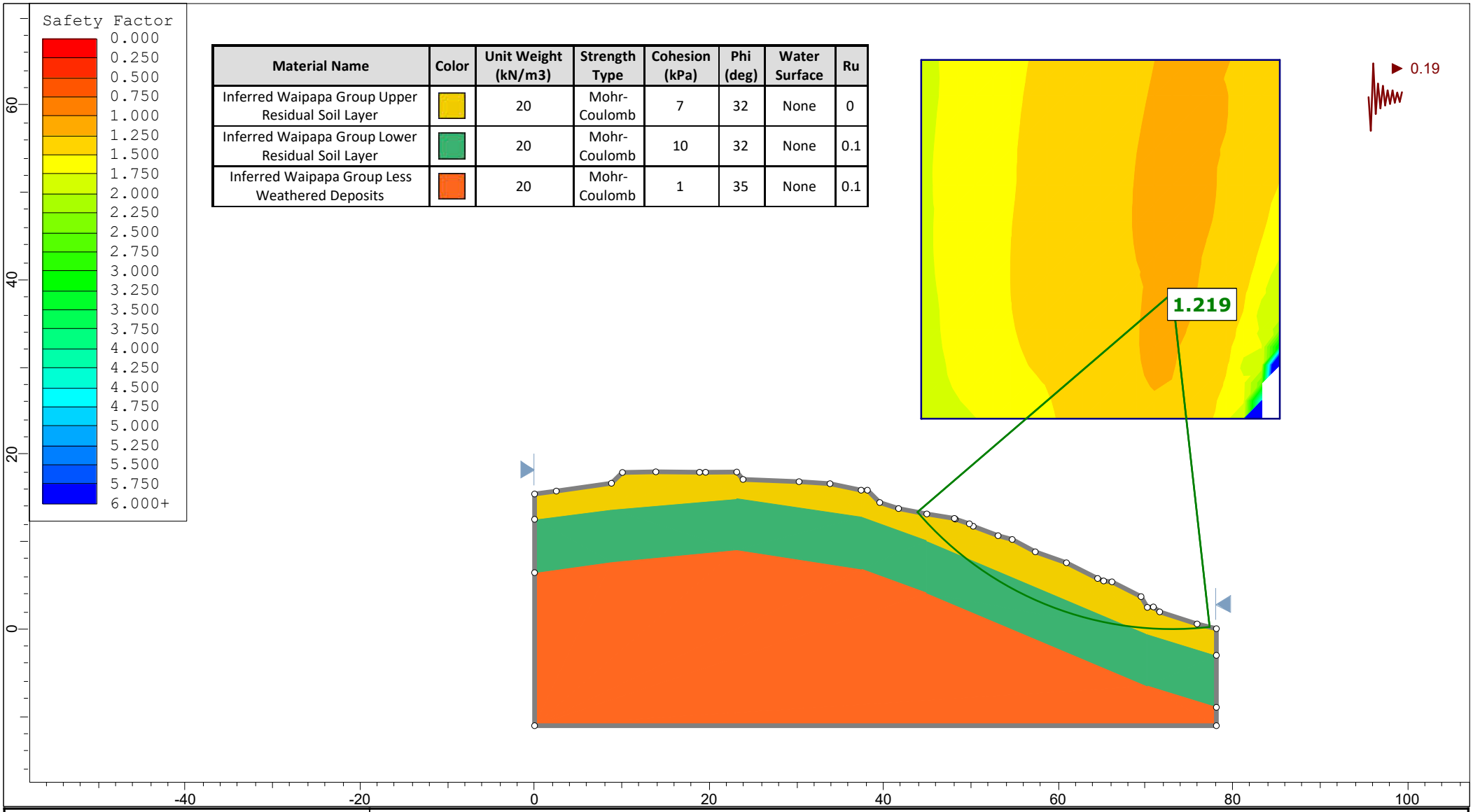
Material Name	Color	Unit Weight (kN/m3)	Strength Type	Cohesion (kPa)	Phi (deg)	Water Surface	Ru
Inferred Waipapa Group Upper Residual Soil Layer		20	Mohr-Coulomb	7	32	None	0
Inferred Waipapa Group Lower Residual Soil Layer		20	Mohr-Coulomb	10	32	None	0.1
Inferred Waipapa Group Less Weathered Deposits		20	Mohr-Coulomb	1	35	None	0.1

CORE ENGINEERING SOLUTIONS

SLIDEINTERPRET 9.019

Project	22-0238 - 319 Aucks Road, Russell		
Group	Pre-shed	*Scenario*	Normal Groundwater
Drawn By	OPLM	*Company*	Core Engineering Solutions
Date	26/10/2023, 2:45:58 pm	*File Name*	Slide1.slmd

Material Name	Color	Unit Weight (kN/m3)	Strength Type	Cohesion (kPa)	Phi (deg)	Water Surface	Ru
Inferred Waipapa Group Upper Residual Soil Layer		20	Mohr-Coulomb	7	32	None	0
Inferred Waipapa Group Lower Residual Soil Layer		20	Mohr-Coulomb	10	32	None	0.1
Inferred Waipapa Group Less Weathered Deposits		20	Mohr-Coulomb	1	35	None	0.1



CORE ENGINEERING SOLUTIONS

Project	22-0238 - 319 Aucks Road, Russell		
Group	Pre-shed	Scenario	Earthquake
Drawn By	OPLM	Company	Core Engineering Solutions
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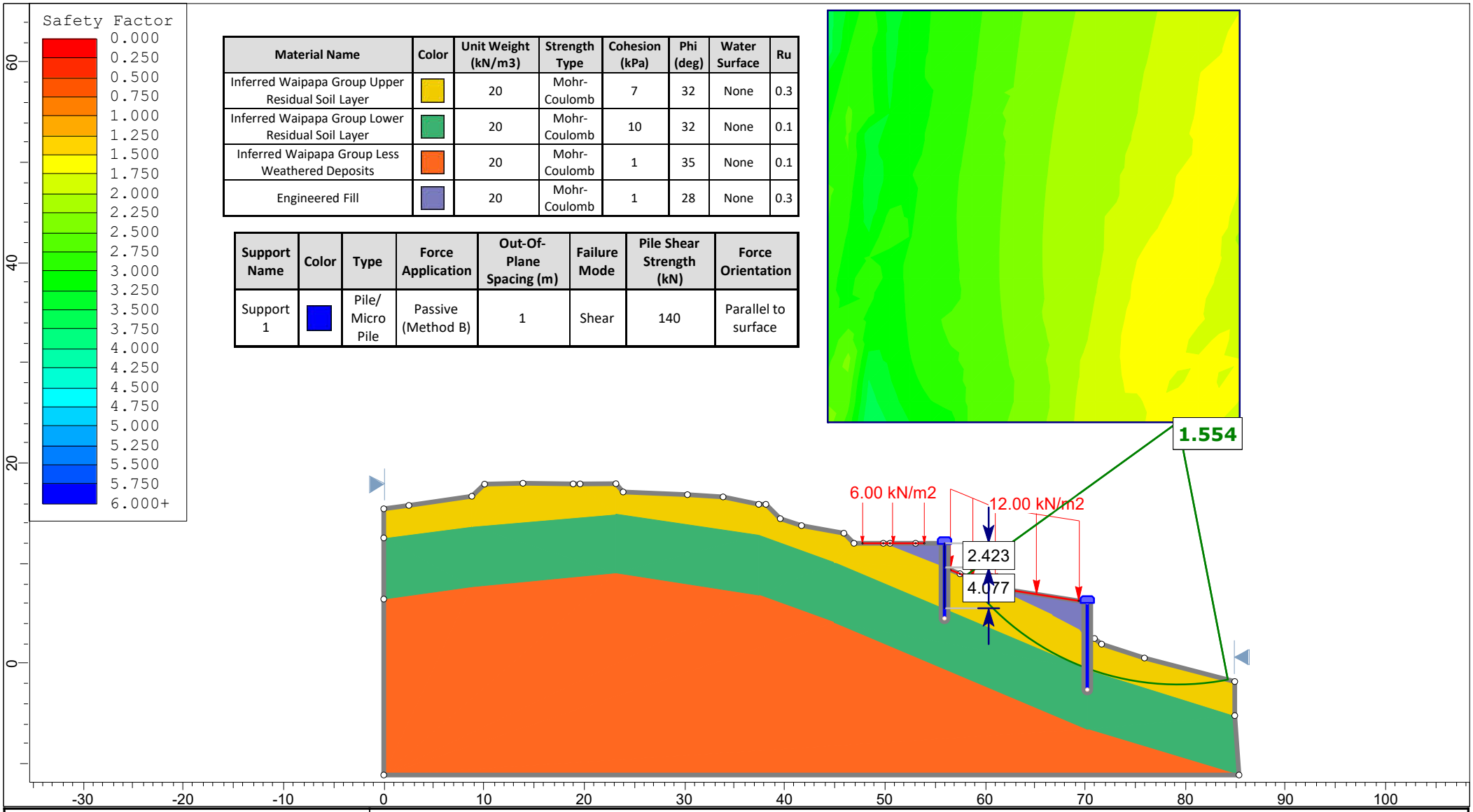
SLIDEINTERPRET 9.019



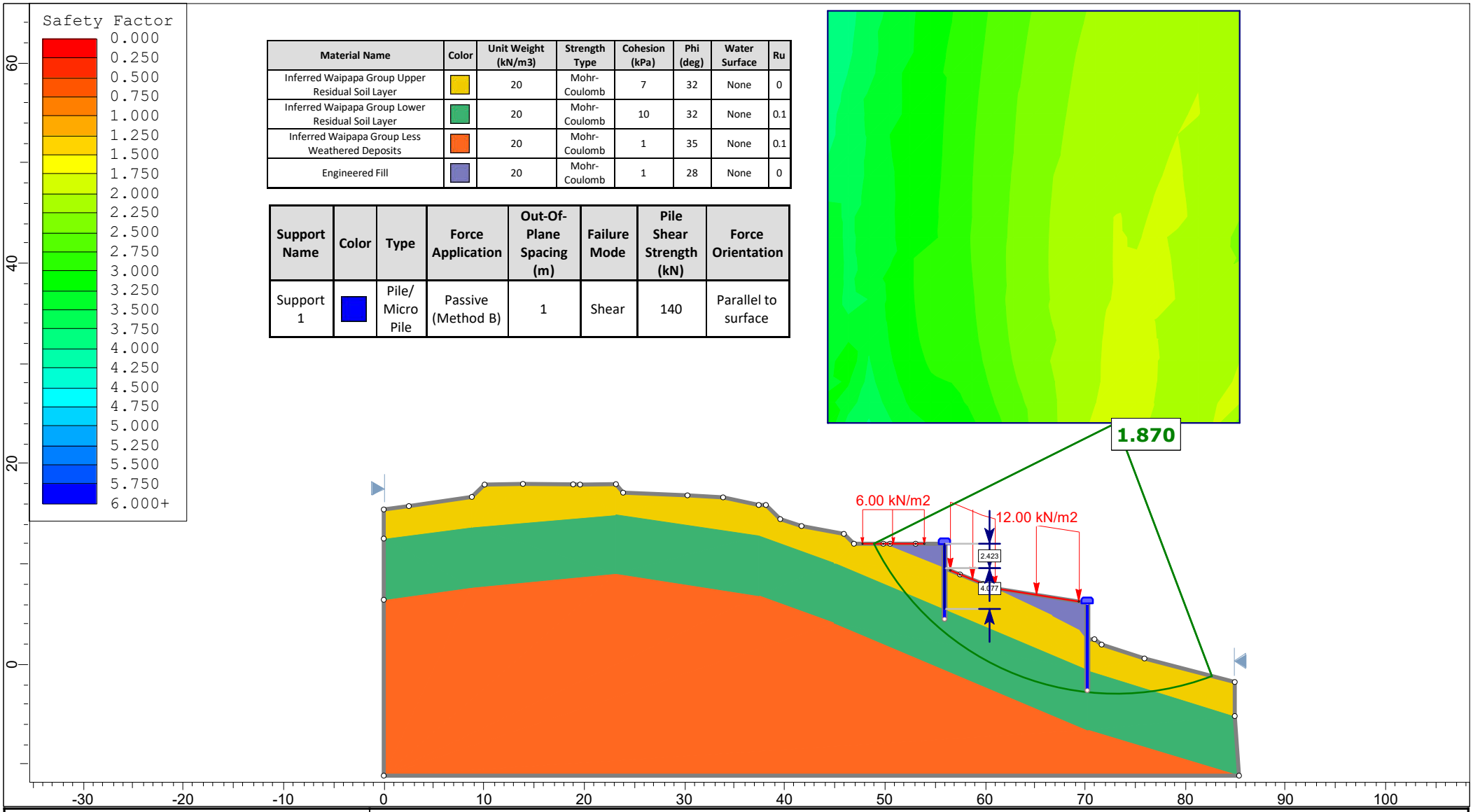
Material Name	Color	Unit Weight (kN/m3)	Strength Type	Cohesion (kPa)	Phi (deg)	Water Surface	Ru
Inferred Waipapa Group Upper Residual Soil Layer		20	Mohr-Coulomb	7	32	None	0.3
Inferred Waipapa Group Lower Residual Soil Layer		20	Mohr-Coulomb	10	32	None	0.1
Inferred Waipapa Group Less Weathered Deposits		20	Mohr-Coulomb	1	35	None	0.1
Engineered Fill		20	Mohr-Coulomb	1	28	None	0.3

Support Name	Color	Type	Force Application	Out-Of-Plane Spacing (m)	Failure Mode	Pile Shear Strength (kN)	Force Orientation
Support 1		Pile/ Micro Pile	Passive (Method B)	1	Shear	140	Parallel to surface

CORE ENGINEERING SOLUTIONS

SLIDEINTERPRET 9.019

Project	22-0238 - 319 Aucks Road, Russell		
Group	post	*Scenario*	Elevated Groundwater
Drawn By	OPLM	*Company*	Core Engineering Solutions
Date	26/10/2023, 2:45:58 pm	*File Name*	Slide1.slmd



Material Name	Color	Unit Weight (kN/m3)	Strength Type	Cohesion (kPa)	Phi (deg)	Water Surface	Ru
Inferred Waipapa Group Upper Residual Soil Layer		20	Mohr-Coulomb	7	32	None	0
Inferred Waipapa Group Lower Residual Soil Layer		20	Mohr-Coulomb	10	32	None	0.1
Inferred Waipapa Group Less Weathered Deposits		20	Mohr-Coulomb	1	35	None	0.1
Engineered Fill		20	Mohr-Coulomb	1	28	None	0

Support Name	Color	Type	Force Application	Out-Of-Plane Spacing (m)	Failure Mode	Pile Shear Strength (kN)	Force Orientation
Support 1		Pile/ Micro Pile	Passive (Method B)	1	Shear	140	Parallel to surface

CORE ENGINEERING SOLUTIONS

Project	22-0238 - 319 Aucks Road, Russell		
Group	post	*Scenario*	Normal Groundwater
Drawn By	OPLM	*Company*	Core Engineering Solutions
Date	26/10/2023, 2:45:58 pm	*File Name*	Slide1.slmd

SLIDEINTERPRET 9.019

Material Name	Color	Unit Weight (kN/m3)	Strength Type	Cohesion (kPa)	Phi (deg)	Water Surface	Ru
Inferred Waipapa Group Upper Residual Soil Layer		20	Mohr-Coulomb	7	32	None	0
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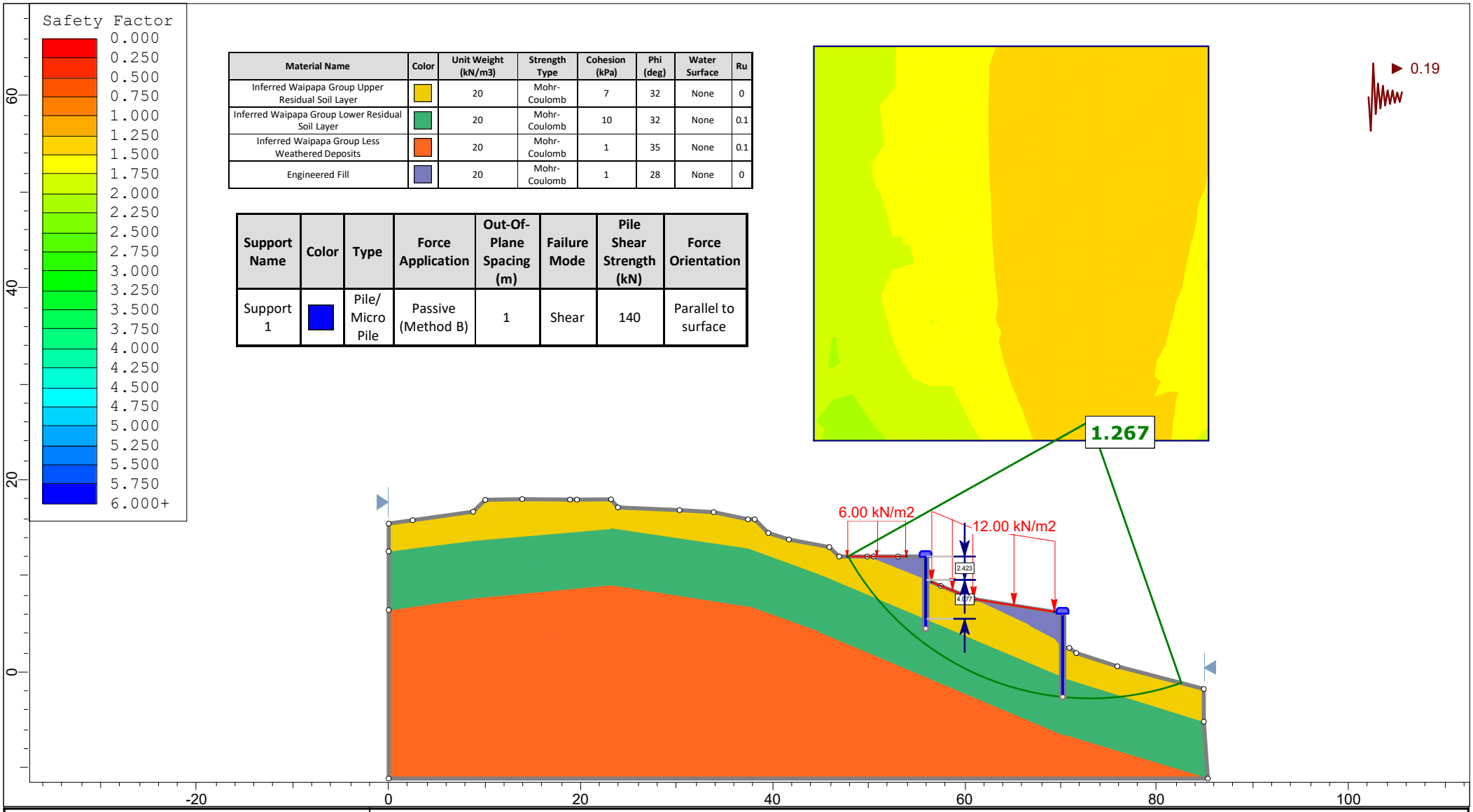
Inferred Waipapa Group Less Weathered Deposits		20	Mohr-Coulomb	1	35	None	0.1
Engineered Fill		20	Mohr-Coulomb	1	28	None	0

Support Name	Color	Type	Force Application	Out-Of-Plane Spacing (m)	Failure Mode	Pile Shear Strength (kN)	Force Orientation
Support 1		Pile/ Micro Pile	Passive (Method B)	1	Shear	140	Parallel to surface



CORE ENGINEERING SOLUTIONS

Project	22-0238 - 319 Aucks Road, Russell		
Group	post	*Scenario*	Earthquake
Drawn By	OPLM	*Company*	Core Engineering Solutions
Date	26/10/2023, 2:45:58 pm	*File Name*	Slide1.slmd

SLIDEINTERPRET 9.019

Attachment D Stormwater Report by Core Engineering Limited

ENGINEERING SOLUTIONS

STORMWATER DISPOSAL REPORT

Lot 10 DP 595923
319 Aucks Road, Okiato

Job Details:	New Dwelling and Shed
Job number:	22-0238
Client:	William McCarthy
Site Address:	319 Aucks Road, Okiato
Legal Description:	Lot 10 DP 595923
Date - Revision:	16/07/2024 – Rev 0
Author:	Iain Mackay
Author email:	jobs@coreeng.nz
Author Phone No:	09 553 3660

TABLE OF CONTENTS

Core Engineering Solutions Limited

Stormwater Disposal Report for New Dwelling and Shed at Lot 10 DP 595923
319 Aucks Road, Okiato

1. EXECUTIVE SUMMARY

Introduction

- Core Engineering Limited was engaged to carry out a stormwater mitigation assessment for the Proposed Development.

Proposal

- The purpose of this assessment is to provide an indicative stormwater disposal system design which will manage runoff generated from the impermeable areas associated with the Proposed Development.

- It is proposed to mitigate peak stormwater runoff using attenuation tanks to restrict stormwater flows to 80% of pre-development levels, including a 20% allowance for climate change in accordance with Far North District Council Engineering Standards (FNDC ES) 2009.

- Stormwater disposal is proposed to be directed into the base of the gulley in the southern corner of the property.

Attenuation Design and Disposal

- As per the attached design calculations, 2/25,000 litre (3.50m diameter) tanks for the driveway and a portion of a 25,000 litre (3.50m diameter) tank for the dwelling and shed roof areas are proposed for attenuation, see conclusion and tank detail drawings.

- It is proposed to pipe (via a 150mm diameter corrugated pipe) the stormwater discharge from the attenuation tanks to a dispersal trench in the base of the gulley in the south of the property, as outlined in the details attached.

Notes:

- To minimise silting or blockage of the attenuation tanks, it is recommended that proprietary leaf guards or other adequate protection are installed in the roof gutters and sumps.

- Subsequent to construction, a programme of regular inspection/maintenance of the system should be initiated by the Owner to ensure the continuance of effective function, and if necessary, the investigation of any maintenance required.

2. INTRODUCTION

This report was prepared by Core Engineering Solutions Limited for the Client; William McCarthy.

The Client is proposing to construct a new dwelling and shed at: Lot 10 DP 595923.

The purpose of this assessment is to provide an indicative stormwater system design that will manage the peak runoff generated from the increased impermeable areas associated with the Proposed Development.

3. PROPERTY SUMMARY

Table 1 – Property Details

Legal Description	Lot 10 DP 595923
Area	8,387m^2
District Council	Far North District Council
Existing Site Cover	Native Trees and foliage
Geology	Waipapa Group sandstone and siltstone (Waipapa Composite Terrane) – From a review of the subsoil testing, the site has dense clay at a shallow depth, which is poorly draining and assessed as being Waipapa Group, which is the underlying geology in the area.
Council Services	None available
Potable water supply	Rainwater Storage Tanks

4. SUPPLIED INFORMATION

The following information has been provided by our Client regarding the proposed development:

Table 2 - Client Supplied Information

Client Supplied Information:	- Clayton Architecture Ltd preliminary set. (Dated 16/10/2023) - Thomson Survey Limited topographical survey. (Dated 12/04/2022) - GWE Consulting Engineers Site Suitability Assessment Preliminary Geotechnical Report. (Dated September 2021)

5. ASSESSMENT CRITERIA / BASIS FOR DESIGN

District / Regional Rules

The outlined design and recommendations contained within this report are in accordance with the following requirements and documentation;

- Far North District Council (FNDC) District Plan Coastal Living Environment Rules.
- New Zealand Building Code Clause E1 – Surface water.
- The Northern Regional Council (NRC) Regional Water and Soil Plan Section 21, Rules for Stormwater Discharges.
- The Far North District Council Engineering Standards (FNDC ES), May 2023.

Far North District Council (FNDC) District Plan Coastal Living Environment Rules.

10.7.5.2 CONTROLLED ACTIVITIES. Section 10.7.5.1.6 outlines the following. *"The maximum proportion or amount of the gross site area which may be covered by buildings and other impermeable surfaces shall be 10% or 600m2 whichever is the lesser."* The site coverage requirements for this property allow for a maximum impervious coverage of the lesser of 10% (838.7m²) or 600m² as a Permitted Activity under the FNDC District Plan for a Coastal Environment. The proposed impervious areas will exceed the above limit.

10.7.5.3 RESTRICTED DISCRETIONARY ACTIVITIES. Section 10.7.5.3.8 outlines the following. *"The maximum proportion or amount of the gross site area covered by buildings and other impermeable surfaces shall be 15% or 1,500m², whichever is the lesser."* The site coverage requirements for this property allow for a maximum impervious coverage of the lesser of 15% (1258.8m²) or 1,500m² as a Restricted Discretionary Activity under the FNDC District Plan for a Coastal Living Environment. The proposed impervious surfaces are within these limits.

Impervious areas are defined as follows under the FNDC District Plan;

"IMPERMEABLE SURFACE

In relation to any site means any building or surface on or over the land which creates a barrier to water penetration into the ground. This definition includes but is not restricted to:

a) *decks (including decks less than 1m in height above the ground), excluding open slatted decks where there are gaps between the boards;*
b) *pools, but does not include pools designed to operate as a detention pond;*
c) *any surfaced area used for parking, manoeuvring, access or loading of motor vehicles, including areas covered with aggregate;*
d) *areas that are paved with concrete, asphalt, open jointed slabs, bricks, gobi or materials with similar properties to those listed;*
e) *roof coverage area on plan, But excludes:*
    a. *Water storage tanks occupying up to a maximum cumulative area of 20m²; and*
    b. *Paths and paving less than 1m wide, provided they are separated from other Impermeable Surfaces by a minimum of 1m. For the purpose of calculating*

impermeable surfaces, account shall not be taken of any additional areas that are overlapped by another form of impermeable surfaces. In the case of jointly owned access lots that contain impermeable surfaces within their boundaries, the total area of these impermeable surfaces are to be divided equally and considered as parts of the various sites served by the access lot for the purpose of determining compliance with the relevant stormwater management rules."

<u>The Far North District Council Engineering Standards (FNDC ES), May 2023</u>

Section 4.1.3 FNDC ES states the following document hierarchy shall be applied:

- The District Plan,
- Relevant FNDC Flood modelling,
- These standards, then
- Auckland Council GD01 (the adopted design guideline for stormwater treatment and low impact design), and
- Wellington Water- Water Sensitive Design for Stormwater: Treatment Device Guideline.

Note: Any relevant national and or regional policies/plans take precedence over documents listed in this hierarchy

Section 4.3.2 of the FNDC ES states; "*Where any development increases impervious surface, the development shall be assessed in accordance with Section 4.1.2 Objectives and Section 4.1.3 Performance Standards to determine the requirements, if any, for water quality and quality controls. Design of a new development or alteration to existing development, resulting in increased impervious surface shall also comply with the NRC."*

Section 4.1.2 of the FNDC ES states, "*the primary objective is to enable design and management of the stormwater system that will minimise flood damage and adverse effects on built and natural environments, people, property, and ecological systems. Which can be done by avoiding or mitigating adverse quality and quantity effects of stormwater resulting from development and growth of human activities. "*

Section 4.1.3 of the FNDC ES states, "*the design of the stormwater system shall achieve the objectives and provide for stormwater system that is fit for purpose, given site constraints and takes into design guidance. New stormwater systems planned shall achieve the following minimum standards:*

- *The stormwater system shall operate by gravity. Pumped public systems are not generally acceptable unless specific approval is obtained from FNDC Stormwater Manager before proceeding with design details (see Section 4.3.8.2 Primary System Design Requirements).*
- *The primary stormwater system shall be capable of conveying 10% AEP design storm events without surcharge (see Section 4.3.9 Hydrological Design Criteria).*
- *The secondary stormwater system shall be capable of conveying the 1% AEP storm event within a defined path and without causing undue risk or damage to persons or property.*

- *The stormwater system shall not connect or be able to overflow to the wastewater network.*
- *Development shall not increase peak discharge rates to receiving environment. An increase may be acceptable for large events where it is demonstrated that there are no adverse effects (including potential, future, or cumulative effects), on the environment or downstream properties as a result of the increase.*
- *The stormwater system shall provide the required amount of treatment through the use of low impact design and sustainable solutions (See Sections 4.3.20 Soakage Devices and 4.3.21 Stormwater Treatment and Detention Devices) "*

FNDC ES, Table 4.1: Minimum Design Summary

Criteria	*Design Parameter*	*When required*
Flood Control (1% AEP event)	*Detention is required, limiting the post-development 1% AEP event flow rates to 80% of the pre-development 1% AEP event flow rates.*	*Where downstream flooding hazard has been identified. Where there is no CMP or site-specific SMP. 1. Refer to Flood Hazard Areas in the District Plan and any known downstream restrictions causing flooding.*
Flow attenuation (Attenuation of the 50% and 20% AEP events)	*Limit the post-development 50% and 20% AEP event flow rates to 80% of the pre-development flows through controlled attenuation and release.*	*Where there is no CMP or site-specific SMP. Catchment location dependent. Typically, always required in the upper catchment and sometimes not required where the development site is located in proximity to the catchment outlet, discharging to a watercourse with sufficient network capacity, and where flow attenuation may worsen flooding hazards due to relative timing of peak flows. This is subject to assessment demonstrating no negative impacts would occur. If the proposed stormwater discharge is into a tidal zone, then no attenuation is required.*

The proposal is to limit the flow rates of post-development 20% and 1% AEP events to 80% of the pre-development flows. This will be achieved by using controlled attenuation and release through attenuation tanks. The discharge from the attenuation tanks will be directed towards the base of the gulley at the southern end of the property within an existing overland flow path and then into the tidal environment, in compliance with the Far North District Council Engineering Standards (FNDC ES) by May 2023.

The FNDC ES Section 4.3.21.3 states that when stormwater is being re-used (i.e. water supply from rainwater tanks), a reduction in attenuation volume is allowed. Table 4-12 of the FNDC ES

specifies a 25% reduction in attenuation for 300m² roof area and 20% reduction in attenuation for 500m² roof area. As the proposed combined roof areas are 340m² an interpreted reduction in volume of 24% has been applied to the tanks collecting roof areas. The attenuation tanks collecting the drive areas have not been reduced.

Included below is the calculation of storage adjustment to account for this in HydroCAD,

$$Storage\ adjustment = 1/\left[1 - \left(Reduction * \frac{Roof\ Area}{Total\ Area}\right)\right]$$
$$= 1/\left[1 - \left(24\% * \frac{340}{340}\right)\right] = 1.32$$

4.2.5. Discharge to Land states,

Subject to the requirements of the NRC Regional Plans, discharge of stormwater from the development onto land is permitted provided that:

a. *Flooding levels shall not be increased due to the development,*
b. *New Outlets to any low-lying areas shall be provided or existing outlets retained,*
c. *Dispersal of concentrated flow from the development shall be designed to occur at the shortest practicable distance and before a concentrated overland discharge to a neighbouring property occurs and*
d. *An acceptable rate of dispersed discharge from stormwater runoff at the boundary is < 2 litres/sec/m (e.g. flow can be managed via dispersal swale or trench).*

A dispersal trench is proposed to be installed at the base of the gulley in the southern low-lying area of the property.

6. STORMWATER MANAGEMENT DESIGN

In this case, two systems utilising water tanks to attenuate flows and disposing to a dispersal trench is the most practical solution for mitigation of peak stormwater flows and overall stormwater management for the development.

A summary of the impervious areas for the development is outlined below.

Table 3 – Development Impervious Areas

	Impervious Areas Not Collected (m²)	Impervious Areas Collected (m²)	Total Impervious Areas (m²)
Pre-Development	0	0	0
Post-Development	20 (paving) 41.4 (4 x water tanks)	110 (shed) 230 (dwelling) 643 (driveway)	1044.4

It is proposed to install two new 25,000L rainwater tanks under the parking deck to attenuate runoff from the proposed driveway area and two additional 25,000L tanks located next to the new dwelling, one of which will be used for attenuation of the proposed shed and dwelling roof areas. By attenuating the flows from the driveway, dwelling, and shed, overall peak runoff can be managed to ensure the effects of pre-development are met.

Rainfall intensities have been taken from the HIRDs V4 data where indicated, and an allowance for a 20% increase for the effects of climate change has been included in the system design calculations for post-development flows.

Table 4 – Pre-Development and Post-Development Flows

	Peak Flows (l/s)	Attenuated volumes (m³)
100% Pre-Development	1% AEP – 13.79 20% AEP – 6.09	-
80% Pre-Development	1% AEP – 11.03 20% AEP – 4.87	-
Post-Development (+20% CC)	1% AEP – 10.96 20% AEP – 4.26	1% AEP (roofs inc reduction)– 8.03 1% AEP (driveway)– 45.5 20% AEP (roofs inc reduction)– 5.6 20% AEP (driveway)– 26.1

Orifices in the proposed tanks reduce peak discharge flows, detaining the runoff before discharging to land via a dispersal trench.

On the basis of the information supplied by the Client, stormwater calculations indicate that a portion of a 1/25,000 litre tank and 2/25,000 litre tanks are required for attenuation.

Attenuation Tanks (Driveway)
2 x 3.50m diameter, 25,000-litre tanks collecting surface water runoff from sumps in the driveway area.

The main design elements of the 2 x 25,000-litre tanks that collect the flows from the driveway are:

- Tank internal diameter 3.50m.
- Tanks to be interconnected with a minimum 50mm diameter pipe.
- Orifice 1; 30mm diameter, 2.24m below overflow invert.
- Orifice 2; 33mm diameter, 1.3m above Orifice 1 invert.
- Overflow = 100mm diameter.
- Discharges to 150mm diameter corrugated pipe and stormwater dispersal trench.

Attenuation Tank (Roof)
3.50m diameter, 25,000 litre tank collecting surface water runoff from proposed roof areas.

The main design elements of the 25,000 litre tank which collects the flows from the roofs are:

- Tank internal diameter 3.50m.
- Orifice 1; 38mm diameter, 0.8m below overflow invert.
- Orifice 2; 54mm diameter, 0.44m above Orifice 1 invert.
- Overflow = 100mm diameter.
- Discharges to 150mm diameter corrugated pipe and stormwater dispersal trench.

Disposal
It is proposed to pipe (via a 150mm diameter corrugated pipe) the stormwater discharge from the attenuation tanks to a dispersal trench in the base of the gulley in the south of the property, as outlined in the details attached. Refer to capacity calculations.

Peak flows from the calculations for a 1% AEP + 20% CC event are 10.96 l/s. As per FNDC ES flows are to be limited to 2 litres/sec/m. Therefore, a minimum disposal trench length of 5.48m is required.

7. CONCLUSION

A design has been achieved that meets the district and regional rules and meets the requirements of FNDC ES.

Tank design details are appended to this report.

To minimise blockage of the attenuation tank, it is recommended that proprietary leaf guards or other adequate protection are installed in the roof gutters and sumps.

Subsequent to construction, a programme of regular inspection/maintenance of the system should be initiated by the Owner to ensure the continuance of effective function, and, if necessary, the investigation of any maintenance required.

8. LIMITATIONS

This assignment only considers the design of an on-site stormwater disposal system and all concept drainage design is up to the connection point for each building face of any new structures/slabs; no internal building plumbing or layouts have been done.

During construction, a person competent in judging whether the site conditions encountered are compatible with the assumption made in this report should examine the site. In all circumstances, should variations in the subsoil occur which differ from that described or assumed to exist, the matter should be referred back to Core Engineering Solutions Limited.

The performance behaviour outlined by this report is dependent on the construction activity and actions of the builder/contractor. Inappropriate actions during the construction phase may cause behaviour outside the limits given in this report.

This report has been prepared for the particular project described to us and no responsibility is accepted for the use of any part of this report in any other context or for any other purpose.

Yours faithfully,
Core Engineering Solutions Limited.

Prepared by:

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NZCE (Mech), NZDE (Civil), MEngNZ
Engineering Technician

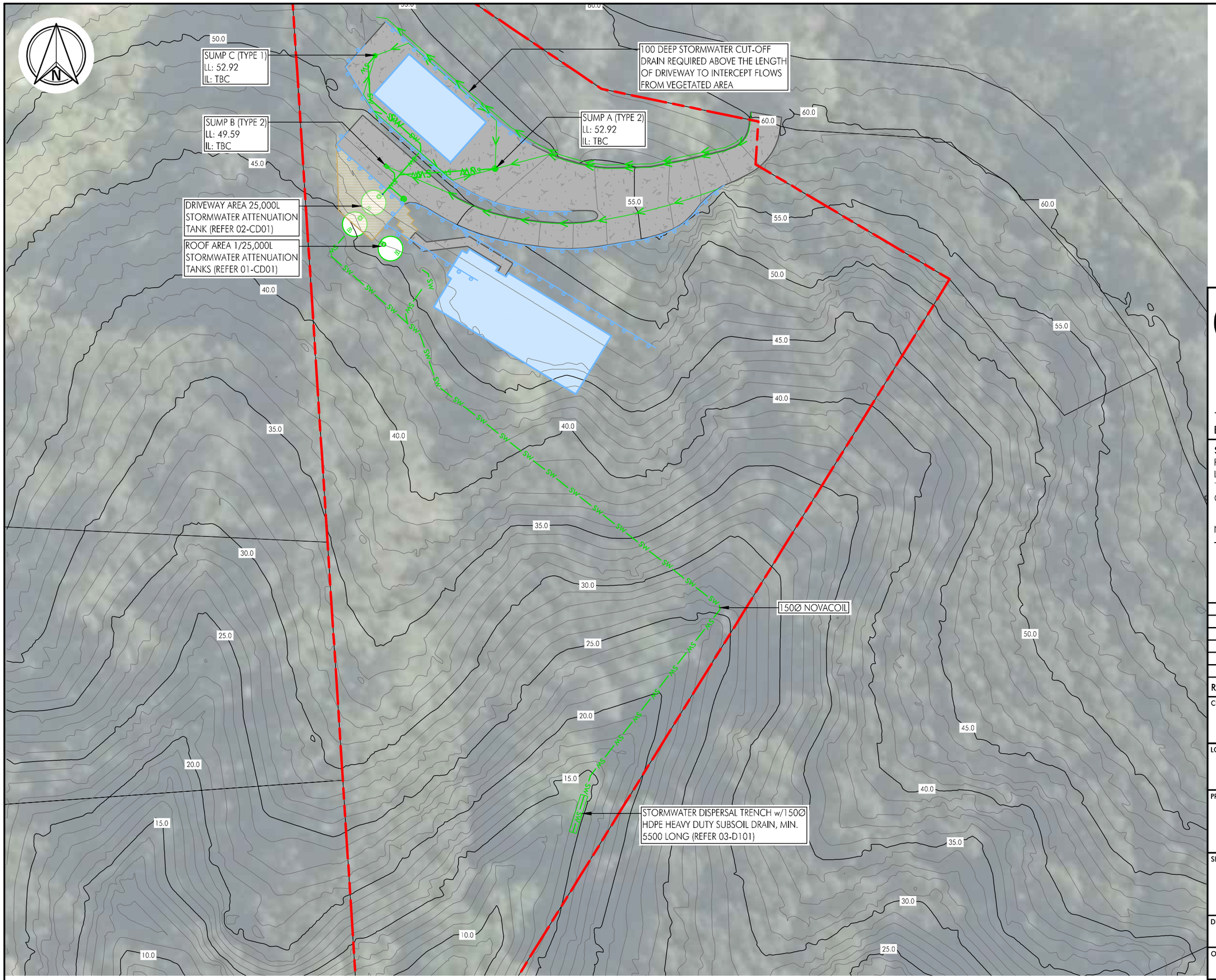
Reviewed by:

David Leslie
BEng (Civil), MEMgt (Hons), DipEng(Civil)
CPEng (Geotechnical / Structural)

9. APPENDICES

Appendix 1 – Stormwater Design Plans and Details
Appendix 2 – Stormwater Design Calculations

Appendix 1 – Stormwater Design Plans and Details



LEGEND:

- SITE BOUNDARY
- PROPOSED CONCRETE
- PROPOSED STRUCTURE
- PROPOSED DECK
- PROPOSED RETAINING
- SW PROPOSED STORMWATER PIPE

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7 Maunu Road,
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SITE INFO:
Parcel ID: 3596066
Legal Desc: Section 17 Block 5 Russell
Titles: NA62/76
GIS Area: 146,699m² / 14.6699ha

NOTES:
- Indicative Lidar contours @1.0m intervals from NZVD2016 Vertical Datum.

Rev	Date	Notes
A	04.07.24	Stormwater & wastewater design alterations
--	02.04.24	Original Issue

CLIENT: William McCarthy

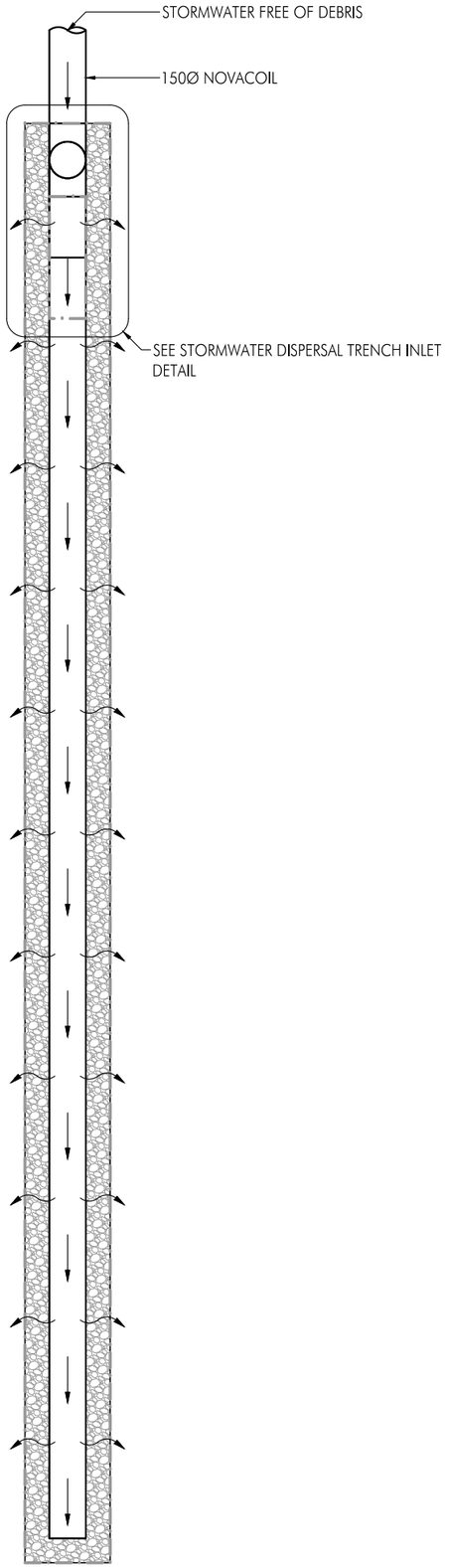
LOCATION: 319 Aucks Road, Okiato

PROJECT DESCRIPTION: NEW DWELLING

SHEET TITLE: STORMWATER PLAN

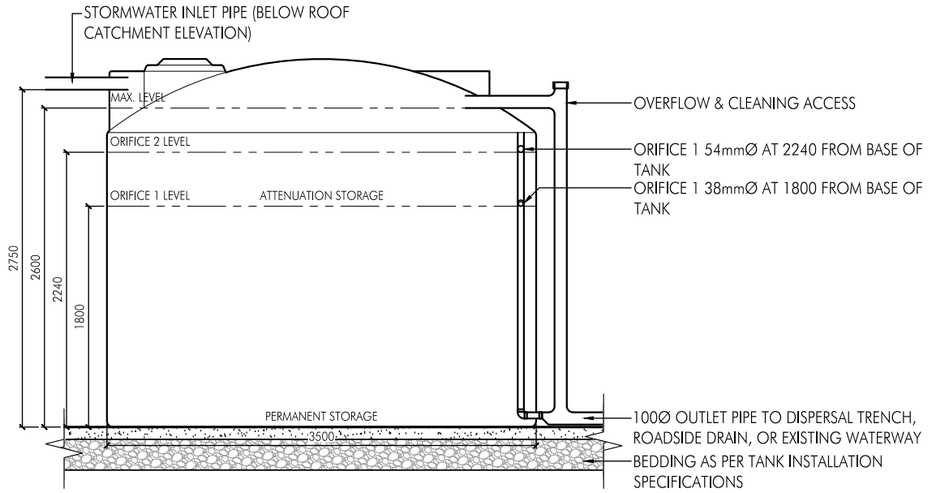
DRAWN BY:	APPROVED BY:
LJM	DAL
ORIGINAL: A3	SCALE: 1:500
FILE: 22-0238	SHEET: L103

- STORMWATERPLAN
L103 SCALE 1:500



03 STORMWATER DISPERSAL TRENCH INLET

L103 SCALE 1:20



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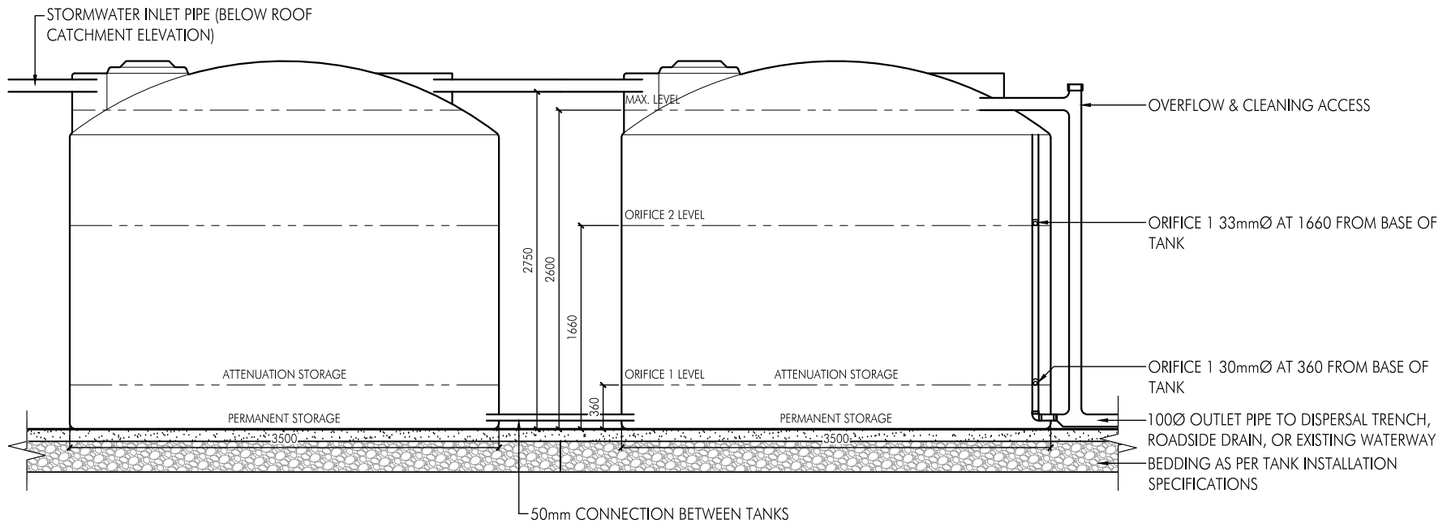

02 STORMWATER ATTENUATION TANK (DRIVEWAY AREA)

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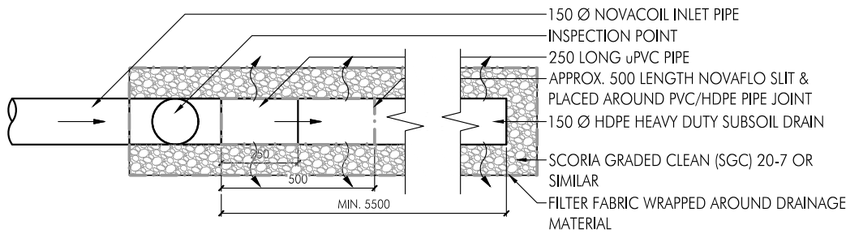

04 STORMWATER DISPERSAL TRENCH INLET

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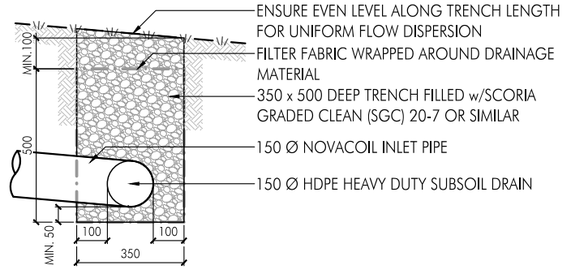

AA STORMWATER DISPERSAL TRENCH SECTION

. SCALE 1:20

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SITE INFO:
Parcel ID: 3596066
Legal Desc: Section 17 Block 5 Russell
Titles: NA62/76
GIS Area: 146,699m² / 14.6699ha

Rev	Date	Notes
--	03.07.24	Original issue

CLIENT: William McCarthy

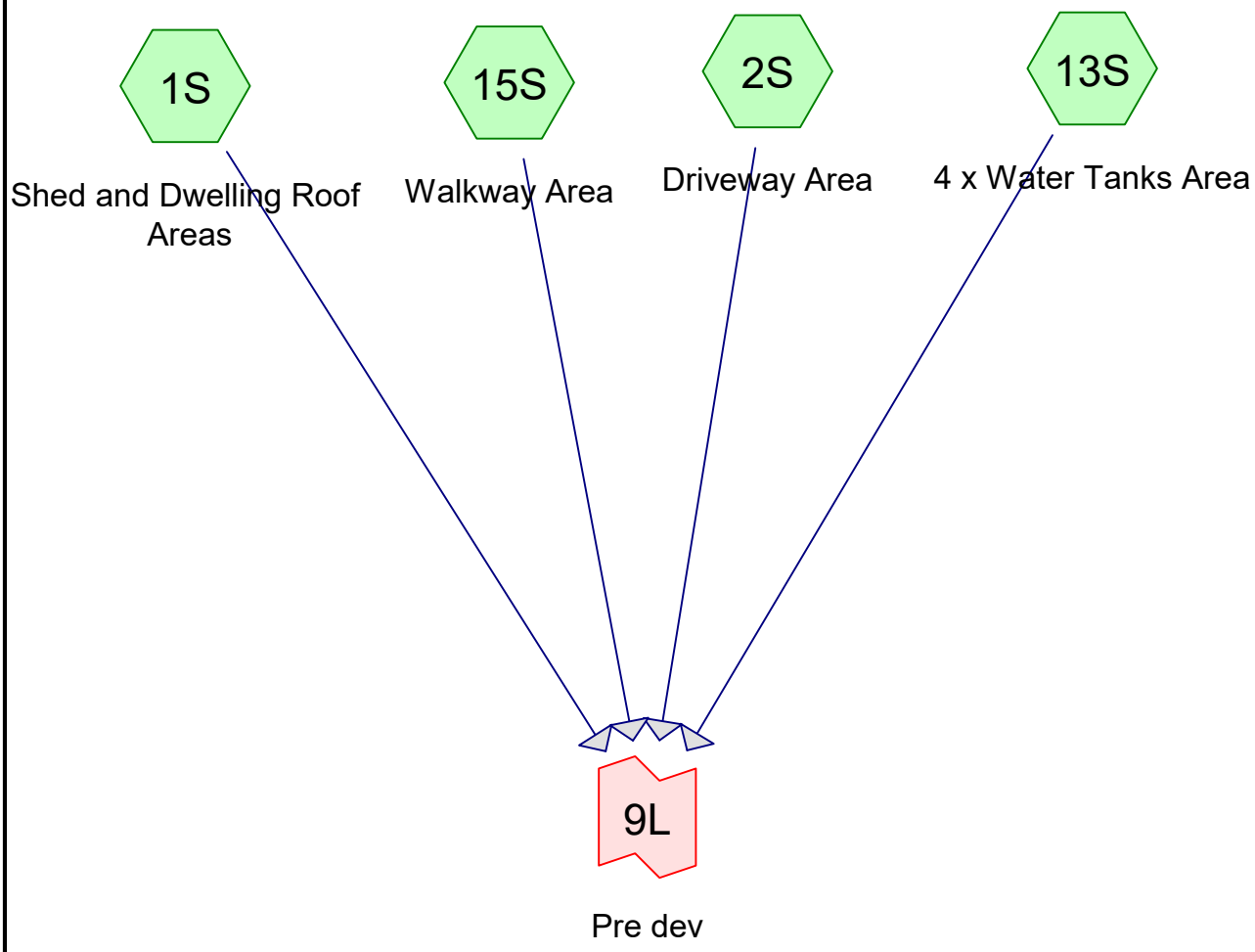
LOCATION: 319 Aucks Road, Okiato

PROJECT DESCRIPTION: NEW DWELLING

SHEET TITLE: STORMWATER DETAILS

DRAWN BY:	APPROVED BY:
LJM	DAL
ORIGINAL: A3	SCALE: 1:20, 1:25, 1:50
FILE: 22-0238	SHEET: CD01

Appendix 2 – Stormwater Design Calculations



Subcat Reach Pond Link

Routing Diagram for 22-0238 Attenuation Design
Prepared by Core Engineering Solutions, Printed 12/06/2024

Area Listing (selected nodes)

Area (sq-meters)	CN	Description (subcatchment-numbers)
1,044.4	77	Woods, Good, HSG D (1S, 2S, 13S, 15S)
1,044.4	**77**	**TOTAL AREA**

Summary for Subcatchment 1S: Shed and Dwelling Roof Areas

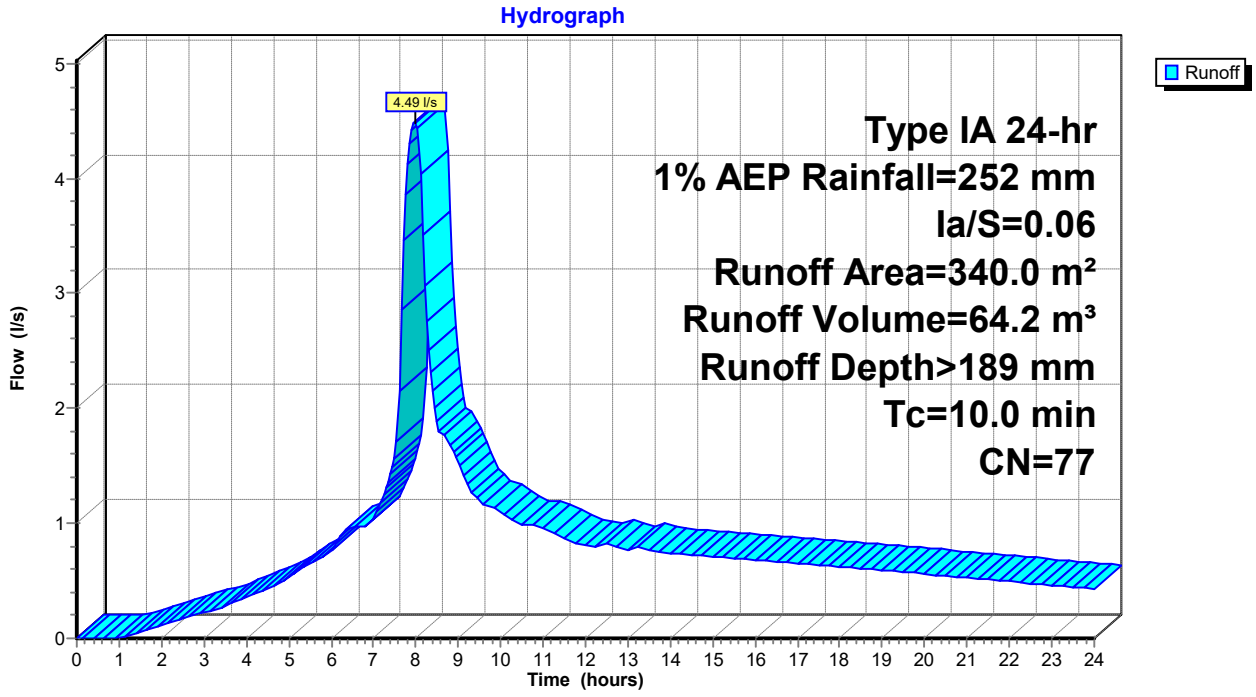
Runoff = 4.49 l/s @ 7.97 hrs, Volume= 64.2 m³, Depth> 189 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 1% AEP Rainfall=252 mm, Ia/S=0.06

Area (m²)	CN	Description
110.0	77	Woods, Good, HSG D
230.0	77	Woods, Good, HSG D
340.0	77	Weighted Average
340.0		100.00% Pervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m³/s)	Description
10.0					**Direct Entry,**

Subcatchment 1S: Shed and Dwelling Roof Areas



Summary for Subcatchment 2S: Driveway Area

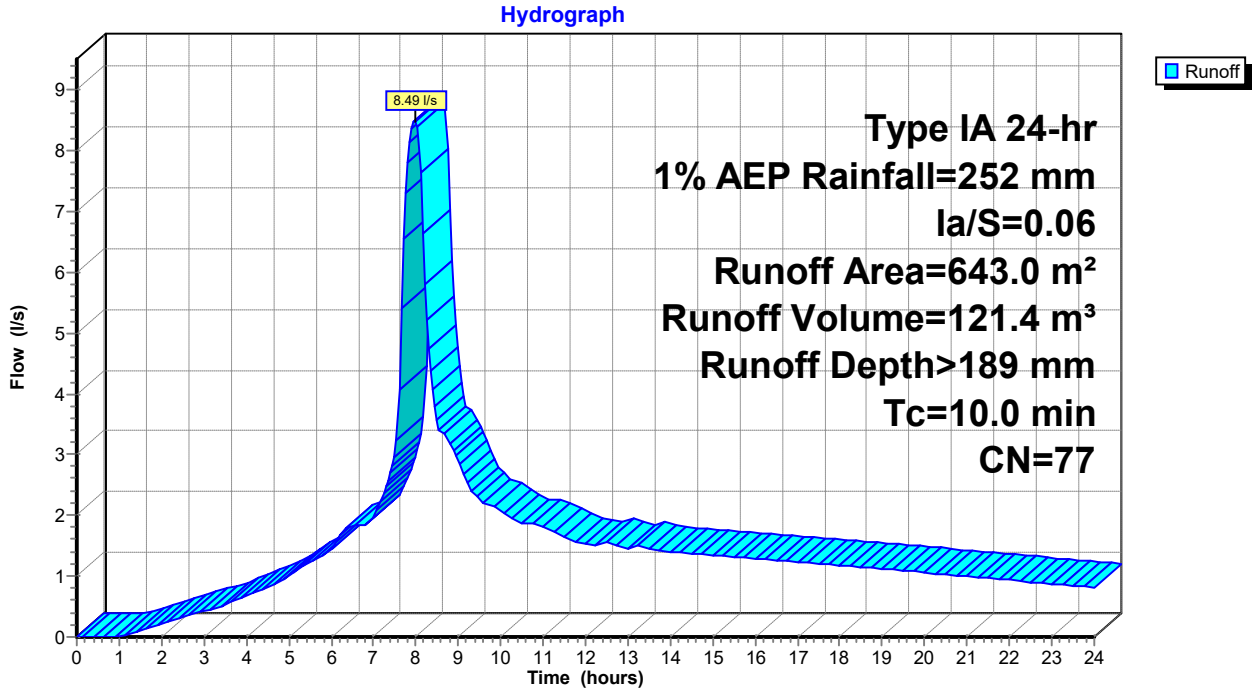
Runoff = 8.49 l/s @ 7.97 hrs, Volume= 121.4 m³, Depth> 189 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 1% AEP Rainfall=252 mm, Ia/S=0.06

Area (m²)	CN	Description
643.0	77	Woods, Good, HSG D
643.0		100.00% Pervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m³/s)	Description
10.0					**Direct Entry,**

Subcatchment 2S: Driveway Area



Summary for Subcatchment 13S: 4 x Water Tanks Area

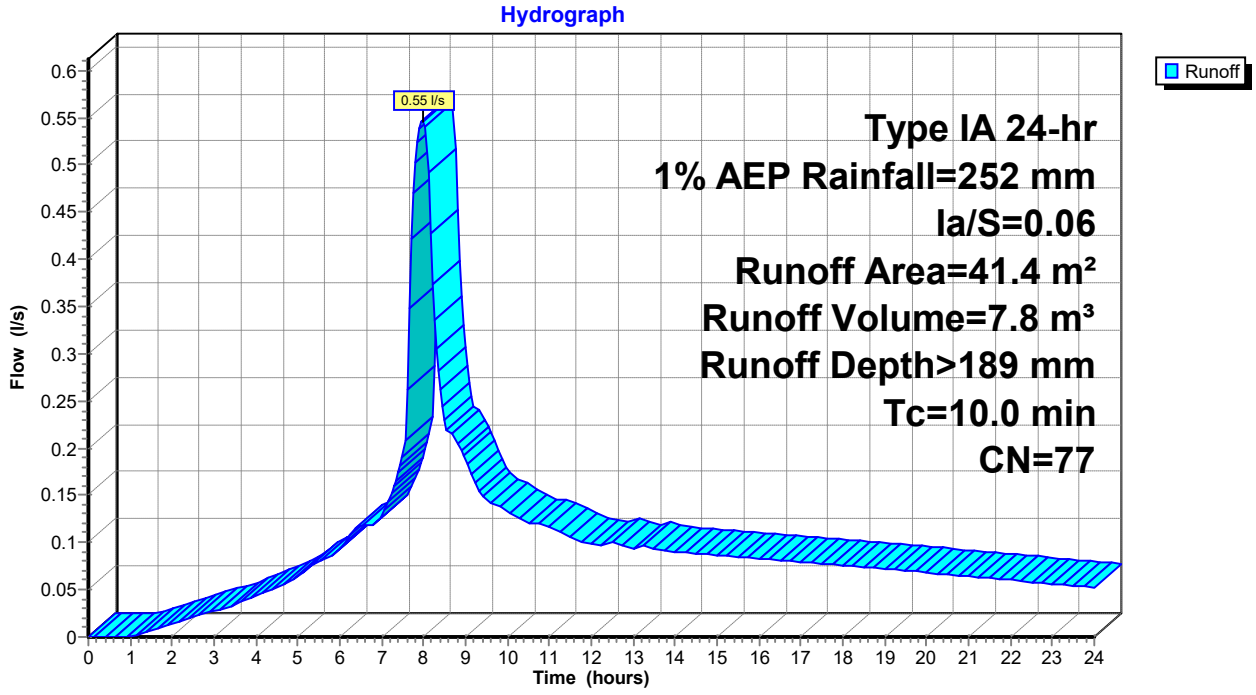
Runoff = 0.55 l/s @ 7.97 hrs, Volume= 7.8 m³, Depth> 189 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 1% AEP Rainfall=252 mm, Ia/S=0.06

Area (m²)	CN	Description
41.4	77	Woods, Good, HSG D
41.4		100.00% Pervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m³/s)	Description
10.0					**Direct Entry,**

Subcatchment 13S: 4 x Water Tanks Area



Summary for Subcatchment 15S: Walkway Area

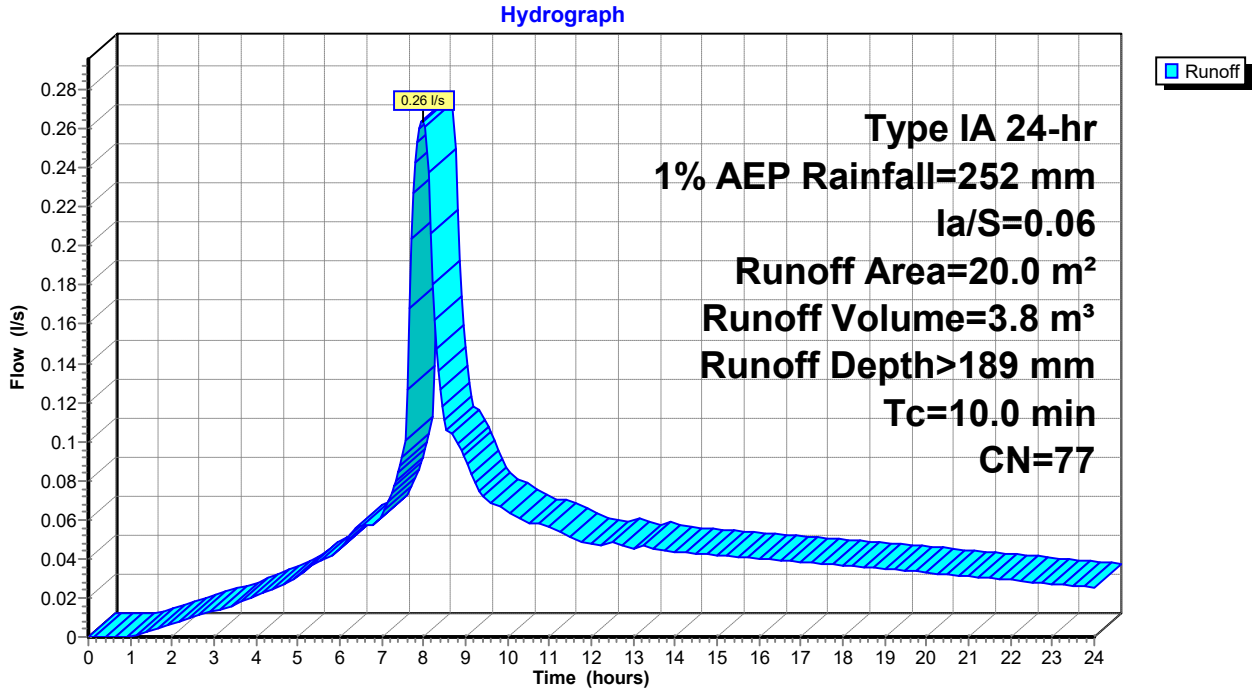
Runoff = 0.26 l/s @ 7.97 hrs, Volume= 3.8 m³, Depth> 189 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 1% AEP Rainfall=252 mm, Ia/S=0.06

Area (m²)	CN	Description
20.0	77	Woods, Good, HSG D
20.0		100.00% Pervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m³/s)	Description
10.0					**Direct Entry,**

Subcatchment 15S: Walkway Area

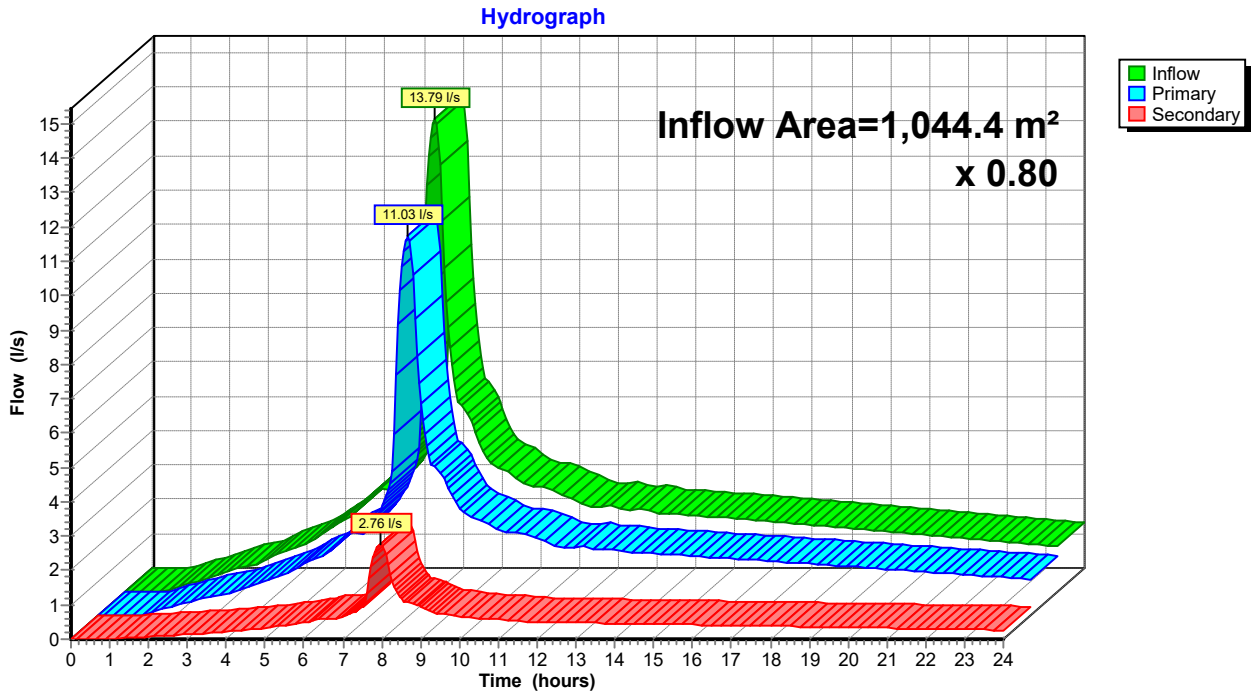


Summary for Link 9L: Pre dev

Inflow Area = 1,044.4 m², 0.00% Impervious, Inflow Depth > 189 mm for 1% AEP event
Inflow = 13.79 l/s @ 7.97 hrs, Volume= 197.2 m³
Primary = 11.03 l/s @ 7.97 hrs, Volume= 157.7 m³, Atten= 20%, Lag= 0.0 min
Secondary = 2.76 l/s @ 7.97 hrs, Volume= 39.4 m³

Primary outflow = Inflow x 0.80, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 9L: Pre dev



Summary for Subcatchment 1S: Shed and Dwelling Roof Areas

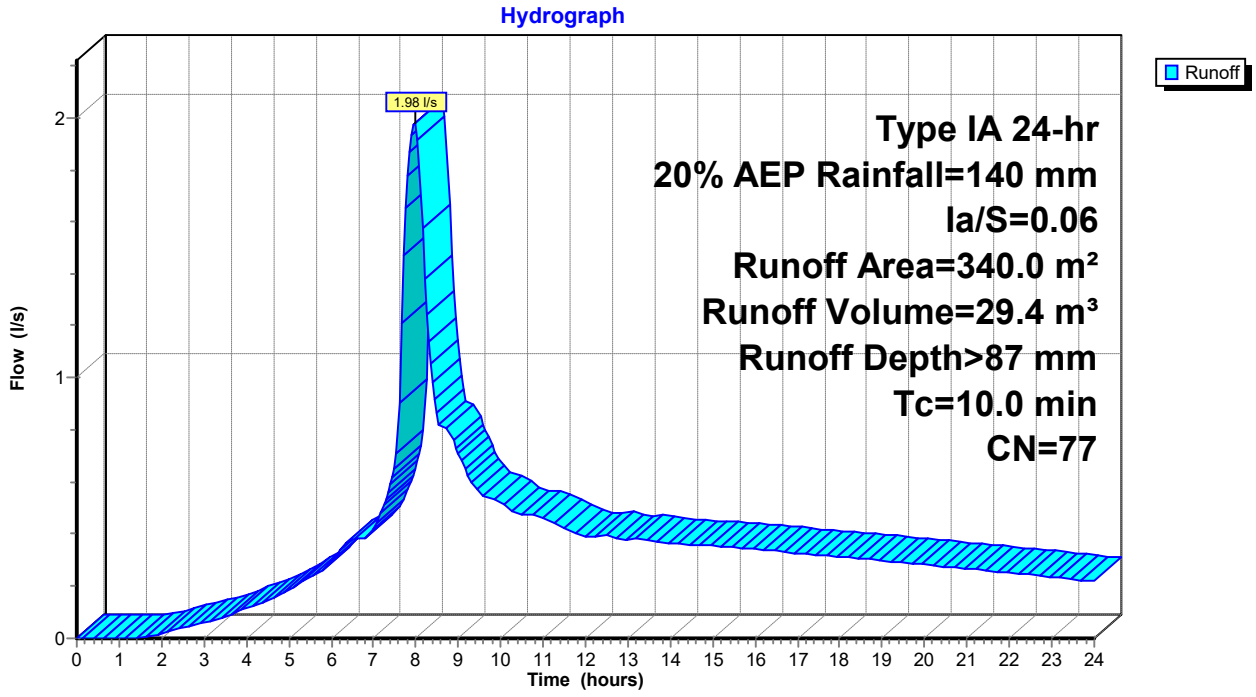
Runoff = 1.98 l/s @ 7.99 hrs, Volume= 29.4 m³, Depth> 87 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 20% AEP Rainfall=140 mm, Ia/S=0.06

Area (m²)	CN	Description
110.0	77	Woods, Good, HSG D
230.0	77	Woods, Good, HSG D
340.0	77	Weighted Average
340.0		100.00% Pervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m³/s)	Description
10.0					**Direct Entry,**

Subcatchment 1S: Shed and Dwelling Roof Areas



Summary for Subcatchment 2S: Driveway Area

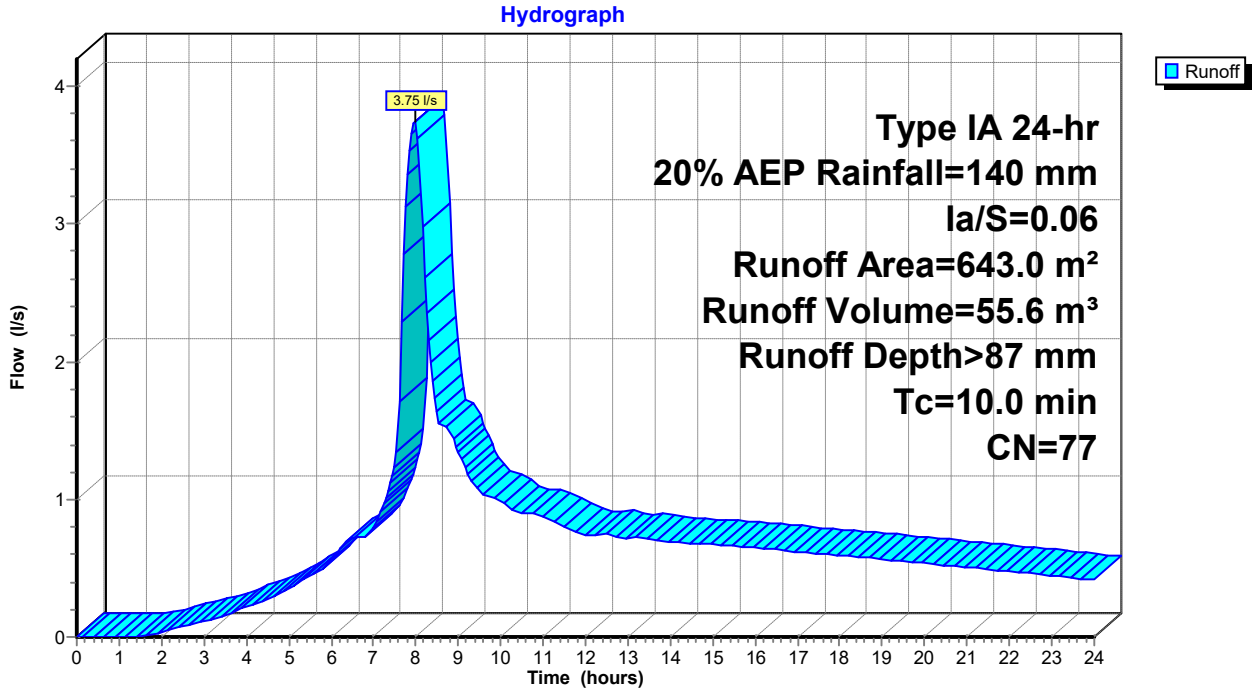
Runoff = 3.75 l/s @ 7.99 hrs, Volume= 55.6 m³, Depth> 87 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 20% AEP Rainfall=140 mm, Ia/S=0.06

Area (m²)	CN	Description
643.0	77	Woods, Good, HSG D
643.0		100.00% Pervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m³/s)	Description
10.0					**Direct Entry,**

Subcatchment 2S: Driveway Area



Summary for Subcatchment 13S: 4 x Water Tanks Area

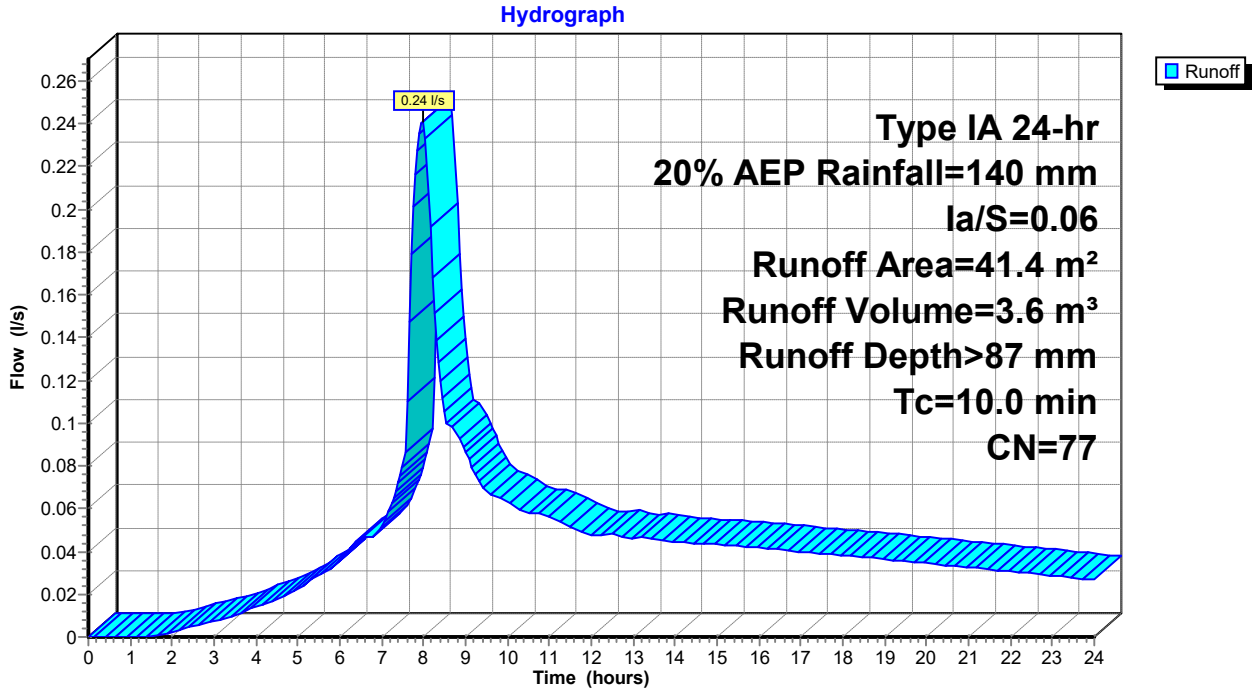
Runoff = 0.24 l/s @ 7.99 hrs, Volume= 3.6 m³, Depth> 87 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 20% AEP Rainfall=140 mm, Ia/S=0.06

Area (m²)	CN	Description
41.4	77	Woods, Good, HSG D
41.4		100.00% Pervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m³/s)	Description
10.0					**Direct Entry,**

Subcatchment 13S: 4 x Water Tanks Area



Summary for Subcatchment 15S: Walkway Area

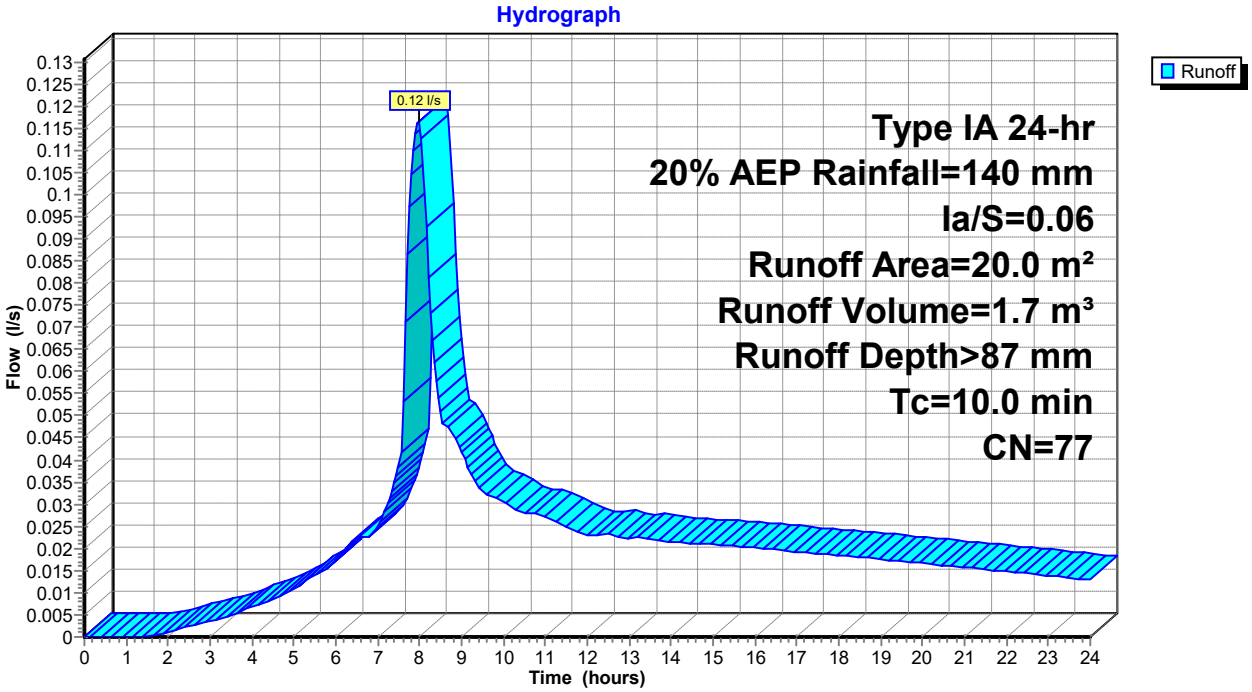
Runoff = 0.12 l/s @ 7.99 hrs, Volume= 1.7 m³, Depth> 87 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 20% AEP Rainfall=140 mm, Ia/S=0.06

Area (m²)	CN	Description
20.0	77	Woods, Good, HSG D
20.0		100.00% Pervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m³/s)	Description
10.0					**Direct Entry,**

Subcatchment 15S: Walkway Area

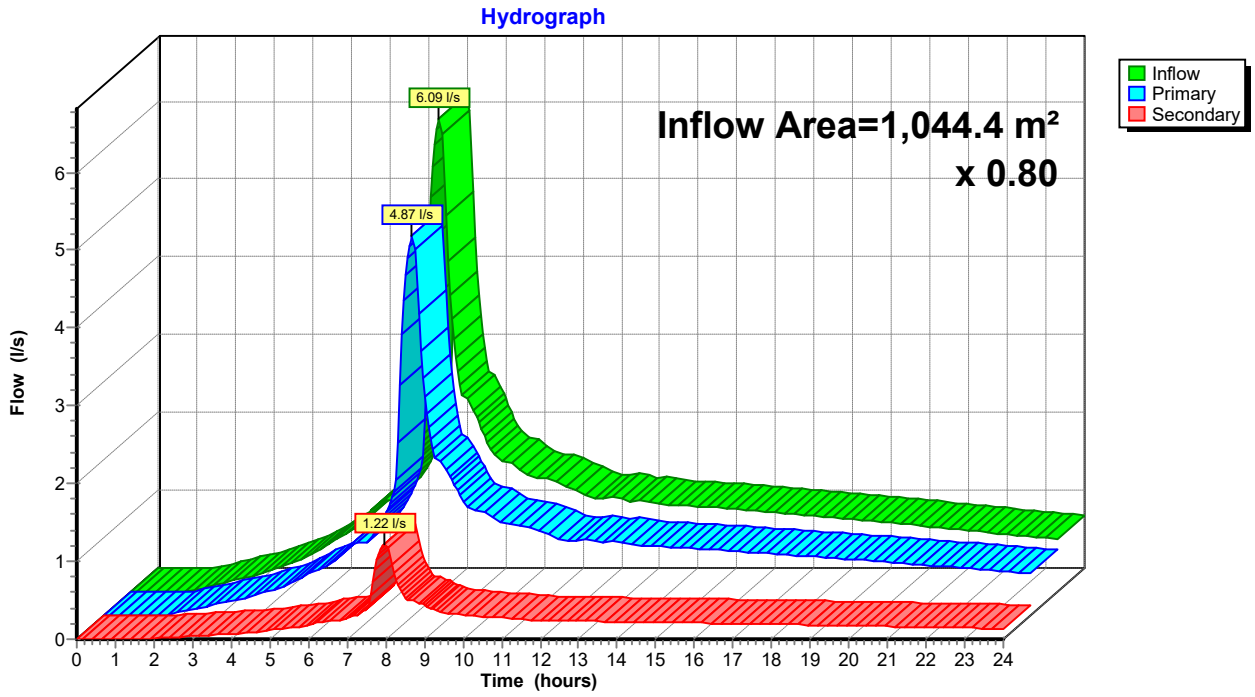


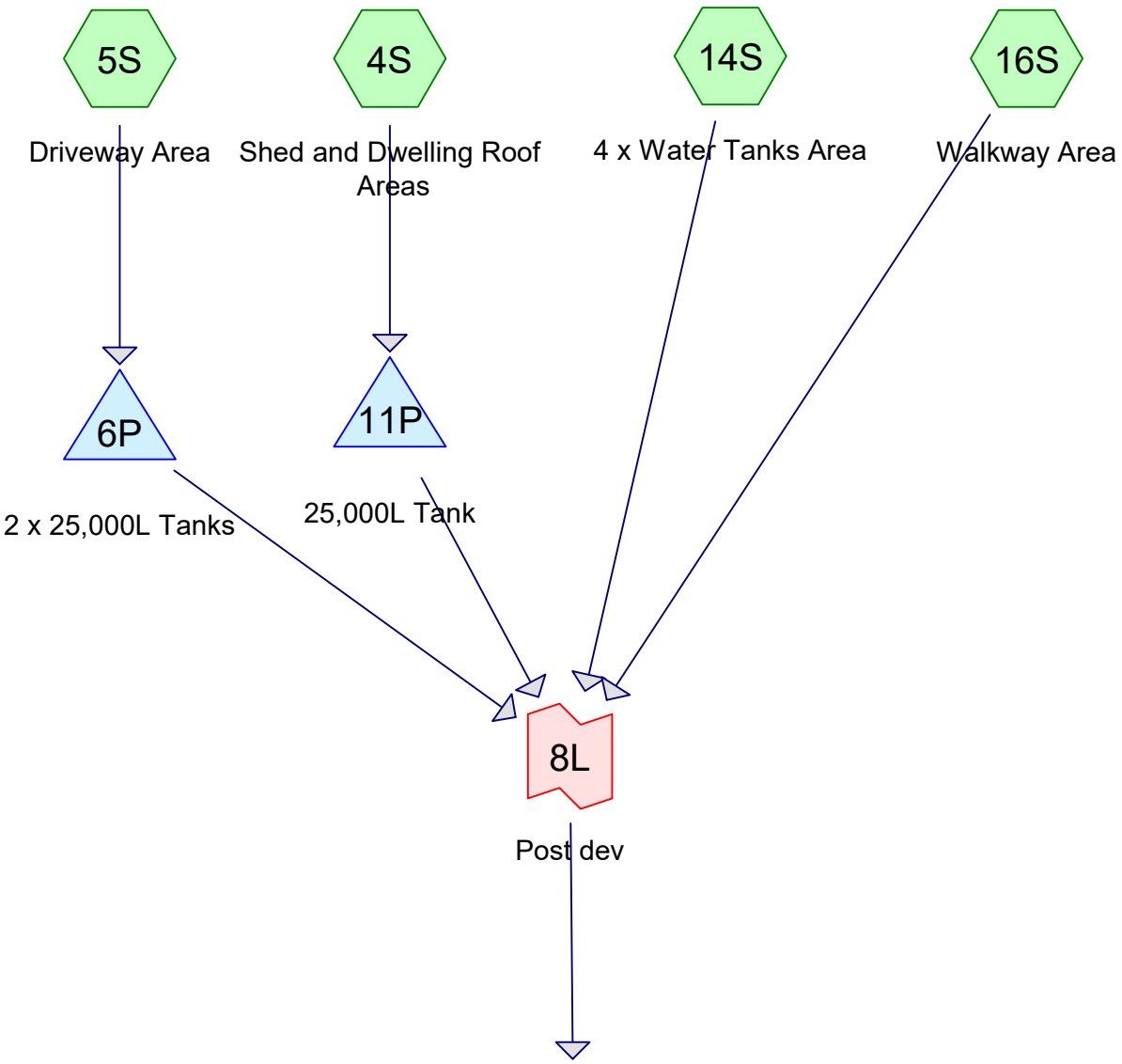
Summary for Link 9L: Pre dev

Inflow Area = 1,044.4 m², 0.00% Impervious, Inflow Depth > 87 mm for 20% AEP event
Inflow = 6.09 l/s @ 7.99 hrs, Volume= 90.4 m³
Primary = 4.87 l/s @ 7.99 hrs, Volume= 72.3 m³, Atten= 20%, Lag= 0.0 min
Secondary = 1.22 l/s @ 7.99 hrs, Volume= 18.1 m³

Primary outflow = Inflow x 0.80, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 9L: Pre dev





Subcat Reach Pond Link

Routing Diagram for 22-0238 Attenuation Design Rev b
Prepared by Core Engineering Solutions, Printed 3/07/2024

Summary for Subcatchment 4S: Shed and Dwelling Roof Areas

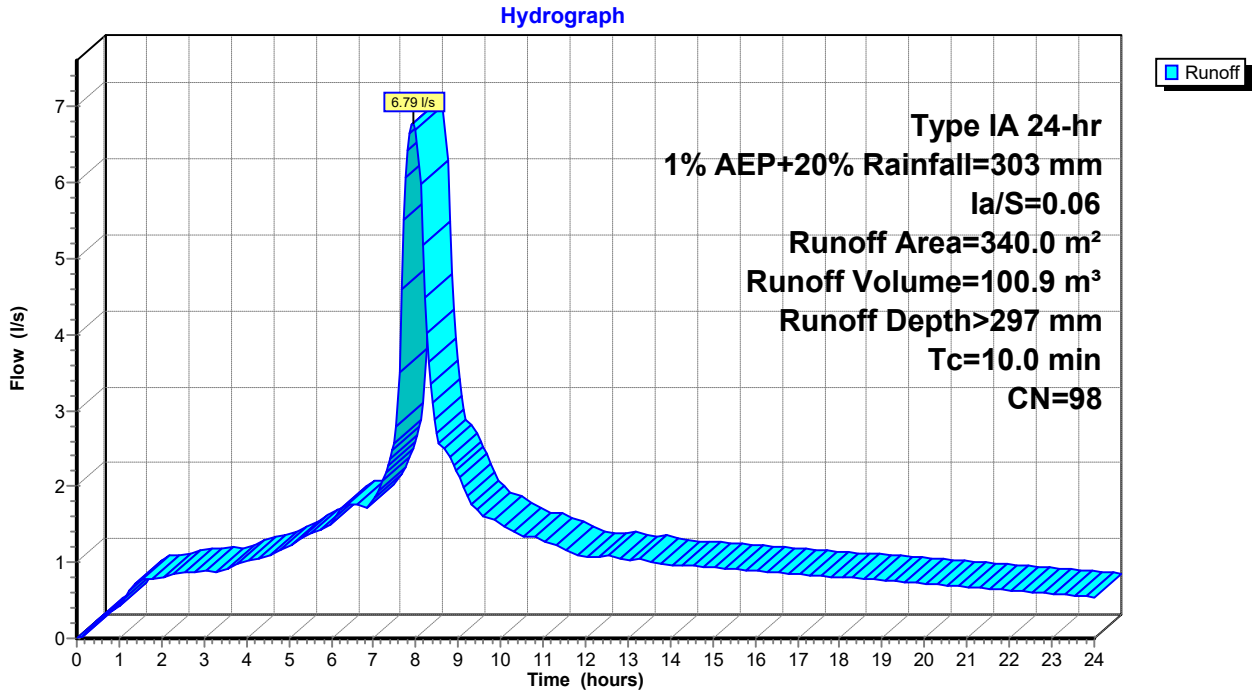
Runoff = 6.79 l/s @ 7.94 hrs, Volume= 100.9 m³, Depth> 297 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 1% AEP+20% Rainfall=303 mm, Ia/S=0.06

Area (m²)	CN	Description
110.0	98	Roofs, HSG D
230.0	98	Roofs, HSG D
340.0	98	Weighted Average
340.0		100.00% Impervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m³/s)	Description
10.0					**Direct Entry,**

Subcatchment 4S: Shed and Dwelling Roof Areas



Summary for Subcatchment 5S: Driveway Area

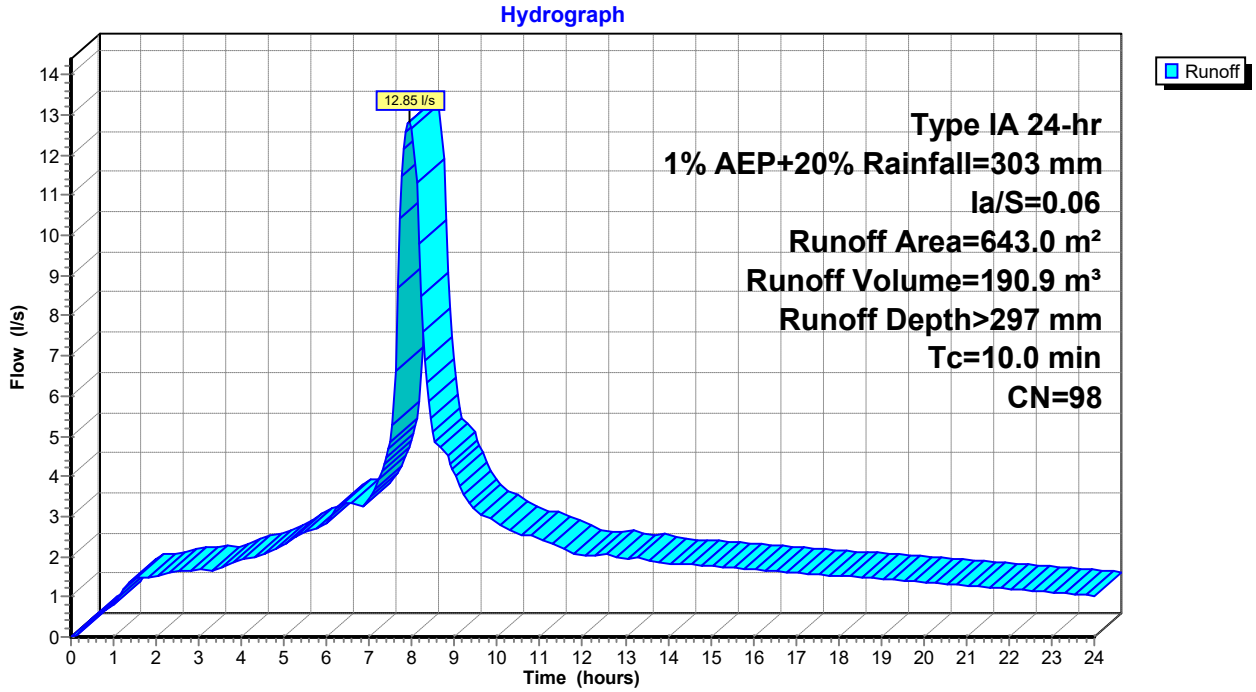
Runoff = 12.85 l/s @ 7.94 hrs, Volume= 190.9 m³, Depth> 297 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 1% AEP+20% Rainfall=303 mm, Ia/S=0.06

Area (m²)	CN	Description
643.0	98	Paved parking, HSG D
643.0		100.00% Impervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m³/s)	Description
10.0					**Direct Entry,**

Subcatchment 5S: Driveway Area



Summary for Subcatchment 14S: 4 x Water Tanks Area

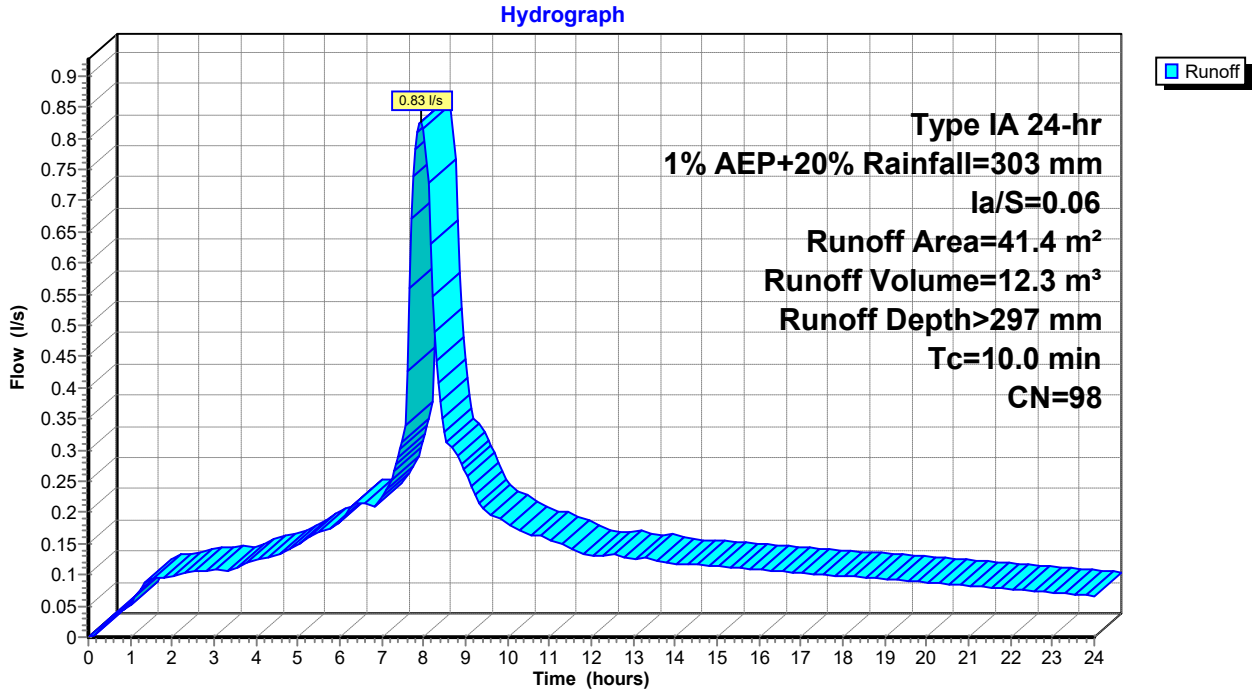
Runoff = 0.83 l/s @ 7.94 hrs, Volume= 12.3 m³, Depth> 297 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 1% AEP+20% Rainfall=303 mm, Ia/S=0.06

Area (m²)	CN	Description
41.4	98	Unconnected pavement, HSG D
41.4		100.00% Impervious Area
41.4		100.00% Unconnected

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m³/s)	Description
10.0					**Direct Entry,**

Subcatchment 14S: 4 x Water Tanks Area



Summary for Subcatchment 16S: Walkway Area

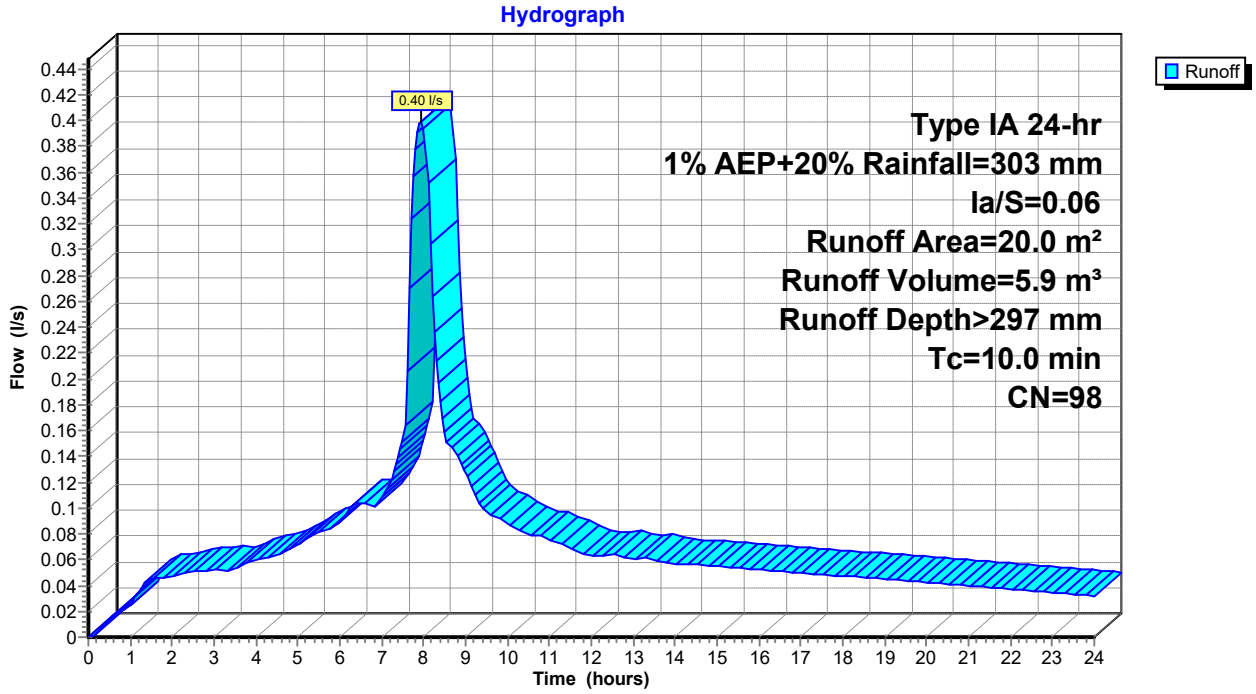
Runoff = 0.40 l/s @ 7.94 hrs, Volume= 5.9 m³, Depth> 297 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 1% AEP+20% Rainfall=303 mm, Ia/S=0.06

Area (m²)	CN	Description
20.0	98	Unconnected pavement, HSG D
20.0		100.00% Impervious Area
20.0		100.00% Unconnected

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m³/s)	Description
10.0					**Direct Entry,**

Subcatchment 16S: Walkway Area



Summary for Pond 6P: 2 x 25,000L Tanks

Inflow Area = 643.0 m²,100.00% Impervious, Inflow Depth > 297 mm for 1% AEP+20% event
Inflow = 12.85 l/s @ 7.94 hrs, Volume= 190.9 m³
Outflow = 4.92 l/s @ 8.54 hrs, Volume= 176.5 m³, Atten= 62%, Lag= 36.4 min
Primary = 4.92 l/s @ 8.54 hrs, Volume= 176.5 m³

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 2.233 m @ 8.54 hrs Surf.Area= 20.4 m² Storage= 45.5 m³

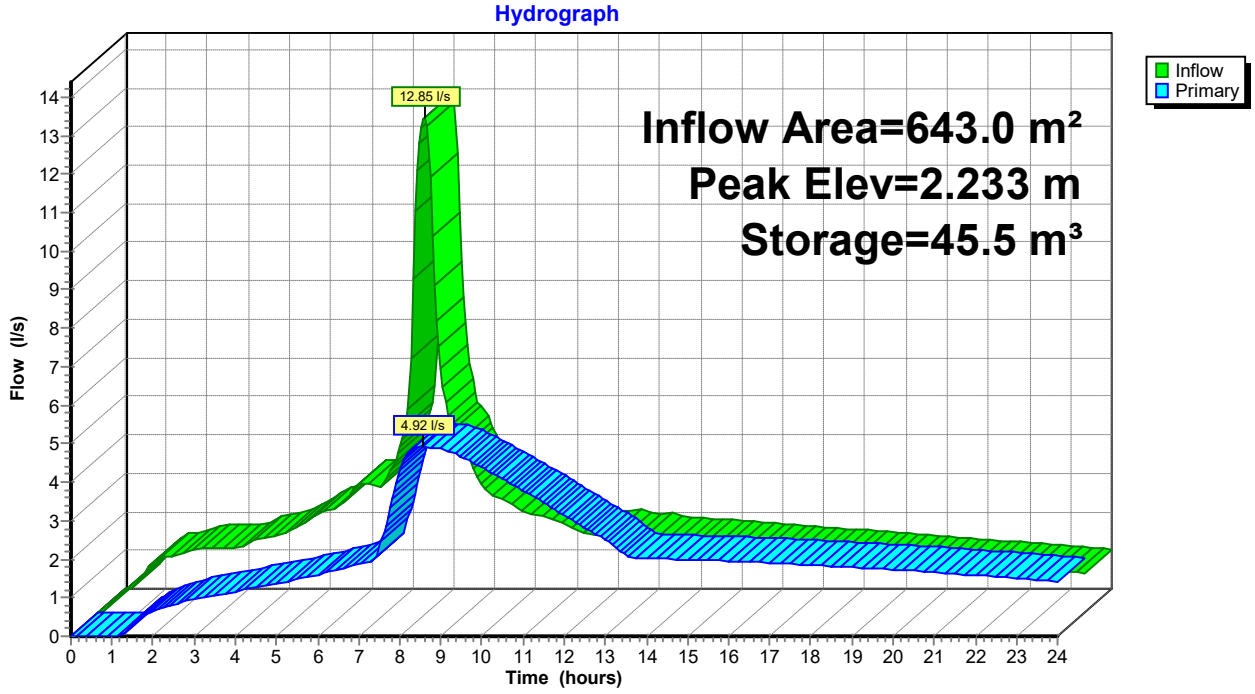
Plug-Flow detention time= 167.1 min calculated for 176.5 m³ (92% of inflow)
Center-of-Mass det. time= 110.8 min (753.5 - 642.7)

Volume	Invert	Avail.Storage	Storage Description
#1	0.000 m	48.9 m³	**3.60 mD x 2.40 mH Vertical Cone/Cylinder** x 2

Device	Routing	Invert	Outlet Devices
#1	Primary	0.120 m	**30 mm Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	1.300 m	**33 mm Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Primary	2.400 m	**100 mm Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.92 l/s @ 8.54 hrs HW=2.233 m (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 2.72 l/s @ 3.85 m/s)
- **2=Orifice/Grate** (Orifice Controls 2.20 l/s @ 2.57 m/s)
- **3=Orifice/Grate** (Controls 0.00 l/s)

Pond 6P: 2 x 25,000L Tanks



Summary for Pond 11P: 25,000L Tank

Inflow Area = 340.0 m²,100.00% Impervious, Inflow Depth > 297 mm for 1% AEP+20% event
Inflow = 6.79 l/s @ 7.94 hrs, Volume= 100.9 m³
Outflow = 5.39 l/s @ 8.14 hrs, Volume= 98.6 m³, Atten= 21%, Lag= 12.1 min
Primary = 5.39 l/s @ 8.14 hrs, Volume= 98.6 m³

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 0.795 m @ 8.14 hrs Surf.Area= 13.3 m² Storage= 10.6 m³

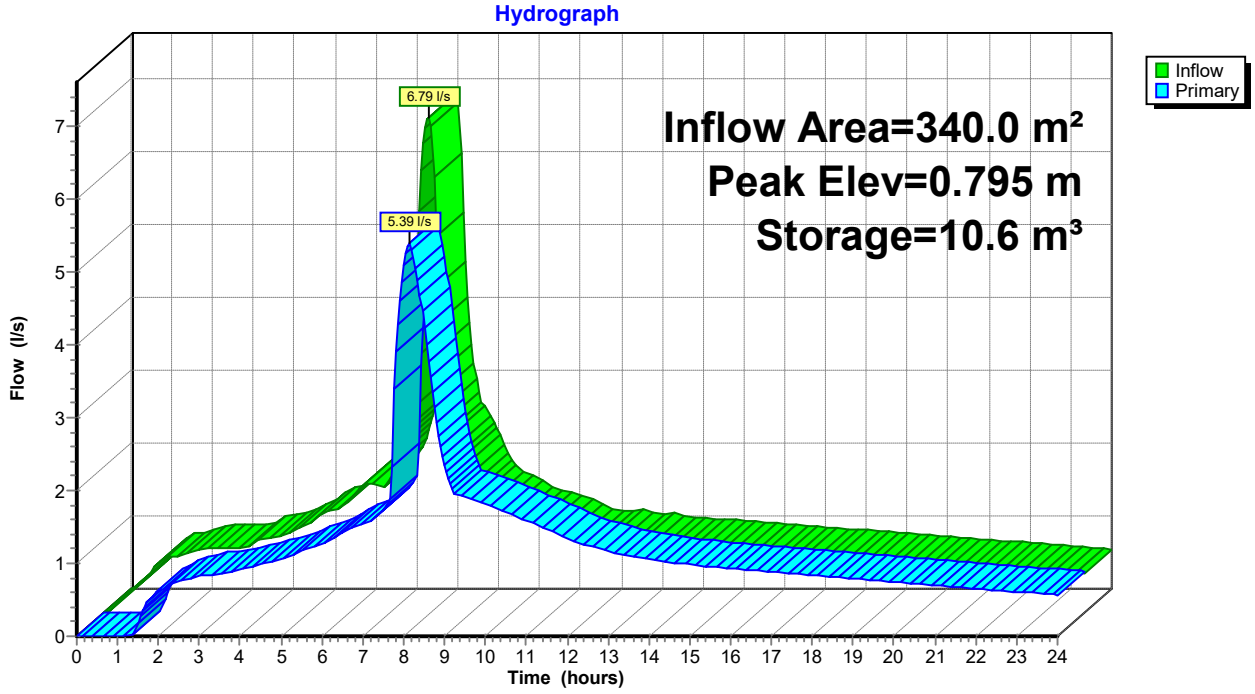
Plug-Flow detention time= 53.8 min calculated for 98.4 m³ (97% of inflow)
Center-of-Mass det. time= 35.9 min (678.5 - 642.7)

Volume	Invert	Avail.Storage	Storage Description
#1	0.000 m	32.0 m³	**3.60 mD x 2.40 mH Vertical Cone/Cylinder** x 1.31

Device	Routing	Invert	Outlet Devices
#1	Primary	0.120 m	**38 mm Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	0.560 m	**54 mm Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Primary	2.400 m	**100 mm Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=5.38 l/s @ 8.14 hrs HW=0.794 m (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 2.44 l/s @ 2.15 m/s)
- **2=Orifice/Grate** (Orifice Controls 2.94 l/s @ 1.28 m/s)
- **3=Orifice/Grate** (Controls 0.00 l/s)

Pond 11P: 25,000L Tank



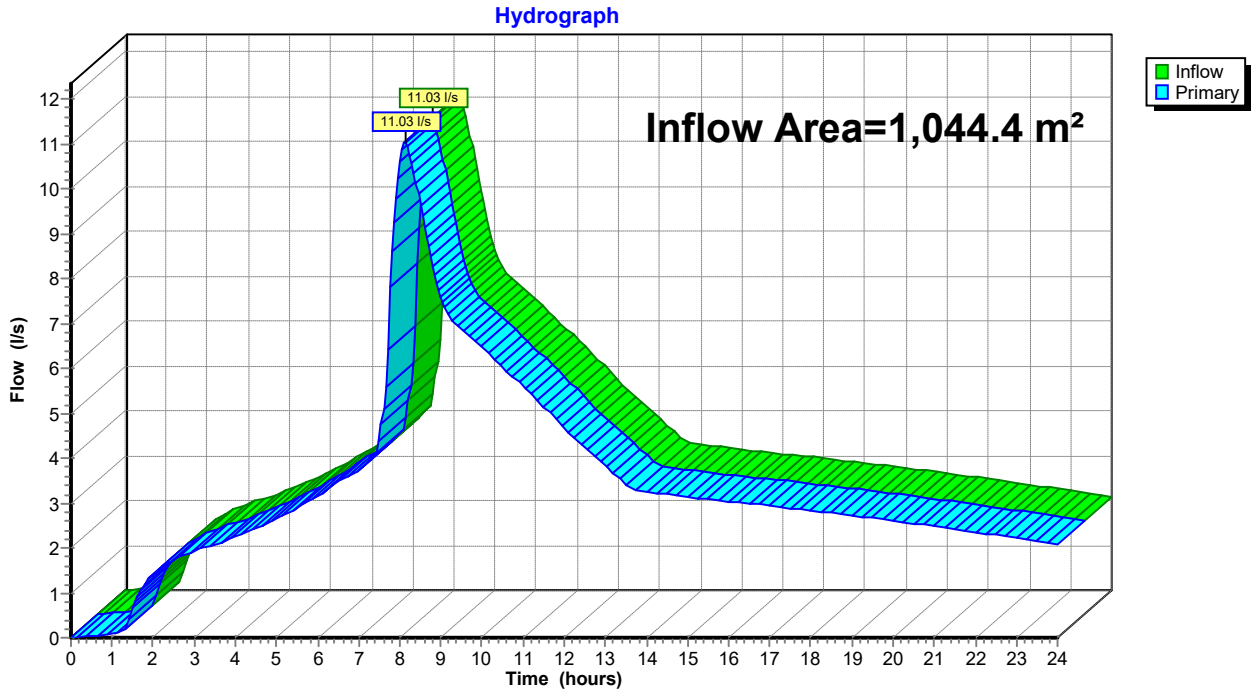
Summary for Link 8L: Post dev

Inflow Area = 1,044.4 m²,100.00% Impervious, Inflow Depth > 281 mm for 1% AEP+20% event
Inflow = 11.03 l/s @ 8.12 hrs, Volume= 293.3 m³
Primary = 11.03 l/s @ 8.12 hrs, Volume= 293.3 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Fixed water surface Elevation= -1.725 m

Link 8L: Post dev



Summary for Subcatchment 4S: Shed and Dwelling Roof Areas

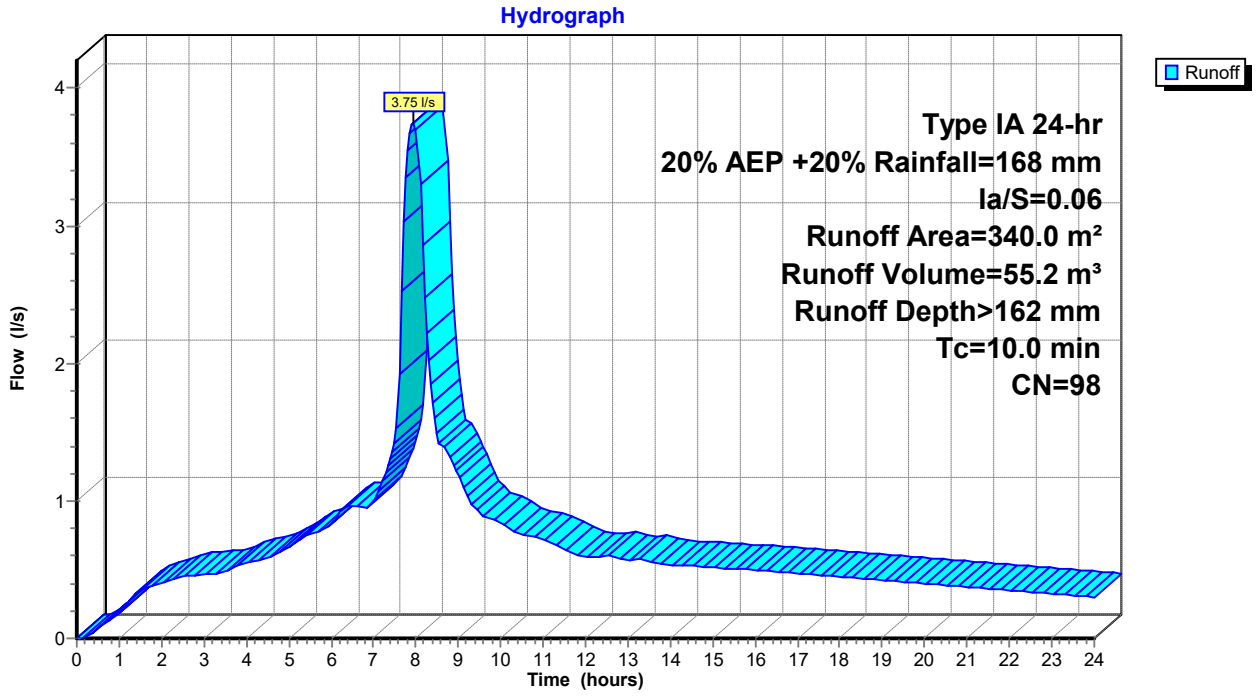
Runoff = 3.75 l/s @ 7.94 hrs, Volume= 55.2 m³, Depth> 162 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 20% AEP +20% Rainfall=168 mm, Ia/S=0.06

Area (m²)	CN	Description
110.0	98	Roofs, HSG D
230.0	98	Roofs, HSG D
340.0	98	Weighted Average
340.0		100.00% Impervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m³/s)	Description
10.0					**Direct Entry,**

Subcatchment 4S: Shed and Dwelling Roof Areas



Summary for Subcatchment 5S: Driveway Area

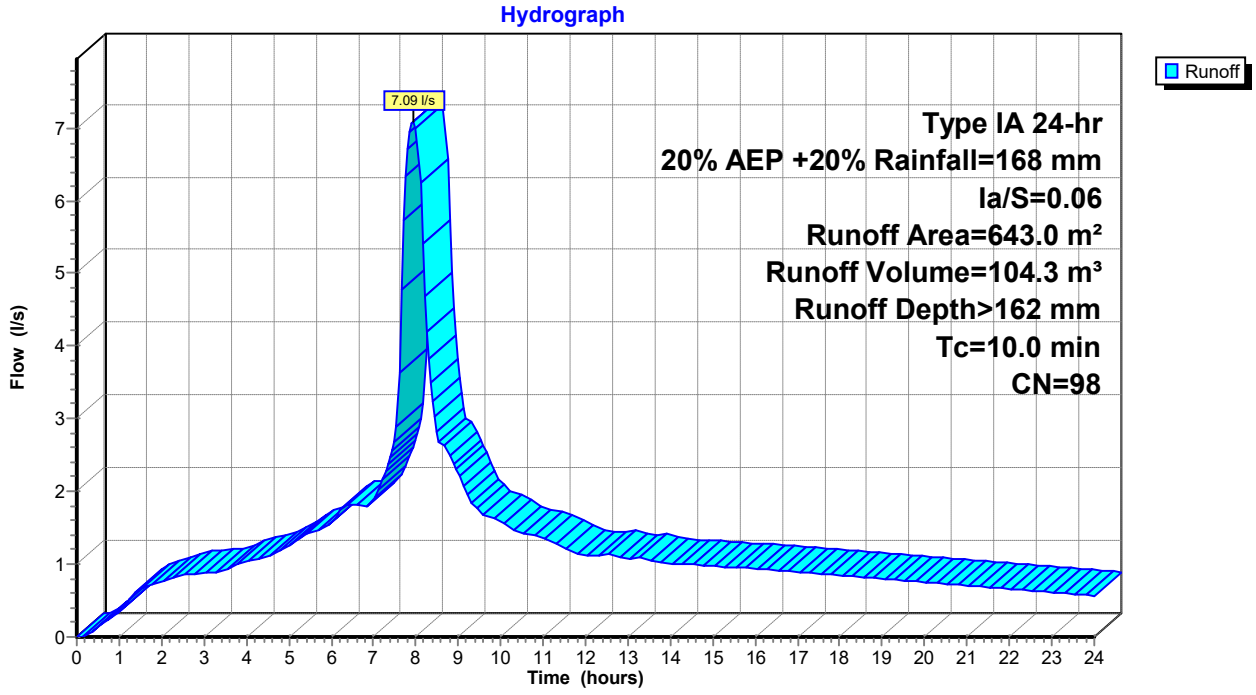
Runoff = 7.09 l/s @ 7.94 hrs, Volume= 104.3 m³, Depth> 162 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 20% AEP +20% Rainfall=168 mm, Ia/S=0.06

Area (m²)	CN	Description
643.0	98	Paved parking, HSG D
643.0		100.00% Impervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m³/s)	Description
10.0					**Direct Entry,**

Subcatchment 5S: Driveway Area



Summary for Subcatchment 14S: 4 x Water Tanks Area

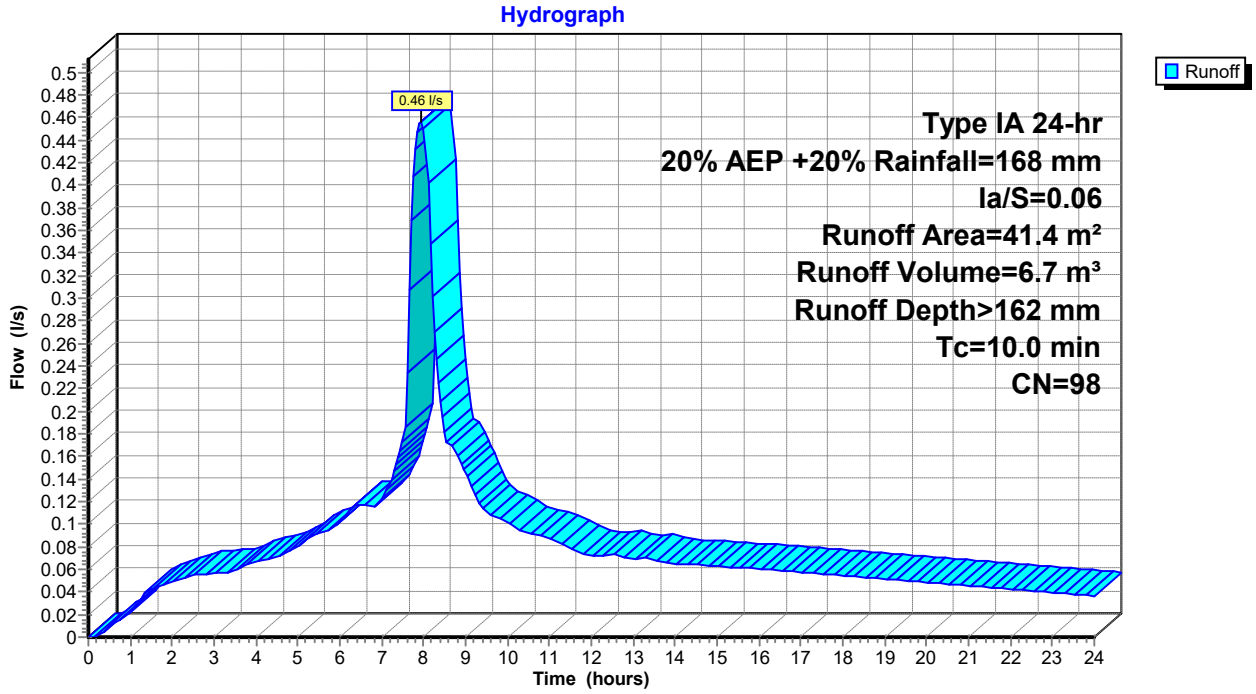
Runoff = 0.46 l/s @ 7.94 hrs, Volume= 6.7 m³, Depth> 162 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 20% AEP +20% Rainfall=168 mm, Ia/S=0.06

Area (m²)	CN	Description
41.4	98	Unconnected pavement, HSG D
41.4		100.00% Impervious Area
41.4		100.00% Unconnected

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m³/s)	Description
10.0					**Direct Entry,**

Subcatchment 14S: 4 x Water Tanks Area



Summary for Subcatchment 16S: Walkway Area

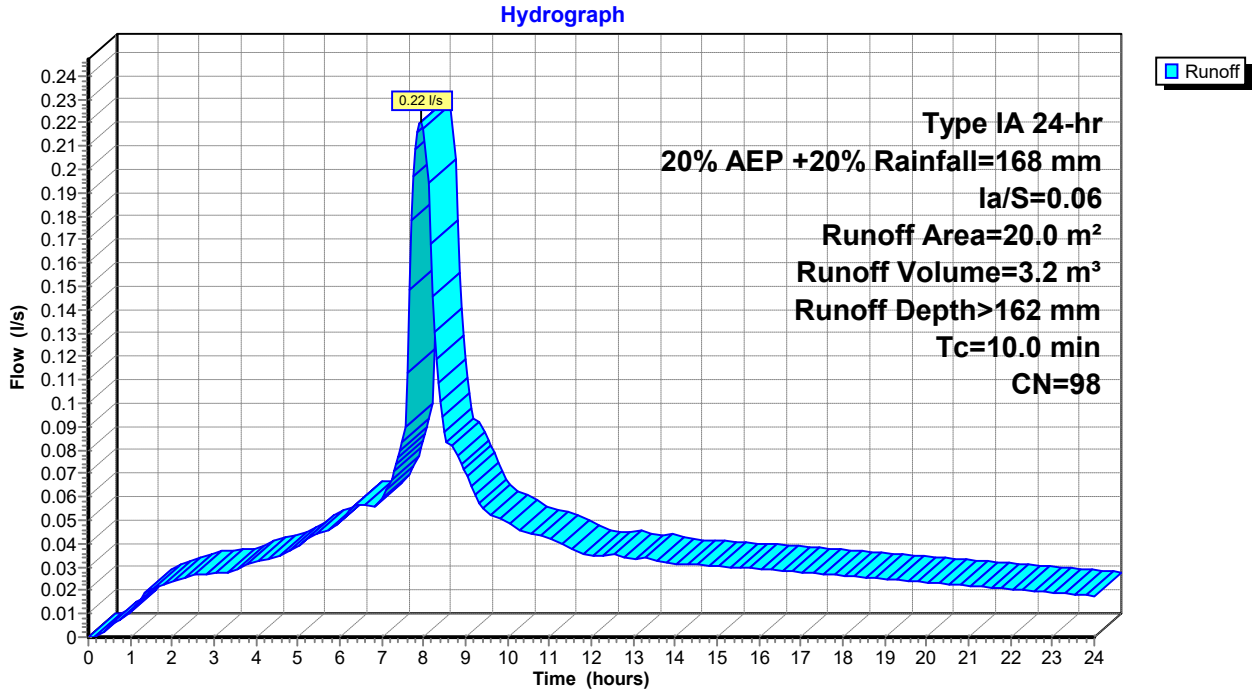
Runoff = 0.22 l/s @ 7.94 hrs, Volume= 3.2 m³, Depth> 162 mm

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 20% AEP +20% Rainfall=168 mm, Ia/S=0.06

Area (m²)	CN	Description
20.0	98	Unconnected pavement, HSG D
20.0		100.00% Impervious Area
20.0		100.00% Unconnected

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m³/s)	Description
10.0					**Direct Entry,**

Subcatchment 16S: Walkway Area



Summary for Pond 6P: 2 x 25,000L Tanks

Inflow Area = 643.0 m²,100.00% Impervious, Inflow Depth > 162 mm for 20% AEP +20% event
Inflow = 7.09 l/s @ 7.94 hrs, Volume= 104.3 m³
Outflow = 2.01 l/s @ 9.17 hrs, Volume= 98.6 m³, Atten= 72%, Lag= 74.1 min
Primary = 2.01 l/s @ 9.17 hrs, Volume= 98.6 m³

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 1.283 m @ 9.17 hrs Surf.Area= 20.4 m² Storage= 26.1 m³

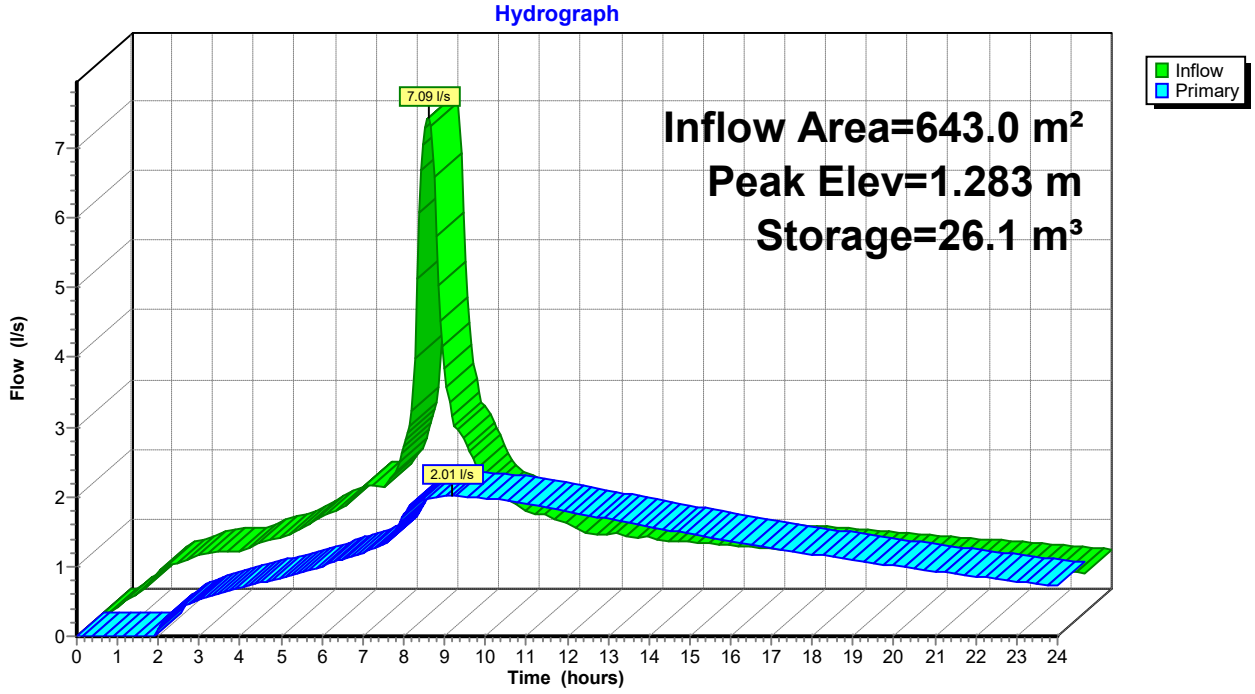
Plug-Flow detention time= 169.0 min calculated for 98.4 m³ (94% of inflow)
Center-of-Mass det. time= 127.5 min (776.6 - 649.1)

Volume	Invert	Avail.Storage	Storage Description
#1	0.000 m	48.9 m³	**3.60 mD x 2.40 mH Vertical Cone/Cylinder** x 2

Device	Routing	Invert	Outlet Devices
#1	Primary	0.120 m	**30 mm Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	1.300 m	**33 mm Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Primary	2.400 m	**100 mm Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.01 l/s @ 9.17 hrs HW=1.282 m (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 2.01 l/s @ 2.85 m/s)
- **2=Orifice/Grate** (Controls 0.00 l/s)
- **3=Orifice/Grate** (Controls 0.00 l/s)

Pond 6P: 2 x 25,000L Tanks



Summary for Pond 11P: 25,000L Tank

Inflow Area = 340.0 m²,100.00% Impervious, Inflow Depth > 162 mm for 20% AEP +20% event
Inflow = 3.75 l/s @ 7.94 hrs, Volume= 55.2 m³
Outflow = 1.95 l/s @ 8.32 hrs, Volume= 53.2 m³, Atten= 48%, Lag= 22.9 min
Primary = 1.95 l/s @ 8.32 hrs, Volume= 53.2 m³

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 0.558 m @ 8.32 hrs Surf.Area= 13.3 m² Storage= 7.4 m³

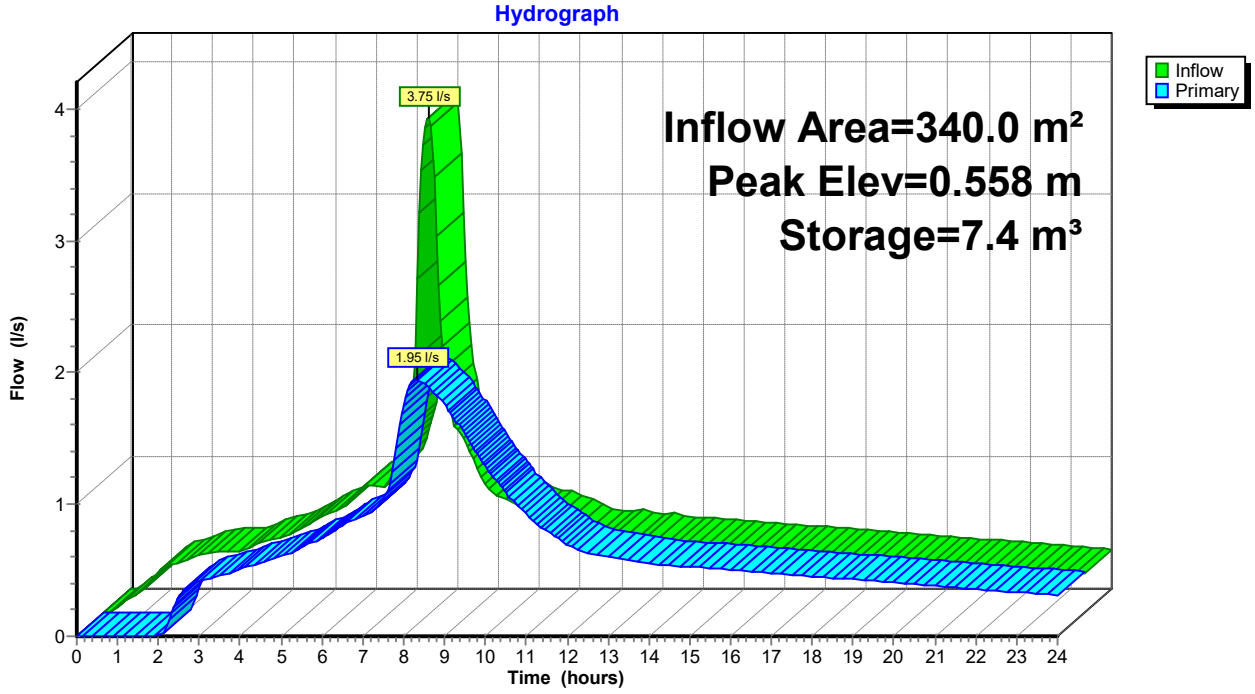
Plug-Flow detention time= 67.6 min calculated for 53.2 m³ (96% of inflow)
Center-of-Mass det. time= 40.0 min (689.1 - 649.1)

Volume	Invert	Avail.Storage	Storage Description
#1	0.000 m	32.0 m³	**3.60 mD x 2.40 mH Vertical Cone/Cylinder** x 1.31

Device	Routing	Invert	Outlet Devices
#1	Primary	0.120 m	**38 mm Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	0.560 m	**54 mm Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Primary	2.400 m	**100 mm Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.95 l/s @ 8.32 hrs HW=0.558 m (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 1.95 l/s @ 1.72 m/s)
- **2=Orifice/Grate** (Controls 0.00 l/s)
- **3=Orifice/Grate** (Controls 0.00 l/s)

Pond 11P: 25,000L Tank



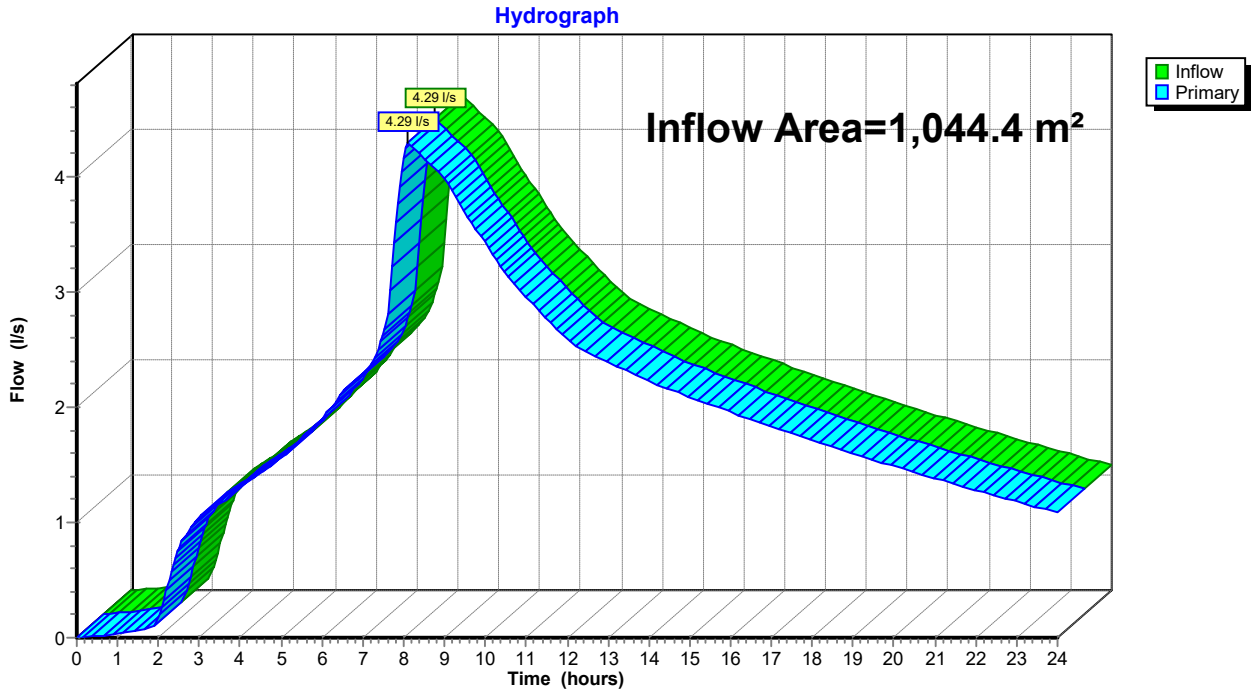
Summary for Link 8L: Post dev

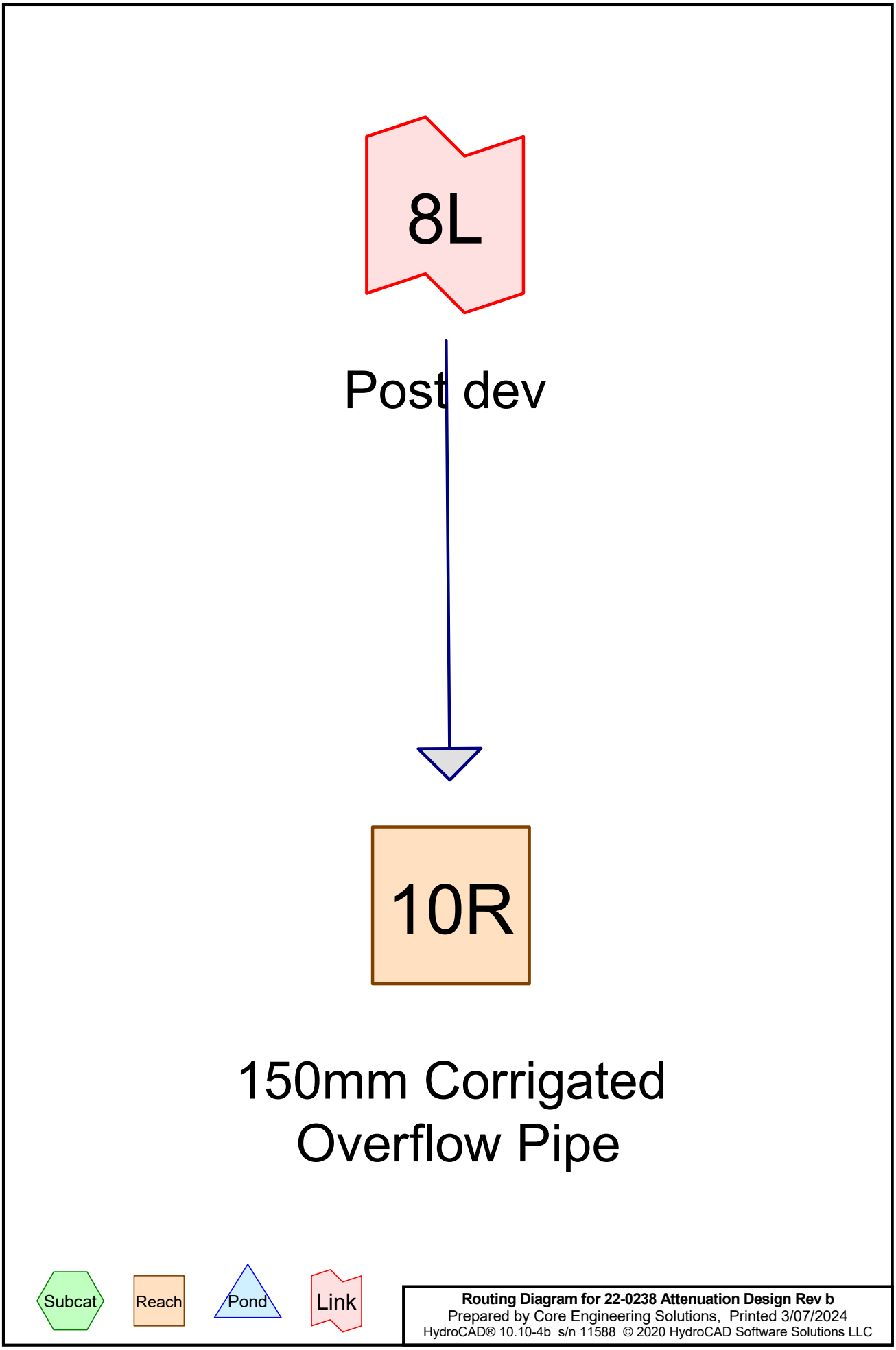
Inflow Area = 1,044.4 m²,100.00% Impervious, Inflow Depth > 155 mm for 20% AEP +20% event
Inflow = 4.29 l/s @ 8.12 hrs, Volume= 161.7 m³
Primary = 4.29 l/s @ 8.12 hrs, Volume= 161.7 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Fixed water surface Elevation= -1.725 m

Link 8L: Post dev




8L
Post dev
10R
150mm Corrigated
Overflow Pipe
Subcat
Reach
Pond
Link

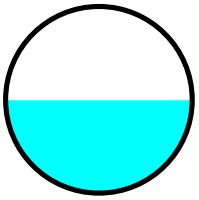
Summary for Reach 10R: 150mm Corrigated Overflow Pipe

Inflow Area = 1,044.4 m²,100.00% Impervious, Inflow Depth > 281 mm for 1% AEP+20% event
Inflow = 11.03 l/s @ 8.12 hrs, Volume= 293.3 m³
Outflow = 11.02 l/s @ 8.14 hrs, Volume= 293.1 m³, Atten= 0%, Lag= 1.2 min

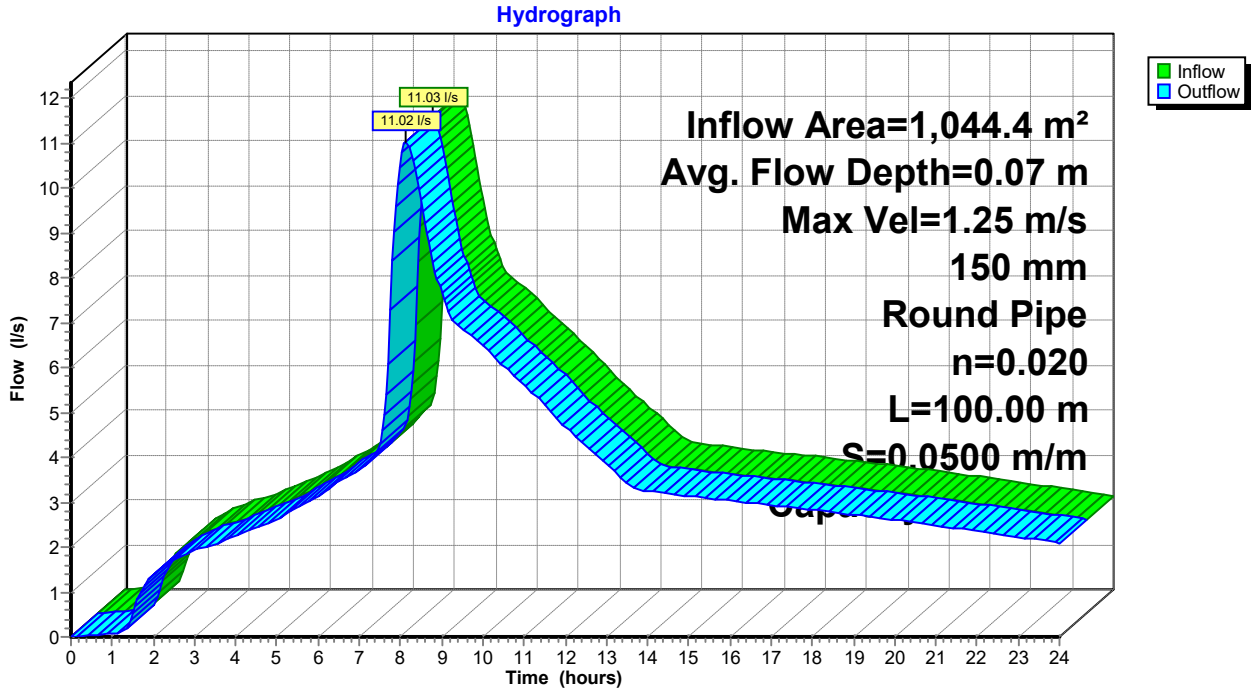
Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.25 m/s, Min. Travel Time= 1.3 min
Avg. Velocity = 0.87 m/s, Avg. Travel Time= 1.9 min

Peak Storage= 0.9 m³ @ 8.14 hrs
Average Depth at Peak Storage= 0.07 m , Surface Width= 0.15 m
Bank-Full Depth= 0.15 m Flow Area= 0.02 m², Capacity= 22.14 l/s

150 mm Round Pipe
n= 0.020 Corrugated PE, corrugated interior
Length= 100.00 m Slope= 0.0500 m/m
Inlet Invert= 0.000 m, Outlet Invert= -5.000 m



Reach 10R: 150mm Corrigated Overflow Pipe



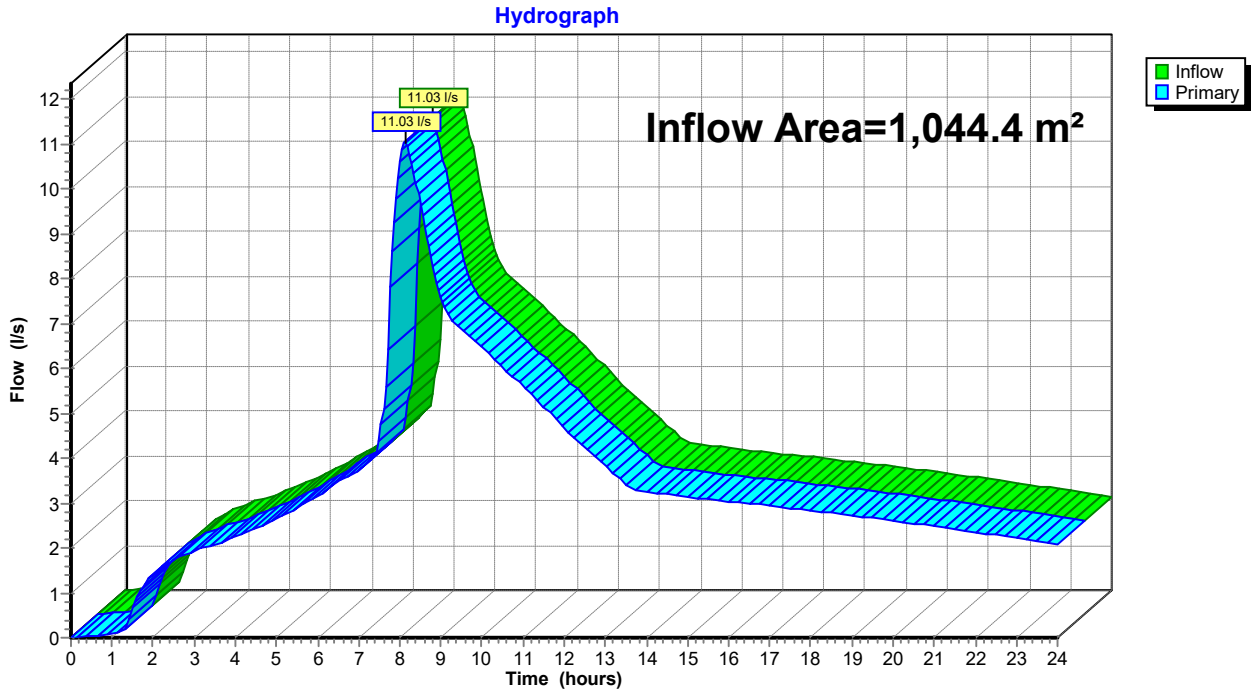
Summary for Link 8L: Post dev

Inflow Area = 1,044.4 m²,100.00% Impervious, Inflow Depth > 281 mm for 1% AEP+20% event
Inflow = 11.03 l/s @ 8.12 hrs, Volume= 293.3 m³
Primary = 11.03 l/s @ 8.12 hrs, Volume= 293.3 m³, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Fixed water surface Elevation= -1.725 m

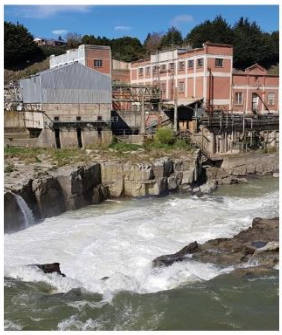
Link 8L: Post dev



Attachment E Ecological Report by EcoLogical Solutions Limited

ecoLogical Solutions
Environmental Consultants





February 2024

Lot 10, 319 Aucks Road, Okiato
Planting Plan

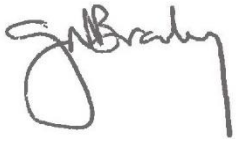
Submitted to: W & T McCarthy

water fauna flora land

Quality Assurance

This report has been prepared and reviewed by the following:

Prepared by: Dr Gary Bramley
Ecologist



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1.0 Introduction

1.1 Background

Peter and Leanne Maloney own the property at 319 Aucks Road, Okiato, Russell. The property is zoned Coastal Living in the Far North District Plan and is legally described as Pt Section 17 Block V Russell Survey District comprising approximately 14.32ha. The property consists of a small headland located on the southern side of Aucks Road and adjoining the Waikare Inlet as shown in Figure 1. Mr and Mrs Maloney have owned the property since 2016, and in 2017 were granted resource consent (subject to conditions) to construct five accommodation chalets and one manager's dwelling, as well as retrospective resource consents to allow 4,920m^2 of earthworks and 3,500m^2 of indigenous vegetation clearance at the site. As well as indigenous vegetation removed, substantial areas of mature pine trees growing on the ridgelines with regenerating indigenous vegetation underneath were also removed. Elsewhere some mature pine trees have been poisoned and allowed to decay in situ.

The conditions of the 2017 resource consent included mitigation planting (to be completed within two years of the consents being granted). In 2022 Mr and Mrs Maloney applied for resource consents to subdivide the property into ten lots as shown in Figure 2. Resource Consent application 2220804-RMACOM relating to the subdivision was granted in 2023.

William McCarthy and Tayla Forde have purchased proposed Lot 10, subject to title being issued, and are planning the construction of the dwelling and buildings shown in Figure 3. Proposed Lot 10 comprises approximately 2.75ha as shown in Figures 2 and 3.

Ecological Solutions Limited (formerly The Ecology Company) undertook an ecological assessment of the property in 2022 to inform the proposed subdivision. Vegetation at the property comprised kānuka (*Kunzea robusta*) dominated shrubland at least 70 years old and typically around 12 - 15m tall, surrounding smaller areas of remnant broadleaf forest located within gullies. The vegetation met the criteria for ecological significance set out in the district plan and was considered to be of moderate – high quality.

Figure 1: Location of 319 Aucks Road, Okiato.

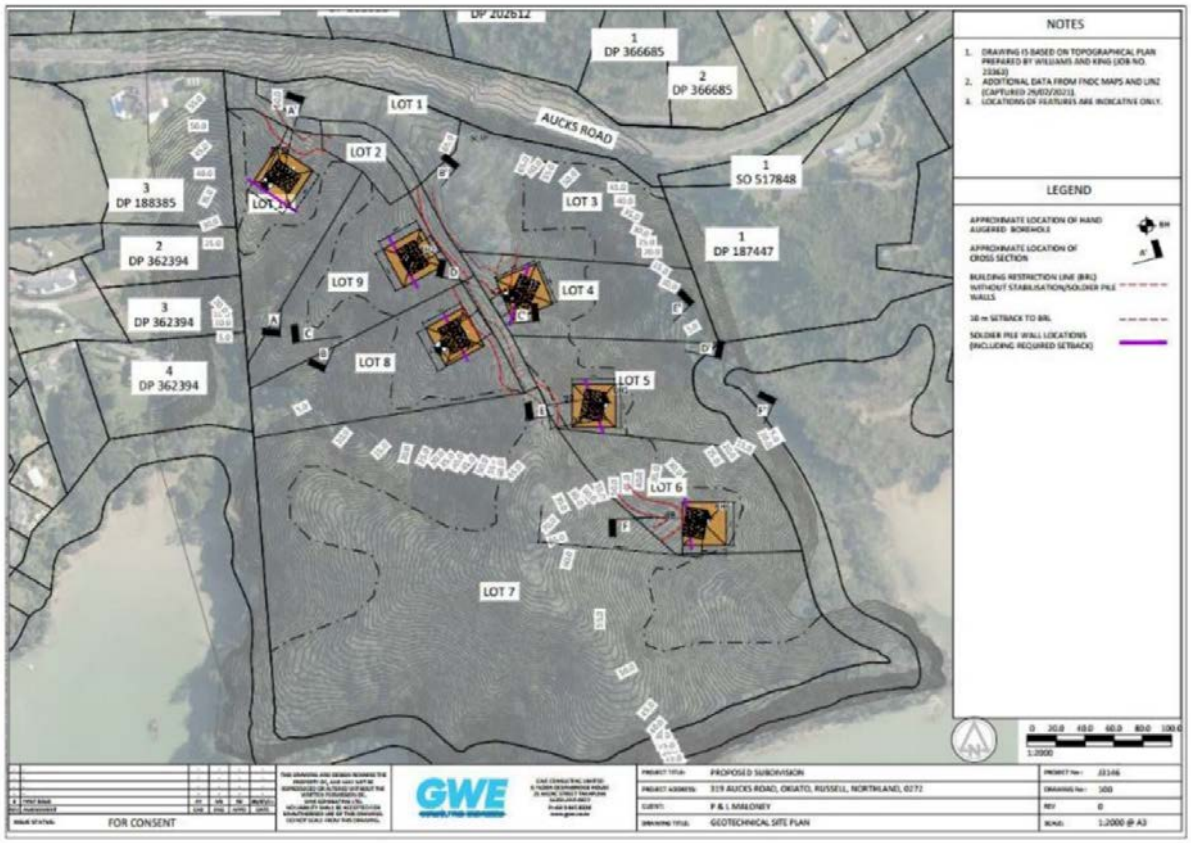


Figure 2: Proposed scheme plan for the proposed subdivision at 319 Aucks Road, Okiato.

The property is not recognised as an Outstanding Landscape or Outstanding Natural Feature. The property is identified as being within the Coastal Environment and having High Natural Character within the operative Northland Regional Policy Statement. On the southern seaward boundary of the property there is an unformed legal road approximately 20 – 30m wide. Much of this unformed public road is steep coastal faces, but it includes small flatter areas, one of which has been the subject of restoration planting since 2006 by Living Waters which also includes some land on adjoining private titles.

The proposed development of Lot 10 would involve clearance of vegetation including both indigenous vegetation and regenerating weeds as well as associated earthworks to allow construction of the proposed shed, dwelling and accessways. The vegetation affected by the site development is described in Section 2.2.

After construction approximately 865m^2 would be replanted as shown in Figure 4. This includes approximately 425m^2 adjoining the taller forest on the site, 350m^2 between the access way and the driveway/garage and 90m^2 between the upper and lower driveway and the lower driveway and the dwelling. The 90m^2 area is intended to be planted in fruit trees including some or all of the following: banana, plum, mandarin, lemon, lime, apple. The remaining 775m^2 is proposed to be returned to indigenous vegetation.

Mr McCarthy and Ms Forde retained Ecological Solutions Limited to prepare a planting plan for the site in order to ensure appropriate species are planted, adverse ecological effects are minimised and adverse effects on threatened and at risk species due to the proposal are avoided. This planting plan is based on a site visit undertaken 12 May 2023 and

addresses the revegetation of the area shown in Figure 4 including site preparation, and maintenance and monitoring for 5-years. Weed and animal pest control for the site are included in separate management plans as required by the subdivision resource consents.

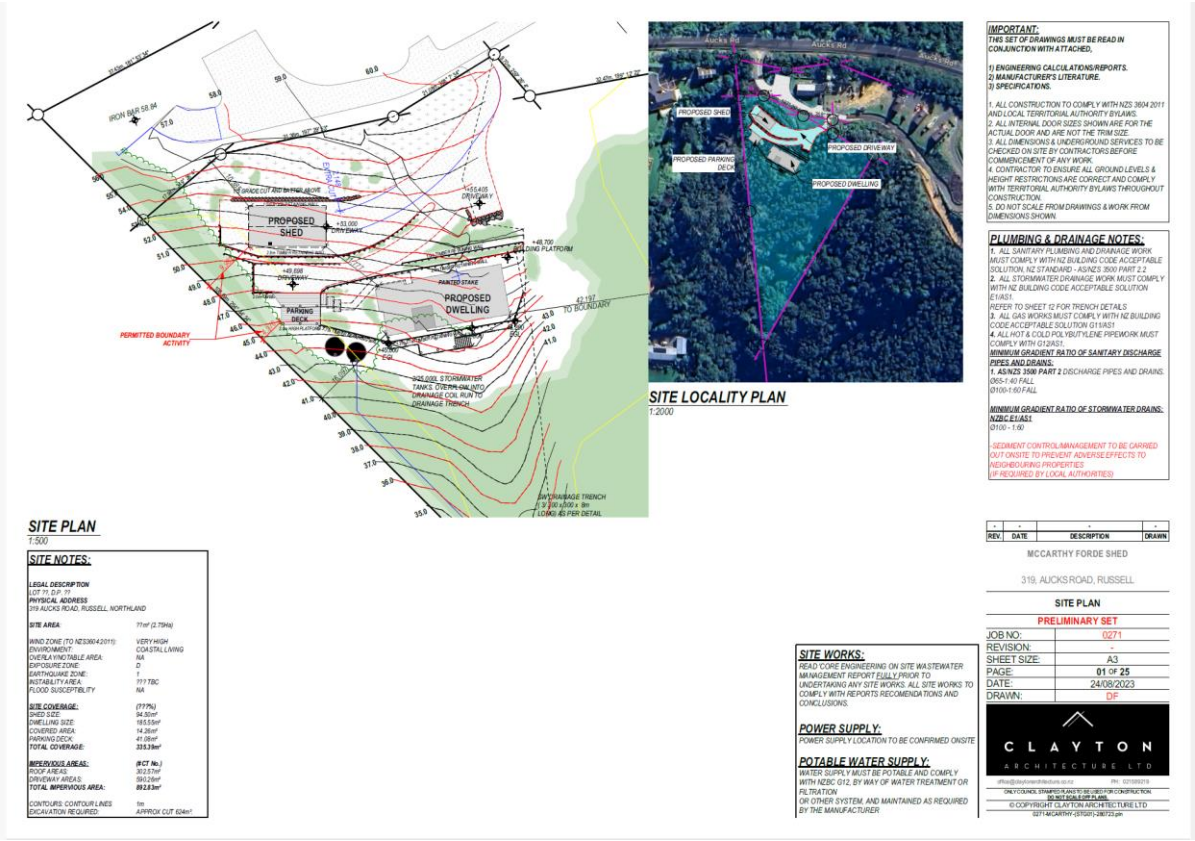


Figure 3: Site Plan for proposed Lot 10, 319 Aucks Road, Okiato.

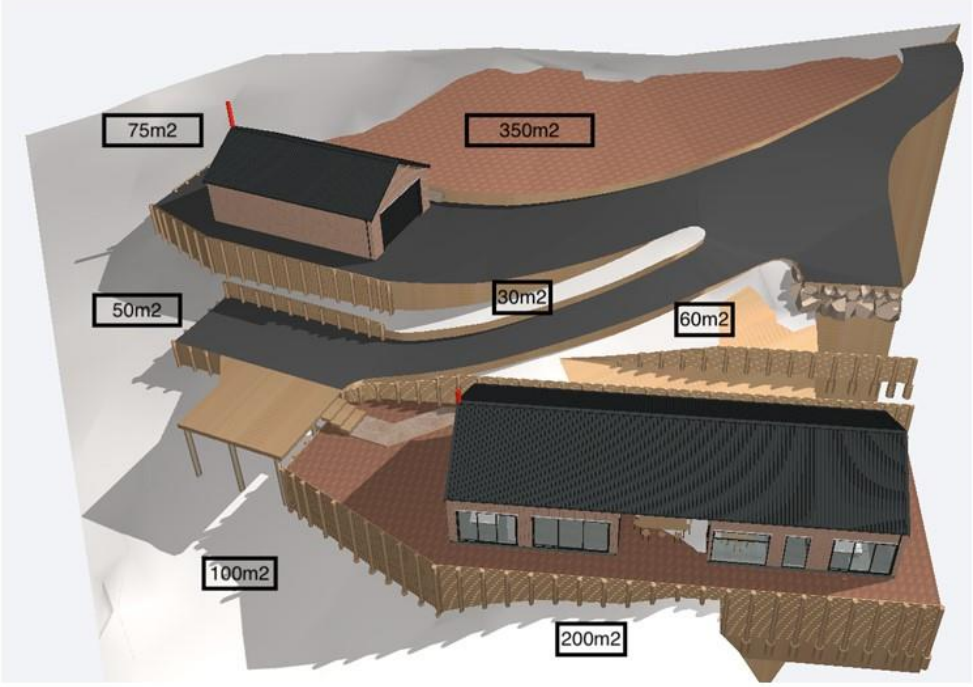


Figure 4: Area to be replanted following construction at proposed Lot 10, 319 Aucks Road, Okiato.

1.2 Relevant Resource Consent Conditions

The conditions of the 2017 resource consent included mitigation planting (to be completed within two years of the consents being granted), ongoing mammalian pest control, resident dogs to be micro-chipped and contained, along with a restriction on the keeping of other carnivorous animals, so as to protect kiwi (*Apteryx mantelli*) and the installation of silt traps at the outlet of all culverts to prevent sediment mobilisation from the site. The relevant conditions applying to the 2022 subdivision are provided below.

Vegetation Clearance on Lots 4-6, 8, 9 and 10

17. The consent holder shall provide a plan for the approval of Council's duly delegated officer showing the area of existing and proposed indigenous bush clearance on Lots 4, 5, 6, 8, 9 and 10. The cleared areas shall not exceed 1,600m² and be in general accordance with the approved Landscape Plan.

Advice Note:

For vegetation clearance in Kiwi zone it is recommended that a certified dog handler runs their dog over the areas intended for vegetation clearance to insure that no birds are distributed during clearance at their own cost. The kiwi for kiwi website has a directory of certified dog trainers/handlers that have dogs trained for this purpose. www.kiwisforkiwi.org.nz

Flora Habitat Protection

18. Provide a weed management plan prepared by a suitably qualified and experienced ecologist for the approval of Council's duly delegated officer. Target weeds should include pine trees, pampas (*Cortaderia* spp). Taiwan cherry, lillypilly, Woolly nightshade (*Solanum mauritianum*), ginger (*Hedychium gardnerianum*), climbing asparagus (*Asparagus*

scandens) and moth plant (*Araujia sericifera*) as well as bird and wind dispersed weeds such as wattle, hakea, privet. Note that it is recommended that the unformed legal road should also be managed in conjunction with the adjoining lot. The plan is to detail a programme of the proposed works, and the methods of ongoing control of all weeds that pose a threat to the ecological values of the land.

19. The weed management plan approved in condition 18 is to be implemented within two months following approval of the plan and maintained continuously thereafter as required by consent notice condition 21 iv.

Consent Notices

21. Secure the conditions below by way of a Consent Notice issued under section 221 of the Act, to be registered against the titles of the affected allotment. The costs of preparing, checking and executing the Notice shall be met by the consent holder:

Consent Notice – All Lots

i. The site at 319 Aucks Road, Russell (Pt Sec 17 Blk V Russell SD) is identified as being within a kiwi high density zone. On all lots, no occupier of, or visitor to the site, shall keep or introduce to the site carnivorous or omnivorous animals (such as cats, dogs or mustelids) which have the potential to be kiwi predators except that this consent notice does not apply to the existing dogs, registered with council in accordance with condition 20 of resource consent 2220804.

iii. Where external lights are necessary, downward-facing lamps with hoods must be used to limit light spillage and limit adverse effects on nocturnal wildlife outside the site.

iv. The lot owner shall continue to implement the approved weed management plan with annual reporting to be provided to Council.

v. The lot owner shall continue to implement the pest control management plan targeting rodents, possums and mustelids. The animal pest and control management plan may either be implemented as part of Russell Landcare or Russell Kiwi Protection groups or under the guidance of a pest control plan prepared by a suitably qualified and experienced ecologist. Note that it is recommended that the unformed legal road should also be managed in conjunction with the adjoining lot. Any indigenous revegetation should use ecologically

Indigenous Vegetation Protection

The indigenous vegetation within areas H, I, J, K, L, M, N, O, P, Q, R, S & T shall not be cut down, damaged, or destroyed without prior written consent of the Council. Such consent may be given in the form of resource consent. The owner shall be deemed to be not in breach of this prohibition if any such vegetation dies from natural causes which are not attributable to any act or default by or on behalf of the owner or for which the owner is responsible.appropriate species sourced from the Whangaruru Ecological District and in accordance with a planting plan prepared by a suitably qualified and experienced ecologist.

These habitats are to be protected by way of the following methods:

- There shall be no intrusion of grazing stock (including horses, cows, sheep, goats, and pigs) into any areas of indigenous vegetation on the site.
- Exotic vegetation which could adversely affect natural regeneration or local forest health is not to be introduced on the site. This includes the introduction of invasive plant species, including those currently listed on the nationally-banned-for-sale list (see Northland Regional Pest Management Strategy). Planting of other exotic species should be confirmed to the immediate vicinity of dwellings. And species with berry-type fruits are to be grown within netting to prevent seed spread by birds.

- Dead wood may be removed by the owners for their own use on the site,
- Any predator / pest control work carried out is to be done in a manner which will not endanger kiwi.

vi. The lot owner shall maintain the planting established around the edge of the cleared areas. Any plants that die shall be replaced in the next planting season (May – September).

Consent Notice – Lots 3 – 10.

21 a (i) Indigenous Vegetation Protection
The indigenous vegetation within areas H, I, J, K, L, M, N, O, P, Q, R, S & T shall not be cut down, damaged, or destroyed without prior written consent of the Council. Such consent may be given in the form of resource consent. The owner shall be deemed to be not in breach of this prohibition if any such vegetation dies from natural causes which are not attributable to any act or default by or on behalf of the owner or for which the owner is responsible.

1.3 Ecological Aims and Purposes

The ecological aims of the proposed plantings are to:

- Ensure appropriate species are planted in the 775m^2 area to be revegetated with indigenous species as set out above.
- Minimise adverse ecological effects due to the proposed vegetation clearance and the location of the residential area adjoining the natural areas on the site.
- Avoid adverse effects on threatened and at risk species.

These aims will be achieved through implementation of the following:

- Control of weeds and animal pests across the site. This control is provided for in separate weed and pest control plans provided as part of the subdivision consents.
- Avoid the introduction of known weed species to the site.
- Ensure that the planting develops into a self-sustaining indigenous community consistent with the surrounding vegetation.

2.0 Site Description

2.1 Ecological Context

The property is located within the Whangaruru Ecological District (Brook, 1996, Booth, 2005). Booth (2005) mapped and briefly described most of the areas of indigenous natural vegetation in the district and also provided an analysis of the main vegetation types as well as information on threatened species and other taxa of scientific interest present as part of the surveys undertaken for the Protected Natural Area Programme (**'PNAP'**). Having evaluated the sites of indigenous vegetation, Booth grouped the sites according to two levels of ecological significance, with Level 1 sites being of the highest ecological value and Level 2 sites supporting populations of indigenous flora and fauna, but of generally lower ecological value than Level 1 sites.

The Whangaruru Ecological District covers approximately 115,782ha between Russell and Cape Brett in the North and Parua Bay in the south. The district lies to the east of Whangarei, and adjoins the Kerikeri Ecological District to the north, Tangihua and Whangarei Ecological Districts to the west, and Manaia and Waipu Ecological Districts to the south. Much of the Ecological District has been modified, with the degree of

modification increasing towards the southern end of the district. The northern third contains some large expanses of native forest, including Russell Forest and the Cape Brett Peninsula. Further south forested areas become smaller, and give way to pasture and plantation forestry (Booth, 2005). The Whangaruru Ecological District is characterised by steep, deeply dissected hill country to 460m elevation, with some areas of lower rolling hill country. The southern part of the Bay of Islands has a deeply indented coastline with numerous small islands and islets, and is bounded to the north-east by the prominent Cape Brett Peninsula. Although there are thirteen estuaries within the District, the most significant being the Eastern Bay of Islands Estuary (1,129ha), much of the open coastline is steep and rocky, with pocket gravel beaches and a number of sand beaches backed by dunes. The most common vegetation type in the District is secondary podocarp–broadleaf forest, dominated by tōtara (*Podocarpus totara*), taraire (*Beilschmiedia tarairi*), or towai (*Pterophylla sylvicola*). This Ecological District contains a high proportion of coastal fringe and islands, one result of which is that it has a high number of threatened plants. Coastal areas are extremely influenced by natural disturbance, and are also affected by other pressures such as development, weeds, pests, vehicles, and livestock.

The Maloney property is located within Site Q05/004 (Tikitikioure/Edwards Coastal Habitat) identified by Booth (2005) which was a large, but discontinuous area of indigenous vegetation covering most of the Russell Peninsula and extending from Okiato and Russell to Clendon Cove (Manawaora Bay). Tikitikioure/Edwards Coastal Habitat was considered a Level 1 site and comprised 1,524ha including 338 ha of forest, 1,146 ha of shrubland and 40ha of wetland. Ecological units at Site Q05/004 included:

a) Pūriri (*Vitex lucens*) – tanekaha (*Phyllocladus trichomanoides*) – taraire coastal forest on hillslope

b) Kohekohe (*Dysoxylum spectabile*)– pūriri – tawaroa[1] coastal forest on hillslope

c) Kānuka/mānuka (*Leptospermum scoparium* agg.) – tanekaha coastal forest on hillslope

d) Mānuka coastal shrubland on hillslope

e) Mamaku (*Cyathea medullaris*) coastal fernland on hillslope

f) Raupō (*Typha orientalis*) – harakeke (*Phormium tenax*) association in swamp

g) Pōhutukawa coastal forest on coastal margin

Site Q05/004 was considered by Booth (2005) to be a Level 1 site because it included over 25km of coastal vegetation, supported threatened fauna including North Island brown kiwi, North Island weka (*Gallirallus australis greyii*), North Island fernbird (*Bowdleria punctata vealeae*), pāteke (brown teal, *Anas chlorotis*) and reef heron (*Egretta sacra*) and was a representative site for ecological units a, b, d, e, f and g and the only location of units a and b in the ecological district. Site Q05/004 also comprised a large area which is well connected to other extensive areas of shrubland and forest on the Russell Peninsula.

Since 2005 the threat status of the bird species identified by Booth (2005) has been reviewed and only reef heron and pāteke are still considered threatened. Of the other species listed North Island brown kiwi are considered to be 'Not threatened', North Island weka are considered to be 'At Risk (Relict)', fernbird are considered to be 'At Risk (Declining)' (Robertson et al., 2021).

[1] Tawaroa (*Beilschmiedia tawaroa*) was described by A.E. Wright from Northland in 1984. More recent studies have not upheld this description because there is gradation between these large-leaved variants and tawa (*B. tawa*). Tawaroa is now considered a form of tawa.

In order to inform the preparation of the 2021 draft Far North District Plan, Wildland Consultants Limited mapped Significant Natural Areas (**'P-SNAs'**) throughout the district. The Maloney property was located within Site FN082 (Edwards/Tikitikioure Coastal Habitat) which covered 1,807ha and included a variety of forest, shrubland, wetland and estuarine habitats on the Russell Peninsula between Oneroa Bay and Manawaora Bay extending across the peninsula to the Waikare Inlet. Site FN082 included a number of existing reserves as well as private land. Wildland Consultants Limited considered that the main threats to the ecology of this SNA were subdivision including associated clearance, roading development, keeping of domestic cats and dogs, and the cultivation of invasive garden plants.

Broad scale pest control in the Russell Peninsula commenced in the early 2000s associated with the construction of a predator exclusion fence south of this site. Elsewhere on the peninsula pest control was patchy until a more concentrated pest control effort associated with the Russell Landcare Trust began its Russell Kiwi Protection Project in 2016. The Russell Kiwi Protection Project includes the Russell Eco-Sanctuary which is located between Pipiroa Bay and Te Wahapu Road and north of Aucks Road. In 2017 the pest control network established on the property as a result of the 2017 resource consent included three lines of pest control including bait stations at 50m intervals and multiple traps designed for possums and rats.

2.2 Terrestrial Vegetation

2.2.1 Historic vegetation

Prior to human arrival the vegetation at the site would have comprised indigenous broadleaf-podocarp forest with emergent conifers such as kauri (*Agathis australis*), tōtara, rimu (*Dacrydium cupressinum*), tanekaha, mataī (*Prumnopitys taxifolia*), miro (*Pectinopitys ferruginea*) and kahikatea (*Dacrycarpus dacrydioides*) growing over a mixed broad leaf canopy including taraire, pūriri, rewarewa (*Knightia excelsa*), tawa (*Beilschmiedia tawa*), northern rata (*Metrosideros robusta*) and pukatea (*Laurelia novaezelandiae*). Kahikatea and pukatea would have been limited to damper gullies and lower slopes, with tanekaha and kauri growing on the driest ridges. Closer to the coast pōhutukawa (*Metrosideros excelsa*) forest would have dominated.

2.2.2 Vegetation within Proposed Lot 10

Proposed Lot 10 is immediately inside the property entrance at 319 Aucks Road and adjoins the accessway created in 2017. The site gently slopes from the accessway down to the coast with the lower areas being steeper than the upper parts. The indicative extent of proposed vegetation clearance is shown in Figure 5.

Figure 5: Approximate extent of vegetation clearance at Lot 10, 319 Aucks Road.

Slightly more than half of the vegetation to be cleared has been cleared in the recent past and was regenerating with native species including kānuka, mānuka, kumarahou (*Pomaderris kumaraho*), ferns such as water fern (*Histiopteris incisa*) and cutty grass (māpere, *Gahnia setifolia*) and common exotic weeds including pampas (*Cortaderia selloana*), woolly nightshade (*Solanum mauritianum*), wilding pines (*Pinus radiata*) and gorse (*Ulex europaeus*). Examples of that vegetation are shown in Figures 6 and 7.

Figure 6: Vegetation within the part of proposed Lot 10 to be cleared to allow access and construction.

Figure 7: Regenerating vegetation at proposed Lot 10, 319 Aucks Road.

The vegetation to be cleared is young (less than five years old) and poorly buffers the adjoining taller forest areas. This means that edge effects still apply to this taller vegetation. The proposal will result in a net loss of approximately 2,225m^2 of this low quality, weedy vegetation once the proposed planting is completed. This exceeds the 1,600m^2 allowed for as part of condition 17 of the resource consents.

Given the low quality and young age of the vegetation to be removed, and the existing edge effects, the proposed indigenous vegetation planting provides an opportunity to restore a more appropriate edge to the buffer the taller vegetation and improve the ecological quality of the vegetation overall. Provided that weed control is effectively implemented, the ecological integrity of the remainder of the site will be improved and the connectivity across the wider site will be maintained. Effects on threatened and at risk species will be avoided. On that basis the effects of the proposed vegetation clearance are low, i.e., a minor shift away from existing baseline conditions. The change arising from the loss/alteration will be discernible, but the underlying character, composition and/or attributes of the existing baseline condition will be similar to pre-development circumstances or patterns. Given the low quality of the vegetation (weedy, young), the overall level of effects would be very low, i.e., less than minor adverse effects which are discernible, but will not cause any significant adverse impacts of the wider habitats of which the area is a part.

The lower slopes are steeper and are covered by older, secondary forest vegetation dominated by kānuka with common tanekaha and frequent tōtara. The canopy was typically 12 – 15m tall with diameters at breast height up to approximately 15cm. Within the sub-canopy and shrub layer a wider diversity of podocarps and broadleaf species were present, including rimu, māpou (*Myrsine australis*), karamu (*Coprosma robusta*), mingimingi (*Leucopogon fasciculatus*), shining karamu (*Coprosma lucida*), *Coprosma rhamnoides*, *C*.

areolata, kānono (*C. autumnalis*) hangehange (*Geniostoma ligustrifolium* var. *ligustrifolium*) whauwhaupaku (five-finger, *Pseudopanax arboreus*) porokaiwhiri (pigeonwood, *Hedycarya arborea*), tawa, akepiro (*Olearia furfuracea*) and kohurangi (Kirk's tree daisy, *Brachyglottis kirkii* var. *angustior*). Ground cover species included seedlings and saplings of taller species as well as māpere (*Gahnia setifolia)*, tūrutu (*Dianella nigra*), ferns (*Adiantum cunninghamii*, *A. viridescens*, *Asplenium oblongifolium*), moss and club mosses including *Pseudolycopodium densum* and *Palhinhaea cernua*. An example of this vegetation is shown in Figure 8.

Bird dispersed forest weeds such as ginger (*Hedychium gardnerianum*), Taiwan cherry (*Prunus campanulata*) and lillypilly (*Syzygium smithii*) were occasional across the wider site.

Figure 8: Secondary forest understorey at proposed Lot 10, 319 Aucks Road, Okiato.

3.0 Site Preparation

3.1 Weed Control

Prior to replanting of the areas shown in Figure 4, the site shall be prepared to be weed free with no mature, flowering and/or fruiting plants in order to promote successful establishment of native plants.

Weed species identified within the site and their control methods are detailed in Table 1.

Table 1: Weed species present at 319 Aucks Road, Okiato

Botanical name	Common name	Location/abundance	Control methods
Cortaderia selloana	pampas	Common in the area to be cleared. Scattered within clearings elsewhere.	Hand pull small plants. Foliar spray larger plants with glyphosate (2% rate) taking care around native vegetation
Hedychium gardnerianum	ginger	Present within adjacent forest, risk of bird dispersal	Dig out individual plants or small infestations. Be sure to remove all rhizomes and fragments. Dispose of rhizomes at a refuse transfer station or by drying out and burning.
Syzygium smithii	lillypilly	Present within adjacent forest, risk of bird dispersal	Cut down and paint stump (all year round): metsulfuron-methyl 600g/kg (5g/L)
Pinus radiata/ Pinus pinaster	Pine	Scattered individuals including mature individuals within the secondary forest and along the property boundary.	Hand pull seedlings. Larger trees cut and squirt (all year round) or bore and fill: Make 1 cut or hole every 10 cm around the trunk, apply a slurry of metsulfuron-methyl 600g/kg (2g) to each cut or hole. Leave in place to fall down unless they pose a health and safety risk.
Prunus campanulata	Taiwan cherry	Present within adjacent forest, risk of bird dispersal	Hand pull seedlings. Larger trees cut and paste with glyphosate or triclopyr (20% rate)
Solanum mauritianum	Woolly nightshade	Within area to be cleared and elsewhere on forest margins	Hand pull seedlings. Larger trees cut and paste with glyphosate or triclopyr (20% rate)
Ulex europaeus	Gorse	Within area to be cleared and elsewhere on forest margins	Hand pull seedlings. Cut and paste larger shrubs with glyphosate (20% rate)

Ongoing weed control of the species outlined above will be required throughout the site and is set out in the Weed Control Plan prepared for the wider site to comply with Condition 18 of the subdivision resource consents.

3.2 Control Methods

Lot 10 should be systematically searched for weeds twice each year (in autumn and spring). Any weeds encountered will be controlled using the following methods:

- ***Hand Pull***
  - Hand pull weeds when applicable/practicable, particularly around stream edges and planted/sensitive areas so as to minimise agrichemical use and avoid non-target dieback.
- ***Cut and Paste***
  - Cut and paste stumps of woody plants with secateurs, hand/silky saw and/or chainsaw, and paint the stump with the appropriate selective herbicide. Vigilant® or similar (active ingredient picloram) is effective with most woody weeds and scrambling vines.
  - Ensure stumps are cut as close to the ground as possible (without compromising the blade of the cutting tool) to avoid regrowth, particularly for persistent species such as woolly nightshade and gorse. Cut vegetative ends of woolly nightshade shall not be in direct contact with the soil (unless treated) as they tend to regrow.
- ***Foliar Spray***
  - Foliar spraying should only occur during favourable weather conditions (calm and no foreseeable short-term rain events) and where non-target plant deaths can be avoided.
- ***Mature Pine Trees***
  - Any mature pine trees at the site that do not pose a health and safety risk should be cut, poisoned and left in situ to die and decay.
  - Any pine trees that pose a health and safety risk if left to naturally decay should be removed by an arborist so as to minimise collateral damage to the understorey to the extent possible.

4.0 Pest Animal Control

4.1 Proposed Animal Control Methodology

The main animal pests likely to be present at this location are rats (*Rattus norvegicus* and *R. rattus*), stoats (*Mustela erminea*) and brush-tailed possums (*Trichosurus vulpecula*). Mice (*Mus musculus*) are also likely to be present and may increase in number once rats and stoats are removed.

Consent Notice 21v of the subdivision resource consents requires pest control across the wider property of which Lot 10 was a part. There are three pre-existing lines of bait stations at 50m intervals accompanied by traps designed to control stoats, possums and rats across the wider property including some traps on Lot 10. The purpose of these is to reduce pest animal populations to low densities in order to minimise the adverse effects of these pests on native flora and fauna and promote ecological integrity and resilience at the site.

It is important to operate these traps in a coordinated way with other pest control efforts in the area to avoid creating refuges for the target pest species. Since pest control is the

subject of an existing resource consent, it is not considered any further here.

5.0 Planting

5.1 Plant Selection

Eco-sourcing is the practice of collecting seeds close to where they are to be planted. Eco-sourcing is seen as important to the long-term success of a revegetation programme because locally collected plants are thought to carry local adaptations which contribute to their ongoing survival and success. Eco-sourcing also helps maintain local biodiversity/genetic variability.

All plants selected[2] are to be sourced from the Whangaruru Ecological District (or the Eastern Northland Ecological Region in order of preference) and true to their name and species, healthy and free of disease and / or injury at the time of planting. Plant numbers indicated may vary depending on availability.

Plants will be well-hardened root trainer ('RT'), ½ L, PB2 or PB3 (i.e., 20 – 60 cm tall at the time of planting) with no visible weed contamination.

Any myrtle species should be certified free of myrtle rust.

5.2 Timing

Planting should occur within the planting season late autumn-winter (i.e., late May to late August).

5.3 Planting Density and Layout

Planting density will determine a number of factors such as the overall number of plants required and the ability to establish canopy cover quickly and eliminate weed species. Higher planting densities do incur a higher cost upfront, but will need less ongoing management costs in subsequent years. Low density plantings spread the cost out, with lower upfront costs but more ongoing maintenance required in later years, but also delay the time taken to achieve an ecologically sound and visually appealing planting.

A planting density of approximately one plant per 1.5m^2 is proposed. Additional plants can be used to assist in achieving canopy cover quickly if desired.

Planting is proposed in "clusters" with shorter plants in the front merging to taller plants at the back forming a dense edge vegetation to the existing secondary forest at the site.

5.4 Plants Required

A total of 500 plants comprising 24 species are required as shown in Table 2.

[2] With the exception of Poor Knight's lily which does not occur naturally in the Whangaruru Ecological District.

Table 2: Plant species proposed for planting at Lot 10, 319 Aucks Road, Okiato.

Botanical name	Common Name	Number required	Location
Arthropodium cirratum	rengarenga lily	16	Low edge
Asplenium bulbiferum	pikopiko/hen and chicken fern	15	Low edge
Asplenium oblongifolium	Huruhuruwhenua, shining spleenwort	15	Low edge
Apodasmia similis	oioi	25	Mid planting
Austroderia splendens	toetoe	25	Mid planting
Carex comans	sedge	15	Low edge
Coprosma x *kirkii*		16	Low edge
Dianella nigra	turutu, New Zealand blueberry	15	Low edge
Epacris pauciflora	tamingi	25	Mid planting
Leptospermum scoparium	mānuka	30	Rear planting
Leptospermum scoparium var. *incanum*	mānuka (pink, Northland endemic)	30	Rear planting
Libertia grandiflora	mīkoikoi, New Zealand iris	15	Low edge
Libertia ixioides	mīkoikoi, New Zealand iris	16	Low edge
Muehlenbeckia astonii	tororaro	25	Mid planting
M. complexa	pōhuehue	16	Low edge
Pakau pennigera	Piupiu, gully fern	15	Low edge
Piper excelsum	kawakawa	30	Rear planting
Phormium cookianum	whararikī, coastal flax	25	Mid planting
Phormium tenax	kōrari/harakeke, New Zealand flax	30	Rear planting
Pomaderris kumeraho	kumerahou	30	Rear planting
Rhopalostylis sapida	nīkau	30	Rear planting
Sophora fulvida	kōwhai	1	Driveway feature tree
Veronica diosmifolia	hebe	25	Mid planting
Xeronema callistemon	Poor Knight's lily	15	Low edge
Total		**500**	

5.5 Planting Method

Plants shall be thoroughly watered prior to being laid out within the site according to their prescribed densities and habitat preferences.

Holes will be dug using a spade, hand trowel and/or auger at least 2x the plants root mass. Plants should be removed from their container with care, placed in their hole, infilled with soil, planted straight and the surface around the plant lightly compacted to secure plant integrity.

Prior to planting, any rootbound plants should be removed from their containers, and roots lightly trimmed to encourage meristematic regrowth.

6.0 Monitoring and Maintenance

6.1 Monitoring

Once plantings have established (after three months), monitoring will be undertaken at least twice annually for five years (during spring and autumn).

Monitoring shall include, but not be limited to the following:

- Record success rates, including growth rate and number of plants lost and analysis of the distribution of losses.
- Record canopy closure, including notes on natural ecological processes such as the use of the area by birds and presence of natural native seedling establishment.
- Record plant health, noting any indicators of insect or disease damage.
- Include a running record of weed and pest animal control.
- Include a running record on the replacement of dead plants.
- Comments on the overall restoration progress and ecosystem health.

Monitoring reports shall also make recommendations on any follow-up maintenance required in terms of the above, i.e., weed control, animal pest control, plant replacement and plant disease.

6.2 Monitoring

Success of the planting and browse will be used for monitoring the influence of possums. Palatable broadleaf trees and shrubs should be monitored to ensure no browse is inflicted upon these species. Information should be collated with records collected during monitoring.

To measure the effectiveness of the control programme, it is important that good quality records be maintained to track the number of rodents or possums caught. This can be collected by recording the number of captures and/or amount of poison used in a diarised notebook.

6.3 Maintenance

General Plant Maintenance

General plant maintenance will involve the following:

- Control of insects and disease by treatment with an appropriate chemical.
- Removal of any damaged of diseased plant material (to prevent further spread).

- Fill of any soil compaction and sinkage around plants (common post planting once the soil has settled).

Plant Releasing

Plant releasing is the process of releasing young plants primarily from grass growth until they can either compete effectively, or have over topped less desirable species. Mulch and/or weed mats may be used to reduce the need for plant releasing. Note that mulch must be free of any weed seeds to be suitable for use.

If necessary, plants will be released using the following methods:

- Hand/manual releasing, which can involve the use of a scrub bar or hand tools to cut back grass and weed growth around plants which have or are at risk of becoming supressed. This method is labour intensive but low risk to plant health.
- Foliar spray using non-selective herbicides (such as glyphosate) will not be used to release plants except for specific control of pampas due to the high risk of spray drift and associated non-target mortality.

6.4 Plant Replacement

Any plants which die shall be replaced with a similar species and at a similar location until such time as canopy closure is achieved.

7.0 Proposed Timeline

	Summer		Autumn			Winter			Spring			Summer
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Year 0						Confirm plant orders						
Year 1	Site preparation			Planting to occur								
Year 2												
Year 3												
Year 4												
Year 5												

Note: Shade cells = plant pest control and monitoring

Attachment F Landscape Architect advice re roof colour

From: Christine Hawthorn
To: Alister Hartstone
Cc: William McCarthy
Subject: Re: Proposed development, Ocean Vista Road, Okiato
Date: Friday, 30 August 2024 12:32:52 pm
Attachments: Email Footer.png

Hi Alister

I have reviewed the use of the proposed Colorsteel product “Sandbar” for the roof cladding. Although it does exceed the LRV stated in my assessment by 4% it is my opinion that due to the earthy brown colour of “Sandbar” and the location of the buildings within a bush setting the potential visual effects of using this colour will not generate any additional adverse visual effects beyond what was assessed as being acceptable.

Therefore it would be my recommendation that Colorsteel “Sandbar” with a LRV of 34% is an appropriate roof colour in this instance.

Kind regards

Christine

> On 23 Aug 2024, at 9:11 AM, Alister Hartstone <alister@setconsulting.co.nz> wrote:
>
> Hi Christine
>
> Thanks for taking my call this morning and sorry you're not feeling too good at present.
>
> My client is proposing to develop Lot 10 of the subdivision at 319 Aucks Road (new private access is now Ocean Vista Road) as per site plan attached. The garage and dwelling are both intended to be simple single gable single-level structures which are being stepped down into the site by developing retained cuts to provide for building, access, and parking.
>
> I’ve obtained a copy of the landscape assessment you prepared for P and L Maloney who did the underlying subdivision. Your final report dated 22 April 2022 was attached as a consent notice condition to the titles which requires compliance with the recommendations in your report. One of the requirements is as follows:
>
> *Building Materials and Finishes*
> *The visual effects of the building sites will be lessened if recessive colours from the A and B Group of the BS 5252 colour chart are used.*
> *The light reflectance values for the exterior roof colours shall not exceed 30% and the exterior walls shall not exceed 40%.*
> *It is recommended to use natural and textural materials, and make use of*

architectural features such as verandahs, pergolas and large eves to create shadow. These will all cast shadows on windows and ranch sliders thus limiting the reflectivity of the facades of the house.

My client has requested using the Colourssteel product 'Sandbar' as per link below which has a LRV of 34% which exceeds the 30% specified in the report.
https://www.colorsteel.co.nz/products/colours/sandbar/

It would be appreciated if you could consider whether this roof colour is suitable in this location/context. If it is acceptable then I would be including a request to the Council as part of an RC application to amend the consent notice condition accordingly. I've cc'ed Bill McCarthy (client) into this email advice in case you wish to contact him directly.

Much appreciated

Regards

Alister Hartstone BREP (Hons) MNZPI
0277555607
alister@setconsulting.co.nz

<0271-MCARTHY-(BC-A)-140824.pdf>

Attachment G FENZ advice

Non-Reticulated Firefighting Water Supplies, Vehicular Access & Vegetation Risk Reduction Application for New and Existing Residential Dwellings and Sub-Divisions

Contents

Section A - Firefighting Water Supplies and Vegetation Risk Reduction Waiver

"Fire and Emergency New Zealand strongly recommends the installation of automatic fire detection system devices such as smoke alarms for early warning of a fire and fire suppression systems such as sprinklers in buildings (irrespective of the water supply) to provide maximum protection to life and property".

Waiver Explanation Intent

Fire and Emergency New Zealand [FENZ] use the New Zealand Fire Service [NZFS] Code of Practice for firefighting water supplies (SNZ PAS 5409:2008) (The Code) as a tool to establish the quantity of water required for firefighting purposes in relation to a specific hazard (Dwelling, Building) based on its fire hazard classification regardless if they are located within urban fire districts with a reticulated water supply or a non-reticulated water supply in rural areas. The code has been adopted by the Territorial Authorities and Water Supply Authorities. The code can be used by developers and property owners to assess the adequacy of the firefighting water supply for new or existing buildings.

The Area Manager under the delegated authority of the Fire Region Manager is responsible for approving applications in relation to firefighting water supplies. The Area Manager may accept a variation or reduction in the amount of water required for firefighting for example; a single level dwelling measuring 200^{m2} requires 45,000L of firefighter water under the code, however the Area Managers in Northland have excepted a reduction to 10,000L.

This application form is used for the assessment of proposed water supplies for firefighting in non-reticulated areas only and is referenced from (Appendix B – Alternative Firefighting Water Sources) of the code. This application also provides fire risk reduction guidance in relation to vegetation and the 20-metre dripline rule under the Territorial Authority's District Plan. Fire and Emergency New Zealand are not a consenting authority and the final determination rests with the Territorial Authority.

For more information in relation to the code of practice for Firefighting Water supplies, Emergency Vehicle Access requirements, Home Fire Safety advice and Vegetation Risk Reduction Strategies visit www.fireandemergency.nz

Section B – Applicant Information

Applicants Information	
Name:	William McCarthy
Address:	319 Aucks Road, Okiato, Russell
Contact Details:	wmccarthy18@gmail.com
Return Email Address:	alister@setconsulting.co.nz

Section C – Property Details

Property Details	
Address of Property:	319 Aucks Road, Okiato, Russell
Lot Number/s:	Lot 10 DP 595923
Dwelling Size: (Area = Length & Width)	195m2
Number of levels: (Single / Multiple)	Single

1. Fire Appliance Access to alternative firefighting water sources - Expected Parking Place & Turning circle

Fire and Emergency have specific requirements for fire appliance access to buildings and the firefighting water supply. This area is termed the hard stand. The roading gradient should not exceed 16%. The roading surface should be sealed, able to take the weight of a 14 to 20-tonne truck and trafficable at all times. The minimum roading width should not be less than 4 m and the property entrance no less 3.5 metres wide. The height clearance along access ways must exceed 4 metres with no obstructions for example; trees, hanging cables, and overhanging eaves.

1 (a) Fire Appliance Access / Right of Way	
Is there at least 4 metres clearance overhead free from obstructions?	☒YES ☐NO
Is the access at least 4 metres wide?	☒YES ☐NO
Is the surface designed to support a 20-tonne truck?	☐YES ☒NO
Are the gradients less than 16%	☐YES ☒NO
Fire Appliance parking distance from the proposed water supply is 15 metres	

If access to the proposed firefighting water supply is not achievable using a fire appliance, firefighters will need to use portable fire pumps. Firefighters will require at least a one-metre wide clear path / walkway to carry equipment to the water supply, and a working area of two metres by two metres for firefighting equipment to be set up and operated.

1 (b) Restricted access to firefighting water supply, portable pumps required
Has suitable access been provided? ☐YES ☒ NO
Comments: Appliances would park on the shared access above the site with connection to the nearest water tank approximately 15 metres down hill.

Internal FENZ Risk Reduction comments only:

Click or tap here to enter text.

2. Firefighting Water Supplies (FFWS)

What are you proposing to use as your firefighting water supply?

2 (a) Water Supply Single Dwelling	
Tank	☐ Concrete Tank ☒ Plastic Tank ☒ Above Ground (Fire Service coupling is required - 100mm screw thread suction coupling) ☐ Part Buried (max exposed 1.500 mm above ground) ☐ Fully Buried (access through filler spout) Volume of dedicated firefighting water 10,000litres

2 (b) Water Supply Multi-Title Subdivision Lots / Communal Supply	
Tank Farm	☐ Concrete Tank ☐ Plastic Tank ☐ Above Ground (Fire Service coupling is required - 100mm screw thread suction coupling) ☐ Part Buried (max exposed 1.500mm above ground) ☐ Fully Buried (access through filler spout) Number of tanks provided Click or tap here to enter text. Number of Tank Farms provided Click or tap here to enter text. Water volume at each Tank Farm Click or tap here to enter text. Litres Volume of dedicated firefighting water Click or tap here to enter text. litres

2 (c) Alternative Water Supply	
Pond:	Volume of water: Click or tap here to enter text.
Pool:	Volume of water: Click or tap here to enter text.
Other:	Specify: There are 5 water tanks proposed on the site - two on one level adjoining the garage studio and a further three adjoining the proposed dwelling.
	Volume of water: Potentially 125,000 litres

Internal FENZ Risk Reduction comments only:

Click or tap here to enter text.

3. Water Supply Location

The code requires the available water supply to be at least 6 metres from a building for firefighter safety, with a maximum distance of 90 metres from any building. This is the same for a single dwelling or a Multi-Lot residential subdivision. Is the proposed water supply within these requirements?

3 (a) Water Supply Location	
Minimum Distance:	*Is your water supply at least 6 metres from the building?* ☒YES ☐ NO
Maximum Distance	*Is your water supply no more than 90 metres from the building?* ☒YES ☐ NO

3 (b) Visibility
How will the water supply be readily identifiable to responding firefighters? E.g.: tank is visible to arriving firefighters or, there are signs / markers posts visible from the parking place directing them to the tank etc.
Comments: Two tanks adjoining garage / studio will be visible from the shared drive looking down over the site.

3 (c) Security
How will the FFWS be reasonably protected from tampering? E.g.: light chain and padlock or, cable tie on the valve etc.
Explain how this will be achieved: It will be on private property set well back and not visible from the road

Internal FENZ Risk Reduction comments only:

Click or tap here to enter text.

4. Adequacy of Supply

The volume of storage that is reserved for firefighting purposes must not be used for normal operational requirements. Additional storage must be provided to balance diurnal peak demand, seasonal peak demand and normal system failures, for instance power outages. The intent is that there should always be sufficient volumes of water available for firefighting, except during Civil Défense emergencies or by prior arrangement with the Fire Region Manager.

4 (a) Adequacy of Water supply
Note: *The owner must maintain the firefighting water supply all year round. How will the usable capacity proposed be reliably maintained? E.g. automatically keep the tank topped up, drip feed, rain water, ballcock system, or manual refilling after use etc.*
Comments: Rain water

Internal FENZ Risk Reduction comments only:

Click or tap here to enter text.

5. Alternative Method using Appendix's H & J

If Table 1 + 2 from the Code of Practice is not being used for the calculation of the Firefighting Water Supply, a competent person using appendix H and J from the Code of Practice can propose an alternative method to determine firefighting water supply adequacy.

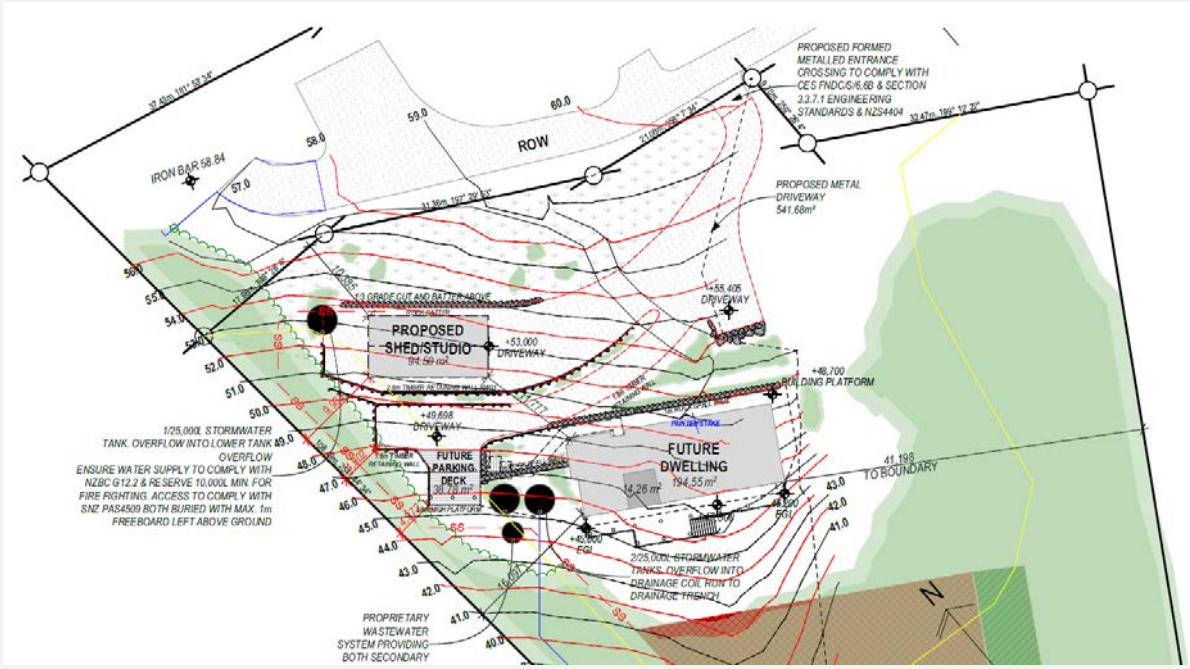
Appendix H describes a method for determining the maximum fire size in a structure. Appendix J describes a method for assessing the adequacy of the firefighting water supply to the premises.

5 (a) Alternative Method Appendix H & J	
If an alternative method of determining the FFWS has been proposed, who proposed it? Name: Click or tap here to enter text.	
Contact Details: Click or tap here to enter text.	
Proposed volume of storage?	Litres: Click or tap here to enter text.
Comments: Click or tap here to enter text. ** Please provide a copy of the calculations for consideration.*	

Internal FENZ Risk Reduction comments only: Click or tap here to enter text.

6. Diagram

Please provide a diagram identifying the location of the dwelling/s, the proposed firefighting water supply and the attendance point of the fire appliance to support your application.



Internal FENZ Risk Reduction comments only:

Click or tap here to enter text.

7. Vegetation Risk Reduction - Fire + Fuel = Why Homes Burn

Properties that are residential, industrial or agricultural, are on the urban–rural interface if they are next to vegetation, whether it is forest, scrubland, or in a rural setting. Properties in these areas are at greater risk of wildfire due to the increased presence of nearby vegetation.

In order to mitigate the risk of fire spread from surrounding vegetation to the proposed building and vice-versa, Fire Emergency New Zealand recommends the following;

I. *Fire safe construction*

Spouting and gutters – Clear regularly and consider screening with metal mesh. Embers can easily ignite dry material that collects in gutters.

Roof – Use fire resistant material such as steel or tile. Avoid butanol and rubber compounds.

Cladding – Stucco, metal sidings, brick, concrete, and fibre cement cladding are more fire resistant than wood or vinyl cladding.

II. *Establish Safety Zones around your home.*

Safety Zone 1 is your most import line of defence and requires the most consideration. Safety Zone 1 extends to 10 metres from your home, you should;

a) *Mow lawn and plant low-growing fire-resistant plants; and*
b) *Thin and prune trees and shrubs; and*
c) *Avoid tall trees close to the house; and*
d) *Use gravel or decorative crushed rock instead of bark or wood chip mulch; and*
e) *Remove flammable debris like twigs, pine needles and dead leaves from the roof and around and under the house and decks; and*
f) *Remove dead plant material along the fence lines and keep the grass short; and*
g) *Remove over hanging branches near powerlines in both Zone 1 and 2.*

III. *Safety Zone 2 extends from 10 – 30 metres of your home.*

a) *Remove scrub and dead or dying plants and trees; and*
b) *Thin excess trees; and*
c) *Evenly space remaining trees so the crowns are separated by 3-6 metres; and*
d) *Avoid planting clusters of highly flammable trees and shrubs*
e) *Prune tree branches to a height of 2 metres from the ground.*

IV. *Choose Fire Resistant Plants*

Fire resistant plants aren't fire proof, but they do not readily ignite. Most deciduous trees and shrubs are fire resistant. Some of these include: poplar, maple, ash, birch and willow. Install domestic sprinklers on the exterior of the sides of the building that are less 20 metres from the vegetation. Examples of highly flammable plants are: pine, cypress, cedar, fir, larch, redwood, spruce, kanuka, manuka.

For more information please go to https://www.fireandemergency.nz/at-home/the-threat-of-rural-fire/

If your building or dwelling is next to vegetation, whether it is forest, scrubland, or in a rural setting, please detail below what Risk Reduction measures you will take to mitigate the risk of fire development and spread involving vegetation?

7 (a) Vegetation Risk Reduction Strategy
The site is steep and sloping to the south. Some vegetation clearance is required for the house site and landscape planting around the house is proposed consisting of more low lying and less flammable species.

Internal FENZ Risk Reduction comments only:

Click or tap here to enter text.

8. Applicant

Checklist	
☒	Site plan (scale drawing) – including; where to park a fire appliance, water supply, any other relevant information.
☒	Any other supporting documentation (diagrams, consent).

I submit this proposal for assessment.

Name: Alister Hartstone Dated: 9/08/2024

Contact No.: 0277555607

Email: alister@setconsulting.co.nz

Signature: A Hartstone

9. Approval

In reviewing the information that you have provided in relation to your application being approximately a Click or tap here to enter text. *square metre,* Choose an item. *dwelling/sub division, and non-sprinkler protected.*

The Area Manager of Fire and Emergency New Zealand under delegated authority from the Fire Region Manager, Te Hiku, has assessed the proposal in relation to firefighting water supplies and the vegetation risk strategy. The Manager Choose an item. *agree with the proposed alternate method of Fire Fighting Water Supplies. Furthermore; the Manager agrees with the Vegetation Risk Reduction strategies proposed by the applicant.*

Name: Click or tap here to enter text.

Signature: Click or tap here to enter text. Dated: Click or tap to enter a date.

P.P on behalf of the Area Manager

Fire and Emergency New Zealand
Te Tai Tokerau / Northland District

APPROVED
By GoffinJ at 9:02 am, Aug 12, 2024

Jason Goffin- Advisor Risk Reduction

Attachment H Written approval

Far North District Council

Office Use Only
Application Number:

Private Bag 752, Memorial Ave
Kaikohe 0440, New Zealand
Freephone: 0800 920 029
Phone: (09) 401 5200
Fax: (09) 401 2137
Email: ask.us@fndc.govt.nz
Website: www.fndc.govt.nz

APPLICATION FOR DEEMED PERMITTED BOUNDARY ACTIVITIES

Pursuant to Section 87AAB & 87AAD of the Resource Management Act 1991 (the Act)

To qualify to be a deemed permitted boundary activity, a proposed activity must meet the following criteria:

- The proposal must require resource consent due to the infringement of one or more boundary rules in a **district plan**
- The proposal must not infringe **any other district rules**
- The infringement must not relate to **public boundaries**
- The owners of all allotments with an infringed boundary have **given written approval** to the proposal, including **signing the site plans**

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. Applicant Details:

Name/s: BILL MCCARTHY

Electronic Address for Service (E-mail): wmccarthy18@gmail.com

Phone Numbers: Work: 021142055 ~~Home:~~

Postal Address: (*or* alternative method of service under section 352 of the Act): 319 AUCKS ROAD OKIATO.

Post Code: 0272

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

Name/s: BILL MCCARTHY.

Electronic Address for Service (E-mail): wmccarthy18@gmail.com

Phone Numbers: Work: 021142055 Home:

Postal Address: (*or* alternative method of service under section 352 of the Act): 319 AUCKS ROAD OKIATO

Post Code: 0272

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

4. 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: BILL MCCARTHY

Property Address/: Location: 319 AUCKS ROAD OKIATO

5. Application Site Details:

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

Site Address/ Location: 319 AUCKS ROAD OKIATO.

Legal Description: _____ Val Number: _____

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.

6. Description of the Boundary Activity:

(Insert description of the activity in sufficient detail for the consent authority to be satisfied that the activity is a permitted boundary activity under section 87AAB of the Act)

10.7.5.1.7 - SETBACKS TO BOUNDARIES

PROPOSED SHED AND RETAINING WALL STRUCTURES

ENCROACH WITHIN 10M RESTRICTION

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

O Building Consent (BC ref # if known) O Other (please specify)

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

The site and proposal may be subject to the above NES. In order to determine whether regard needs to be had to the NES please answer the following (further information in regard to this NES is available on the Council's planning web pages):

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

9. Boundary Activity details:

- ☑ Plan (drawn to scale) of the site at which the activity is to occur, showing the height, shape, and location on site of the proposed activity*
- ☑ Full name and address of each owner (other than the applicant) of the site to which the proposed activity relates*
- ☑ Full name and address of each owner of an allotment with an infringed boundary to which the proposed activity relates*
- ☑ Written approval and a signed plan from each owner of an allotment with an infringed boundary*
- ☐ Site photos

*denotes mandatory information

Please attach the above to this application.

10. 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: BILL MCCARTHY

Electronic Address for Service (E-mail): wmccarthy18@gmail.com.

Phone Numbers: Work: 021442055 Home:

Postal Address: (*or* alternative method of service under section 352 of the Act) 319 AUCKS ROAD OKIATO.

Post Code: 0272.

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: BILL MCCARTHY (please print)

Signature: (signature of bill payer – mandatory) Date: 13/10/25

Important Information:

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

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

Name: BILL MCCARTHY (please print)

Signature: _____ (signature) Date: 13/10/23.

Checklist (please tick if information is provided)

- ○ Payment (cheques payable to Far North District Council)
- ○ A current Certificate of Title (Search Copy not more than 6 months old)
- ○ Copies of any listed encumbrances, easements and/or consent notices relevant to the application
- ○ Applicant / Agent / Property Owner / Bill Payer details provided
- ○ Location of property and description of proposal
- ○ Written approvals and a signed plan from each owner of an allotment with an infringed boundary
- ○ Copies of other relevant consents associated with this application
- ○ Location and Site plans
- ○ Elevations / Floor plans
- ○ Topographical / contour plans

Note to applicant

You must include all information required by this form. If all information is not included, the consent authority will return this to you and the correct information must be supplied before a written notice permitting your activity can be provided.

In order to be eligible for a deemed permitted boundary activity, the activity must meet the definition of boundary activity under section 87AAB(1) of the Act.

You must provide written approval from all owners of allotments with infringed boundaries under section 87BA(1) of the Act 1991.

If all of the information required under section 87BA(1) of the Act is provided to the consent authority, the consent authority must notify you of your permitted boundary activity within 10 working days after the date on which it receives the information.

You must pay the charge (if any) payable to the consent authority for the deemed permitted boundary activity under the Act.

If signing on behalf of a trust or company, please provide additional written evidence that you have signing authority.

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

UNBOUND **SINGLE SIDED** **NO LARGER THAN A3 in SIZE**

Far North District Council

WRITTEN APPROVAL FOR DEEMED PERMITTED BOUNDARY ACTIVITY
s87BA of the Resource Management Act 1991

1. **Name of person giving written approval (Full Name):**
A G HARRIS.

2. **I am the owner of the property at:**
335 AUCKS RD
RD 1 RUSSELL

3. **Address of the property subject to the proposal:**
319 AUCKS RD.

4. **Are you signing on behalf of other owners?** (Yes / No)

If Yes, List their names: FELICITE ANNE HARRIS.

- I have authority to sign on behalf of the other owners of the property listed in 4*.
- I confirm that I have read the description of the activity and seen and signed the site plans attached.
- In signing this written approval, I confirm that I understand the proposal and understand that the consent authority will permit the applicant to undertake the activity (provided they have supplied the correct information, including all other written approvals required).
- I understand that I may not withdraw my written approval.

*** If signing on behalf of a trust, company or other owners, please provide additional written evidence that you have signing authority.**

Signature: A.G.H (signature) Date: 15/9/2023

5. **Contact Details:**

Contact Person:

Electronic Address for Service: (E-mail) kiteride34@gmail.com.

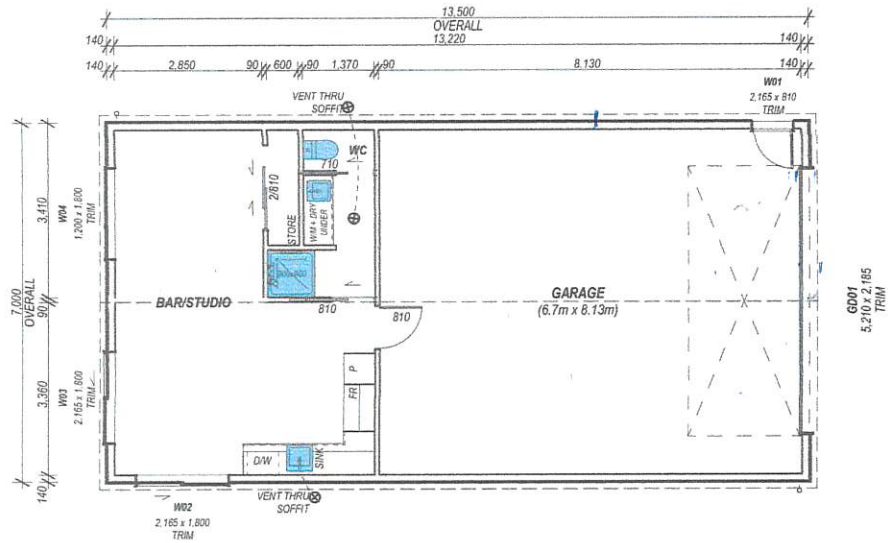
Phone Numbers: Work: Home: 021 374 009

Postal Address: (*or* alternative method of service under s352 of The Act)

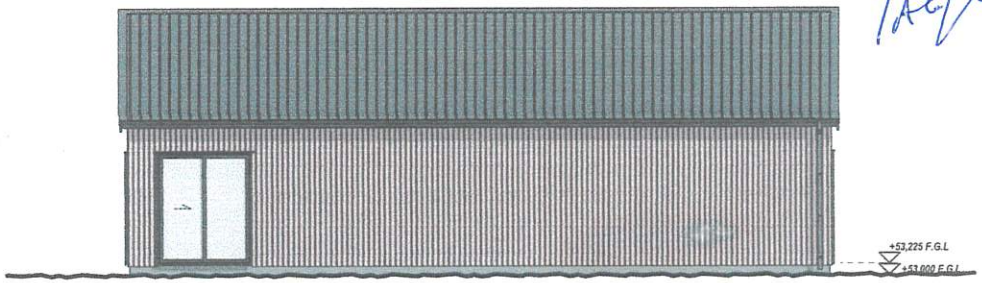
Post Code: 0272.

Note to person signing written approval

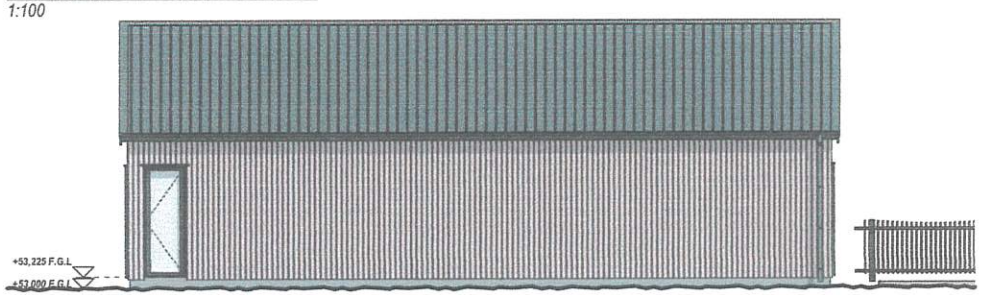
- You should only sign this form if you fully understand the proposal. You should seek expert or legal advice if you need the proposal or deemed permitted boundary activity process explained to you.
- Conditional written approvals cannot be accepted, and written approvals cannot be withdrawn once provided.
- There is no obligation to sign this form, and no reasons need to be given.
- If you do not sign this form, resource consent may be required for the activity and you may have the opportunity to submit on the application.



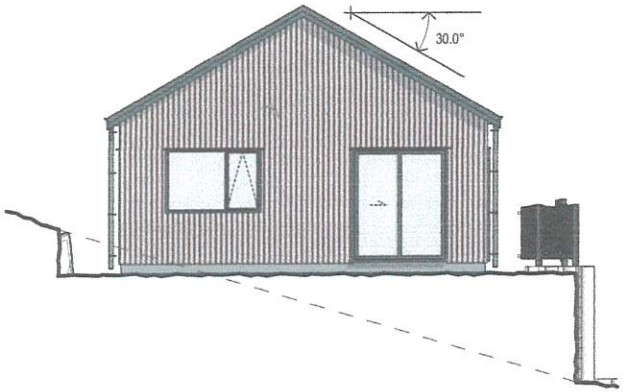
SHED FLOOR PLAN
1:100



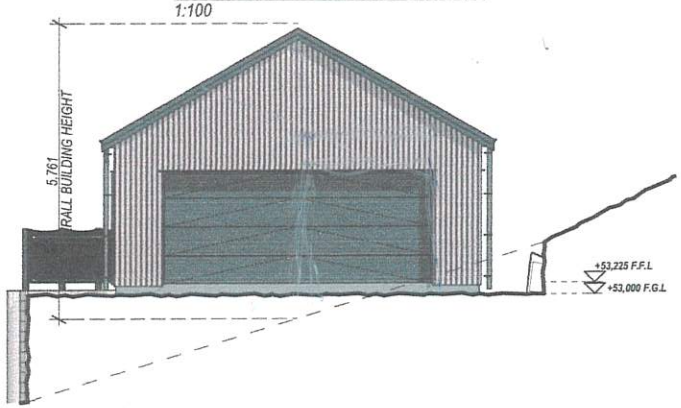
SOUTHELEVATION
1:100



NORTH ELEVATION
1:100



WEST ELEVATION
1:100



EAST ELEVATION
1:100

EXPOSURE ZONE D: FIXINGS ARE TO COMPLY WITH NZBC B2 DURABILITY AND NZS 3604:2011 SECTION 4 - DURABILITY ALL STRUCTURAL FIXINGS TO BE MIN. TYPE 304 STAINLESS STEEL (EXPOSED & SHELTERED).

NOTE
ALL BOLTS SHALL HAVE 50SQ X 3MM WASHERS TO TIMBER FACES

FLASHING AND WRAP SYSTEMS
ALL FLASHINGS, FLASHING TAPES, WRAPS, UNDERLAYS AND ASSOCIATED ACCESSORIES ARE TO BE INSTALLED STRICTLY IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS.

LIGHTING
ARTIFICIAL LIGHTING TO COMPLY WITH NZBC G8/AS1

SMOKE ALARMS.
SMOKE ALARMS SHALL COMPLY WITH APPROVED DOCUMENT F7 WARNING SYSTEMS. (SD)

CONFIRM THE LOCATION OF THE FOLLOWING WITH OWNER PRIOR TO INSTALLATION:
- CEILING HATCH/ACCESS (IF AVAILABLE) - CHECK HEAD HEIGHT FOR ACCESS
- FLOOR COVERINGS - CONFIRM LOCATION, EXTENT AND DIRECTION OF FLOOR COVERINGS SHOWN
- METER BOX & DISTRIBUTION BOARD
- EXTERIOR TAPS

WET AREAS WATERPROOFING SYSTEM OPTIONS.
ALL DETAILS/WINDOWS TO COMPLY WITH NZBC E3 INTERNAL MOISTURE AND MANUFACTURER'S PRODUCT DETAILS.
PROVIDE AN IMPERVIOUS AND EASILY CLEANABLE SURFACE TO ALL WALLS & FLOOR AREAS LIKELY TO BE SPLASHED TO COMPLY WITH E3/AS1.
USE GIB AQUALINE ON WET AREA WALLS & CEILINGS
BATHROOM-FULL HEIGHT AQUALINE
LAUNDRY, WC & KITCHEN- 1200mm DADO
WET AREA VENTILATION.
TO COMPLY WITH NZBC G4 VENTILATION

INTERIOR DOORS
TYPICAL DOORS:
PAINT QUALITY HOLLOW CORE DOORS WITH 18mm PAINT QUALITY DOOR JAMBS AND SELECTED HANDLESUNLESS STATED OTHERWISE

INSULATION-EXCLUDING GARAGE
CEILING INSULATION: R3.6 POLYESTER INSULATION ON CEILING BATTENS BETWEEN RAFTERS/TRUSSES
WALL INSULATION R2.5 POLYESTER WALL BATTS TO EXTERIOR WALLS

TIMBER TREATMENT:
TREATMENT LEVELS TO COMPLY WITH NZBC CLAUSE B2/AS1 DURABILITY, NZS3602. TIMBER AND WOOD BASED PRODUCTS FOR USE IN BUILDING AND NZS3640 CHEMICAL PRESERVATION OF ROUND AND SAWN TIMBER.

H1.2-ALL WALL FRAMING AND ASSOCIATED MEMBERS
ROOF FRAMING, TRUSSES AND CEILING JOISTS
ENCLOSED FRAMING WITHIN SKILLION / FLAT ROOFS

H3.1-CLADDING CAVITY BATTENS

STUD GRADE
UNLESS SPECIFIED OTHERWISE WALL FRAMING IS GRADED TO SG8 AS PER NZS3604:2011

REV.	DATE	DESCRIPTION	DRAWN
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MCCARTHY FORDE SHED

319, AUCKS ROAD, RUSSELL

SHED FLOOR PLAN

PRELIMINARY SET

JOB NO:	0271
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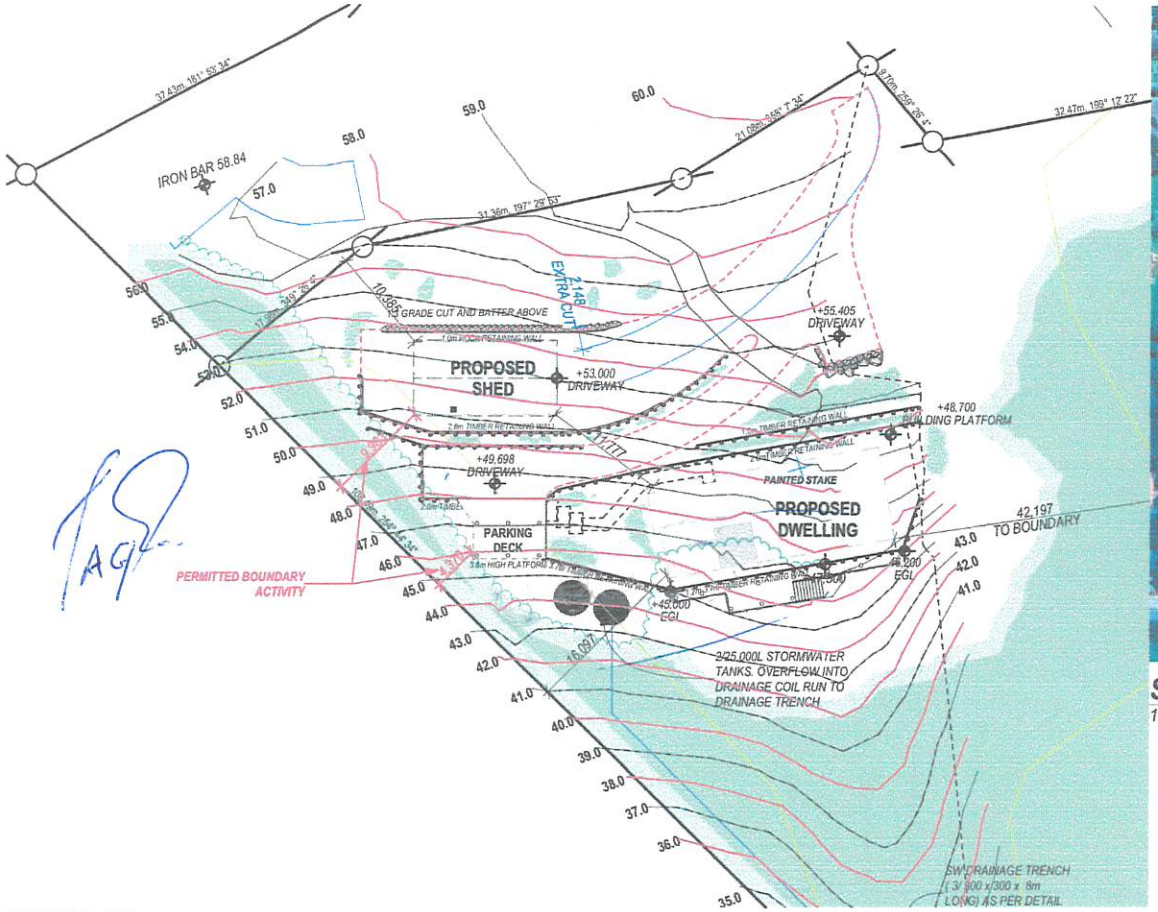
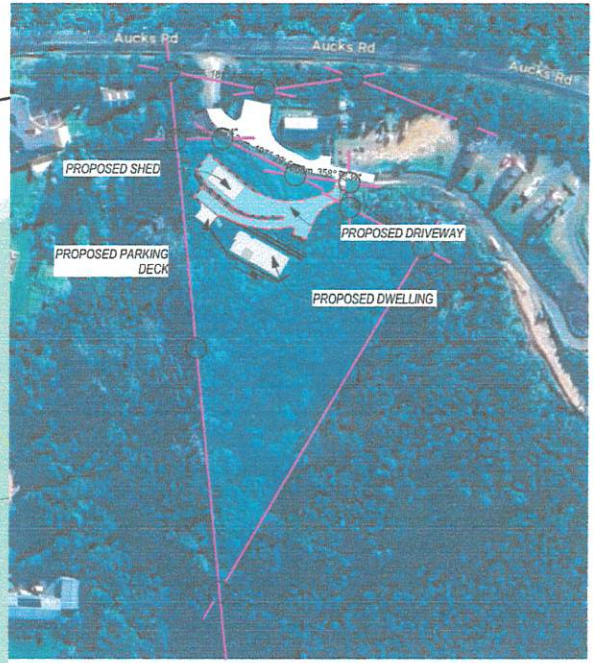


SITE PLAN
1:500



SITE LOCALITY PLAN
1:2000

SITE NOTES:

LEGAL DESCRIPTION
LOT ??, D.P. ??
PHYSICAL ADDRESS
319 AUCKS ROAD, RUSSELL, NORTHLAND

SITE AREA:	??m² (2.75Ha)
WIND ZONE (TO NZS3604:2011):	VERY HIGH
ENVIRONMENT:	COASTAL LIVING
OVERLAY/NOTABLE AREA:	NA
EXPOSURE ZONE:	D
EARTHQUAKE ZONE:	1
INSTABILITY AREA:	??? TBC
FLOOD SUSCEPTIBLITY	NA
SITE COVERAGE:	(????)
SHED SIZE:	94.50m²
DWELLING SIZE:	185.55m²
COVERED AREA:	14.26m²
PARKING DECK:	41.08m²
TOTAL COVERAGE:	**335.39m²**
IMPERVIOUS AREAS:	**(#CT No.)**
ROOF AREAS:	302.57m²
DRIVEWAY AREAS:	590.26m²
TOTAL IMPERVIOUS AREA:	**892.83m²**
CONTOURS: CONTOUR LINES	1m
EXCAVATION REQUIRED:	APPROX CUT 624m³.

SITE WORKS:
READ 'CORE ENGINEERING ON SITE WASTEWATER MANAGEMENT REPORT FULLY PRIOR TO UNDERTAKING ANY SITE WORKS. ALL SITE WORKS TO COMPLY WITH REPORTS RECOMENDATIONS AND CONCLUSIONS.

POWER SUPPLY:
POWER SUPPLY LOCATION TO BE CONFIRMED ONSITE

POTABLE WATER SUPPLY:
WATER SUPPLY MUST BE POTABLE AND COMPLY WITH NZBC G12, BY WAY OF WATER TREATMENT OR FILTRATION
OR OTHER SYSTEM, AND MAINTAINED AS REQUIRED BY THE MANUFACTURER

IMPORTANT:
THIS SET OF DRAWINGS MUST BE READ IN CONJUNCTION WITH ATTACHED,

1) ENGINEERING CALCULATIONS/REPORTS.
2) MANUFACTURER'S LITERATURE.
3) SPECIFICATIONS.

1. ALL CONSTRUCTION TO COMPLY WITH NZS 3604 2011 AND LOCAL TERRITORIAL AUTHORITY BYLAWS.
2. ALL INTERNAL DOOR SIZES SHOWN ARE FOR THE ACTUAL DOOR AND ARE NOT THE TRIM SIZE.
3. ALL DIMENSIONS & UNDERGROUND SERVICES TO BE CHECKED ON SITE BY CONTRACTORS BEFORE COMMENCEMENT OF ANY WORK.
4. CONTRACTOR TO ENSURE ALL GROUND LEVELS & HEIGHT RESTRICTIONS ARE CORRECT AND COMPLY WITH TERRITORIAL AUTHORITY BYLAWS THROUGHOUT CONSTRUCTION.
5. DO NOT SCALE FROM DRAWINGS & WORK FROM DIMENSIONS SHOWN.

PLUMBING & DRAINAGE NOTES:
1. ALL SANITARY PLUMBING AND DRAINAGE WORK MUST COMPLY WITH NZ BUILDING CODE ACCEPTABLE SOLUTION, NZ STANDARD - AS/NZS 3500 PART 2.2
2. ALL STORMWATER DRAINAGE WORK MUST COMPLY WITH NZ BUILDING CODE ACCEPTABLE SOLUTION E1/AS1.
REFER TO SHEET 12 FOR TRENCH DETAILS
3. ALL GAS WORKS MUST COMPLY WITH NZ BUILDING CODE ACCEPTABLE SOLUTION G11/AS1
4. ALL HOT & COLD POLYBUTYLENE PIPEWORK MUST COMPLY WITH G12/AS1,

MINIMUM GRADIENT RATIO OF SANITARY DISCHARGE PIPES AND DRAINS:
1. AS/NZS 3500 PART 2 DISCHARGE PIPES AND DRAINS.
Ø65-1:40 FALL
Ø100-1:60 FALL

MINIMUM GRADIENT RATIO OF STORMWATER DRAINS: NZBC E1/AS1
Ø100 - 1:60

-SEDIMENT CONTROL/MANAGEMENT TO BE CARRIED OUT ONSITE TO PREVENT ADVERSE EFFECTS TO NEIGHBOURING PROPERTIES
(IF REQUIRED BY LOCAL AUTHORITIES)

REV.	DATE	DESCRIPTION	DRAWN
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MCCARTHY FORDE SHED

319, AUCKS ROAD, RUSSELL

SITE PLAN

PRELIMINARY SET

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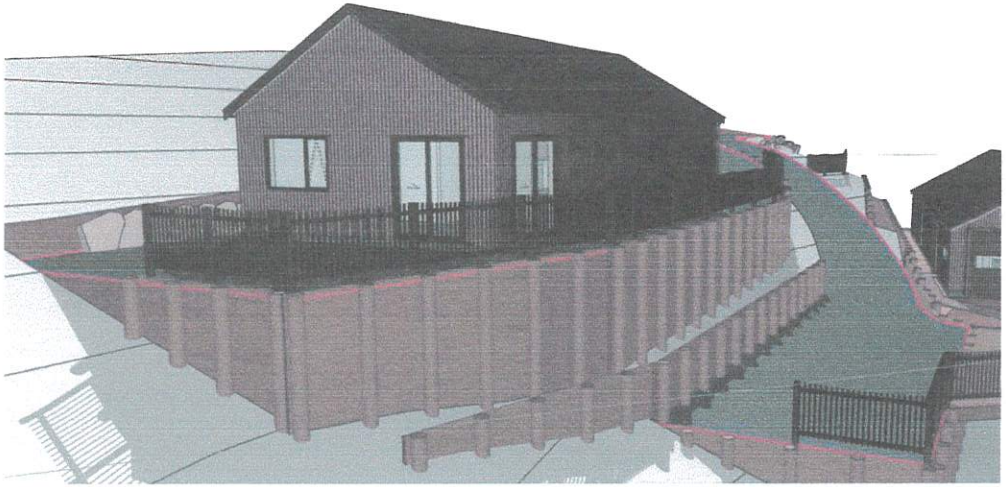
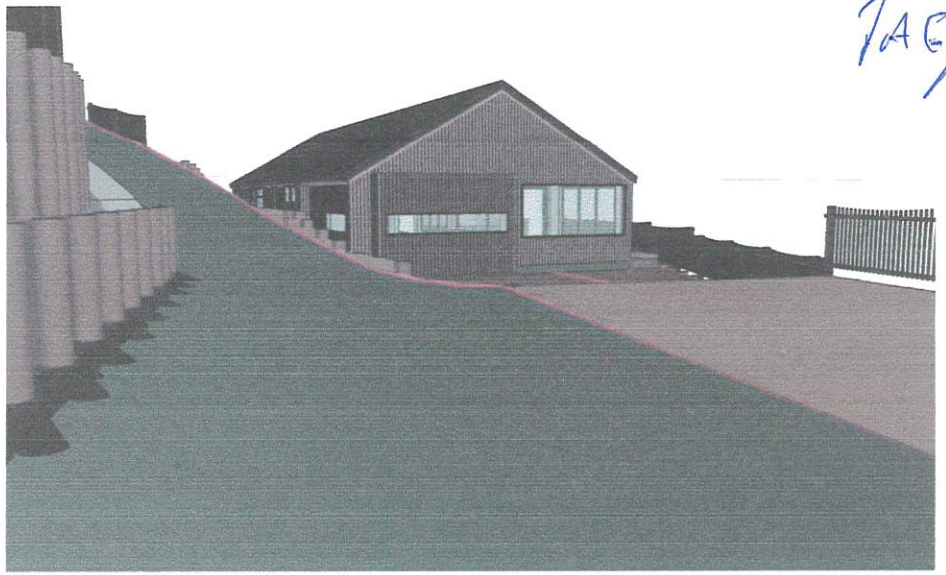
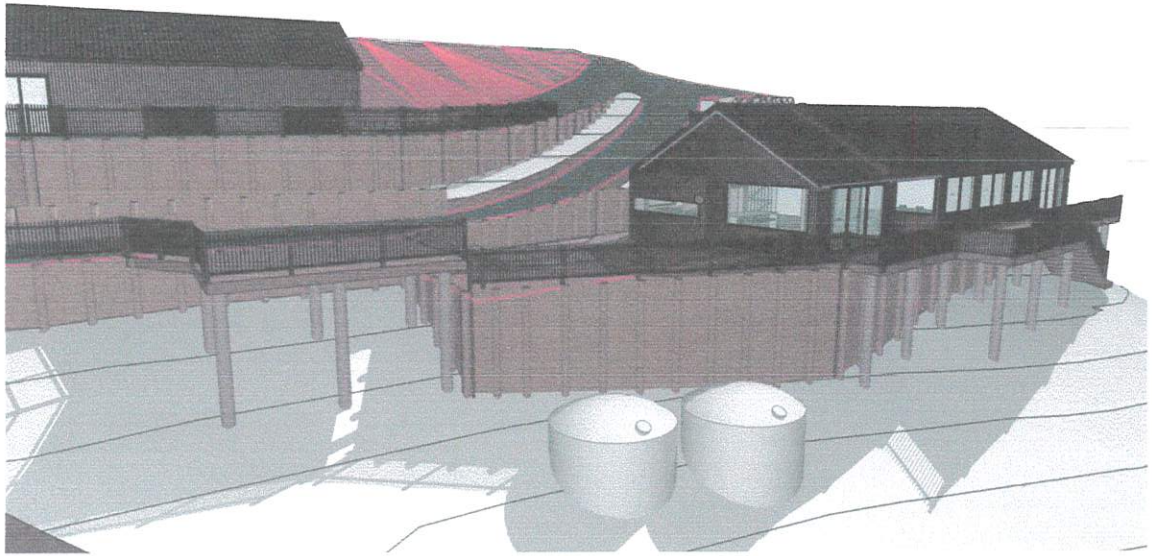


SKETCH: 3D VIEW 01



SKETCH: 3D VIEW 04



SKETCH: 3D VIEW 03

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PRESENTATION

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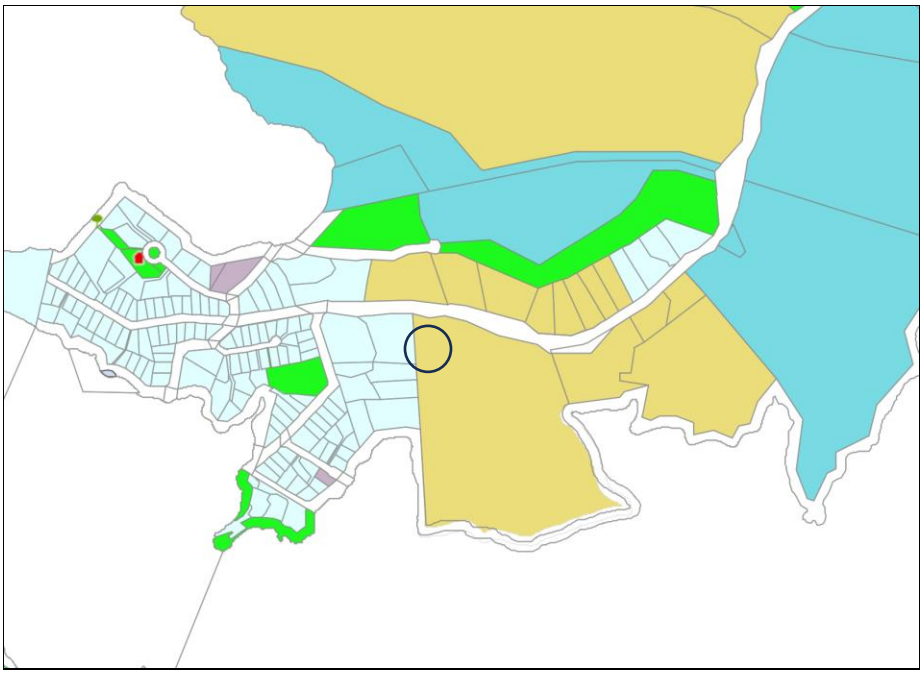
Attachment I District Plan maps

Operative Far North District Plan



Proposed Far North District Plan