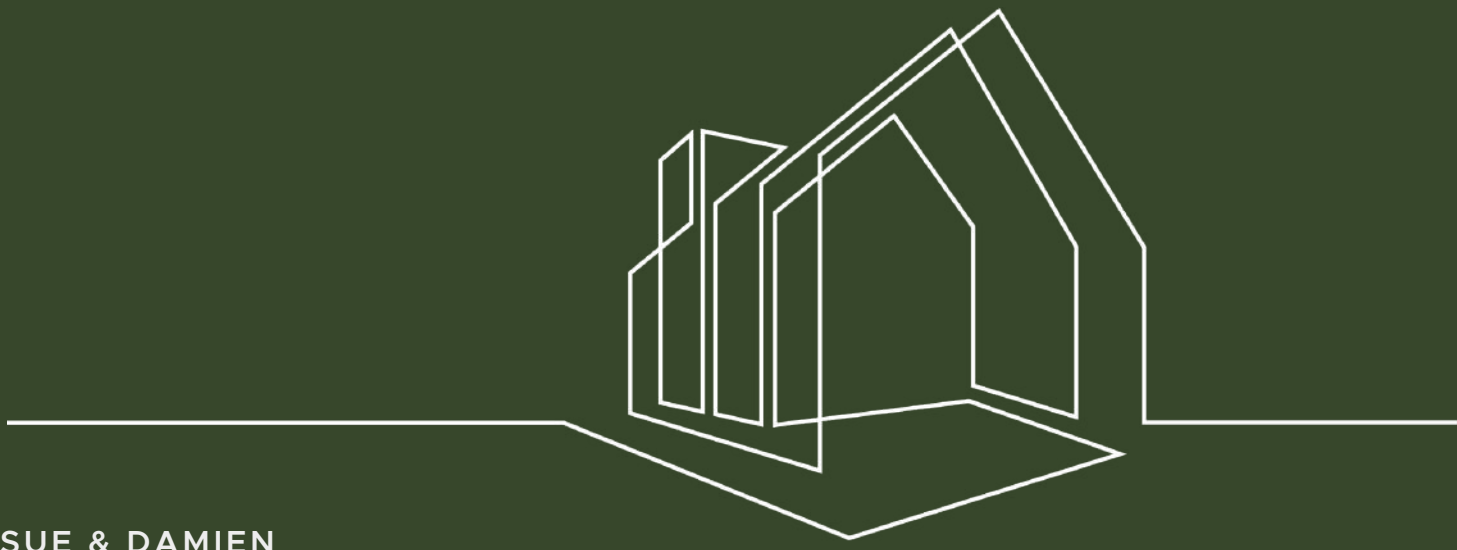
WDC
LIM REPORT



SUE & DAMIEN

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OWN
REAL ESTATE

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P +64 9 430 4200 | 0800 WDC INFO | 0800 932 463
E mailroom@wdc.govt.nz www.wdc.govt.nz/ContactUs

Land Information Memorandum

Sections 44A-C Local Government Official Information and Meetings Act 1987

LIM number: LM2601514

Received: 16 Sep 2026

Issued: 24 Sep 2026

Applicant

Own Real Estate
75 Forest View Road
RD 1
Kamo 0185

Site Information

Property ID: 175994

Street Address: 29 Lauries Drive
Te Kamo 0185

Legal Description: LOT 1 DP 614681

Disclaimer

The information included in this LIM is based on a search of Council records only and there may be other information relating to the land which is unknown to the Council.

Please note that other agencies may also have information relevant to the use of the land, for example, the Northland Regional Council, Heritage New Zealand Pouhere Taonga, and Land Information New Zealand.

The applicant is solely responsible for undertaking comprehensive due diligence of this property.

Council records may not show illegal or unauthorised building or works on the property. Council has not carried out an inspection of the land or buildings for the purpose of preparing this LIM.

The LIM also includes information that identifies natural hazards known to Council. The existence of a natural hazard or potential natural hazard does not equal likelihood of that hazard occurring.

The LIM is not a risk assessment and does not quantify risk. The applicant is advised to seek further information to ensure that the land is suitable for a particular purpose.

A LIM is only valid at the date of issue as information is based only on information that was known to the Council at the time of that LIM application being made.

Further information about the property may be available in the Council records or the current Record of Title. The LIM and any attachments should be read together.

You may wish to seek independent advice to aid the understanding of any of the information included in this LIM.

Property details

- Location Map
- Aerial Photo
- Record of Title: 1226843
- Deposited Plan: DP 614681

This property is subject to a Consent Notice, information attached.

- Interest Number 12406379.2 dated – 28/03/2022

s44A(2)(aa) Information identifying special features or characteristics of the land

Information identified on a site-specific scale for this property is attached for your information.

1. Refer also copies of following reports as attached:

   a. Geotechnical Investigation by Soil and Rock Consultants dated 30/05/2023 from BC2300601 reference NL230058.

   b. Wastewater Report by RS Eng Ltd dated 27/04/2023 from BC2300601 reference 18685.

s44A(2)(b) Information on private and public stormwater and sewerage drains; s44A(2)(bb) Information Council holds regarding drinking water supply to the land

Information relating to Council Utility Services for this property is attached.

- Water, Wastewater and Stormwater Map

As-Built, House Connection and/or Drainage Plan for this property from the building file is attached.

- As Built Services Plan from BC2300601

For further information regarding Council Water Supply please refer:
<https://www.wdc.govt.nz/WaterSupply>

s44A(2)(c)(ca)(cb) Information relating to any rates owing in relation to the land

Information on Valuation, Rates and Water Meter location (if applicable) for the current financial year, is attached.

s44A(2)(d) Any permit, consent, certificate, notice, order or requisition affecting the land or buildings; s44A(2)(daa) Information relating to non-consented small stand-alone dwellings s44A(2)(da) Information provided under s362T of the Building Act 2004; s44A(2)(e) Certificate issued by a building certifier; s44A(2)(ea) Information notified under s124 of the Weathertight Homes Resolution Services Act 2006

Copy of Building Consent and Code Compliance Certificate issued for this property is attached as listed below:

- BC2300601 – Relocation of New Dwelling
  Building Consent Issued – 16/06/2023
  Code Compliance Certificate Issued – 23/01/2024

There is a swimming pool at this property that is NOT on the Whangarei District Council's pool register. The Building Compliance team have been notified and will contact the owner in due course.

For further information please refer: https://www.wdc.govt.nz/PoolFencing

s44(2)(f) Information relating to the use to which the land may be put and conditions attached to that use

Plan Change 4A and 4C are currently progressing through the statutory planning process and may affect how the District Plan applies to this property.
Further information is available here:
<https://www.wdc.govt.nz/Services/Planning/District-Plan/District-Plan-changes/Current-plan-changes/PC4A-and-PC4C>

As part of Plan Change 4C - Minor Improvements, the Road Hierarchy mapping in the Whangarei District Plan is proposed to be updated. The updated layer identifies road centrelines and their classifications, which in turn influence various transport and setback rules in the District Plan. The proposed mapping updates can be viewed by selecting the "District Plan Changes' tile here:
<https://gismaps.wdc.govt.nz/GISMapsGallery/>

This property is located in a Future Urban Zone.

See map attached and for more information search the property address on Council's ePlan:
https://eplan.wdc.govt.nz/plan

s44(2)(g) Information regarding the land which has been notified to Council by another statutory organisation

Whangarei District Council is not aware of any classification attached to the land or building/s.

s44(2)(h) Information regarding the land which has been notified to Council by a network utility operator pursuant to Building Act 1991 or Building Act 2004

Information relating to any utility service other than Councils such as telephone, electricity, gas and regional council will need to be obtained from the relevant utility operator.

Further information may be available from other authorities; Northpower; Spark; Vector Limited; etc.

S44A(3) Other information Council considers relevant to the land

Whangarei District Council recommends that all Whangarei District residents visit the Northland Regional Council website for information on Civil Defence hazard response:
https://www.nrc.govt.nz.

This information includes Tsunami evacuation zones, maps and community response plans for flooding and extreme weather events etc.

Copies of site plan, floor plan and elevations are attached for your information.

s44B(2) Natural Hazards

This LIM includes natural hazard information held by Northland Regional Council and Whangarei District Council, however:

- There may be hazards the Councils do not have information about.
- Some hazard information may be held by other organisations.
- If a hazard is not mentioned in this LIM, it does not necessarily mean the hazard does not exist.

Information about a single hazard (such as flooding, erosion, or land instability) may be included in more than one part of this report. Please check all relevant sections to ensure you have a complete understanding of the hazard.

District Plan Information about Natural Hazards

This property is mapped under PC1 as **Moderate & High Land Instability**. The Whangarei District Council notified PC1 on 31 May 2023. The Plan Change introduces new provisions relating to natural hazards to the District Plan, including updated hazard maps and rules for land use, development, and subdivision in hazard susceptible areas. As of 4 December 2024 the Decision Version PC1 rules have legal effect.

Refer to map attached and for more information on the proposed plan change please visit https://www.wdc.govt.nz/PlanChanges

Building Act Information about Natural Hazards

No Building Act Information about natural hazards applies to this property.

Flooding

Flooding occurs when rainfall exceeds the capacity of the river, land or urban stormwater systems to hold the water. In steep terrain or around rivers, floods can be fast-moving; in low-lying areas and wetlands, floods can cause ponding.

In coastal areas, storm surges can cause flooding affecting land.

Northland Regional Council has modelled the flood risk across Te Taitokerau Northland and maintains a monitoring and forecasting programme to predict flooding. However, the absence of flooding information contained in this report does not exclude the possibility of site flooding, including from local depressions or overland flow paths on nearby properties.

River flood maps

Modelling by Northland Regional Council does not identify a River Flood Hazard for this property.

A river flood occurs when a river, lake or stream overflows its banks due to excessive rain. The duration and intensity (volume) of rainfall in the catchment area of the river determine the severity of a river flood. Other factors include soil water saturation due to previous rainfall, and the terrain surrounding the river system.

In flatter areas, floodwater tends to rise more slowly and be shallower, and it often remains for days. In hilly or mountainous areas, floods can occur within minutes after a heavy rain, drain very quickly, and cause damage due to debris flow.

To determine the probability of river flooding, models consider past precipitation, forecasted precipitation, current river levels, as well as soil and terrain conditions. Flood risk will increase with climate change with the forecast increase in rainfall. Northland Regional Council's flood hazard models include predicted climate change impacts.

Draft river flood reports

Northland Regional Council are continuing with their flood hazard modelling programme to improve the information about the potential for flooding in the region. The reports on these models are not currently published as they are going through peer review and quality checks, however they are available upon request from the Northland Regional Council.

The following reports are available:

- Whangārei Catchment Upgrade and Options Model. Project objectives include providing an appropriate modelling capability for catchment management, asset management and flood risk management. The completed model as well as the Whangārei urban areas detailed level which is closely related to the drainage system management. The report was prepared April 2023 by EWaters and updated in 2025

- Report on the Northern Wairoa Rainfall, Tidal and Storm-Surge Model is designed to simulate rainfall-induced flooding, tidal influences, and storm surge effects for the Northern Wairoa catchment, with a focus on the Dargaville area. The model has been calibrated using multiple flood events at all river gauge locations within the catchment. The report was prepared in September 2025 by Submergent Limited for Northland Regional Council.

Since 2008, Northland Regional Council has undertaken detailed flood modelling of priority catchments, i.e. those catchments and rivers determined present the highest risk to our communities. The flood extent shown on the maps are produced at a catchment scale and is not intended to depict specific flooding details for individual properties. We recommend obtaining site-specific engineering assessments to assess flood risk. Priority catchment flood maps are available on the Northland Regional Council Natural Hazards Map viewer https://www.nrc.govt.nz/environment/natural-hazards-portal/hazard-maps/advanced-hazard-map-viewer/

The priority flood hazard maps include the following flood hazard zones:

- *River Flood Hazards Zone - Priority Rivers (10 year extent).* Flood extent for the most common scenario - a flood with a 10% chance of happening in any year.
- *River Flood Hazards Zone - Priority Rivers (50 year extent).* The extent of a flood that has a 2% annual probability of happening.
- *River Flood Hazards Zone - Priority Rivers (100 year extent CC).* The extent of a flood that has a 1% annual probability of happening, taking the effects of climate change into account.

In 2019 - 2021 Northland Regional Council undertook regionwide flood modelling to model catchments not covered by the priority rivers programme. The flood extent shown on the maps are produced at a catchment scale and is not intended to depict specific flooding details for individual properties. We recommend obtaining site-specific engineering assessments to assess flood risk. The regionwide flood hazard maps are available on the Northland Regional Council Natural Hazards Map viewer https://www.nrc.govt.nz/environment/natural-hazards-portal/hazard-maps/advanced-hazard-map-viewer/

The regionwide flood hazard maps include the following flood hazard zones:

- *River Flood Hazards Zone - Regionwide models (10 year extent).* Flood extent for the most common scenario - a flood with a 10% chance of happening in any year.
- *River Flood Hazards Zone - Regionwide models (50 year extent).* The extent of a flood that has a 2% annual probability of happening.
- *River Flood Hazards Zone - Regionwide models (100 year extent CC).* The extent of a flood that has a 1% annual probability of happening, taking the effects of climate change into account.

Northland Regional Council are continuing with their flood hazard modelling programme and as at October 2025 currently has draft flood models for Whangārei, Kerikeri, Northern Wairoa, Waima and Punakitere, Catchments. These models are not currently published as they go through peer review and quality checks. Flood hazards for these catchments can be requested from Northland Regional Council.

Surveyed and observed flood levels

Northland Regional Council records flood levels during flood and storm events which provides evidence of lands that are effected by flooding.

Surveyed River Flood Levels are available on the Northland Regional Council Natural Hazards Maps viewer.
https://www.nrc.govt.nz/environment/natural-hazards-portal/hazard-maps/advanced-hazard-map-viewer/

Information about observed Coastal Flood Levels is available on the Northland Regional Council's website.
https://www.nrc.govt.nz/media/jtmbbgr1/historicobservedcoastalfloodlevelsnorthland2017.pdf

Flood susceptible lands

Prior to undertaking flood modelling and mapping, Northland Regional Council identified land that could be susceptible to flooding based largely on soil type. This information should only be used where flood hazard modelling and maps are not available (upper Kaihu, upper Kerikeri and upper Rotokakahi and upper Waitangi, Waima and Punakitere catchments).
Flood susceptible land information is available on the Northland Regional Council Natural Hazards Maps viewer.
https://www.nrc.govt.nz/environment/natural-hazards-portal/hazard-maps/advanced-hazard-map-viewer/

River Flood Hazard Technical Reports

1. Scope of report:	Whangārei Catchments
2. Report Title:	NRC Priority Rivers Modelling Report and Whangārei Modelling Report
3. Report date:	March 2011, October 2013
4. Report prepared by:	URS
5. Report commissioned by:	Northland Regional Council
6. Purpose of the report:	This report explains the technical aspects relating to the development of the Priority Rivers Flood Risk reduction project and specifically rivers in the Whangārei catchment. The 2013 report details the work that was done to merge the Hatea and Wairarohia/Raumanaga models and to recalibrate the new Hatea model.
7. Where or how to access report:	River modelling technical reports https://www.nrc.govt.nz/resource-library-summary/research-and-reports/river-modelling-technical-reports/

1. Scope of report:	Whangārei Catchment (Catchment M01)
2. Report Title:	Design Modelling Whangarei Catchment (M01)
3. Report date:	May 2021
4. Report prepared by:	Water Technology
5. Report commissioned by:	Northland Regional Council
6. Purpose of the report:	This report documents the calibration and design modelling methodology for Whangarei Catchment (M01), noting that this catchment was calibrated to the July 2020 flood event.
7. Where or how to access report:	River modelling technical reports https://www.nrc.govt.nz/resource-library-summary/research-and-reports/river-modelling-technical-reports/

Stormwater Catchment and Flood Management

This property has been identified as having information available under Stormwater Catchment and Flood Management, see map attached.

Overland flow paths provide indicative routes of where the surface stormwater may flow during rainfall events and the direction of this flow. Depression storage areas/surface depression ponding areas provide an indicative extent of ponding that may occur if the outlet to the ponding area is blocked or where the outlet capacity is exceeded, for example, if a pipe is either blocked or the design capacity of the pipe is exceeded during a rainfall event.

The Overland Flow Paths are a useful indicator of flow direction and location of where ponding will occur frequently during smaller events and before larger flooding may occur in major rainfall events.

The Overland Flow Path information was developed using LiDAR (Light Detection and Ranging) data. If the landform had changed since the LiDAR data was collected, the indicative Overland Flow Paths and depression ponding areas may not be accurate.

Climate change could make the natural hazard worse by increasing the amount and intensity of rain, which means more water could flow over land and follow these paths, leading to a higher risk of flooding.

Whangārei Stormwater Planning - Overland Flow Paths and Depression Storage Areas district wide report by Morphum Environmental Ltd, dated 4 October 2019, provided a technical overview of the scope, methodology, issues and limitations of the mapped Overland Flow Paths and indicative extent of surface depression areas.

The report can be viewed under the Whangārei Overland Flow Paths and Depression Storage Area section on our Natural Hazards web page: https://www.wdc.govt.nz/NaturalHazards

Refer disclaimer with the mapped OLFP and ponding
https://geo.wdc.govt.nz/portal/sharing/rest/content/items/73a86bc1bfed41a3baf4842efbcf9ae1/data

Land Instability

Whangarei District Council holds indicative information on land stability hazard for Whangārei. Information on land stability.

A landslide is defined as the downslope movement of a mass of earth, rock or debris under the influence of gravity. Whangārei District is susceptible to landslides due to a combination of steep topography, subtropical climate and the underlying geology which includes weak or expansive soil, weak rock and highly weathered, clay rich soils. Landslides are often triggered by intense or prolonged rainfall (as well earthquakes, loss of vegetation cover, leaky water infrastructure and earthworks) which will increase with the effects of climate change.

It is not possible to identify all potential or actual landslides or land instability. The absence of information in this section does not necessarily indicate the absence of a landslide risk.

'Landslide susceptibility' is the relative likelihood of future landsliding occurring based on underlying properties compared with surrounding areas. It does not indicate the size or frequency of potential landslides, or the potential for landslides to cause damage or loss.

This LIM includes maps which indicate Landslide Susceptibility in relation to this property and its surrounds - is **low/moderate/high.** These maps are based on a district wide study entitled 'Landslide Susceptibility Assessment for Whangarei District Council, October 2022.

These maps are a generalisation of available data, and do not represent site specific assessment. They are not intended to be viewed or relied upon on a property-level scale.

The Whangarei District Council may require site-specific investigations before granting future subdivision or building consent for the property, the level of investigation or assessment would depend on the level of stability risk of the area the property is in.

Technical report

1. Report Title:	Landslide Susceptibility Assessment for Whangarei District Council
2. Report date:	October 2022
3. Report prepared by:	Tonkin & Taylor Ltd
4. Report commissioned by:	Whangarei District Council
5. Purpose of the report:	The purpose and outcomes of this analysis and mapping is to: Provide a landslide susceptibility assessment and map that covers the Whangārei District and follows on from the landslide susceptibility assessment and mapping done previously but covered discrete areas of the district only.
6. Scope of report:	Whangārei District
7. Where or how to access report:	You can find the above report under the Land Instability section on our Natural Hazards webpage. Additional reports that may be relevant to Land Instability are also available at: https://www.wdc.govt.nz/NaturalHazards

Liquefaction

This property is located within an area classified as Liquefaction vulnerability category: **unlikely** and can be viewed on the Council Hazard viewer: https://www.wdc.govt.nz/HazardsGISMap

Please note: To view the liquefaction layer your map scale must be greater than 1:5000.

Liquefaction is a natural process where earthquake shaking increases water pressure in the ground in granular soils, resulting in temporary loss of soil bearing capacity. Liquefaction commonly leads to buildings 'sinking' on their foundations during the shaking - in line with that experienced in the 2011 Canterbury earthquakes.

Climate change is expected to cause sea level rise, and in turn an elevation of groundwater levels. Elevated ground water levels are likely to increase liquefaction susceptibility, but the extent of the increase has not been quantified by the report, nor Whangarei District Council.

Whangarei District Council commissioned Tonkin and Taylor Ltd to complete a district wide Liquefaction Vulnerability Study in August 2020. The report identifies and analyses the risk of liquefaction to help inform decisions about future development of land and buildings.

You can find the report under the Liquefaction section on our Natural Hazards web page: https://www.wdc.govt.nz/NaturalHazards

Tsunami

Tsunami are a series of waves, typically created by submarine or coastal earthquakes, landslides (including underwater landslides) and offshore submarine volcanic eruptions. Tsunami may travel hundreds of kilometres an hour and pass by unnoticed at sea, but slow down and grow as they move to shallow water, causing significant damage when they make landfall.

This property is located in an area identified as **Green Zone - Safe Area**

With funding from the Natural Hazards Commission Northland Civil Defence and Emergency Management have modelled the tsunami risk and created Tsunami Evacuation Zone and Safe Zone map:
<https://northlandcdem.maps.arcgis.com/apps/webappviewer/index.html?id=00bf741d369b4eb7802021004d123e3b>

Technical Report for Tsunami Evacuation Zone and Safe Zone map

1. Scope of report	Regional
2. Report Title:	Tsunami Inundation Modelling for Evacuation Planning in Northland
3. Report date:	2024
4. Report prepared by:	Orca Consulting
5. Report commissioned by:	Natural Hazards Commission
6. Purpose of the report:	The objective of this study was to produce tsunami inundation and evacuation zones for the Northland region that are compliant with guidelines set forth in the document 'Tsunami Evacuation Zones: Director's Guidelines for Civil Defence Emergency Management Groups' (MCDEM, 2016). To define these zones, numerical modelling was undertaken to determining the extents of the tsunami inundation zones for the Northland Region. The study used a Level 3/Level 4 modelling approach (as defined in MCDEM 2016) whereby a physics based numerical model was used to model the evolution of the tsunami from source through to inundation. The study used multiple sources, both local and distant.
7. Where or how to access report	A copy is available upon request from Northland Regional Council

Erosion and Landslide

Erosion is any movement of soil, rocks or sand, under the influence of wind, water or gravity. Landslides are a type of erosion. A landslide is the downslope movement of a mass of earth, rock or debris under the influence of gravity. Te Taitokerau Northland is susceptible to landslides due to its steep topography, subtropical climate, and underlying geology. Landslides are often triggered by intense or prolonged rainfall (as well as earthquakes, loss of vegetation cover, leaky water infrastructure and earthworks), which will increase with the effects of climate change. Climate change is expected to increase erosion in Te Taitokerau Northland.

Northland Regional Council has modelled the region's relative risk of erosion and sediment loss to water and these have been published as Erosion and Sediment Risk at this link - <https://experience.arcgis.com/experience/bf65abc23bc144e2a32cd1efd6094167>
The maps are based on a predictive model created using a range of information, including LiDAR (remote sensing technology that uses lasers to create 3D maps), soil and geology type, slope and climate data. The maps are designed as a tool to help landowners manage risks to water quality as a result of sediment loss to water - they provide an assessment of the relative risk of erosion and risk of sediment reaching waterways across Northland.
The maps do not provide a geotechnical assessment of land suitability for subdivision or built development, nor do they quantify the likelihood of future landslides or slips.

Technical Reports for erosion prone land

1. Scope of report	Regional
2. Report Title:	Northland's Landscape Driven Erosion Map: A Resources for Decision-Makers and Communities
3. Report date:	2025
4. Report prepared by:	Land and Water Science
5. Report commissioned by	Northland Regional Council
6. Purpose of the report:	This report was created for people across Northland-farmers, council staff, iwi and hapū, community leaders, and planners-who want to better understand a new regional tool called the Sediment-Process Attribute Layer, or S-PAL. S-PAL does not replace older soil or geology maps. Instead, it builds on those valuable foundations by adding a new layer of information made possible through modern datasets.
7. Where or how to access report	Northland Regional Council website: <https://www.nrc.govt.nz/media/tr4ng33g/northlands-landscape-driven-erosion-map-lws-2025.pdf>

1. Scope of report	Regional
2. Report Title:	The S-PAL Framework: Technical User Guide for Erosion Susceptibility Assessment and Mitigation
3. Report date:	2026
4. Report prepared by:	Land and Water Science
5. Report commissioned by	Northland Regional Council
6. Purpose of the report:	This User Guide explains how to use the S-PAL v 2.0 Framework to identify land that is prone to erosion across Northland. S-PAL stands for Sediment-Process Attribute Layers - a system that combines detailed maps and measurements to show where the land is most likely to erode and shed sediment into waterways.
7. Where or how to access report	Northland Regional Council website: <https://www.nrc.govt.nz/media/qkofckd2/northland-erosion-and-sediment-risk-map-technical-user-guide-11jan2026.pdf>

Draft subsidence report

Northland Regional Council have commissioned work into subsidence regions. The available report is Northland Region InSAR and Differential LiDAR Study. This report presents an analysis of surface deformation across the Northland region between January 2019 and August 2021 using InSAR (Interferometric Synthetic Aperture Radar), a technique for mapping ground deformation using space-borne radar images of the Earth's surface. This report was prepared in June 2026 by Harvey Geoscience.

Drought

Drought in Te Taitokerau Northland is a complex hazard to define and detect, and its impacts vary from one area to the other.

Technical Report for Northland Drought Assessment

1. Scope of report	Regional
2. Report Title:	Droughts in Northland: A Local and Regional Analysis
3. Report date:	2024
4. Report prepared by:	National Institute of Water and Atmosphere
5. Report commissioned by:	Northland Regional Council
6. Purpose of the report:	Analysis of the development, occurrence and severity of droughts in Northland Region.
7. Where or how to access report	Envirolink website: Droughts in Northland: A local and regional analysis <https://www.envirolink.govt.nz/assets/Envirolink/2403-NLRC240-Droughts-in-Northland-A-Local-and-Regional-Analysis.pdf>

In September 2024 the Ministry for the Environment and NIWA published national climate projections.

Droughts are expected to become more frequent and more severe in Te Taitokerau Northland by 2090.

Volcanic, Geothermal and Earthquake

There are many processes associated with volcanic eruptions, and these can be hazardous when they interact with people and/or infrastructure. The type and intensity of volcanic process will vary from volcano to volcano. There are two areas of past local volcanic activity in Northland, at Puhipuhi-Whangārei and at Kaikohe-Bay of Islands. While climate change does not affect volcanic eruptions, it can affect the risk from volcanic hazards such as lahars (volcanic mudflows) because of the forecast changes in rainfall.

Earthquakes occur when stress that has built up along a fault - a break in the Earth's crust - is suddenly released. Earthquakes can cause ground shaking, fault rupture, permanent ground movement, subsidence or lateral spreading, liquefaction, landslides, rock falls and tsunami. Although climate change does not affect earthquakes, it can make some of the problems earthquakes cause, such as subsidence, liquefaction, and landslides, more likely or more severe. This is because climate change affects rainfall and groundwater, which play roles in these hazards.

While the earthquake risk in Northland is low, there have been earthquakes recorded in the region.

Northland Regional Council does not have a map of volcanic, geothermal or earthquake risk but did commission information on volcanic hazards as part of the review of natural hazards information for Northland region. This information relates to region-wide studies and may not reflect the on-site situation or natural hazard investigations and mitigation done on a site-specific property level.

Technical Report for earthquake information

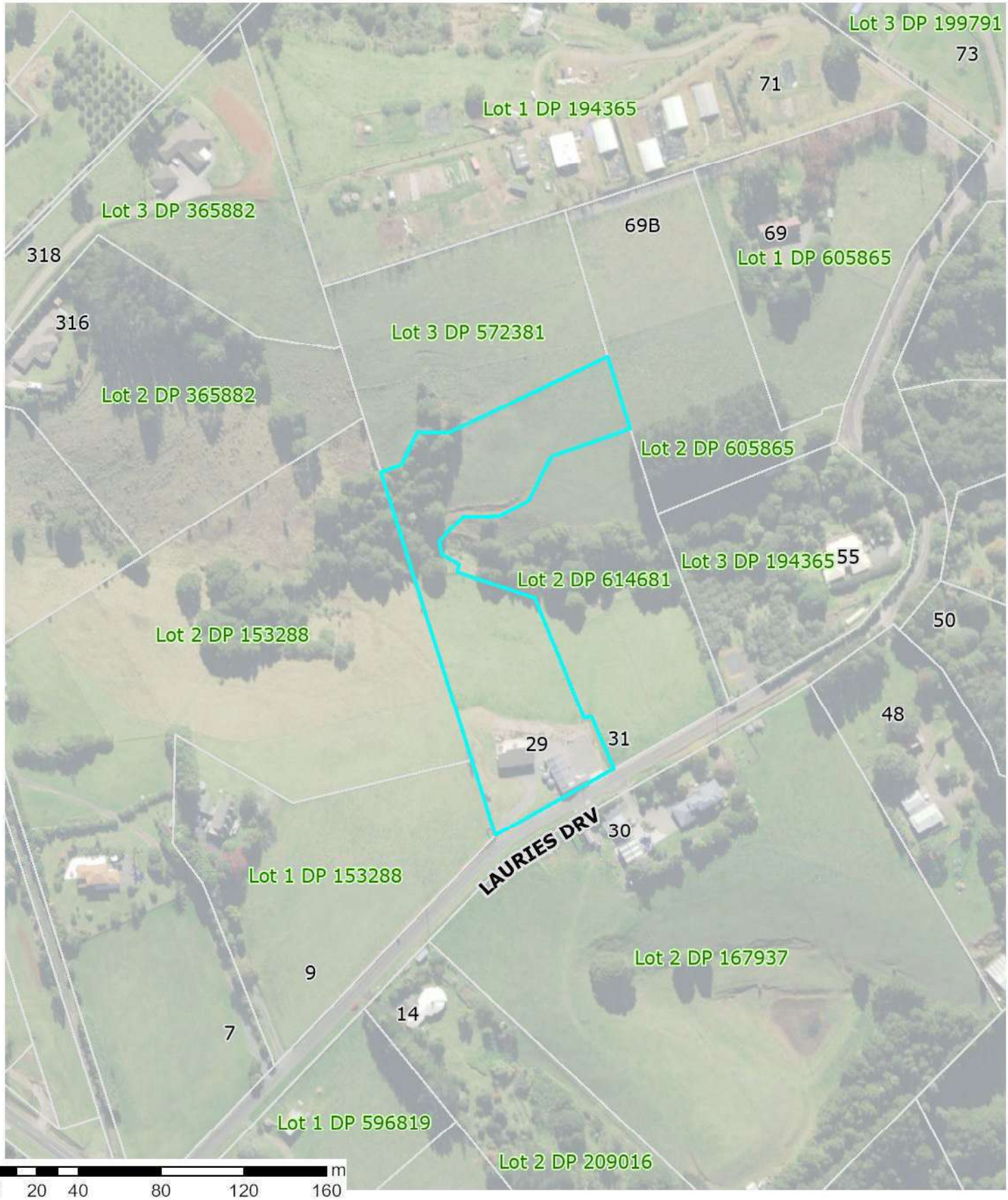
1. Scope of report	Regional
2. Report Title:	A review of natural hazards information for Northland region Section 2.0 Seismic Hazards
3. Report date:	2004
4. Report prepared by:	Institute of Geological & Nuclear Sciences Limited
5. Report commissioned by:	Northland Regional Council and Whangarei District Council
6. Purpose of the report:	The aim of this report is to assemble and present a review of existing information on natural hazards, including earthquakes. The report identifies gaps and possible future work. Please note sections on flooding and erosion prone land have been superseded by more recent work and modelling.
7. Where or how to access report:	Northland Regional Council Website <https://www.nrc.govt.nz/media/2itixwuo/naturalhazards.pdf>

Signed for and on behalf of Council:

P Luwes
Property Information Officer

Property Map

Whangarei District Council



New Subdivisions

- Proposed Pre-223
- 223 Certificate

New subdivisions: Proposed as accepted, pre-223 and 223 Certificate with set Conditions.

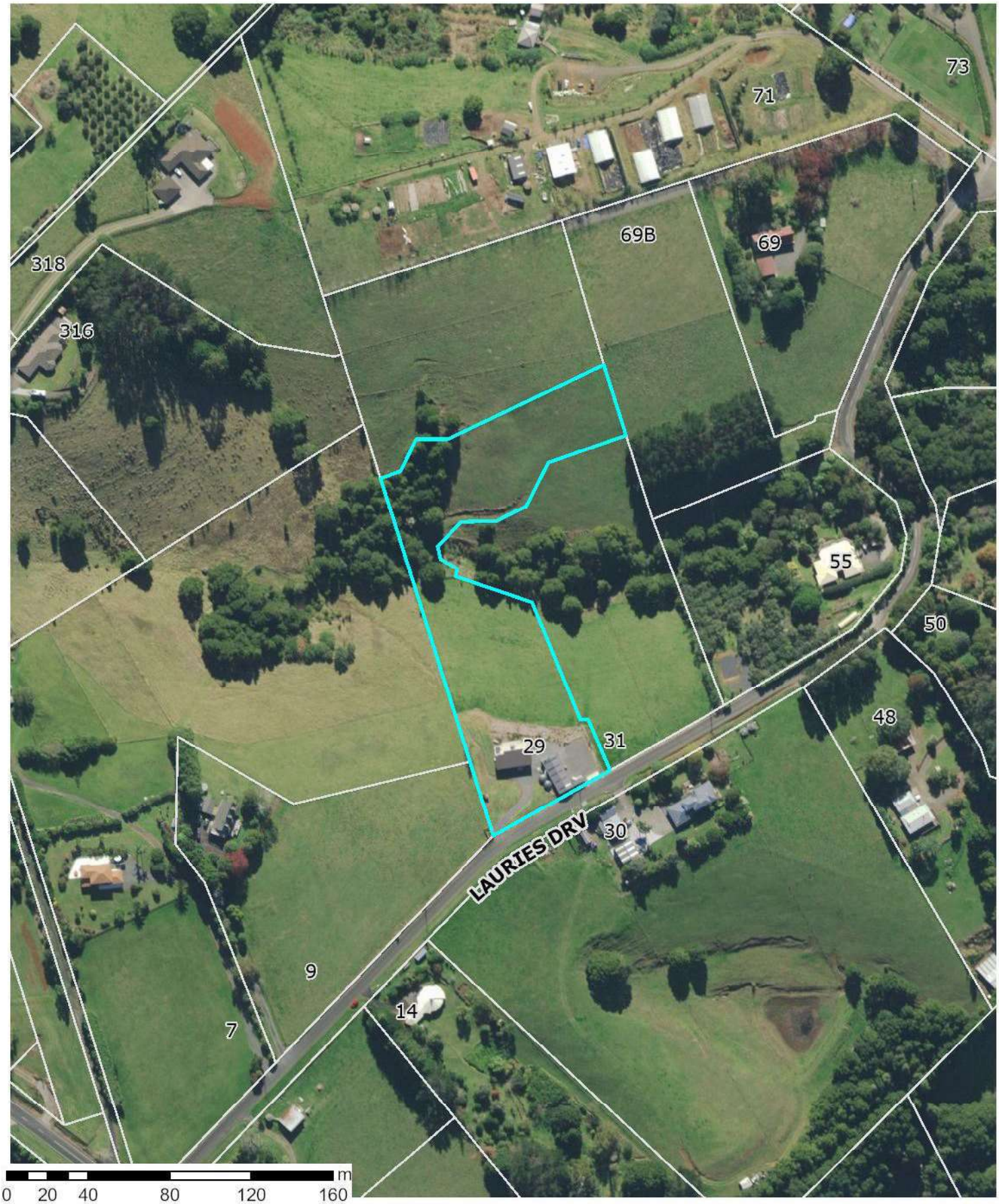
Land Parcel boundaries are indicative only and are not survey accurate. Area measurement is derived from the displayed geometry and is approximate. True accurate boundary dimensions can be obtained from LINZ survey and title plans

22 September 2026

Scale 1:2,500

Aerial Photography

Whangarei District Council



This map includes New Zealand's most current publicly owned aerial imagery and is sourced from the LINZ Data Service.

22 September 2026

Scale 1:2,500

RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD

Guaranteed Search Copy issued under Section 60 of the Land Transfer Act 2017

R.W. Muir
Registrar-General
of Land

Identifier	**1226843**
Land Registration District	**North Auckland**
Date Issued	30 May 2025

Prior References
1039321

Estate	Fee Simple
Area	1.1730 hectares more or less
Legal Description	Lot 1 Deposited Plan 614681
Registered Owners	
Aaron Neil Maple	

Interests

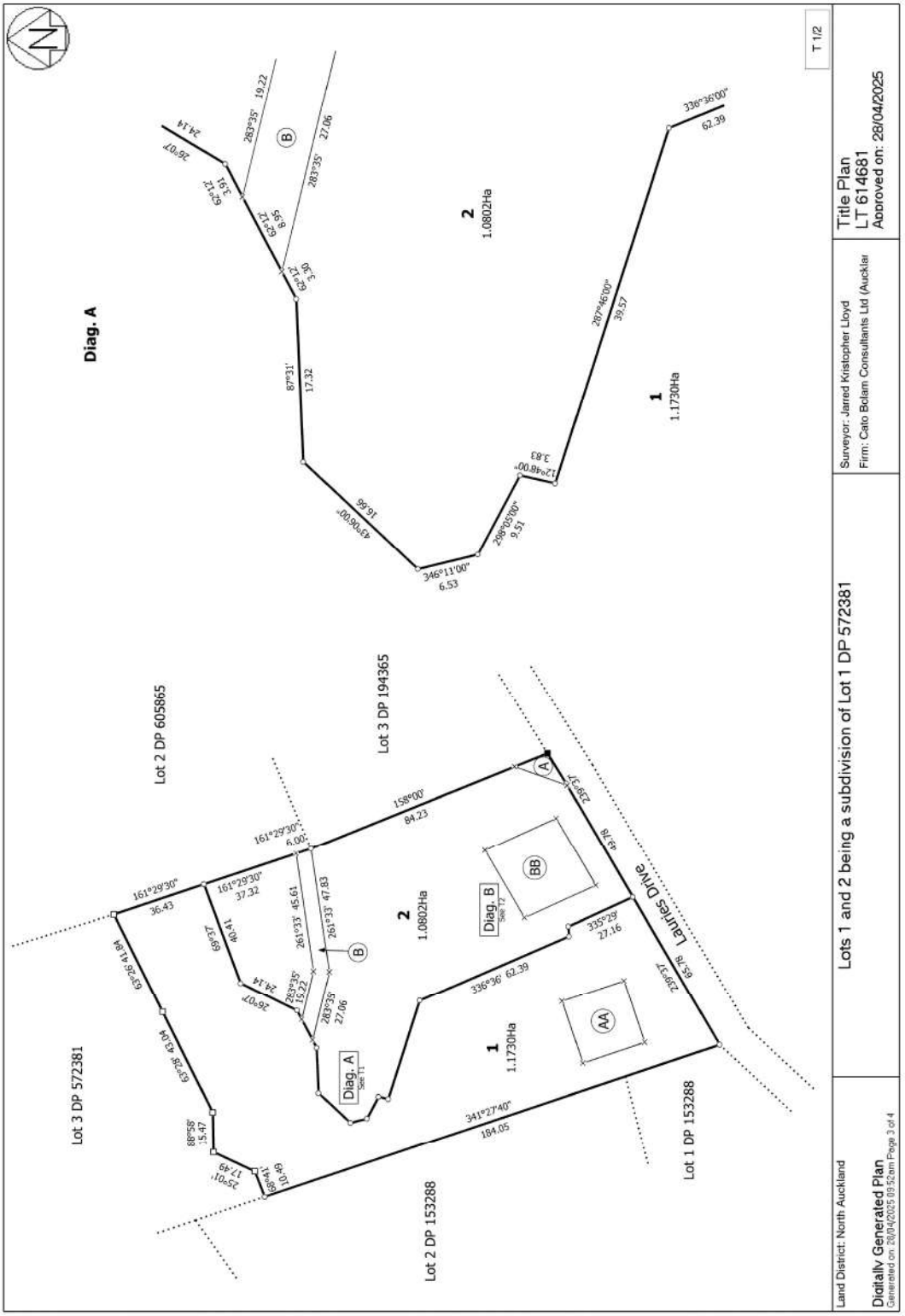
Subject to Section 59 Land Act 1948

Subject to Section 8 Coal Mines Amendment Act 1950

12406379.2 Consent Notice pursuant to Section 221 Resource Management Act 1991 - 4.5.2022 at 12:30 pm

Land Covenant in Covenant Instrument 12406379.7 - 4.5.2022 at 12:30 pm (Limited as to duration)

12534271.5 Mortgage to Bank of New Zealand - 19.8.2022 at 3:30 pm


Diag. A
Lot 2 DP 605865
Lot 3 DP 194365
Lot 3 DP 572381
Lot 2 DP 153288
Lot 1 DP 153288
Laurles Drive
1
1.1730Ha
2
1.0802Ha
Diag. A
Diag. B
T 1/2
Lots 1 and 2 being a subdivision of Lot 1 DP 572381
Title Plan
LT 614681
Approved on: 28/04/2025
Surveyor: Jarred Kristopher Lloyd
Firm: Cato Bolam Consultants Ltd (Auckla
Land District: North Auckland
Digitally Generated Plan
Generated on: 28/04/2025 09:52am Page 3 of 4

Title Plan - DP 614681

Survey Number	DP 614681
Surveyor Reference	48452 Maple
Surveyor	Jarred Kristopher Lloyd
Survey Firm	Cato Bolam Consultants Ltd (Auckland)
Surveyor Declaration	I Jarred Kristopher Lloyd, being a licensed cadastral surveyor, certify that-- (a) this dataset provided by me and its related survey are accurate, correct and in accordance with the Cadastral Survey Act 2002 and Cadastral Survey Rules 2021; and (b) the survey was undertaken by me or under my personal direction. Declared on 24 Apr 2025 08:38 AM

Survey Details

Dataset Description	Lots 1 and 2 being a subdivision of Lot 1 DP 572381		
Status	Deposited		
Land District	North Auckland	**Survey Class**	Class B
Submitted Date	24/04/2025	**Survey Approval Date**	28/04/2025
		Deposit Date	30/05/2025

Territorial Authorities

Whangarei District

Comprised In

RT 1039321

Created Parcels

Parcels	Parcel Intent	Area	RT Reference
Lot 1 Deposited Plan 614681	Fee Simple Title	1.1730 Ha	1226843
Lot 2 Deposited Plan 614681	Fee Simple Title	1.0802 Ha	1226844
Area A Deposited Plan 614681	Easement		
Area B Deposited Plan 614681	Covenant - Land		
Area BB Deposited Plan 614681	Covenant - Land		
Area AA Deposited Plan 614681	Covenant - Land		
Total Area		2.2532 Ha	

LT 614681 Schedule/Memorandum

Land registration district	Territorial authority
North Auckland	Whangarei District

Memorandum of Easements in Gross

Parcels shown with a prefix of *HL-* include height-limited boundaries

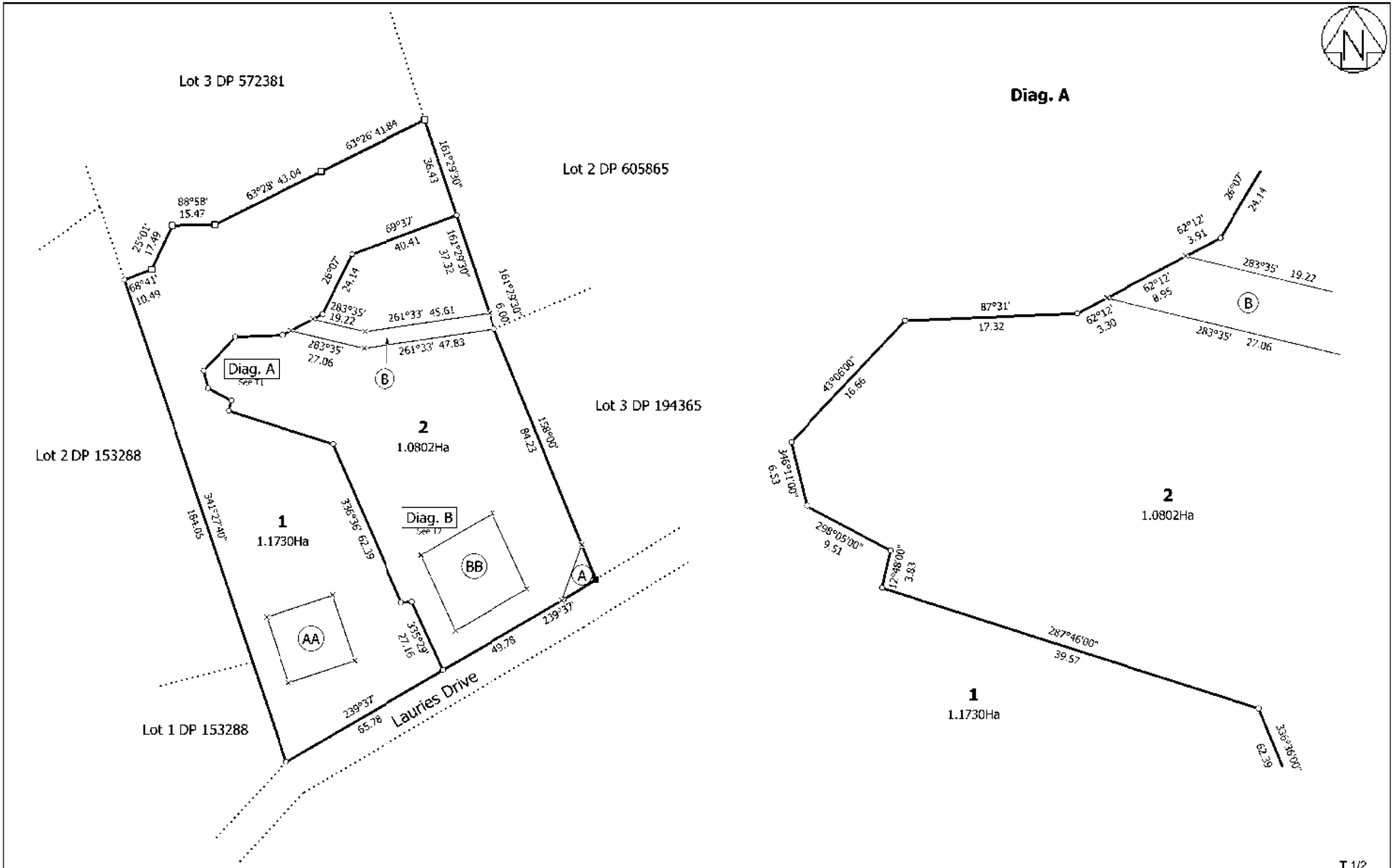
PURPOSE	SHOWN	BURDENED LAND	GRANTEE
Right to convey electricity, telecommunications	A	Lot 2	Northpower Limited and Northpower Fibre Limited

Notes

Subject to existing Consent Notice 12406379.2 shown as Area AA hereon.

Area shown as B is to be subject to Restrictive Covenants (Future Access).

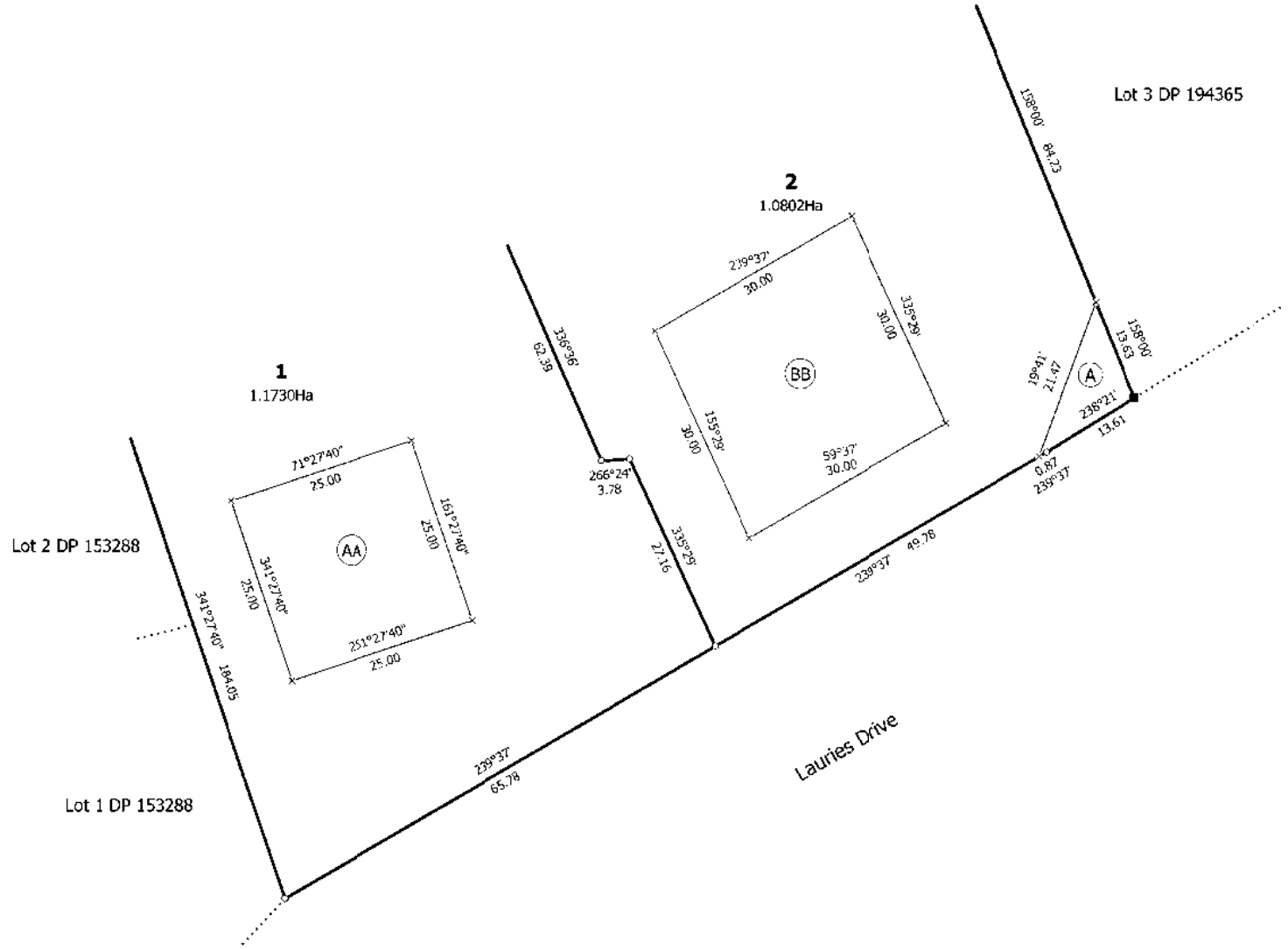
Area shown as BB is to be subject to Restrictive Covenants (Building Area).



T 1/2

Land District: North Auckland Digitally Generated Plan Generated on 10/06/2025 2:38pm Page 3 of 4	Lots 1 and 2 being a subdivision of Lot 1 DP 572381	Surveyor: Jarred Kristopher Lloyd Firm: Cato Bolam Consultants Ltd (Auckla	Title Plan DP 614681 Deposited on: 30/05/2025

Diag. B



T 2/2

Land District: North Auckland Digitally Generated Plan Generated on 10/06/2025 2:38pm Page 4 of 4	Lots 1 and 2 being a subdivision of Lot 1 DP 572381	Surveyor: Jarred Kristopher Lloyd Firm: Cato Bolam Consultants Ltd (Auckla	Title Plan DP 614681 Deposited on: 30/05/2025

CONSENT NOTICE PURSUANT TO SECTION 221
RESOURCE MANAGEMENT ACT 1991

IN THE MATTER	of the Resource Management Act 1991 ("the Act")
AND	
IN THE MATTER	a subdivision consent as evidenced by Deposited Plan No. 572381
AND	
IN THE MATTER	of a Consent Notice issued pursuant to s221 of the Act by the Whangarei District Council ("the Council")

IT IS HEREBY CERTIFIED that the following conditions, to be complied with on a continuing basis by the subdividing owner and subsequent owners, were imposed as conditions of the subdivision consent ("the consent") as effected by Deposited Plan No. 572381 ("the Plan").

In respect of Lot 1 on the Plan:

1. The construction of any building or structure on Lot 1 shall be located entirely within the building envelope shown as area "AA" on DP 572381.
2. Any development shall comply with the restrictions and recommendations identified in the Geotechnical Investigation Report prepared by Soil & Rock Consultants dated 25 May 2021 reference NL21052 (a copy of which is held on Council's file number SD2100115) unless an alternative engineering report prepared by a suitably experienced Chartered Professional Engineer is approved in writing by Council.
3. At the time of building consent, provide suitable evidence / design to illustrate that stormwater attenuation will be provided for all impervious surfaces to ensure compliance with Chapter 4 of Council's Environmental Engineering Standards 2010 to the satisfaction of Council's Building Officer.
4. A wastewater treatment system capable of treating the domestic wastewater generated by a dwelling to a secondary standard shall be installed and the treated wastewater shall be discharged to land by way of pressure compensating dripper irrigation unless an alternative system certified by a Geo-Professional is approved by Council's Building Consent Officer.
5. A maintenance contract for the on-site wastewater system, which includes inspections and maintenance of both the wastewater treatment and disposal systems, shall be kept in place at all times.
6. Upon construction of any habitable building, sufficient water supply for firefighting purposes is to be provided and is to be accessible by firefighting appliances in

accordance with Council's Environmental Engineering Standards 2010, and more particularly with the 'FENZ Fire Fighting Code of Practice SNZ PAS 4509:2008'. An alternative means of compliance with this standard will require written approval from Fire and Emergency New Zealand.

7. Future owners of the Lot are advised that as at the date of this Consent Notice no conventional telecommunication connections have been provided to Lot 1 as part of the subdivision works as it is intended that wireless or satellite technology will be utilised if and when a telecommunication connection is required. Council will not be responsible for ensuring, nor providing, telecommunication connections to the Lot, upon future development of the Lot, or at the time of further subdivision.

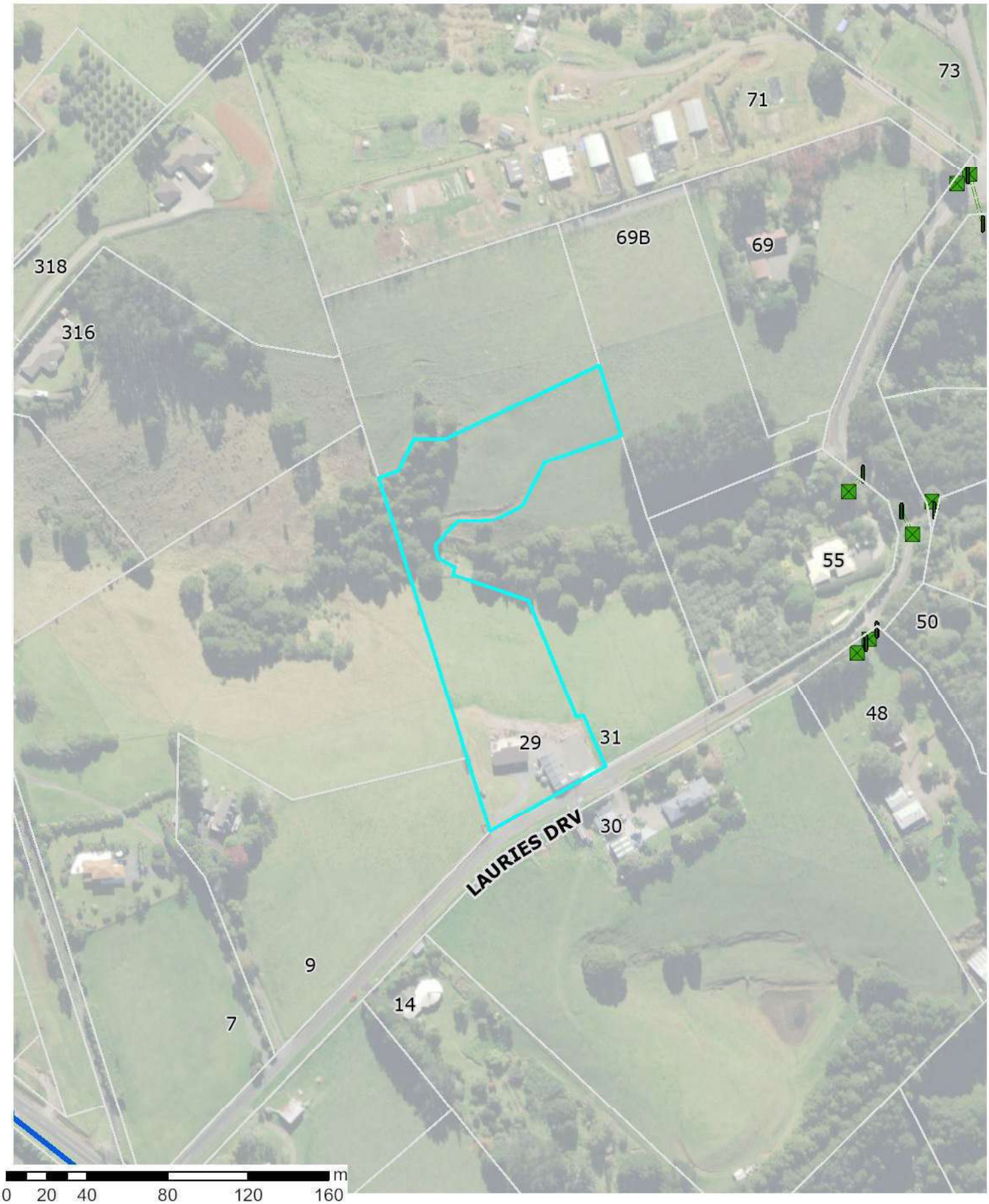
Dated the 28th day of March 2022.

Signed by Whangarei District Council pursuant to the authority of the Council given pursuant to the Local Government Act 2002 and the Resource Management Act 1991:

Authorised Signatory
Karen Toni Satherley
Post Approval RMA Officer

Water, Wastewater and Stormwater

Whangarei District Council



This information is generalized and shows the approximate location of the known pipeline services.
For digging, the As-Built engineering drawings must be used to accurately locate the services.
See WDC Customer Services.

22 September 2026
Scale 1:2,500

Water, Wastewater and Stormwater – Map Legend

Whangarei District Council

Water

Water Point

- Actuator: WDC, Private
- Backflow Device: WDC, Private
- Bore: WDC, Private
- End Structure: WDC, Private
- Fitting Node: WDC, Private
- Hydrant: WDC, Private
- Meter: WDC
- Meter Manifold: WDC, Private
- Pump: WDC, Private
- Valve: WDC, RED, Private

Water Line

- Abandoned Pipe
- Raw Water Main: WDC, Private
- Trunk Main: WDC, Private
- Other Main: WDC, Private
- Process Pipework: WDC, Private
- Reticulation: WDC, Private
- Service Line: WDC, Private

Water Area

- Chamber: WDC, Private
- Reservoir: WDC, Private

Stormwater

Stormwater Point

- End Structure: WDC, Private
- Fitting Node: WDC, Private
- GPT: WDC, Private
- Manhole: WDC, Private
- Pump: WDC, Private
- Stormwater Inlet: WDC, Private
- Valve: WDC, Private

Stormwater Line

- Abandoned Pipe
- Culvert: WDC, Private
- Drainage: WDC, Private
- Main: WDC, Private
- Service Line: WDC, Private
- Surface Drain: WDC, Private

Stormwater Area

- Basin: WDC, Private
- Chamber: WDC, Private

Wastewater

Wastewater Point

- Backflow Device: WDC, Private
- End Structure: WDC, Private
- Fitting Node: WDC, Private
- Manhole: WDC, Private
- Meter: WDC, Private
- Motor Control Centre: WDC, Private
- Pump: WDC, Private
- Valve: WDC, Private

Wastewater Line

- Abandoned Pipe
- Main: Rising Main (Pressure), Sewer Gravity Main, Private, Other
- Process Pipework: WDC, Private
- Service Line: WDC, Private

Wastewater Area

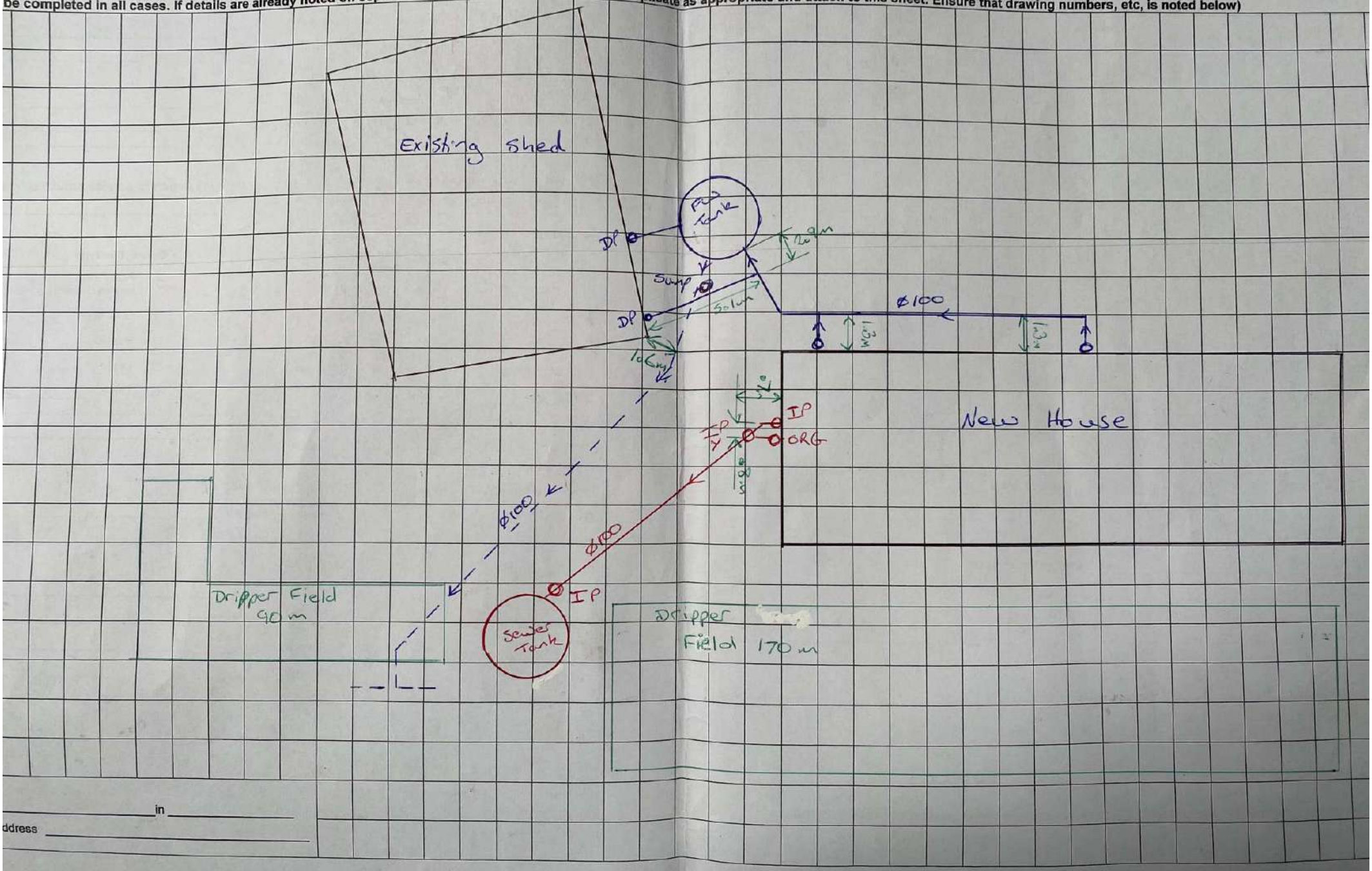
- Chamber: WDC, Private

Pressure Sewer System

- Public
- Private

RT C As-built services plan

be completed in all cases. If details are already noted on separate drawings then provide copies in duplicate as appropriate and attach to this sheet. Ensure that drawing numbers, etc, is noted below)



in

ddress

234816

October 2010

Whangarei District Council
Private Bag 9023, Te Mai
Whangarei 0143
Ph:0-9-430 4200
Email: mailroom@wdc.govt.nz

Rates LIM Report

As at: Tuesday, 22 September, 2026

Property Number	175994
Legal Description	LOT 1 DP 614681
Assessment Number	0033033227
Address	29 Lauries Drive Te Kamo 0185
Record of Title(s)	1226843
Land Value	$375,000
Capital Value	$805,000
Date of Valuation	01-July-2024
Effective Date (used for rating purposes)	01-July-2025
Meter Location	

Rates Breakdown (up to 30 June 2027)

Rates Charge	Charge Total
General Residential - Lifestyle	1,155.75
Regional Emergency & Hazard Management	58.36
Regional Flood Infrastructure	43.11
Regional Economic Development	13.20
Regional Whangarei Urban Riv Mgt Gen Catchment	39.83
Stormwater	124.00
Regional Pest Management	110.40
Uniform Annual General Charge	996.00
Regional Rescue Services	11.09
Regional Council Services	214.35
Regional Whangarei Transport Rate	29.70
Regional Land and Freshwater Management	104.85
Regional Sporting Facilities	7.94
Annual Charge Total	**$2,908.58**

Opening Balance as at 01/07/2026 $0.00

Rates Instalments	Total
20/07/2026 Instalment	$727.58
20/10/2026 Instalment	$727.00
20/01/2027 Instalment	$727.00
20/04/2027 Instalment	$727.00
Rates Total	**$2,908.58**

Balance to Clear $2,181.00

Whangarei District Council

Forum North, Private Bag 9023
Whangarei 0148, New Zealand
P +64 430 4200
E mailroom@wdc.govt.nz
www.wdc.govt.nz

Form 5
Building Consent - BC2300601

Section 51, Building Act 2004

The Building

Street address of building:	29 Lauries Drive Kauri 0185
Legal description of land where building is located:	LOT 1 DP 572381
Building name:	N/A
Location of building within site/block number:	N/A
Level/unit number:	N/A

The Owner

Name of owner:	Aaron Neil Maple
Contact person:	N/A
Mailing address:	29 Lauries Drive RD 1 Kamo 0185
Street address/registered office:	N/A
Phone number:	Landline: N/A Mobile: 0224388838
Daytime:	N/A
After hours:	N/A
Facsimile number:	N/A
Email address:	aaron@washrite.co.nz
Website:	N/A

First point of contact for communications with the building consent authority:
Corry Clayton (Clayton Architecture Limited); Mailing Address: 15 Waipui Place
RD 9
Whangarei 0179; Mobile: 021589219; Email: office@claytonarchitecture.co.nz

Building Work

The following building work is authorised by this building consent:
Relocation of New Dwelling

This building consent is issued under section 51 of the Building Act 2004. This building consent does not relieve the owner of the building (or proposed building) of any duty or responsibility under any other Act relating to or affecting the building (or proposed building). This building consent also does not permit the

construction, alteration, demolition, or removal of the building (or proposed building) if that construction, alteration, demolition, or removal would be in breach of any other Act.

Conditions

This building consent is subject to the following conditions:

Section 90 - Inspections by Building Consent Authorities: (1) Every building consent is subject to the condition that agents authorised by the building consent authority for the purposes of this section are entitled, at all times during normal working hours or while building work is being done, to inspect-
(a) land on which building work is being or is proposed to be carried out; and
(b) building work that has been or is being carried out on or off the building site; and
(c) any building.

(2) The provisions (if any) that are endorsed on a building consent in relation to inspection during the carrying out of building work must be taken to include the provisions of this section.

(3) In this section, inspection means the taking of all reasonable steps to ensure that building work is being carried out in accordance with a building consent.

Construction monitoring requirements
Please contact the following consultants directly to arrange the construction monitoring identified which they have been engaged to carry out.

- Soil Rock Consultants:
  Must observe/inspect pile pre-pour ground conditions and supply site notes and PS4 to the BCA.

Copies of all site reports/records must be provided to the Building Consent Authority as work proceeds for their records. Please upload these to the AlphaOne portal for this consent.

Inspections
The following inspections are required:

- Prepour
- Sub-floor Framing
- Final
- Wastepipes
- Drainage

Documents Required

Prepour

- Record Of Work Foundations
- B1: Piles - Construction monitoring records

Drainage

- E1: Stormwater drain leakage test and as-built plans
- G13: As-builts, drainlayer details, pipework test
- G13 VM4 - Onsite wastewater treatment system as-built and installer details

Final

- PS4 Covering Monitoring Conditions On BC Form 5
- G9: Energy works certificate
- G10 & G11: Energy works certificate

Compliance Schedule

A compliance schedule is not required for this building.

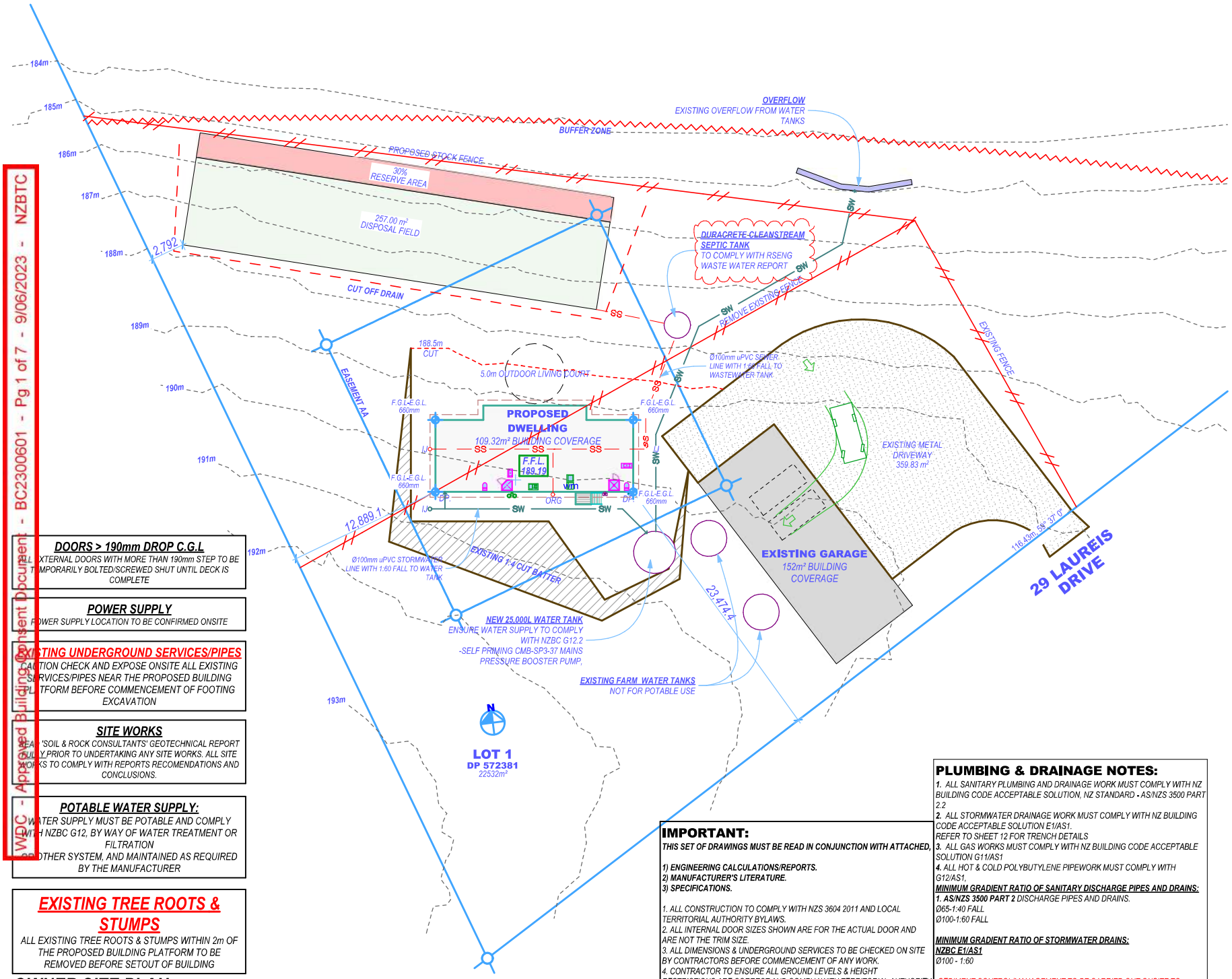
Attachments

Copies of the following documents are attached to this building consent:

Information page: Now you have your Building Consent

- Advice notes

Signature: Jamie Nikora (NZBTC)
Position: Building Control Officer
On behalf of: Whangarei District Council
Issue Date: 16 June 2023



SITE NOTES

LEGAL DESCRIPTION:	LOT 1, DP 572381
SITE AREA:	22532m²
PHYSICAL ADDRESS	29 LAUREIS DRIVE KAURI, WHANGAREI,
WIND ZONE (TO NZS3604:2011):	VERY HIGH
ENVIRONMENT:	FUTURE URBAN ZONE
EXPOSURE ZONE:	C
EARTHQUAKE ZONE:	1
FLOOD SUSCEPTIBLITY:	NA
OVERLAY:	NA
BUILD AREAS:	
PROPOSED DWELLING:	109.32m²
PROPOSED GARAGE:	152m²
TOTAL AREA:	261.32m²
TOTAL SITE COVERAGE:	**1.16%**
IMPERVIOUS AREAS 2.85%	
PROPOSED ROOF AREA:	131.65m²
GARAGE ROOF AREA:	152m²
PROPOSED DRIVEWAY AREA:	359.83m²
TOTAL IMPERVIOUS AREA:	**643.48m²**
CONTOURS: CONTOUR LINES	1m INTERVALS
EXCAVATION REQUIRED:	APPROX CUT ??m³

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

POWER SUPPLY
POWER SUPPLY LOCATION TO BE CONFIRMED ONSITE

EXISTING UNDERGROUND SERVICES/PIPES
CAUTION CHECK AND EXPOSE ONSITE ALL EXISTING SERVICES/PIPES NEAR THE PROPOSED BUILDING PLATFORM BEFORE COMMENCEMENT OF FOOTING EXCAVATION

SITE WORKS
REFER 'SOIL & ROCK CONSULTANTS' GEOTECHNICAL REPORT FULLY PRIOR TO UNDERTAKING ANY SITE WORKS. ALL SITE WORKS TO COMPLY WITH REPORTS RECOMENDATIONS AND CONCLUSIONS.

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

EXISTING TREE ROOTS & STUMPS
ALL EXISTING TREE ROOTS & STUMPS WITHIN 2m OF THE PROPOSED BUILDING PLATFORM TO BE REMOVED BEFORE SETOUT OF BUILDING

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)

OWNER SITE PLAN
1:300

REV.	DATE	DESCRIPTION	DRAWN
A	09/06/23	COUNCIL RFI	CC

MAPLE RESIDENCE

29 LAUREIS DRIVE, KAURI, , WHANGAREI

OWNER SITE PLAN

****BC SET ONLY****

JOB NO:	0320
REVISION:	A
SHEET SIZE:	A3
PAGE:	**01** OF **07**
DATE:	9/06/2023
DRAWN:	CC

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office@claytonarchitecture.co.nz PH: 021589219

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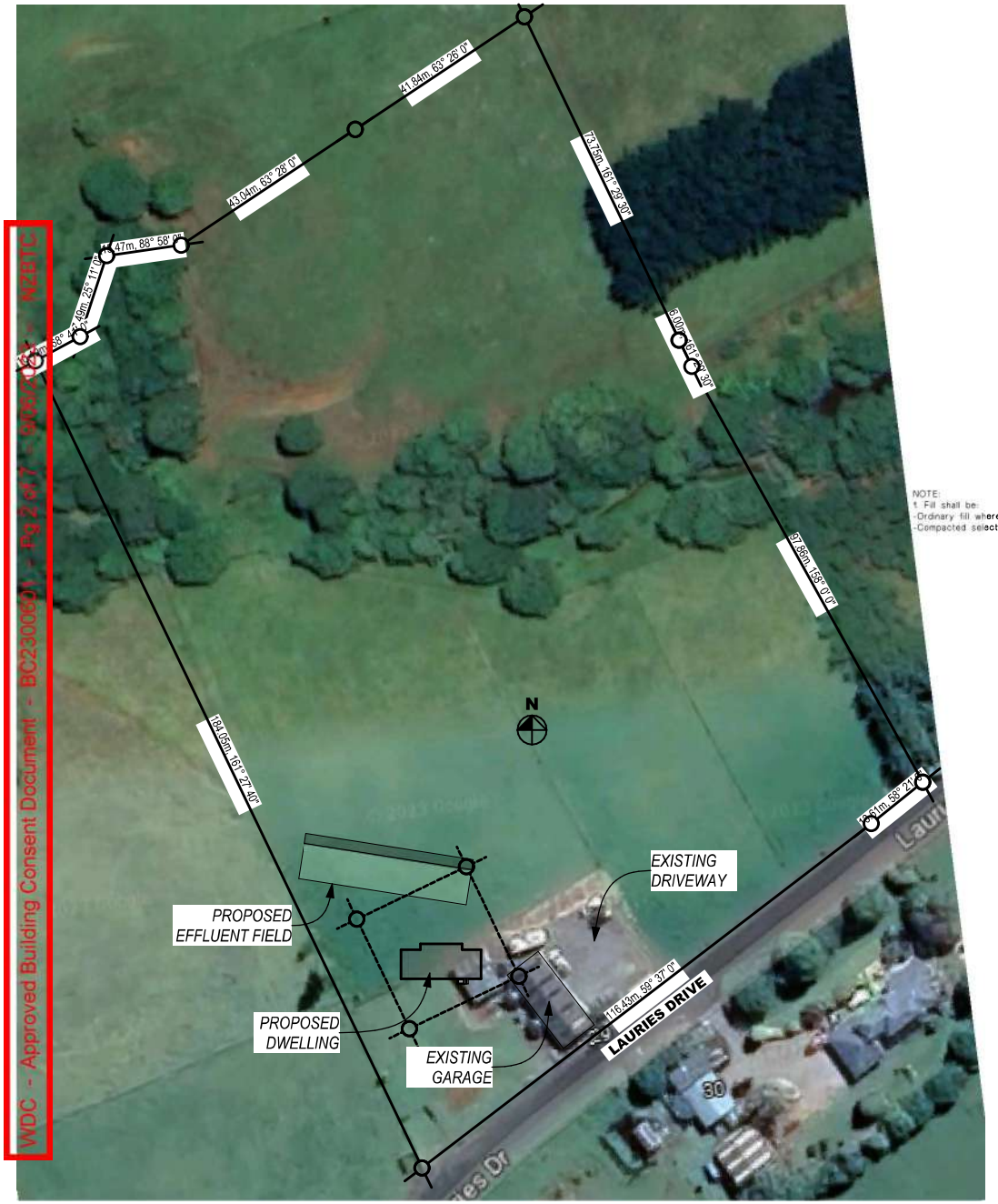
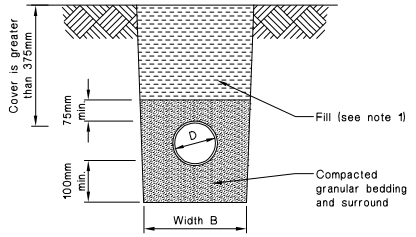
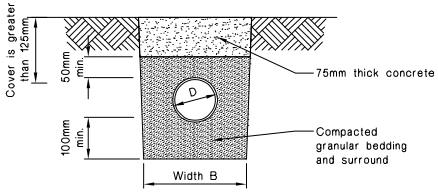


OVERALL SITE PLAN
1:1000

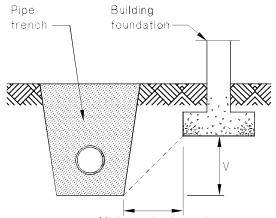


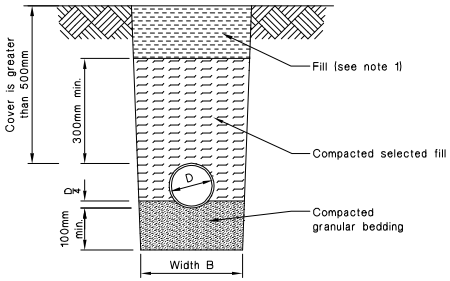
(b) Cover greater than 375 mm
Bedding type 'D' of NZS 4452



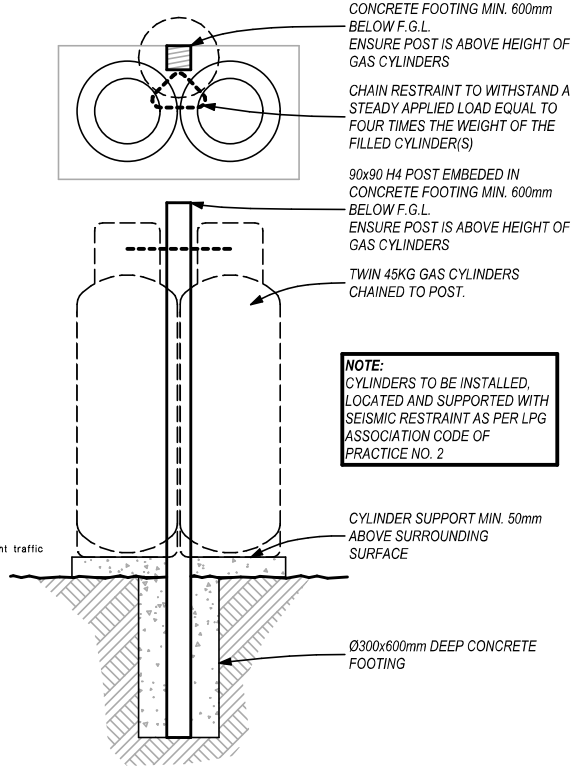
(c) Cover greater than 125 mm

NOTE:
1. Fill shall be:
-Ordinary fill where drains are located below gardens and open country.
-Compacted selected fill where the drains are located below residential driveways and similar areas subjected to light traffic





(a) Cover greater than 500 mm
Bedding type 'B' of NZS 4452



GAS BOTTLE RESTRAINT DETAIL
1:20

03
-

REV.	DATE	DESCRIPTION	DRAWN
-	-	-	-

MAPLE RESIDENCE

29 LAUREIS DRIVE, KAURI, , WHANGAREI

OVERALL SITE PLAN

****BC SET ONLY****

JOB NO:	0320
REVISION:	-
SHEET SIZE:	A3
PAGE:	**02** OF **07**
DATE:	30/05/2023
DRAWN:	CC

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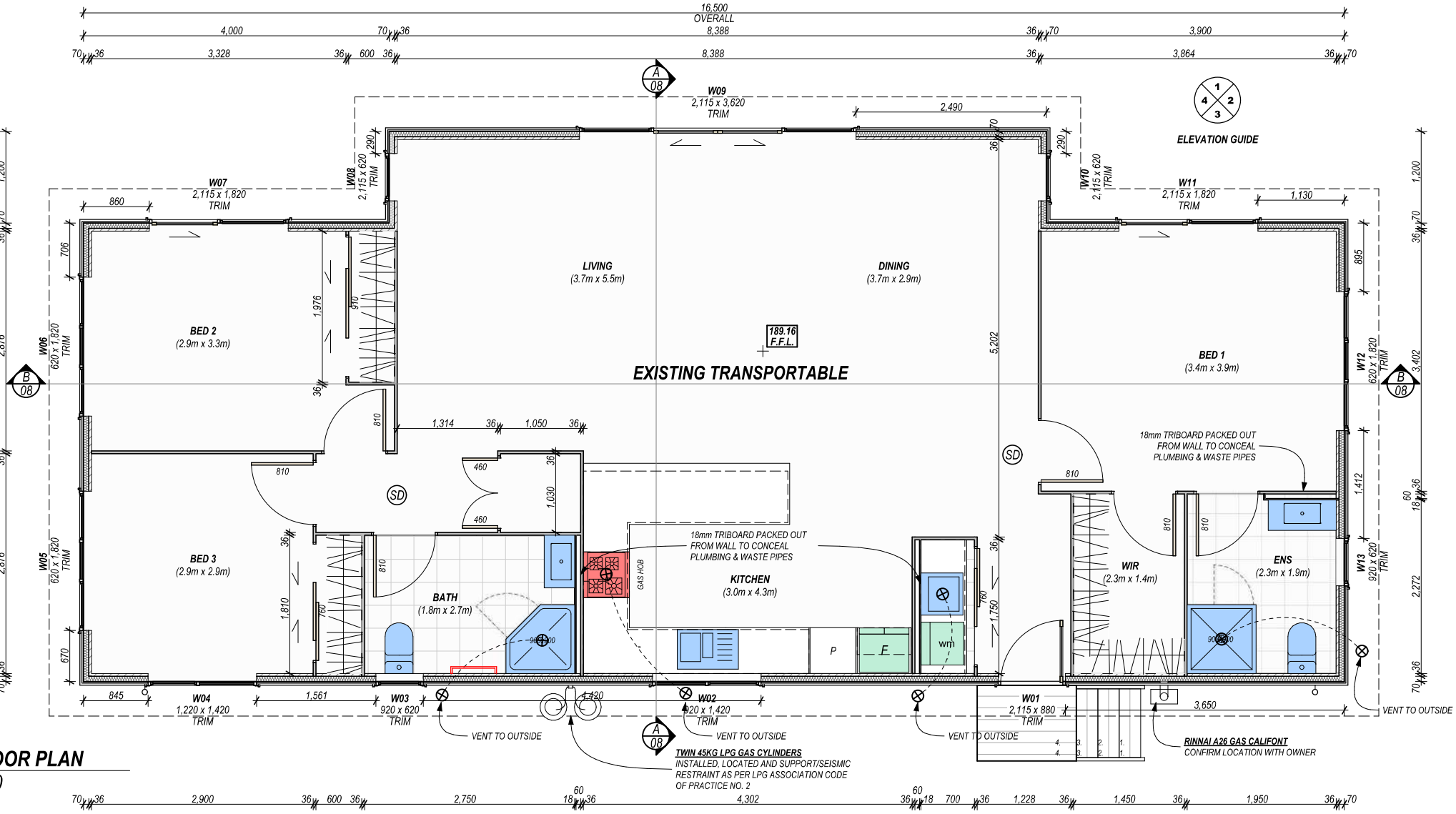

FLOOR PLAN

1:50

REV.	DATE	DESCRIPTION	DRAWN
-	-	-	-

FLOOR PLAN

****BC SET ONLY****

JOB NO:	0320
REVISION:	-
SHEET SIZE:	A3
PAGE:	03 OF 07
DATE:	30/05/2023
DRAWN:	CC

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office@claytonarchitecture.co.nz PH: 021589219

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

0320-MAPLE-(BC)-100523.pln

MAPLE RESIDENCE

29 LAUREIS DRIVE, KAURI, , WHANGAREI

LOT 1, DP 572381

DOORS > 190mm DROP C.G.L

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

G4 VENTILATION:

NATURAL VENTILATION =
- 5% OF FLOOR AREA (OPENABLE WINDOW)

MECHANICAL VENTILATION =
REFERENCE AS1668.2 TABLE B1 EXTRACT RATES

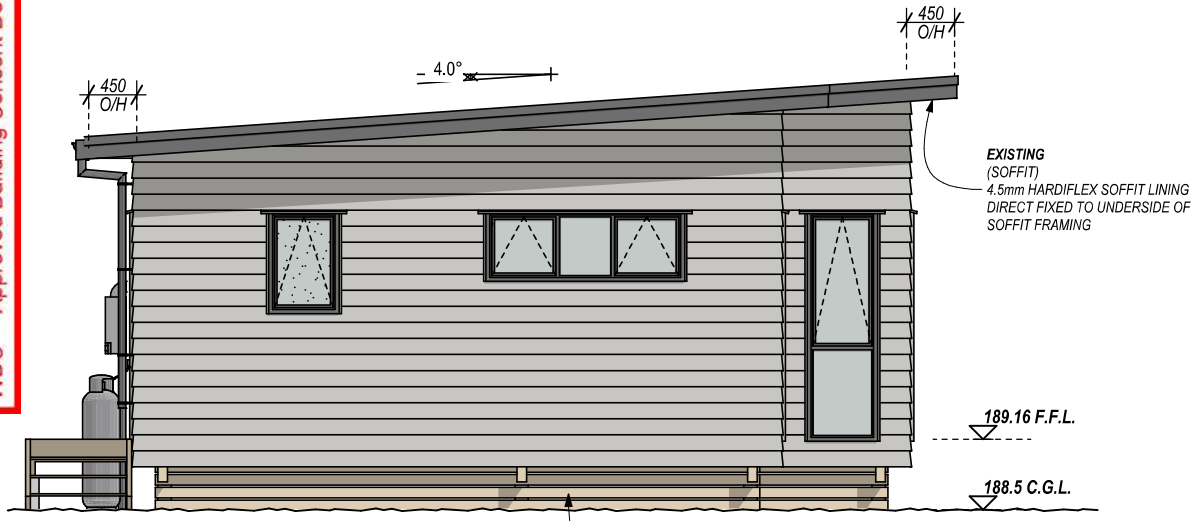
- BATHROOM/TOILETS:	MIN. 25L/S
- LAUNDRIES:	MIN. 20L/S
- KITCHENS:	MIN. 50L/S

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

STAIRS:
COMMON/MAIN PRIVATE TO NZBC D1 FIG. 11

MAX. RISE:	190mm
MIN. TREAD:	280mm

EAST ELEVATION
1:50



SOUTH ELEVATION
1:50

REV.	DATE	DESCRIPTION	DRAWN
-	-	-	-

MAPLE RESIDENCE

29 LAUREIS DRIVE, KAURI, , WHANGAREI

ELEVATIONS

****BC SET ONLY****

JOB NO:	0320
REVISION:	-
SHEET SIZE:	A3
PAGE:	**04** OF **07**
DATE:	30/05/2023
DRAWN:	CC

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office@claytonarchitecture.co.nz PH: 021589219

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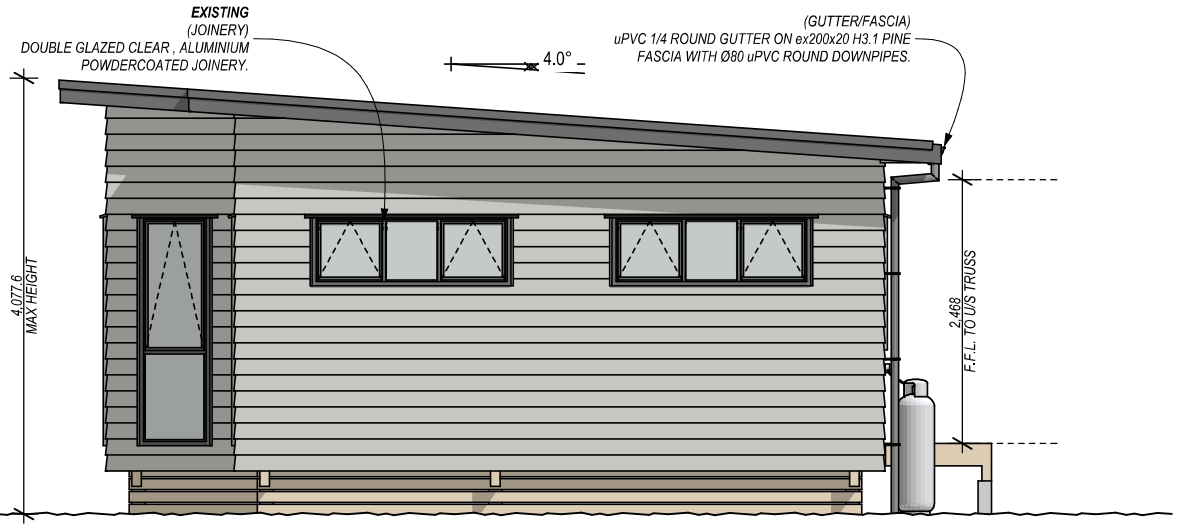
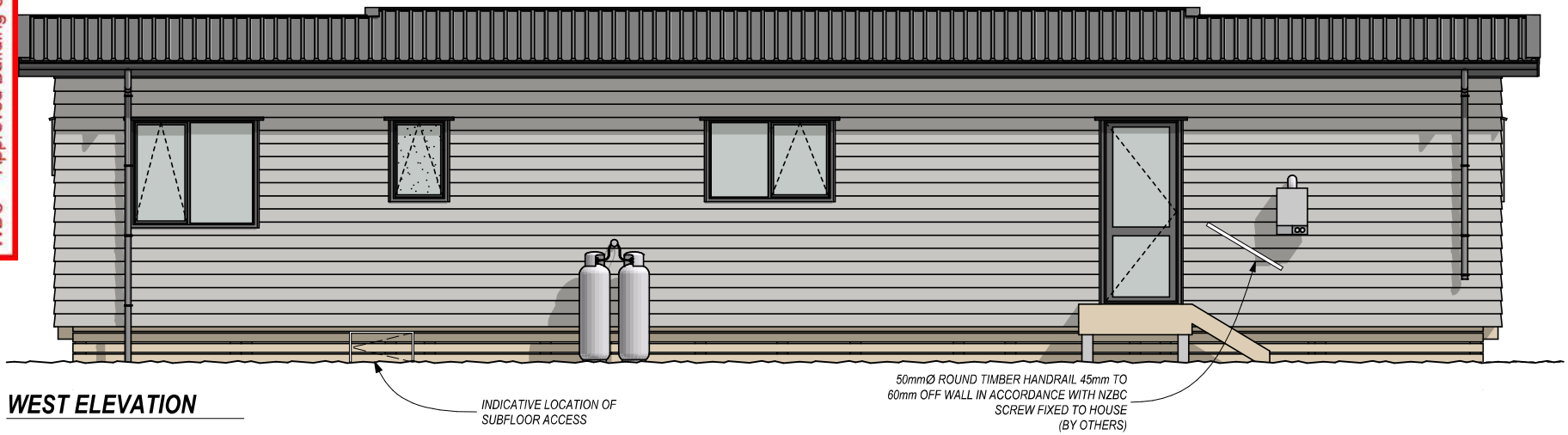


NORTH ELEVATION

1:50



WEST ELEVATION

JOINERY NOTES:

(JOINERY)
DOUBLE GLAZED CLEAR , ALUMINIUM POWDERCOATED JOINERY.
ALL UNITS VIEWED FROM EXTERIOR
*ALL DIMENSIONS ARE **TRIM** SIZE (NOT WINDOW SIZE)*
CONFIRM BEFORE COMMENCING CONSTRUCTION.
ALL JOINERY TO BE POWDERCOATED ALUMINIUM AND BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURERS REQUIREMENTS.
ALL JOINERY TO HAVE H3.1 JAMBLINERS.
ALL GLAZING BELOW 800mm FROM F.F.L. TO BE TOUGHENED SAFETY GLASS

JOINERY MANUFACTURER TO CHECK AND VERIFY ALL DIMENSIONS, AND STRUCTURAL SUPPORTS WHERE REQUIRED.

GLAZING TO COMPLY WITH THE FOLLOWING STANDARDS
NZS 3504: SPECIFICATION FOR ALUMINIUM WINDOWS
NZS 4223: CODE OF PRACTICE FOR GLAZING IN BUILDINGS
NZS 4211: SPECIFICATION FOR THE PERFORMANCE OF WINDOWS

ALL GLASS SHOWER SCREENS TO BE TOUGHENED SAFETY GLASS TO COMPLY WITH NZS 4223:

ANY WINDOW SILL CLOSER THAN 760mm TO THE TOP OF A TOILET SEAT OR WINDOW SEAT TO HAVE RESTRICTORS INSTALLED AS PER F4/AS1 2.0 AND BE TOUGHENED SAFETY GLASS TO COMPLY WITH NZS 4223:

GLASS, TOUGHENED AS REQUIRED FOR PANE SIZE.
ALL FIXINGS AND FLASHINGS TO MANUFACTURERS DETAILS AND SPECIFICATIONS.
INSTALL WITH FLASHING TAPE SYSTEM TO WRAP MANUFACTURERS SPECIFICATIONS AND DETAILS.

FINISHES TO ALL SILL TRAYS AND FLASHINGS TO MATCH JOINERY FRAMES.

REV.	DATE	DESCRIPTION	DRAWN
-	-	-	-

MAPLE RESIDENCE

29 LAUREIS DRIVE, KAURI, , WHANGAREI

ELEVATIONS

****BC SET ONLY****

JOB NO:	0320
REVISION:	-
SHEET SIZE:	A3
PAGE:	**05** OF **07**
DATE:	30/05/2023
DRAWN:	CC

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Soil&Rock Consultants

Your responsive & cost-effective engineers

Geotechnical Investigation for Relocatable Dwelling at

29 Lauries Drive, Kauri

Rev A **30 May 2023** **Job No. NL230058**

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GEOTECHNICAL INVESTIGATION
FOR RELOCATABLE DWELLING AT
29 LAURIES DRIVE, KAURI

Job Number:	NL230058
Name of Project:	29 Lauries Drive, Kauri
Client:	Aaron Maple
Author:	Ayda Azimi, Geotechnical Engineer, MEngNZ
Reviewer and Authoriser:	Ilai Waqa, Principal Geotechnical Engineer, CMEngNZ, CPEng
Document Version:	A
Published:	30 May 2023
Author Signature:	
Reviewer and Authoriser Signature:	

Table of Contents

Appendices:

Appendix A: Drawings

Appendix B: Investigation Logs

Appendix C: Laboratory Test Result

Report Summary

The following summarises the findings of this report however is not to be taken in isolation. It is a requirement that any user of this report review the document in its entirety, including all appendices.

Feature	Commentary
Proposed Development	Construction of a relocatable dwelling
Building Act: Section 71	No *geotechnical* natural hazards were identified (as listed in this Act) that are considered an undue impediment to construction or that cannot be reasonably addressed by typical engineering design and construction
Natural Soils	Stiff to hard weathered Kerikeri Volcanic Group soils
Unduly Weak, Sensitive, or Compressible Soils	Not encountered
Groundwater	Not encountered
Seismic Site Class	Site Class C
Expansive Soils	Classified as Highly Expansive in accordance with B1/AS1
Slope Stability	We consider the proposed building platform to be suitable for the construction of the proposed dwelling from a global, land stability point of view
Foundations	The natural site soils are considered suitable for the use of shallow foundations embedded a minimum of 600mm into stiff natural ground or engineered fill and designed to accommodate the soil expansivity characteristics of the ground.
Drawing Review prior to Building Consent Application	Required
Construction Constraints	See Section 15.0 of this report
Construction Observation	Recommended

1.0 Introduction

Soil & Rock Consultants (S&RC) were engaged by Aaron Maple to carry out a geotechnical investigation at 29 Lauries Drive, Kauri regarding a proposed dwelling.

Our investigation has been informed by Section 71 of the Building Act 2004 which lists 'Natural Hazards' that must be considered by Council when assessing a Building Consent application. Our assessment has also extended to consideration of the following:

- Provision of a seismic site class in accordance with NZS1170.5:2004.
- Provision of geotechnical recommendations related to stability and foundation design requirements.

The primary purpose of this reporting is to identify the issues discussed above and provide associated remedial, mitigating, and design recommendations in order that Consent can be granted. Information and advice related to good construction practise are also provided.

S&RC carried out a geotechnical investigation at the general site locality in support of a previous residential subdivision. The finding and recommendations of our investigation are presented in a report titled "Geotechnical Investigation for Proposed Subdivision at 69 Lauries Drive, Kauri, Whangarei, dated: 25 May 2021, Ref: NL21052.

1.1 Limitations

This report has been prepared by Soil & Rock Consultants for the sole benefit of Aaron Maple (the client) with respect to 29 Lauries Drive, Kauri and the brief given to us. The report can also be relied on by client-appointed consultants and by Council for the purpose of assessing an application for Building Consent for the building work described in this report. The data and/or opinions contained in this report may not be used in other contexts, for any other purpose or by any other party without our prior review and agreement. This report may only be read or transmitted in its entirety, including the appendices.

The recommendations given in this report are based on data obtained from discrete locations and soil conditions between locations are inferred only. Our geotechnical models are based on those actual and inferred conditions however variations between test locations may occur and Soil & Rock Consultants should be contacted in this event.

Soil & Rock Consultants should also be contacted should the scope or scale of the development proposal vary from that currently indicated.

2.0 Site Description

The subject site (Lot 1), forms one of the three lots of the recently subdivided property legally described as Lot 2 DP 194365. The site is roughly rectangular in shape and covers an area of 2.25ha (see Figure 1).

An east-to-west flowing stream with densely vegetated banks is situated approximately in the centre of the site. The ground surface slopes down gently to moderately from Lauries Drive at inclinations ranging from 5° to 14° becoming steeply sloping (approximately 18°) near the stream.

Figure 1: Aerial Image *(Source: Cato Bolam)*

2.1 Proposed Development

Based on the information provided by the client, the proposed development will comprise construction of a relocatable dwelling approximately at the southern end of Lot 1 as shown in Figure 1.

3.0 Geology

Reference to the GNS New Zealand Geological Web Map 1:250,000 Geology map, indicates the site is underlain by soils of the Kerikeri Volcanic Group (See Figure 2).

These deposits comprise ash, tuff and basalt rock. The presence of the volcanic tuffs was confirmed during our site investigation.

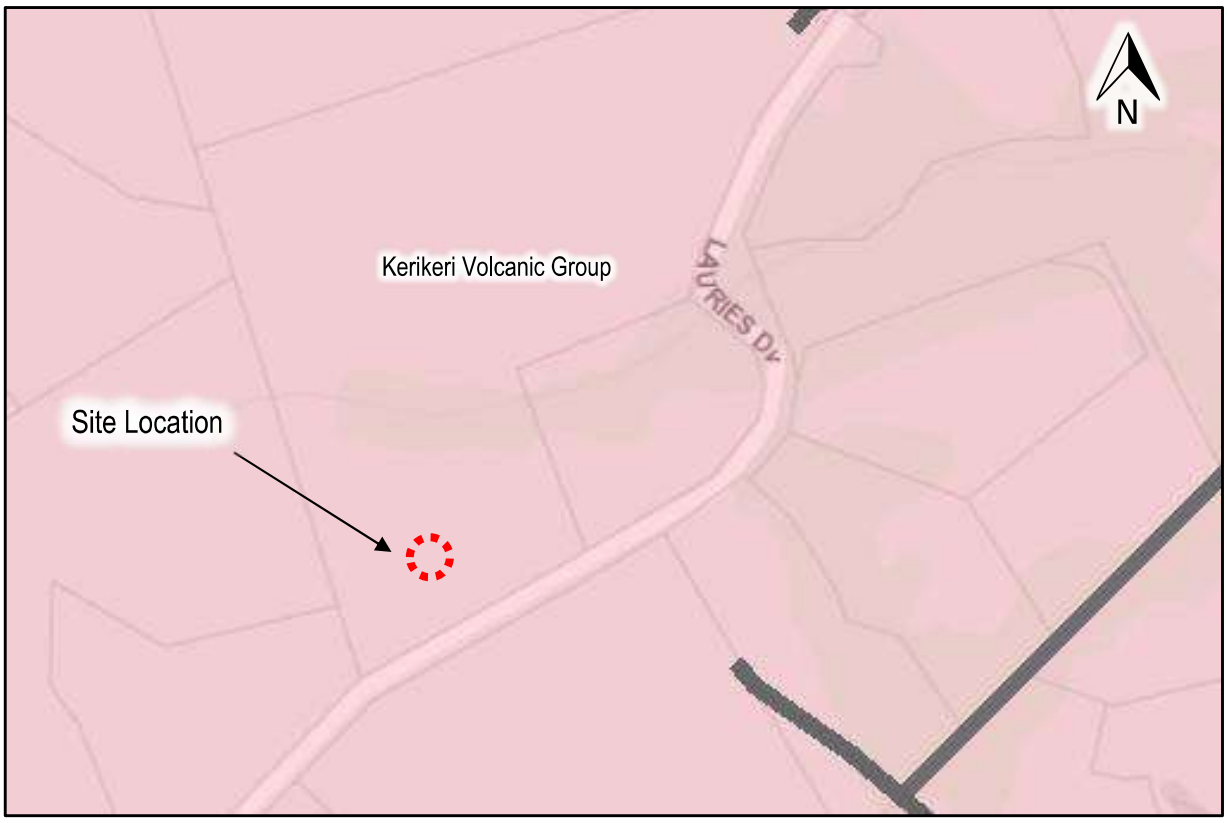


Figure 2: Geological Map *(Source: GNS WebMaps Website)*

4.0 Hazard Map

Based on the Whangarei District Council Hazard Map, the site is mapped as having a low to moderate land instability risk.

5.0 Field Investigation

The field investigation carried out on 14 April 2021 and 11 May 2023 comprised the following components:

- Visual appraisal of the site
- Drilling of three hand augerholes (AH01 – AH03 inclusive) – Appendix B
- Retrieval and laboratory testing of one soil expansivity sample (SS01) – Appendix C

The test locations are shown on the Site Plan, Drawing No NL230058/1 (Appendix A). The locations were measured from existing site features using a hand-held tape and are therefore approximate only.

Measurements of undrained shear strength were undertaken in the augerholes at intervals of depth using a handheld shear vane in accordance with the New Zealand Geotechnical Society Guidelines for Handheld Shear Vane Tests, dated August 2001. Peak and remoulded vane shear strengths shown on the attached augerhole logs represent dial readings off the shear vane adjusted using the BS 1377 calibration correction factor given on the log.

A visual-tactile field classification of the soils encountered during drilling was carried out in accordance with "Guidelines for the Field Classification and Description of Soil and Rock for Engineering Purposes", issued by the New Zealand Geotechnical Society Inc. (2005).

Dynamic Cone (Scala) Penetrometer testing was carried out from the base of augerholes until refusal was reached. Refusal is defined as five consecutive blow counts of 10 or greater per 50mm penetration or a blow count of 20 for 50mm penetration. The results are given on the attached sheet (Appendix B).

5.1 Subsurface Conditions

Subsurface conditions have been interpolated between the test locations and localised variations between and away from the test locations will exist.

In general, the soils encountered comprised topsoil underlain by weathered Kerikeri Volcanic Group soils. An outline of the soil conditions and investigation results is given below and summarised in Table 1, and detailed descriptions of the soils are given on the attached logs (Appendix B).

- **Topsoil.** Topsoil was encountered at each test location to a maximum depth of 0.2m below present ground level (bpgl). This material is unsuitable for the support of permanent structures (i.e. building foundations, floor slabs, pavements etc.).
- **Kerikeri Volcanic Group.** Volcanic deposits were encountered at each test location underlying the topsoil to the termination depths of the augerholes The volcanic soils comprised stiff to hard silts with lesser amounts of clay and fine sand. Vane shear strengths ranged from 86kPa to greater than 200kPa where the soil strength was in excess of the shear vane dial capacity or was 'UTP' – Unable to Penetrate into the soil.
- **Scala Penetrometer Testing.** Scala Penetrometer testing was carried out from the base of each augerhole. Refusal, was encountered at depths ranging between 6.0m and 8.0m bpgl. The increase in blow counts with depth is likely due to friction along the Scala rods rather than contact with an underlying dense stratum.
- **Groundwater.** Groundwater was not encountered on the day of drilling.

Groundwater measurements taken during drilling are not always an accurate portrayal of the actual long-term groundwater table as groundwater levels can take time to stabilise within the augerhole following drilling.

Table 1 – Summary of Subsurface Conditions

Date	Test ID	Termination Depth	Depth to the base of Topsoil/Fill	Vane Shear Strength Range (kPa)	Scala Penetrometer Termination	Groundwater Depth
All depths measured in (m) below present ground level. (Rounded to 1 DP)						
11/05/23	AH01	4.0	0.1	130-200+UTP	6.0	NE
14/04/21	AH02	5.0	0.2	86-200+ UTP	8.0	NE
	AH03	5.0	0.2	124-200+ UTP	8.0	NE

NE = Not Encountered

6.0 Expansive Soils

One soil sample (SS01) was retrieved from near-surface strata and tested in Geocivil Ltd laboratory to determine the Atterberg Limits of the soil in accordance with NZS4402:1986 Tests 2.1, 2.2, 2.3 and 2.4. The results of the tests were used to determine the soil expansivity characteristics. The laboratory test results (i.e. Liquid Limit of 127) indicate the soils lie in 'Expansive Soil Class H – Highly Expansive' with reference to B1/AS1, or Class H2 with reference to AS2870:2011. Laboratory test results are presented in Appendix C.

7.0 Sensitive Soils

The ratio of peak to remoulded vane shear strength values recorded during our investigation ranges approximately between 2 and 4, indicative of a 'moderately sensitive' subgrade. Volcanic, silty or sandy soils can be sensitive to mechanical disturbance and/or exposure to the elements. The practical outcome of this characteristic is that soils that test well in-situ can perform poorly when construction is under way. Care is therefore required during construction to ensure the soils are protected to ensure favourable short and long-term subgrade performance.

Practical means of protecting the soils include avoidance of vibration-based compaction equipment, protecting the subgrade following initial site clearance, and minimising the passage of heavy or vibrating construction plant. Protecting a cleared ground surface from rain events would also assist in this regard.

8.0 Seismic Design Parameters

The site is considered a Class C – 'Shallow Soil Site' as defined by NZS 1170.5:2004.

9.0 Liquefaction

Liquefaction occurs when excess pore-water pressures are generated within loose, saturated and generally cohesionless soils (typically sands and silty sands) during earthquake shaking. The resulting high pore-water pressures can cause the soils to undergo a partial to complete loss of effective shear strength which can result in settlement and/or horizontal movement (lateral spread) of the soil mass.

Given the very stiff to hard and cohesive nature of the Volcanic Group soils encountered during our investigation, and the absence of groundwater within the weathered and drillable soil layers, we consider that liquefaction (and consequently lateral spreading) is not a risk at this site under any design-level seismic event.

10.0 Slope Stability

The ground surface comprises gentle to moderate slopes (approximately in the range of 5° - 14º) falling gradually away from Lauries Road. Slopes steepens northeast of the site near the existing stream. Vane shear strengths were all 'stiff to hard' which indicates favourable resistance to downslope movement. The investigation was carried out during a heavy rainfall period; however, no groundwater was encountered in the hand augerholes.

A review of historical aerial images indicated the site has been used as farmland and no sign of instability was observed. At the time of our investigation, no visual evidence of deep-seated instability was encountered across or near the site.

We consider the site to be geotechnically suitable for the proposed development provided the recommendations given in this report are observed.

11.0 Foundation Design Recommendations

S&RC should inspect all foundation excavations to determine whether the exposed soil and foundation conditions are consistent with those described in this report.

11.1 Shallow Foundations

The natural site soils are considered suitable for the use of shallow foundations ('Senton footings') embedded a minimum of 600mm into stiff natural ground or engineered fill and designed to accommodate the expansivity characteristics of the soils, classified as per Section 6.0 of this report.

A Design (Dependable) Bearing Capacity of 150kPa is available for Ultimate Limit State Design of shallow foundations carried out in accordance with B1/AS1 or AS2870:2011, B1/VM4 and AS/NZS 1170:2002. A Strength Reduction Factor ($Ø_{bc}$) of 0.5 has been applied to the Geotechnical Ultimate Bearing Capacity value to determine the Design Bearing Capacity.

12.0 Pavements

All topsoil, non-engineered fill, vegetation, organic or otherwise unsuitable material should be removed from under pavement areas prior to construction.

For preliminary design a CBR value of 3% or a modulus of subgrade reaction of 20kPa/mm are considered appropriate for flexible and rigid pavements respectively. These values should be confirmed by specific testing by S&RC following preparation of the subgrade.

13.0 Cuts and Fills

All fills, regardless of depth, must be placed in accordance with NZS 4431:2022 with respect to subgrade preparation and standard of compaction. The following procedures should be observed during earthworks:

- Prior to commencing earthworks, a sediment control system must be constructed to ensure the Territorial and Regional Authority requirements are met.
- All earthworks should be carried out to the requirements of NZS 4404:2010 '*Land Development and Subdivision Infrastructure*' and NZS 4431:2022, '*Code of Practice for Earthfilling for Residential Development*'.

- Unsuitable materials (topsoil, unsuitable soils) encountered during building platform preparation should be excavated, removed and replaced with good quality fill compacted in layers no greater than 150mm (loose, prior to compaction).

- Any springs or seepage of water observed at ground level or intercepted by stripping operations should be captured in a suitable sealed pipe and taken via the shortest route to a safe discharge point as per the Geotechnical Engineer's advice.

- The surficial soils (volcanic deposits) are sensitive to disturbance and must be protected at all times from exposure to the elements, and from excessive construction plant vibration in order to prevent loss of strength.

- Service trenches should be backfilled with engineered granular fill where this is deemed necessary e.g. under pavements and other permanent structures.

- Any cuts must be battered back to batters no steeper than 1V:4H (approximately 14º) unless subject to specific engineering design. Where this is not achievable, they must be retained by engineer-designed retaining walls.

- All engineered earthfill batters should be constructed at a gradient of no steeper than 1V:3H (approximately 18°) unless subject to specific engineering design.

- Prior to placing any fill, the sloping ground shall be stripped of topsoil and benched horizontally.

- A Geotechnical Engineer should inspect the prepared subgrade prior to placement of additional fill and test the fill during placement.

14.0 Stormwater

Concentrated stormwater flows must not be allowed to run onto or over slopes or saturate the ground as this could adversely affect slope stability or foundation conditions. Flows from all impermeable areas must be collected and carried in sealed pipes to a disposal point approved by Council.

15.0 Construction Constraints

Geotechnical aspects of construction that are anticipated to require special attention by the Contractor and inspecting Geotechnical Engineer include (but are not necessarily limited to) the following:

- Sensitive soils are present across the site which exhibit a significant strength reduction when disturbed or exposed to the weather. Care is therefore required to protect the exposed soils during construction. Reference should be made to Section 12.0 of this report in this regard.

16.0 Drawing Review

No detailed drawings of the proposed development were provided at the time of preparation of this report. We recommend once plans are available that they be submitted to S&RC so that the applicability and implementation of the recommendations made in this report can be confirmed prior to application for Building Consent.

17.0 Observation of Construction

The recommendations given in this report are based on limited site data from discrete locations and it is in the nature of geotechnical engineering that variations in ground conditions will exist across a site. S&RC should be engaged to inspect excavations and foundation conditions exposed during construction so that 'actual' ground conditions can be compared with those assumed in formulating this report.

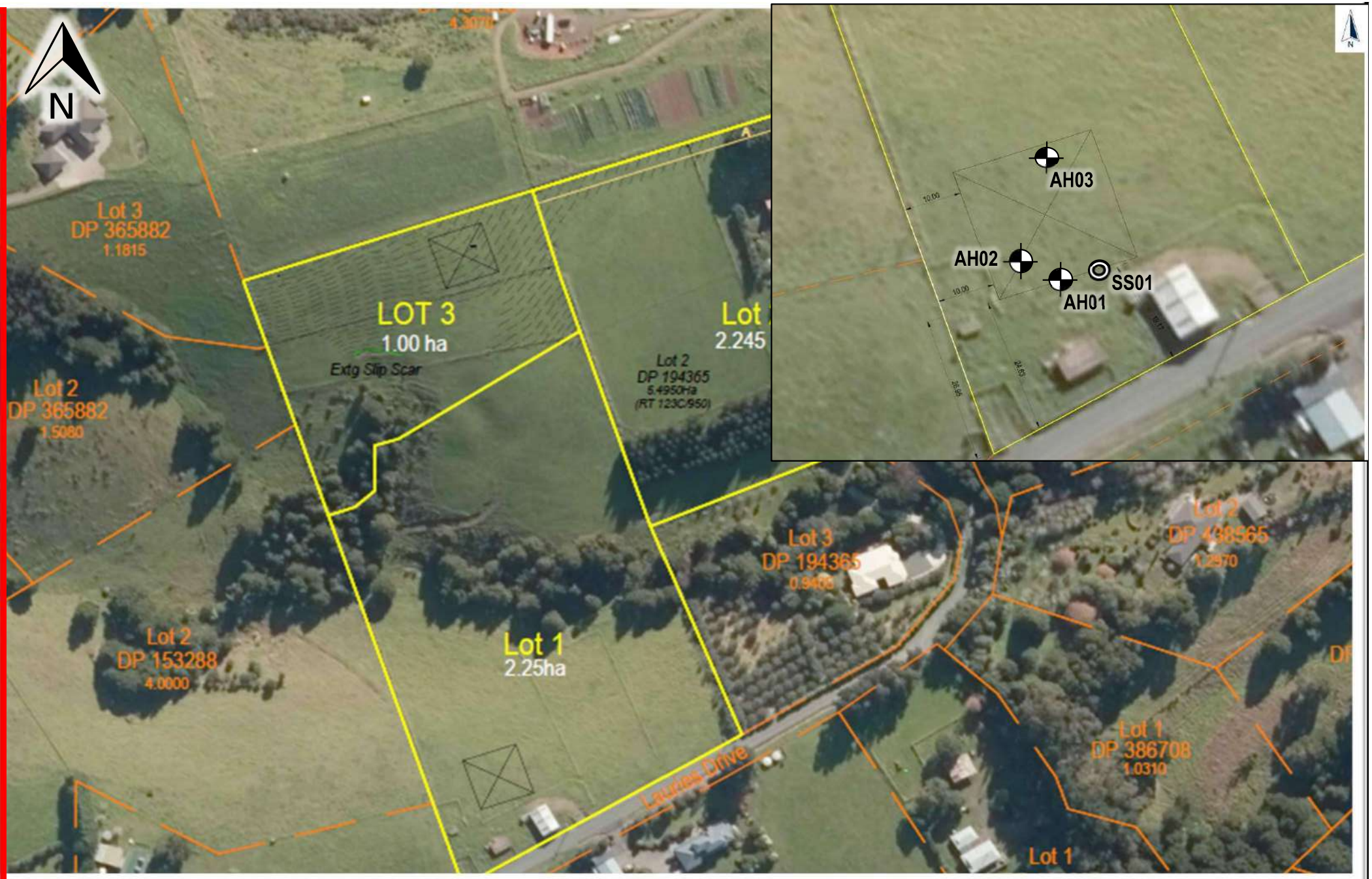
The aspects of the development that require geotechnical observation, testing, and final certification will be determined by Council and given in the Special Conditions of the Consent. The Contractor should make themselves familiar with those conditions and ensure adequate observations are carried out. In any case, the contractor should notify S&RC should ground conditions encountered during construction vary from those described in this report.

Any ground covered by fill or concrete prior to geotechnical inspection will be specifically excluded from completion certification (PS4).

End of Report Text – Appendices Follow

Appendix A

Drawings



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DRAWING NO:	NL230058/1
DATE:	11 May 2023
DRAWN:	AA
SCALE:	NTS

SITE PLAN
29 LAURIES DR, KAURI

Key:

- **AH01** S&RC Hand Augerhole Locations 11 May 2023
- **SS01** S&RC Expansivity Sample Locations 11 May 2023

WASTEWATER REPORT

29 Lauries Drive, Kauri

Whangarei

(Lot 1 DP 572381)

RS Eng Ltd • 2 Seaview Road, Whangarei 0110 • **09 438 3273** • **office@RSEng.co.nz**
Consulting Engineers

WASTEWATER REPORT

29 Lauries Drive, Kauri

Whangarei

(Lot 1 DP 572381)

Report prepared for: Aaron Maple

Report reference: 18685

Date: 27/04/2023

Revision: 1

Document Control

Date	Revision	Description	Prepared by:	Reviewed by:	Authorised by:
27/04/23	1	Building Consent Issue	A Taylor	C Hay	S Turner

Contents

Appendices

File: 18685
27/04/23
Revision: 1

WASTEWATER REPORT

29 Lauries Drive

(Lot 1 DP 572381)

1.0 Introduction

RS Eng Ltd (RS Eng) has been engaged by Aaron Maple to investigate the suitability of his property (Lot 1 DP 572381) for on-site wastewater disposal. The purpose of this report is to cover the design of a wastewater system to dispose of wastewater on-site, to accompany a building consent application. The client proposes to construct a new three-bedroom dwelling.

2.0 Site Description

This 2.2532 ha property is located off Lauries Drive, approximately 300 m from its intersection with Vinegar Hill Road. The land where the proposed building site is located is gently sloping to the north and is covered in pasture.

Figure 1: Lot 1 DP 572381, property outlined in blue-green, approximate wastewater field in yellow.

3.0 Desk Study

3.1 Referenced/Reviewed Documents

The following documents have been referenced in this report:

- GNS – Geology of The Whangarei Area – Edbrooke & Brook – 2009.
- Soil & Rock Consultants – Geotechnical Investigation Subdivision Report – 2021.

3.2 Site Geology

The GNS 1:250,000 scale New Zealand Geology Web Map shows that the property is located within an area underlain by Kerikeri Volcanics, which has been described as follows: *"Basalt lava, volcanic plugs and minor tuff."*

3.3 Subdivision Report

The underlying subdivision was reported on by Soil & Rock Consultants in a report entitled *"Geotechnical Investigation for Proposed Subdivision at 69 Lauries Drive, Kauri, Whangarei."* dated *25 May 2021.* The following conclusions were made in relation to the property in question:

• The site is capable of supporting an on-site wastewater treatment and dispersal system for a typical four-bedroom dwelling.

• Designs for a larger dwelling are likely to be feasible.

• All designs for on-site wastewater systems should be carried out by an Engineer experienced in on-site wastewater disposal.

4.0 Field Investigation

An Engineering Geologist from this office visited the property on 19 April 2023 to undertake a walkover inspection and one hand auger.

The walkover inspection did not observe any signs of concern at the wastewater disposal site in relation to the proposal.

The hand augers were dug to a maximum depth of 1.6 m below ground level (BGL). Shear vane readings were taken at regular intervals throughout the hand auger. Soil and rock descriptions are in general accordance with the New Zealand Geotechnical Society guideline.

5.0 Subsoil Conditions

Interpretation of subsurface conditions are based on the investigations shown on the drawings in Appendix A. The conditions are summarised below.

- Topsoil depth is ~0.20 m BGL and is firm, moist and low plastic.
- Residual soils are stiff to very stiff, moist with low plasticity, extending to 0.8 m BGL.
- Completely weathered basalt is extremely weak, extending to a target depth 1.6 m BGL.
- Groundwater was not encountered and assumed to be >5.0 m.

6.0 On-site Wastewater Disposal

6.1 Site Evaluation

The land available for effluent disposal is mostly gently sloping (<10°), increasing in steepness to moderately sloping further downslope and is linear convergent. Subsoil investigation have assessed the soil as Category 4 as per AS/NZS1547, consistent with Soil & Rock Subdivision report.

RS Eng recommend the use of a secondary treatment system loading surface pressure compensating drip irrigation line as these systems use lower application rates. A buffer zone may be required if positioned on sloping land >10°, annotated in site plan (Appendix A).

6.2 Design

The proposed dwelling has three bedrooms. The design calculations are presented in Table 1 below.

Table 1: Wastewater Disposal Calculations three-bedroom dwelling

Number of Bedrooms	3	No.
Number of Persons	5	No.
Flow Allowance	180	L/Person/Day
Total Flow	900	L/Day
Irrigation Rate (DIR)	3.5	L/m²/day
Slope Reduction Factor	0	%
Irrigation Area Required	257	m²
Irrigation Line Spacing	1	m

Table 2 demonstrates the effluent disposal areas, which meet compliance with the Northland Regional Council's Regional Plan.

Table 2: NRC Permitted Discharge Compliance

Feature	**Proposed Regional Plan**	**Available**
Identified Stormwater Flow Path	5 m	>5m
River, Lake, Pond, Stream, Dam or Wetland	15 m	>15m
Existing Water Supply Bore	20 m	>20m
Property Boundary	1.5 m	>1.5m
Groundwater	0.6 m	>0.6m
10 m Buffer Zone	Slopes >10°	<10°
Floodplain Exclusion	5% AEP	>5% AEP
Reserve area	30%	>30%

7.0 Conclusions

RS Eng Ltd is satisfied that the proposed wastewater disposal field can be constructed in accordance with AS/NZS 1547 and the NRC New Regional Plan, and that the system design as specified in this report will be suitable for the proposed dwelling.

8.0 Limitations

This report has been prepared solely for the benefit of our client. The purpose is to determine the suitability of the property for on-site wastewater disposal, in relation to the material covered by the report. The reliance by other parties on the information, opinions or recommendations contained therein shall, without our prior review and agreement in writing, do so at their own risk.

Recommendations and opinions in this report are based on data obtained as previously detailed. The nature and continuity of subsoil conditions away from the test locations are inferred and it should be appreciated that actual conditions could vary from those assumed. If during the construction process, conditions are encountered that differ from the inferred conditions on which the report has been based, RS Eng should be contacted immediately.

Construction site safety is the responsibility of the builder/contractor. The recommendations included herein should not be construed as direction of the contractor's methods, construction sequencing or procedures. RS Eng can provide recommendations if specifically engaged to, upon request.

This report does not address matters relating to the National Environmental Standard for Contaminated Sites, and if applicable separate advice should be sought on this matter from a suitably qualified person.

Prepared by:

Anthony Taylor
Engineering Geologist
BAppSc (Geology), PMEG, MEngNZ

Reviewed by:

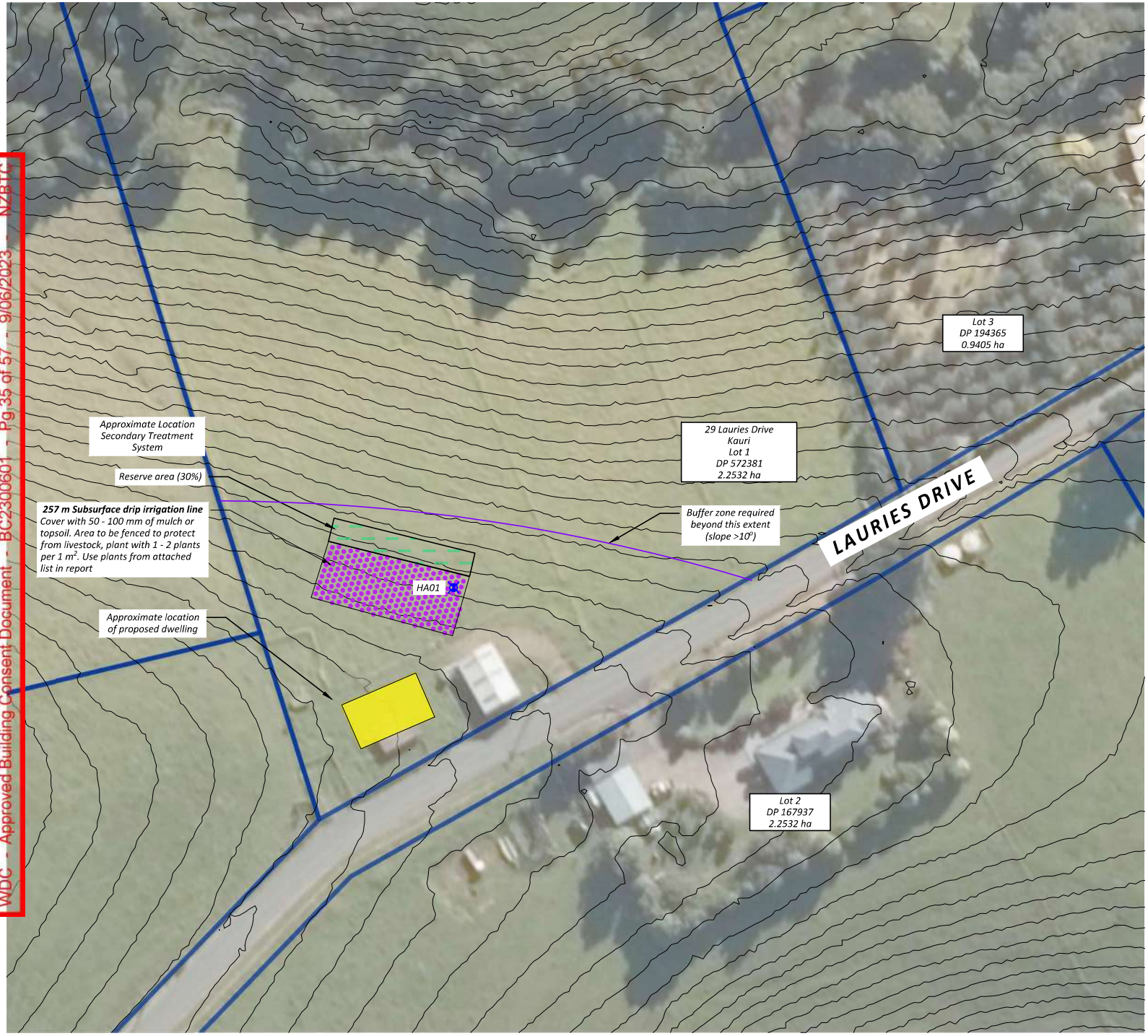
Codie Hay
Engineering Technician

Approved by:

Steven Turner
Senior Engineer
BE(Civil), CPEng, IntPE(NZ), CMEngNZ
RS Eng Ltd

Appendix A

Drawings



WWM SITE PLAN - SHOWING SECONDARY TREATMENT

1:750

NOTES:

- All services should be located on-site prior to commencement of works.
- All works to comply with all relevant local authority by-laws and council regulations where applicable.
- Contractors to confirm all dimensions on site prior to commencing any work.
- Do not scale off drawings.
- These drawings are to be read in conjunction with specifications - plans take precedence.
- If any part of these documents are unclear, please contact RSEng Ltd.
- This plan is copyright to RSEng Ltd and should not be reproduced without prior permission.

KEY

Hand Auger Location

Contours are shown at 1.0 m crs.
Contours are derived from LiDAR (2018) and are shown at OTP64 Vertical Datum.

RS Eng Ltd
09 438 3273
office@RSEng.co.nz
2 Seaview Road,
Whangarei 0110

Title
WASTEWATER REPORT

Investigation layout

Client
Aaron Maple

Location
29 Lauries Drive, Kauri
Whangarei

Date	Rev	Notes
26/04/2023	A	

Scale	Original	Rev
1:750	A3	A

Drawn	Approved	File #	Sheet
AT	ST	18685	1

Appendix C

On-site Wastewater Disposal Details

Irrigation Field Installation Details

- Use a system producing secondary treated effluent.
- **Use 257 m (minimum) of Sub Surface Pressure Compensating Drip irrigation line**, with Arkal filters, flushing and air release valves fitted.
- Irrigation line is to be laid in a 50-100mm (minimum) trench (sub surface) or covered in mulch surface.
- Disposal Field to be Planted.
- Irrigation line is to be laid with the contour.
- System to be installed and maintained as per manufacturer's recommendations including regular de-sludging of the primary treatment tank.
- Disposal area to be protected from stock and vehicles.
- Refer to "How to look after your septic tank" (published by the Northland Regional Council) when protecting the disposal area.
- The system will benefit from the use of water reduction fixtures, i.e., dual flush 6/3 litre water closets, shower-flow restrictors, aerator tap fittings and water conserving automatic washing machines.

Irrigation Line Specification

- Distribution is to be via drip irrigation line with self-compensating pressure drip emitters.
- Install an Arkal disc filter at the outlet of the treatment system. Install pressure checkpoints on either side of the filter to allow for gauges to check for blockages. Install pressure checkpoints at the end of each lateral.
- Install either manual or automatic flushing valves at the end of each lateral. Install air release valves in the high points of the irrigation field.
- Allow 5m head loss from semi-blocked filter and ensure 12m of end pressure for the lowest emitter in the field.
- Ensure there is laminar flow through all lines in the field. Ensure flushing velocity is greater than 0.5m/s.
- **Use drip irrigation line with 1.0m dripper spacing and 1.0m spacing between lateral.**

Suitable Plant Species for Evapo – Transpiration Systems

(Source: NRC *"Looking after your household Sewerage System")*

Native Shrubs and Trees

- **Coprosma**
- **Hebe**
- **Manuka**
- **Weeping Mapou**
- **Flax (Fast)**
- **Pokaka (slow)**
- **Cabbage Tree (fast)**
- **Rangiora (fast)**
- **Lacebark (fast)**
- **Ribbonwood (fast)**
- **Poataniwha**
- **Heketara**
- **Poataniweta**
- **Kohuhu (fast)**

Grasses

- **Jointed Twig Sedge**
- **Longwood Tussock**
- **Pukio**
- **Toetoe (native species)**
- **Umbrella Sedge**
- **Oioi**
- **Hooksedge**

Introduced Species

- **Canna Lilies**
- **Taro**
- **Aralia**
- **Fuschia**
- **Philodendrons**
- **Begonia**

TECHNICAL INFORMATION – CLEANSTREAM TXR-1

The Cleanstream TXR-1 is a complete, one tank textile media treatment system. Its multi-chambered design consists of 2 septic stages, a textile filter stage and irrigation and recirculation stages.

- 8400 litre total capacity
- Emergency storage (without cross contamination - 3500 litres)
- Alarm system (to notify the homeowner of any faults)
- Comprehensive maintenance, 24 hour service

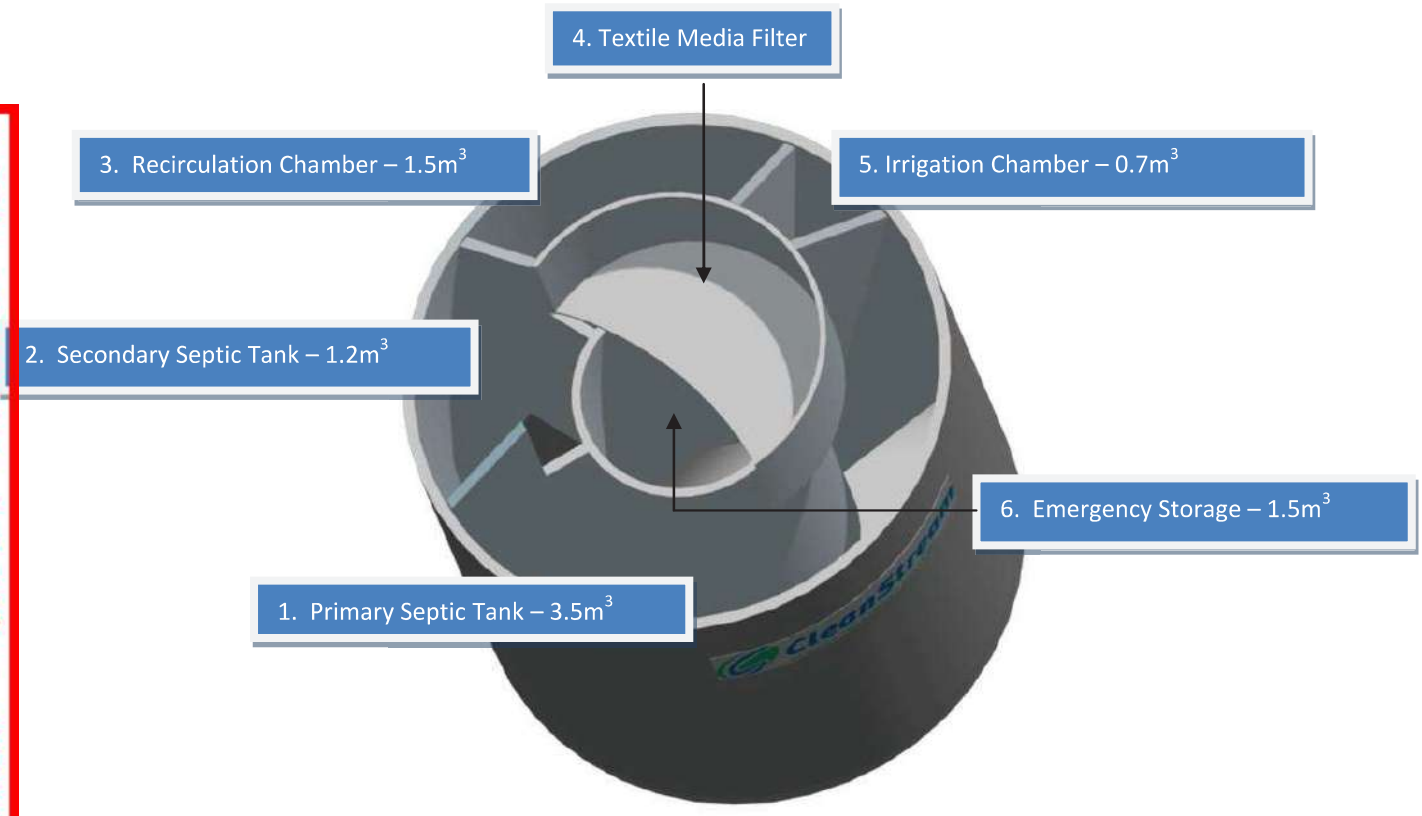
- The TXR-1 tank, roof and walls are constructed from galvanised steel reinforced concrete (70MPA at 28 days) and come with a manufacturer's warranty of 10 years. The mechanical components of the system also come with a 2 year warranty.
- The textile filter and recirculation stages are designed so that effluent is filtered multiple times through the textile media leading to much higher effluent quality than conventional aerobic systems.
- Separate septic stages mean there is always a working septic tank even after periods of non use, this allows the system to stay in a relatively active state.
- The system comes fully constructed, making installation a plug and play operation which provides for a faster turnaround while minimizing installation problems.
- Large emergency storage reduces problems during pump or power failure. The system has approximately 2.5 days of emergency capacity without cross contamination (based on typical flow through 1200L/day)

TREATMENT PERFORMANCE

12 monthly servicing is required to maintain efficient and effective treatment of household waste. This service must be performed by suitably trained personnel.

Expected treatment for medium size homes with daily flows up to 1500L is BOD5 10 mg/L, TSS 10 mg/L. However the system can treat up to 2000L per day whilst still complying with ARC TP58 effluent quality of BOD <15mg and TSS<15 mg/L for Advanced Secondary Treatment Systems – Packed Bed Reactors. Provision for 6 monthly service is required to achieve these larger daily flows.

TREATMENT OVERVIEW



1. The primary septic tank receives the wastewater. It acts like a conventional septic tank and reduces BOD and suspended solids. Effluent then passes through a particulates filter designed to stop large objects from inhibiting the treatment process further on.

2. The secondary septic provides an anoxic environment which aids in nitrate removal converting ammonia into nitrate, while reducing BOD and suspended solids. At the completion of this stage effluent passes through an attached growth filter, which provides an environment for denitrifying bacteria to flourish.

3. The Recirculation Chamber contains a large amount of emergency capacity and is a storage place for effluent before it passes through the textile filter.

4. From the Recirculation chamber treated wastewater is pumped onto the textile filter, this effectively aerates the effluent. Organic Nitrogen is converted to Ammonia by nitrifying bacteria. This process increases effluent quality as it passes through the textile media in the textile filter. The effluent then flows back into the secondary septic tank, unless there is sufficient forward flow to warrant irrigation in which case it drains into the irrigation chamber. Recirculation generally happens multiple times before irrigation is needed.

5. From the irrigation chamber the effluent is passed through a 130 micron Arkal Filter and then dispersed through self compensating drip irrigation.

6. In the event of pump failure emergency storage is provided in the central and recirculation chambers.

CleanStream
SEWAGE TREATMENT SYSTEMS

Turn your wastewater into a liquid asset

The CleanStream TXR high performance Biofiltration System is suitable for both medium and large dwellings.
The TXR's design means it is flexible, robust, forgiving and less sensitive to domestic fluctuations.

Why choose a CleanStream TXR ?

- Affordably priced, low cost operation & maintenance means terrific value for home owners.
- It is a high performance treatment system.
- Produces an improved level of secondary treatment.
- Suitable for applications with intermittent use - typically holiday homes which are unoccupied for long periods.
- Not adversely effected by low concentrations of anti bacterial products.
- Capable of handling high volumes of shock loading.
- No noise operation.
- Suitable to discharge through dripline irrigation.
- Trained service technicians.
- Easily installed on most sites.
- Early fault detection alarm system.

Installation of system

Biofiltration Concepts

The concept of biofiltration has been around for many decades. The process involves a combination of biological action and filtration. Over time this process has been developed and improved. Biofiltration has been proven to be a very successful solution to treating household sewage waste for larger family homes.

The use of modern technologies has made it possible to develop smaller household sewage systems, capable of producing a very high standard of treated effluent.

The CleanStream TXR has been designed with a combination of traditional methods and new technology. After a long trial period and extensive testing, the TXR has proven to be the optimum treatment system, and replaces our CleanStream Aerated System.

Planted irrigation fields

How it Works

- The system receives all household waste.
- The waste is transferred through a four chambered system and pumped over a biomass.
- A process of spraying effluent over the biomass filter on a continuous cycle further cleans the water to a very high quality.
- The clean treated water exits the system from the final chamber into a system of drip irrigation.
- The result is nutrient rich, clear water, ideal for irrigating planted areas such as orchards, shrubs, gardens and shelter trees.

Technical Information

- Manufactured from galvanized steel reinforced concrete.
- Four chambered system with biomass filter.
- 8400L total capacity. Emergency storage (3500L)
- Alarm system (to notify homeowner of faults.)
- Comprehensive maintenance service available.

DURACRETE
PRECAST TO LAST

Duracrete
Saleyards Road, Kauri
P.O Box 4194, Kamo
Whangarei 0141
Phone 09 435 2412 Fax: 09 435 2432
Email: sales@duracrete.co.nz
Website: www.duracrete.co.nz

USER INFORMATION AND MAINTENANCE

CLEANSTREAM TXR-BIOFILTRATION TEXTILE SYSTEM

Service Provider

USER INFORMATION AND MAINTENANCE

System No: _____ Installed on: _____ / ___ / ___

CONTENT

DESIGN

VOLUME

The **CleanStream TXR-Bio-Filtration Textile System** has been designed and tested to work on an average of 1,200 litres per day of wastewater. This averages out at six people contributing 200 litres per person per day. This loading is spread over the day. The timing processors can be changed to increase the treatment volume but a reduction in treatment quality may occur.

LID

The system has concrete and polyethylene lids that are used for easy access into the system. **These lids are not designed to be jumped on or driven over.** They are slightly above the finished ground level to stop water intrusion.

ELECTRICAL COVER

The rectangular plastic box houses all the electrical controls. This base is 100 mm above finished ground level. Please make sure you do not build the soil up around this box because this could allow flooding to occur and this will damage the electrical controls. It must not be jumped on. If it is broken or holed, please call the Service Provider who will need to replace it.

SYSTEM CONTROLLER V1.1

The CleanStream TXR-Bio-Filtration Textile system controller manages the way the system operates.

Unique Features

The controller is pre-programmed for three (3) separate modes

The mode will be factory set at Mode '**O**' (1,200 litres/day)

The design of your system may require a different mode appropriate to the loadings for your specific application.

Each mode has advantages and disadvantages dependent on the situation.

Service Providers are trained to determine which Mode should be applied.

Owners should check with the Service Provider prior to changing setting mode.

ALARM

ALARM TYPES

The system is installed with high level alarms for the recirculation and irrigation pumps.

ALARM NOTIFICATION

If the alarm does activate, press the mute button on the alarm panel to silence the buzzer. This will silence the Alarm for 24 hours. The Alert light will stay on. **Please note which Alert light is on.** Advising the Service Provider of this will enable them to diagnose the fault and be more efficient in rectifying it.

If it's Alert 1 that is on it may indicate an overuse issue. The system will automatically move to a higher use mode in an effort to clear the water that has caused the alert. If the system can clear the water causing Alert 1 it will automatically return to the mode it was set in by the installer.

WHO TO CALL

Call the Service Provider as soon as possible - but at least within 24 hours.

WHAT TO DO

Until repairs are made, limit the amount of wastewater going to the system.

MAINTENANCE

TYPES OF FILTERS

The system is fitted with two filters inside the tanks and one on the irrigation pump line. Normally the internal system filter should not need cleaning between service calls. This however is dependent on the volume of solids deposited in the tank. On the pump line is an Arkal filter with 130 micron discs. This is to protect the irrigation field.

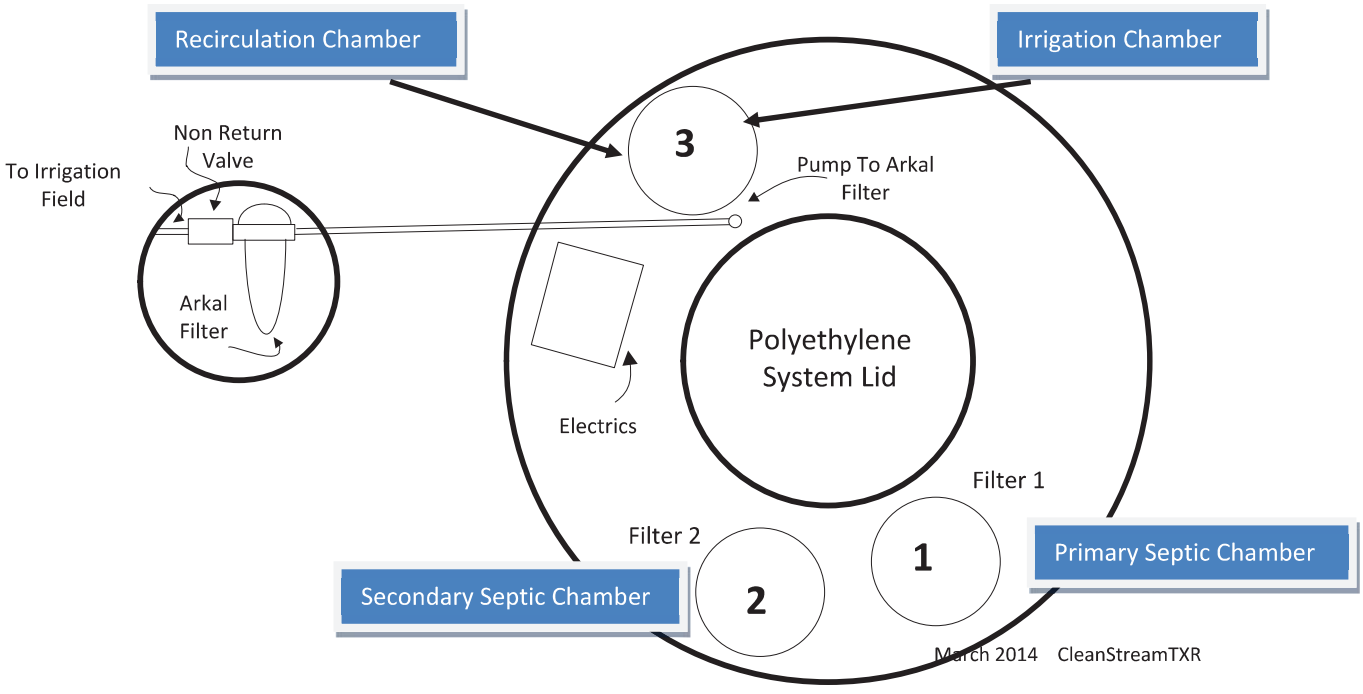
CLEANING FILTERS

Discuss the frequency of cleaning filters in your system with your Service Provider. The frequency will differ for individual households.

INTERNAL SYSTEM FILTERS

These filters should only be cleaned if effluent is backing up in the system. We recommend that even if the filters are flowing freely that a six monthly inspection should be completed. Discuss this with your Service Provider.

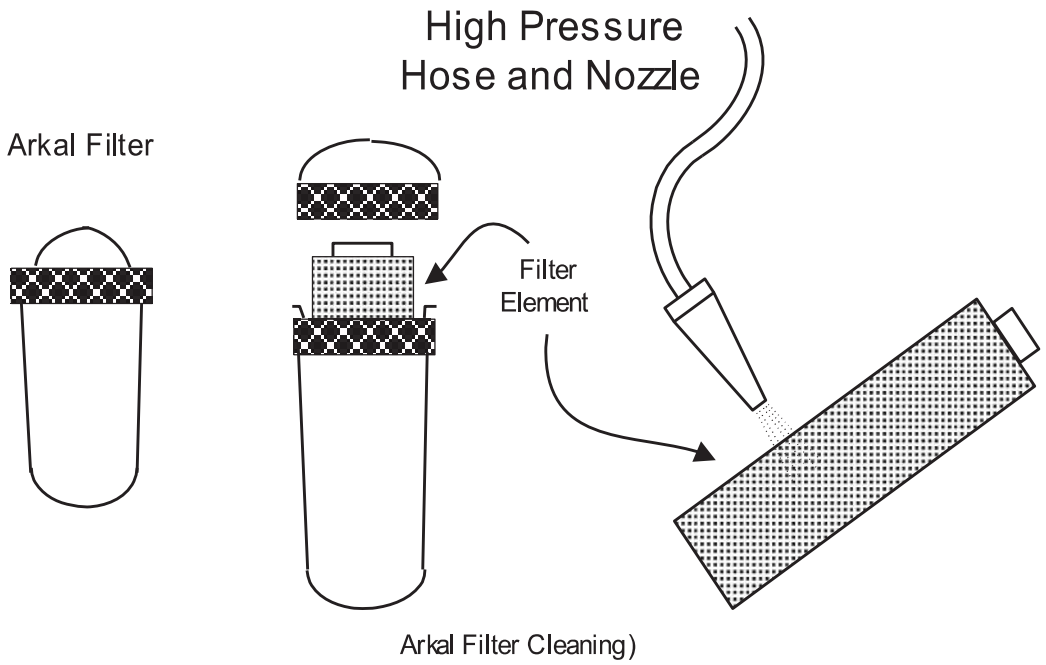
Cleaning of internal filters should be carried out by the **Service Provider** as there are Health risks involved in the process.



ARKAL FILTER

The Arkal filter protects the irrigation line.

The Arkal filter cleans with a spinning action using a high pressure nozzle on a household hose.



Arkal Filter Cleaning)

To clean the arkal filter, **the owner** needs to follow these basic steps:

i) Turn the power off to the system. This stops the pump operating when the filter is open.

ii) Disassemble the filter by first loosening the locking ring with the plastic wrench provided.

iii) Remove the bottom portion of the plastic housing exposing the spine on which the discs are stacked. With the cover removed the discs will automatically come free so you can either hose the discs in place by aiming a hose with clean water under pressure at the discs causing these to "spin". This action cleans the discs. The spine is removable, so the discs may be removed if it is more convenient to clean the discs elsewhere.

iv) Install the spine (if removed).

v) Replace the cover and locking ring.

vi) Tighten ring.

vii) Turn power back on.

Protective clothing and gloves should be worn at all times during these cleanings.

MAINTENANCE SERVICING

The **Service Provider** will arrange an annual service for the system. It is important the system is serviced regularly to ensure efficient performance. After each service you will be given a copy of the service report.

DESLUDGING

SLUDGE

Desludging is dependent on loadings. For example, the use of garbage disposal units will increase the load and may necessitate more frequent desludging.

The Service Provider will advise you if it is necessary to desludge. Any desludging required is at the owner's expense.

Typically desludging is required every 3-5 years.

NOISE

PUMPS

The system uses 2 pumps. These pumps are virtually silent and they operate intermittently. If you hear any unusual noise, please call your Service Provider.

ODOURS

VENTING

The CleanStream TXR system uses a natural bacterial process which digests household waste, similar to a large municipal wastewater plant.

During this process, odours may occur for different reasons such as:

1. Higher than normal use of anti-bacterial products
2. Householders on high medication
3. Rapid changes to inflow volumes
4. The system has not been in use for long periods
5. Inefficient terminal venting

In the unlikely event of odours occurring, discuss any issues with your Service Provider.

SHOCK LOADING

If you go away for a period of time the system gets shock loaded on your return. This occurs because the bacteria population needs to build up to cope with the increased loadings. This can result in some temporary odours. Likewise if the loading is increased significantly for a short period, such things as large numbers of visitors, the bacteria population increases. Bacteria balance themselves with their food source. This can result in some temporary odours. In a Textile system these odours are rare but are not impossible.

BACTERIA

Please treat the system as a living entity with lots of different bacteria working for you. Use anti-bacterial products sparingly.

IMPORTANT DAILY USE ISSUES

DO NOT

- ☒ Drive over it.
- ☒ Use substances that will kill the bacteria. Such things as strong detergent, disinfectant, bleach or chlorine based products such as Napisan in moderation only.
- ☒ Flush sanitary pads, nappies or condoms into the system. Flushing tampons or their packaging into the system should also be avoided because they may cause blockages.
- ☒ Damage the irrigation line in any way.
- ☒ Use garbage disposal units on any septic tank system. The added loading will require more frequent desludging.
- ☒ Never turn off the power to the system.

SOME DOS'

- ☑ Call the service technician within 24 hours if the alarm is activated.
- ☑ Reduce the amount of waste water entering the system if an alarm is activated.
- ☑ Call the service technician if the irrigation line or any other part of the system is damaged in any way.
- ☑ Maintain and prevent intrusion of insects, plants and tree roots into the system.
- ☑ Use the Biowashball instead of conventional household detergents as it is friendly to the bacteria within the sewage system and allows efficient treatment of the effluent – available from ***www.duracrete.co.nz***

WARRANTY

All effluent treatment systems produced by Duracrete have been inspected before leaving the factory.

The standard pumps used with the system have a two (2) year manufacturer's warranty.

All other electrical componentry have manufacturers' warranties of one (1) year.

The concrete tanks are guaranteed by the manufacturer for a period of ten (10) years from the time they leave the factory. During this period any defect which is attributed to the manufacturer will be repaired or replaced free of charge at Duracrete's option.

This guarantee does not cover damage caused by the following;

- misuse of the tank
- concrete erosion due to inadequate or restrictive venting
- neglect
- failure to keep the unit clean and functional
- accidental damage
- vandalism
- use of incorrect power supply
- fluctuations in the power supply
- earthquakes, fire, flood, storm, lightening, land slip or other acts of nature
- persons unauthorised by Duracrete interfering with the system in any way
- customer/owner/occupier failure to advise of any warning or other malfunction within 24 hours of the malfunction occurring
- Intrusion by plants or insects

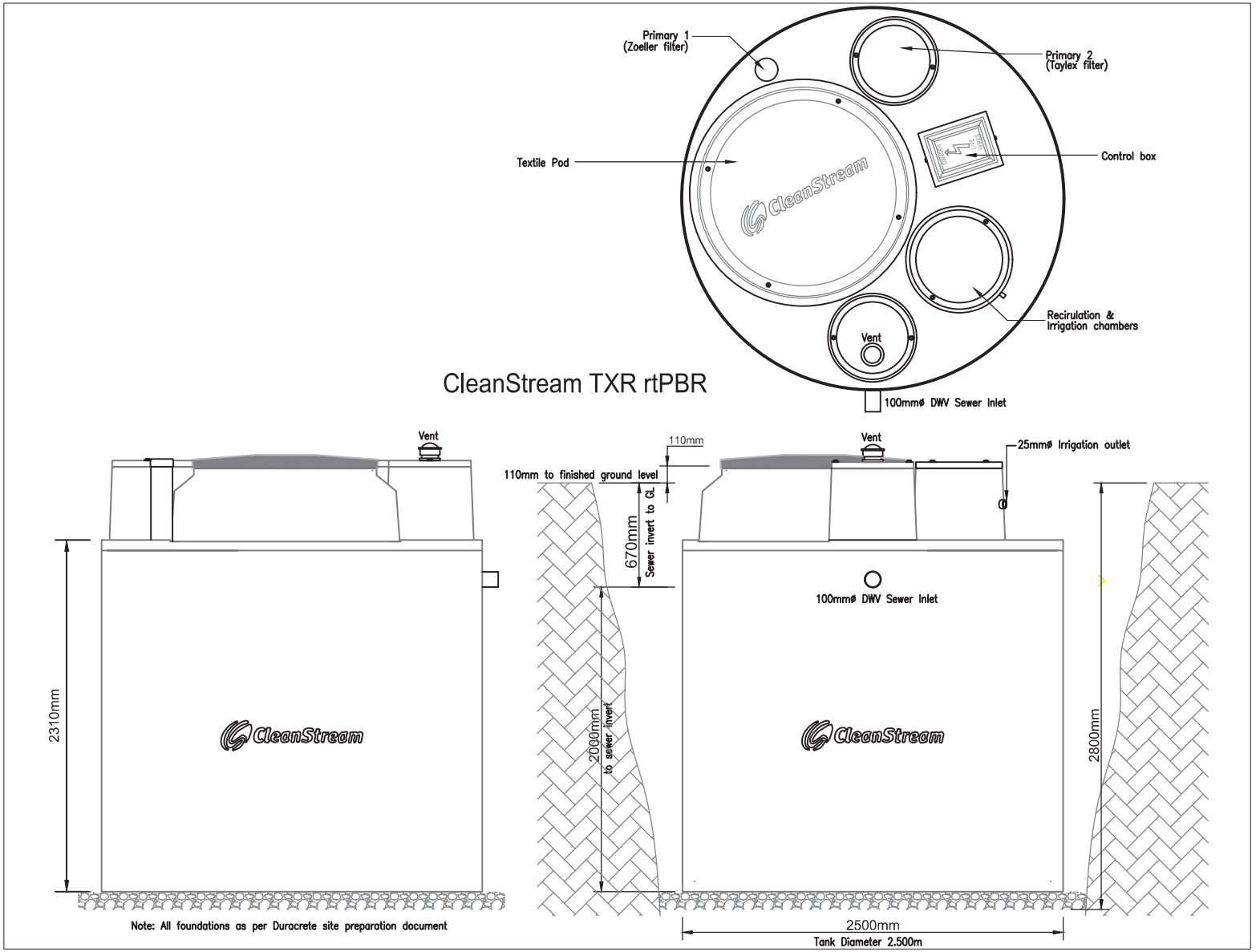
Please note - the system is not designed to be driven over by vehicles.

COMMISSIONING

WHEN TO USE

The **CleanStream TXR-Bio-Filtration Textile System** should not be used in any way until the system has been commissioned. This includes contractors during the construction of the house and owners wishing to take up residency.

Thank you for buying a **CleanStream TXR-Bio-Filtration Textile System**. Please contact your Service Provider if you have any questions.



On-site Effluent Treatment National Testing Programme (OSET NTP)

PERFORMANCE CERTIFICATE
CleanStream TXR-1 On-site Domestic Wastewater Treatment System, OSET NTP Trial 9, 2013/2014

System Tested

The **CleanStream TXR-1 system** is a packed bed recirculating textile filter wastewater treatment unit. The manufacturer's rated design capacity is 1,200 litres/day. Total liquid volume is 7,400 litres (primary treatment 2 tanks each with an effluent filter 3,700 and 1,200 litres; secondary treatment with packed bed 900 litres; recirculation tank 1,100 litres; pump chamber 700 litres). Emergency storage is 1,500 litres. No tertiary treatment (such as UV disinfection) is incorporated. The manufacturer's stated service frequency is annual.

Test Flow Rate

The **CleanStream TXR-1 system** was tested at 1,000 litres/day (equivalent to servicing a 3-bedroom 5 to 6 person household) over an 8 month (35 week) period November 2013 to July 2014 followed by a 1 month (4 week) high load effects test involving 5 days at 2,000 litres per day then 1,000 litres/day over the following 3 weeks.

Testing and Evaluation Procedures

A total of 37 treated effluent samples of organic matter (BOD_5) and suspended solids (TSS) at generally six day intervals during weeks 9 to 35 were tested and evaluated against the secondary effluent quality requirements of the joint Australia/NZ standard AS/NZS 1547:2012.

A total of 16 treated effluent samples of organic matter (BOD_5), total suspended solids (TSS), total nitrogen (TN), ammonia nitrogen (NH_4-N), total phosphorus (TP) and faecal coliforms (FC) at generally six day intervals during weeks 23 through 35 were tested and the results benchmarked and rated on their median values. In addition, the energy used by the treatment system was assessed on the mean of consumption levels over the benchmark period.

AS/NZS 1547:2012 Secondary Effluent Quality Requirements

These requirements are that 90% of all test samples must achieve a BOD_5 of $\leq$ 20 g/m^3 and TSS of $\leq$ 30 g/m^3 with no one result for BOD_5 being >30 g/m^3 and no one result for TSS being >45 g/m^3. The **CleanStream TXR-1 system achieved** a performance level of **100%** for BOD_5 and **100%** for TSS based on the full set of 37 test results in weeks 9 to 35, with no results exceeding the maximums. The **CleanStream TXR-1 system** thus **meets** the secondary effluent quality requirements of AS/NZS 1547:2012.

Benchmark Ratings

The **CleanStream TXR-1 system achieved** the following effluent quality ratings for the sixteen benchmarking results in weeks 20 to 35.

Indicator Parameters	Median	Std Dev	Rating	Rating System				
				A+	*A*	*B*	*C*	*D*
BOD (mg/L)	*2*	*1*	A+	*<5*	*<10*	*<20*	*<30*	*≥30*
TSS (mg/L)	*3*	*1*	A+	*<5*	*<10*	*<20*	*<30*	*≥30*
Total Nitrogen (mg/L)	*37.1*	*5*	D	*<5*	*<15*	*<25*	*<30*	*≥30*
NH_4- Nitrogen (mg/L)	*1.9*	*4*	A	*<1*	*<5*	*<10*	*<20*	*≥20*
Total phosphorus (mg/L)	*4.4*	*0.5*	B	*<1*	*<2*	*<5*	*<7*	*≥7*
Faecal Coliforms (cfu/100mL)	*65,000*	*100,000*	C	*<10*	*<200*	*<10,000*	*<100,000*	*≥100,000*
Energy (kWh/d) (mean)	*0.98*	*0.12*	A	*0*	*<1*	*<2*	*<5*	*≥5*

This Performance Certificate is specific to the **CleanStream TXR-1** model as specified above when operated at a flow rate of 1,000 litres/day. The initial Performance Certificate was issued on 20 February 2015 with a 5 year validity to 20 February 2020. For the full OSET NTP report on the performance of the **CleanStream TXR-1 system** contact **Duracrete Products Ltd**, Kamo, Whangarei, Ph: 0800 387 227 Email:ric@duracrete.co.nz.

On 21 November 2019 Duracrete Products Ltd applied to retest their **CleanStream TXR-1** plant in the 2021 OSET-NTP Trial 16 and applied for an extension to the above certificate through to the end of Trial 16. They provided a signed and legally witnessed statement confirming that there has been no change made whatsoever to the plant as tested in 2014. Hence OSET-NTP confirm that the validity of the Performance Certificate of 20 February 2015 as detailed above can be extended to 5 March 2022.

Authorised By:

Ray Hedgland, Technical Manager, OSET NTP
28 February 2020

On-site Effluent Treatment National Testing Programme, c/- Technical Manager, 10 Tide Close, Mt Wellington, AUCKLAND 1060 Mob: 021 626 772 E-mail: ray@hedgland.co.nz

GIB EzyBrace® Bracing Software

Demand Calculation Sheet

Job Details

Name:	Maple Residence
Street and Number:	29 Laureis Road
Lot and DP Number:	Lot 1 DP 572381
City/Town/District:	Whangarei
Designer:	CC
Company:	
Date:	Tuesday, 30 May 2023

Building Specification

Number of Storeys	1
Floor Loading	2 kPa
Foundation Type	Subfloor
Subfloor Cladding Weight	Light
	Single
Cladding Weight	Light
Roof Weight	Light
Room in Roof Space	No
Roof Pitch (degrees)	4
Roof Height above Eaves (m)	0.789
Building Height to Apex (m)	4.077.6
Ground to Lower Floor (m)	.66
Average Stud Height (m)	2.468
Building Length (m)	16.5
Building Width (m)	7.2
Building Plan Area (m²)	109.32

Building Location

Wind Zone = Very High

Earthquake Zone 1

Soil Type D & E (Deep to Very Soft)

Annual Prob. of Exceedance: 1 in 500 (Default)

Bracing Units required for Wind

	Along	Across
Single Level	**342**	**661**
Subfloor Level	**756**	**1183**

Bracing Units required for Earthquake

	Along & Across
Single Level	**570**
Subfloor Level	**743**

Subfloor Level Along Resistance Sheet

Job Name: Maple Residence

Line	Element	Length (m)	Angle (degrees)		Type	Supplier	Wind (BUs)	EQ (BUs)	Wind / Demand / 756 / Achieved / 1600 / 212%	EQ / Demand / 743 / Achieved / 1200 / 162%
A	1	2.00			Anchor Pile	NZS3604	320	240		
	External Length = 8.6								320 OK	240 OK
B	1	2.00			Anchor Pile	NZS3604	320	240		
	External Length = 7.9								320 OK	240 OK
C	1	3.00			Anchor Pile	NZS3604	480	360		
									480 OK	360 OK
D	1	3.00			Anchor Pile	NZS3604	480	360		
	External Length = 16.5								480 OK	360 OK

Subfloor Level Across Resistance Sheet

Job Name: Maple Residence

Line	Element	Length (m)	Angle (degrees)		Type	Supplier	Wind (BUs)	EQ (BUs)	Wind Demand 1183 / Achieved 1600 135%	EQ Demand 743 / Achieved 1200 162%
M	1	2.00			Anchor Pile	NZS3604	320	240		
	External Length = 6.0								320 OK	240 OK
N	1	2.00			Anchor Pile	NZS3604	320	240		
	External Length = 1.2								320 OK	240 OK
O	1	2.00			Anchor Pile	NZS3604	320	240		
									320 OK	240 OK
P	1	2.00			Anchor Pile	NZS3604	320	240		
	External Length = 1.2								320 OK	240 OK
Q	1	2.00			Anchor Pile	NZS3604	320	240		
	External Length = 6.0								320 OK	240 OK

Form 7
Code Compliance Certificate
Section 95, Building Act 2004

Rust Avenue, Whangarei
Private Bag 9023, Te Mai,
Whangarei 0143, New Zealand
P +64 9 430 4200
E mailroom@wdc.govt.nz
www.wdc.govt.nz/ContactUs

The Building

Street address of building:	29 Lauries Drive, Kauri 0185
Legal description of land where building is located:	LOT 1 DP 572381
Building name:	N/A
Location of building within site/block number:	N/A
Level/unit number:	N/A
Current, lawfully established, use:	2.0 Housing: 2.0.2 Detached Dwelling with 2 occupants
Year first constructed:	2023

The Owner

Name of owner:	Aaron Neil Maple
Contact person:	N/A
Mailing address:	29 Lauries Drive, RD 1, Kamo
Street address/registered office:	N/A
Phone number:	Landline: N/A Mobile: 0224388838
Daytime:	Landline: N/A Mobile: 0224388838
After hours:	Landline: N/A Mobile: 0224388838
Facsimile number:	N/A
Email address:	aaron@washrite.co.nz

First point of contact for communications with the council/building consent authority:
Corry Clayton (Clayton Architecture Limited); Mailing Address: 15 Waipui Place
RD 9
Whangarei 0179; Mobile: 021589219; Email: office@claytonarchitecture.co.nz

Building Work

Building consent number:	BC2300601
Description:	Relocation of New Dwelling
Issued by:	Whangarei District Council

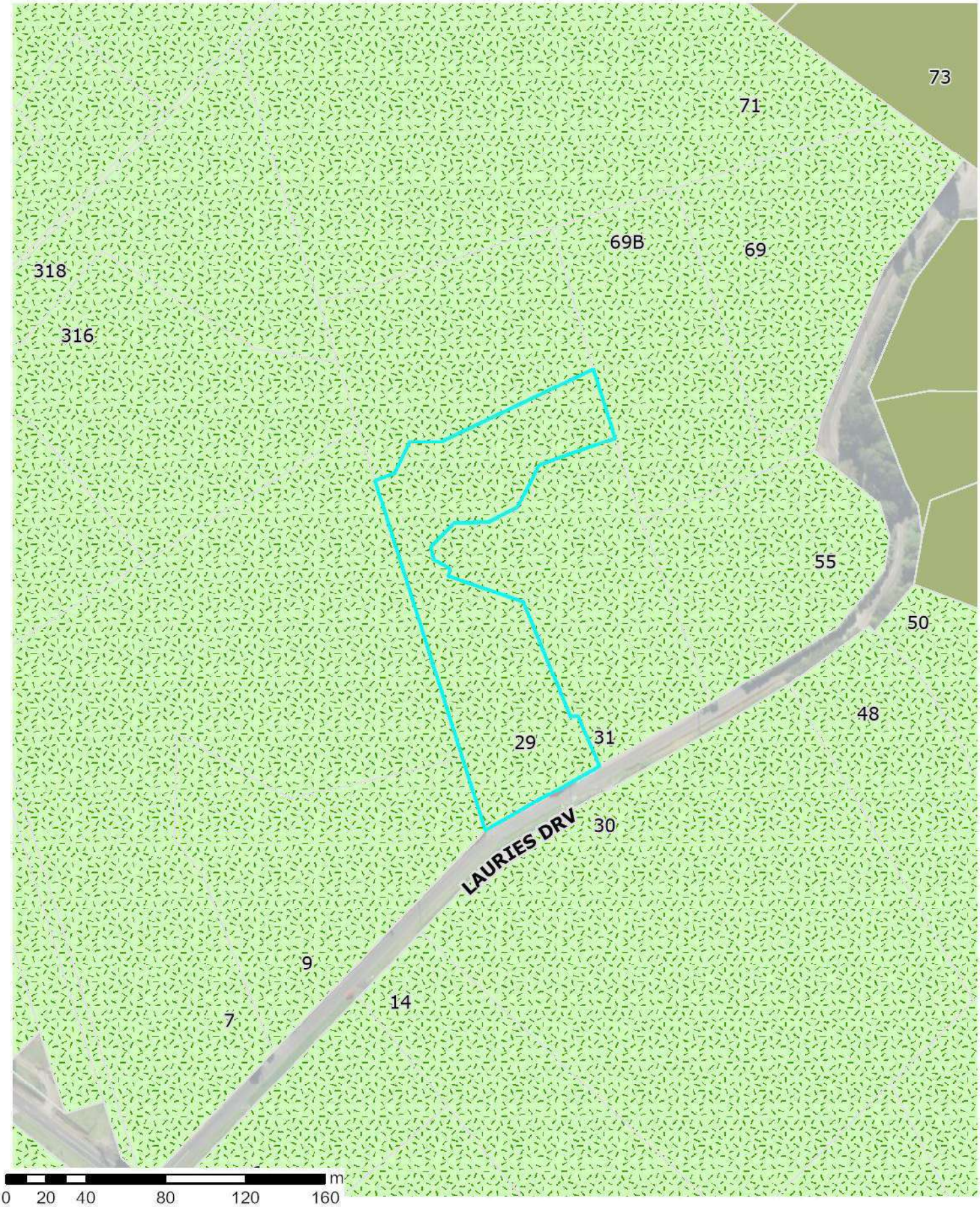
Code Compliance

The building consent authority named below is satisfied, on reasonable grounds, that -
the building work complies with the building consent.

Signature: Brian Cook
Position: Building Control Officer - Snr - Inspections
On behalf of: Whangarei District Council
Date: 23 January 2024

Operative District Plan - Area Specific Matters

Whangarei District Council



22 September 2026

Scale 1:2,500

Operative District Plan – Map Legend

District-Wide Matters

Energy, Infrastructure and Transport

- National Grid Tower
- Northpower Tower CEL-Cat1
- National Grid Line
- Northpower Overhead Critical Line Cel-Cat1
- Northpower Critical Overhead Lines CEL
- Northpower Critical Underground Lines CEL
- Airport Runway
- Indicative Road
- National Road
- Regional Road
- Arterial Road
- Primary Collector Road
- Secondary Collector Road
- Low Volume Road
- Access Road
- Strategic Road Protection Area
- Strategic Railway Protection Line

Hazards and Risks

- Coastal Hazard Area 1
- Coastal Hazard Area 2
- Flood Susceptible Areas
- Mining Hazard Area 1
- Mining Hazard Area 2
- Mining Hazard Area 3

Historical and Cultural Values

- Notable Tree Overlay
- Heritage Item Overlay
- Sites of Significance to Maori
- Heritage Area Overlay
- Areas of Significance to Maori

Natural Environment Values

- Esplanade Priority Area
- Coastal Marine Area (CMA) boundary
- Goat Control Areas
- Outstanding Natural Feature
- Outstanding Natural Landscape

General District-Wide Matters

- Airport Noise Boundary
- Outer Control Boundary
- Helicopter Hovering Area
- Noise Control Boundary Overlay
- Rail noise alert area
- Rail vibration alert area
- QRA Quarrying Resource Area
- QRA Mining Area
- QRA Buffer Area
- QRA 500m Indicative Setback
- Coastal Environment Overlay
- Outstanding Natural Character Area
- High Natural Character Area

Area Specific Matters

- Designation
- Precinct
- Development Area

Residential Zones

- Large Lot Residential Zone
- Low Density Residential Zone
- General Residential Zone
- Medium Density Residential Zone

Rural Zones

- Rural Production Zone
- Rural Lifestyle Zone
- Settlement Zone Residential Sub-Zone
- Settlement Zone Centre Sub-Zone
- Settlement Zone Industry Sub-Zone

Commercial and Mixed Use Zones

- Local Centre Zone
- Neighbourhood Centre Zone
- Commercial Zone
- Mixed Use Zone
- Town Centre Zone
- City Centre Zone

Industrial Zones

- Light Industrial Zone
- Heavy Industrial Zone

Open Space and Recreation Zones

- Natural Open Space Zone
- Open Space Zone
- Sport and Active Recreation Zone

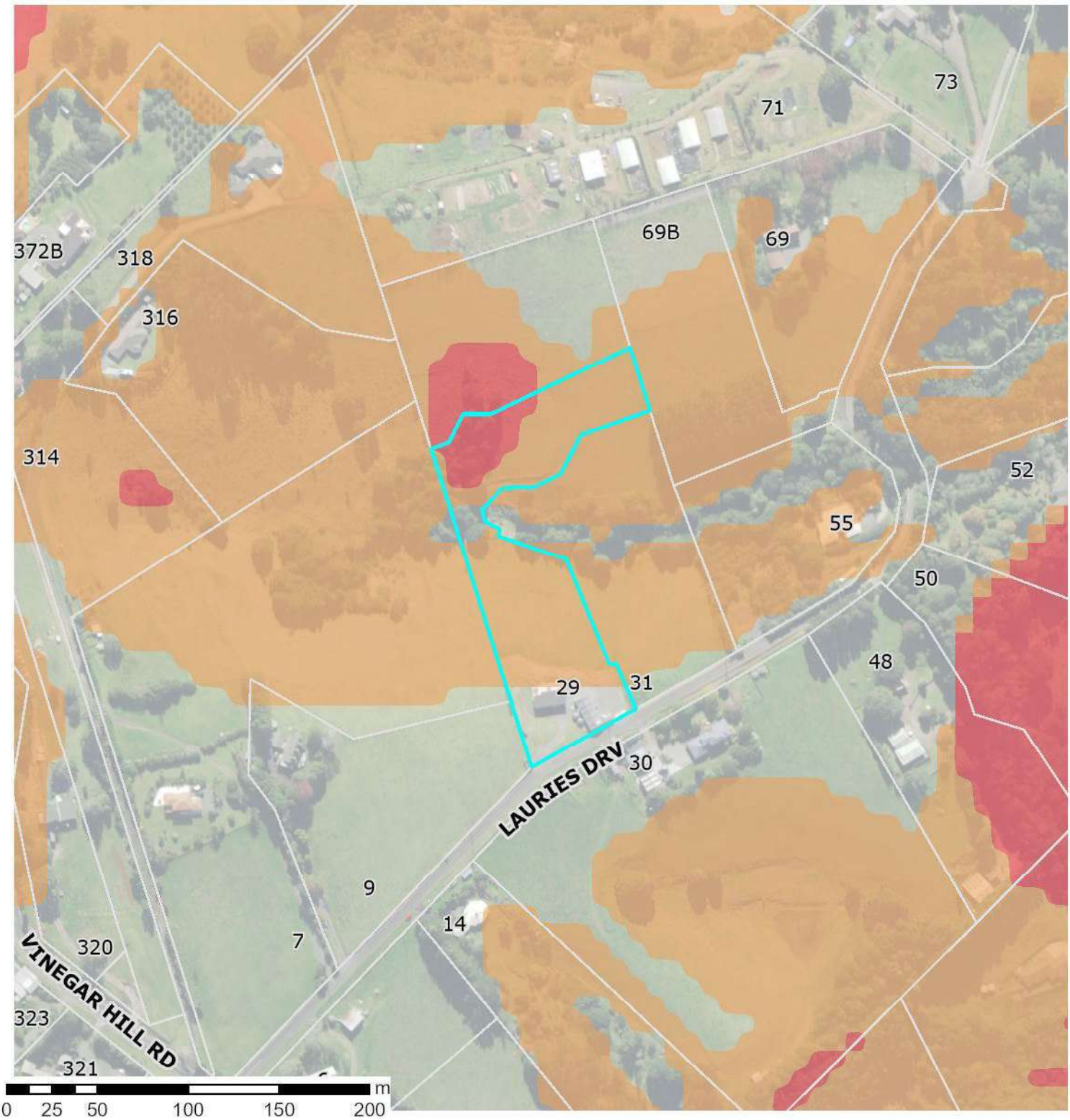
Special Purpose Zones

- Airport Zone
- Future Urban Zone
- Fonterra Kauri Milk Processing SRIZ – Ancillary Irrigation Farms
- Hospital Zone
- Port Zone
- Ruakaka Equine Zone
- Shopping Centre Zone
- Strategic Rural Industries Zone
- Waterfront Zone

The information displayed is schematic only and serves as a guide.
It is made available in good faith but its accuracy or completeness is not guaranteed

The Whangarei District Council district plan GIS data was created at a specific point in time.

District Plan Change 1 - Natural Hazards
Land Instability



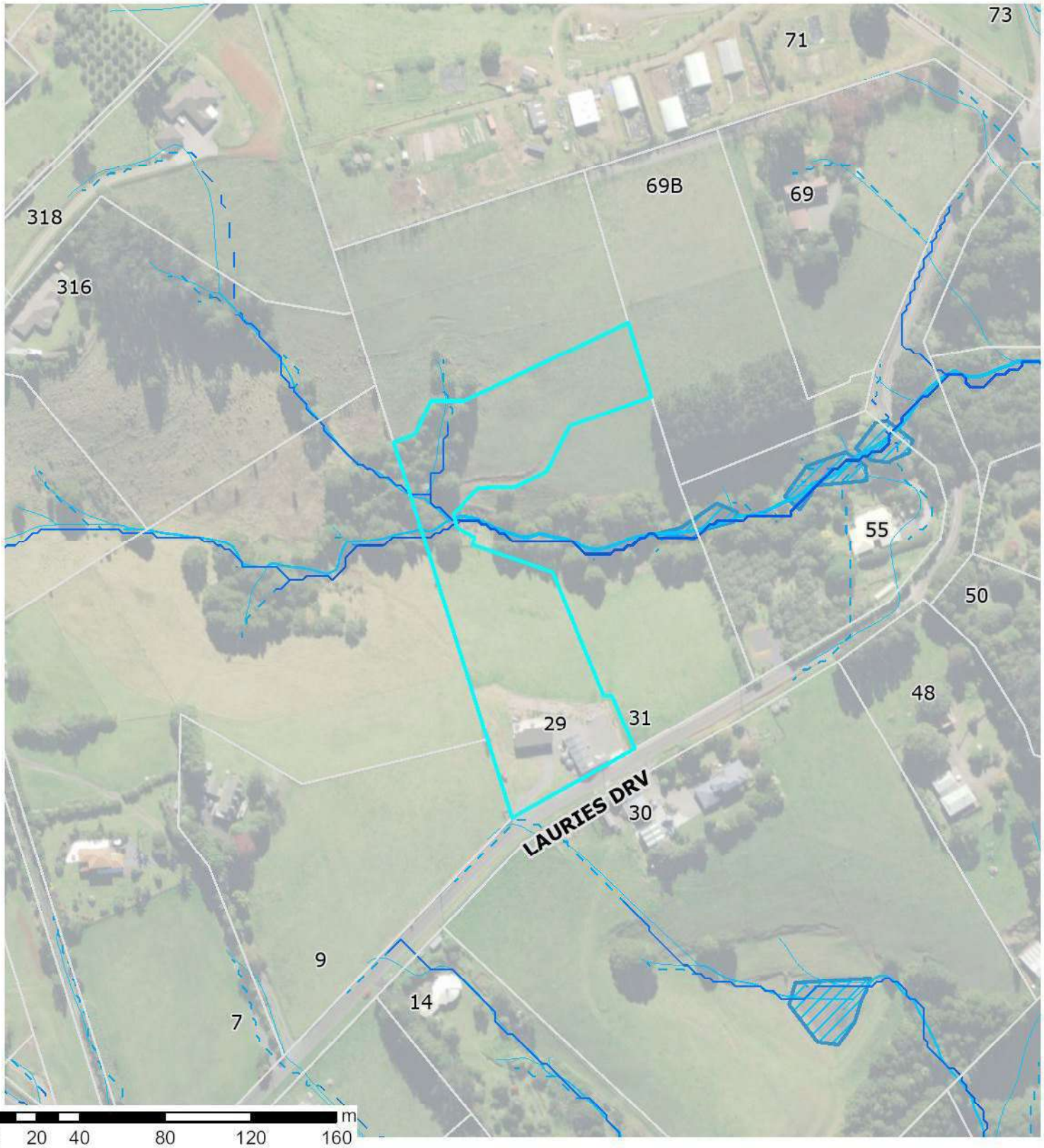
PC1 - Natural Hazards
Land Instability
- High Susceptibility to Land Instability
- Moderate Susceptibility to Land Instability

22 September 2026
Scale 1:3,000

Information provided on this map forms part of Plan Change 1 – Natural Hazards.
To view the maps and see how the changes may affect the property please visit:
https://www.wdc.govt.nz/Services/Planning/District-Plan-changes/Current-plan-changes.

Stormwater Catchment and Flood Management

Whangarei District Council



Overland Flow Paths 2021

Modelled Catchment Flowpaths 2021

- 0.2 ha to 0.4 ha
- 0.4 ha to 1.0 ha
- 1.0 ha to 3.0 ha
- 3.0 ha to 100.0 ha
- 100.0 ha and above

Surface Depression Ponding Areas 2021

- 0.200000 - 0.600000 m
- 0.600001 - 1.200000 m
- 1.200001 - 2.000000 m
- 2.000001 - 4.000000 m
- 4.000001 - 9.910000 m

Overland Flow Paths 2017

Catchment Area 2017

- 0.2 - 1.0 Ha
- 1.0 - 2.0 Ha
- 2.0 - 5.0 Ha
- > 5.0 Ha

Depression Storage Areas 2017

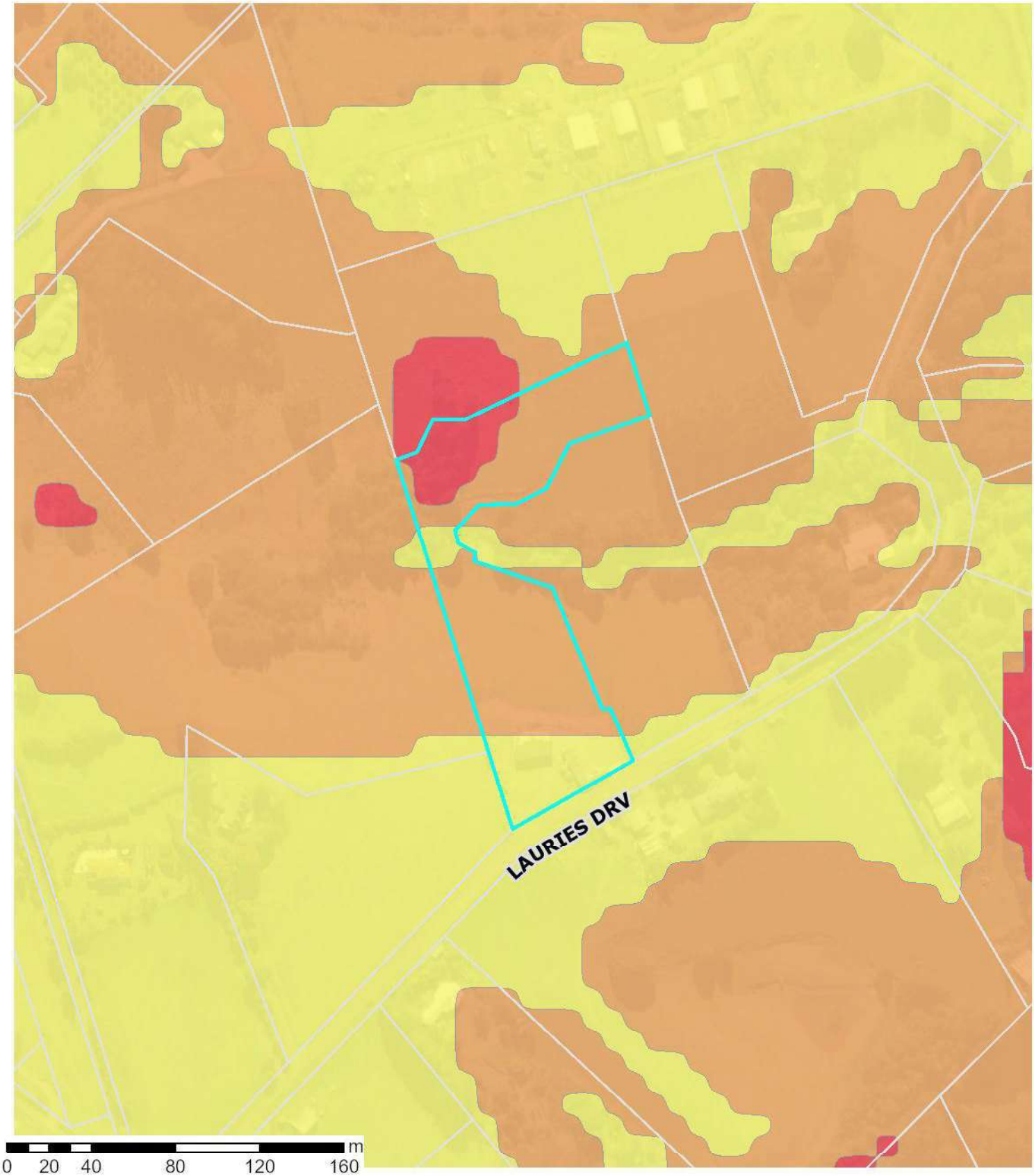
- Depression Storage Areas

22 September 2026

Scale 1:2,500

Land Instability

Whangarei District Council



Landslide Susceptibility Zone

- High
- Moderate
- Low

22 September 2026

Scale 1:2,500

Whangārei District Council holds indicative information on land stability hazard for Whangārei. The Whangarei District Council may require site-specific investigations before granting future subdivision or building consent for the property, depending on the level of stability risk of the area the property is in. Tonkin + Taylor Ltd Landslide Susceptibility assessment report: https://www.wdc.govt.nz/files/assets/public/v/2/documents/council/reports/hazard-reports/land-stability/landslide-susceptibility-technical-report.pdf

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