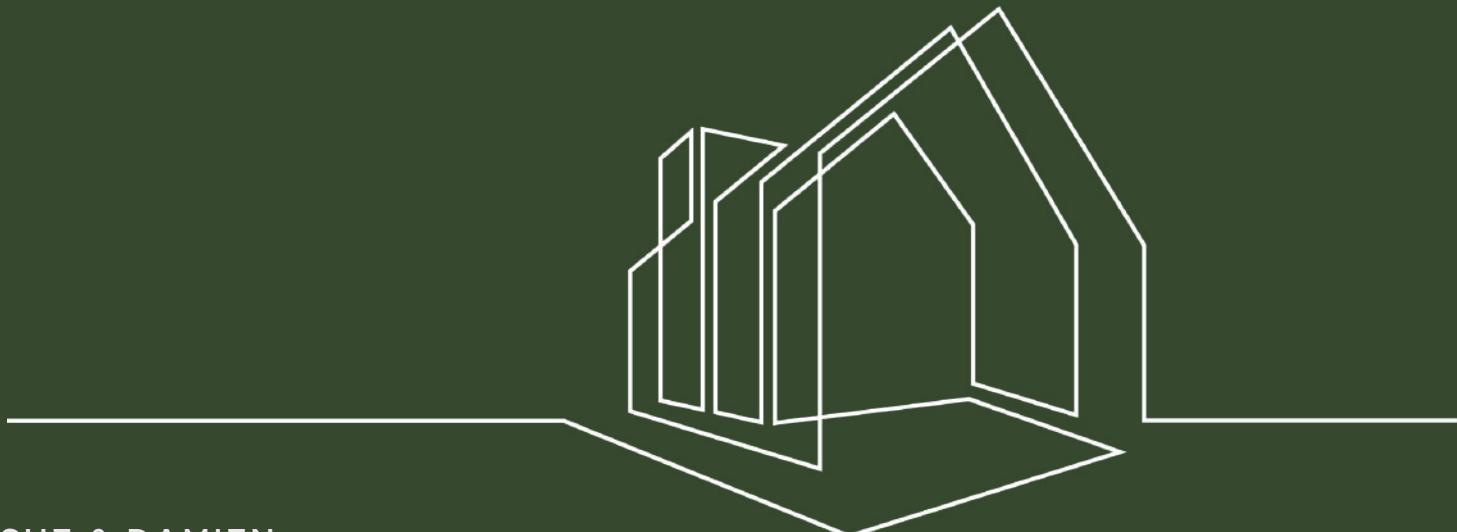


WDC LIM REPORT



SUE & DAMIEN

021 793 822 | 021 387 345

ownrealestate.co.nz

POWERED BY OWNLY LTD. LICENSED REAA 2008

OWN
REAL ESTATE

LAND INFORMATION MEMORANDUM NO: LM2501492

Received: 15 Sep 2025

Issued: 23 Sep 2025

**Section 44A, Local Government Official Information
And Meetings Act 1987**

APPLICANT

E Abraham, R Abraham
66 Karanui Road
Te Kamo 0185

SITE INFORMATION

Property ID: 166827
Street Address: 66 Karanui Road, Te Kamo 0185
Legal Description: LOT 49 DP 496877

This is a Land Information Memorandum only.

Full payment has been made for this Land Information Memorandum.

1: PROPERTY DETAILS.

- Location Map
- Aerial Photo
- Record of Title: 732463
- Deposited Plan: DP 496877

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

- Interest Number 10793415.7 – Dated 10/04/2017

2: INFORMATION IDENTIFYING EACH (IF ANY) SPECIAL FEATURE OR CHARACTERISTIC OF THE LAND CONCERNED, INCLUDING BUT NOT LIMITED TO POTENTIAL EROSION, AVULSION, FALLING DEBRIS, SUBSIDENCE, SLIPPAGE, ALLUVION, OR INUNDATION, OR LIKELY PRESENCE OF HAZARDOUS CONTAMINANTS, BEING A FEATURE OR CHARACTERISTIC THAT IS KNOWN TO THE WHANGAREI DISTRICT COUNCIL.

Whangarei District Council holds indicative information on land stability hazard for Whangārei. Information on land stability, including an interactive web tool, can be found on the Council's website. 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.

See map attached indicating this property is located within low and moderate zones and refer:

<https://www.wdc.govt.nz/Services/My-property-and-rates/Natural-hazards>

Whangarei District Council notified Plan Change 1 - Natural Hazards (PC1) on the 31st of May 2023. The Plan Change introduces new provisions relating to natural hazards to the District Plan, including new 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/Services/Planning/District-Plan-changes/Current-plan-changes>

Whangarei District Council holds information on the liquefaction vulnerability of the district. The site is located within an area classified as Liquefaction vulnerability categories: Undetermined and unlikely.

The report was prepared by Tonkin & Taylor Ltd to provide WDC with a district wide liquefaction vulnerability assessment to help inform spatial planning and assessment of landuse, subdivision and building consents.

To view the report and access maps please use the following link:

<https://www.wdc.govt.nz/Services/My-property-and-rates/Natural-hazards>

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

3: INFORMATION ON COUNCIL AND PRIVATE UTILITY (SEWERAGE, WATER & STORMWATER) SERVICES.

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 Service Plan from BC1701523

4: INFORMATION RELATING TO VALUATION, LAND, AND WATER RATES. INFORMATION FROM WHANGAREI DISTRICT COUNCIL RECORDS.

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

5: INFORMATION CONCERNING ANY PERMIT, CONSENT, CERTIFICATE, NOTICE ORDER, OR REQUISITION AFFECTING THE LAND OR ANY BUILDING ON THE LAND PREVIOUSLY ISSUED BY THE WHANGAREI DISTRICT COUNCIL OR BUILDING CERTIFIER (WHETHER UNDER THE BUILDING ACT 1991 AND/OR 2004 OR ANY OTHER ACT).

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

- BC1701523 – New Dwelling
Building Consent – Issued 24/01/2018
Code of Compliance Certificate – Issued 06/12/2018

6: INFORMATION RELATING TO THE USE TO WHICH THE LAND MAY BE PUT AND ANY CONDITIONS ATTACHED TO THAT USE.

This property is located in a Large Lot Residential Zone.

See map attached and for more information search the property address on Councils ePlan here <https://eplan.wdc.govt.nz/plan/>

7: INFORMATION WHICH IN TERMS OF ANY OTHER ACT HAS BEEN NOTIFIED TO THE WHANGAREI DISTRICT COUNCIL BY ANY STATUTORY ORGANISATION HAVING THE POWER TO CLASSIFY LAND OR BUILDINGS FOR ANY PURPOSE.

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

8: OTHER INFORMATION CONCERNING THE LAND AS WHANGAREI DISTRICT COUNCIL CONSIDERS, AT COUNCILS DISCRETION, TO BE RELEVANT.

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

Please see attached a copy of a Suitability Report by Richardson Stevens Consulting Engineers from BC1701523 dated 11/10/2017 for your information.

Please see attached a copy of an Inspection Report by RS Eng Ltd from BC1701523 dated 08/02/2018 for your information.

**9: 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.

DISCLAIMER

Land Information Memoranda (LIM) are prepared under the provisions of Section 44A of the Local Government Official Information and Meetings Act 1987. An inspection of the land or building(s) has not been completed for the purposes of preparing the LIM. It has been compiled from the records held by Whangarei District Council. The information contained in the LIM is correct at the date of issue.

A LIM is prepared for the use of the applicant and may not be able to be relied on by other parties.

Advice from an independent professional such as a lawyer or property advisor should be sought regarding the contents of this LIM.

Additional information regarding the land or buildings (such as resource consents and other permissions and restrictions) not contained in this LIM may be held by Northland Regional Council. For further information contact Northland Regional Council on (09) 470 1200, 0800 002 004 or www.nrc.govt.nz.

A LIM is not a suitable search of Council's records for the purposes of the National Environmental Standards (NES) for soil contamination of a potentially contaminated site.

Signed for and on behalf of Council:



Eilish Getty
Property Information Officer

Property Map



New Subdivisions

- Proposed Pre-223
- 223 Certificate

New subdivisions: Proposed as accepted, pre-223 and 223 Certificate with set Conditions. 22 September 2025

Scale 1:1,000

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



Aerial Photography



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

22 September 2025

Scale 1:1,000



The information displayed is schematic only and serves as a guide. It has been compiled from Whangarei District Council records and is made available in good faith but its accuracy or completeness is not guaranteed. Parcel Information is sourced from the Land Information New Zealand (LInZ) Data Service. CROWN COPYRIGHT RESERVED. © Copyright Whangarei District Council.



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




R. W. Muir
Registrar-General
of Land

Identifier **732463**

Land Registration District **North Auckland**

Date Issued 18 May 2017

Prior References

718283

Estate Fee Simple

Area 4104 square metres more or less

Legal Description Lot 49 Deposited Plan 496877

Registered Owners

Ebson Abraham and Rincy Abraham

Interests

Land Covenant in Easement Instrument 9998428.11 - 11.5.2015 at 2:16 pm

Appurtenant hereto is a right to drain water created by Easement Instrument 10183821.12 - 3.11.2015 at 11:48 am

The easements created by Easement Instrument 10183821.12 are subject to Section 243 (a) Resource Management Act 1991

Land Covenant in Easement Instrument 10183821.19 - 3.11.2015 at 11:48 am

Land Covenant in Easement Instrument 10484567.14 - 30.6.2016 at 10:45 am

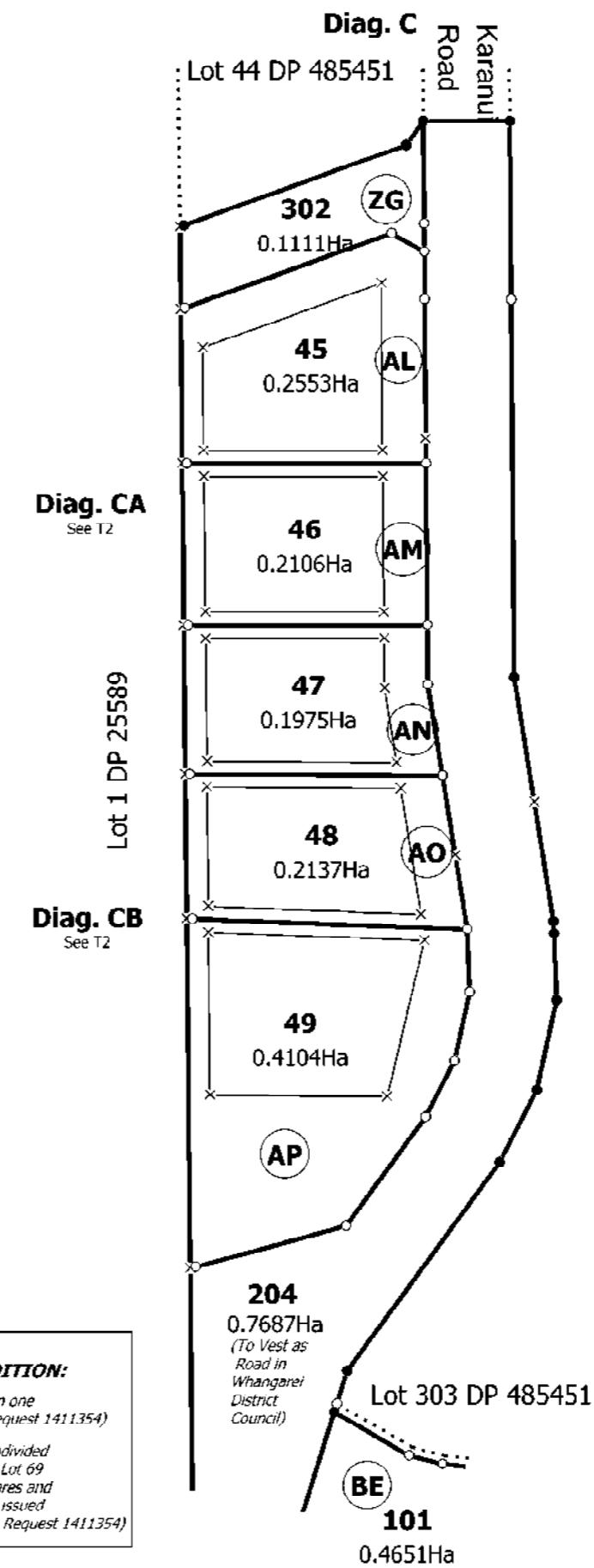
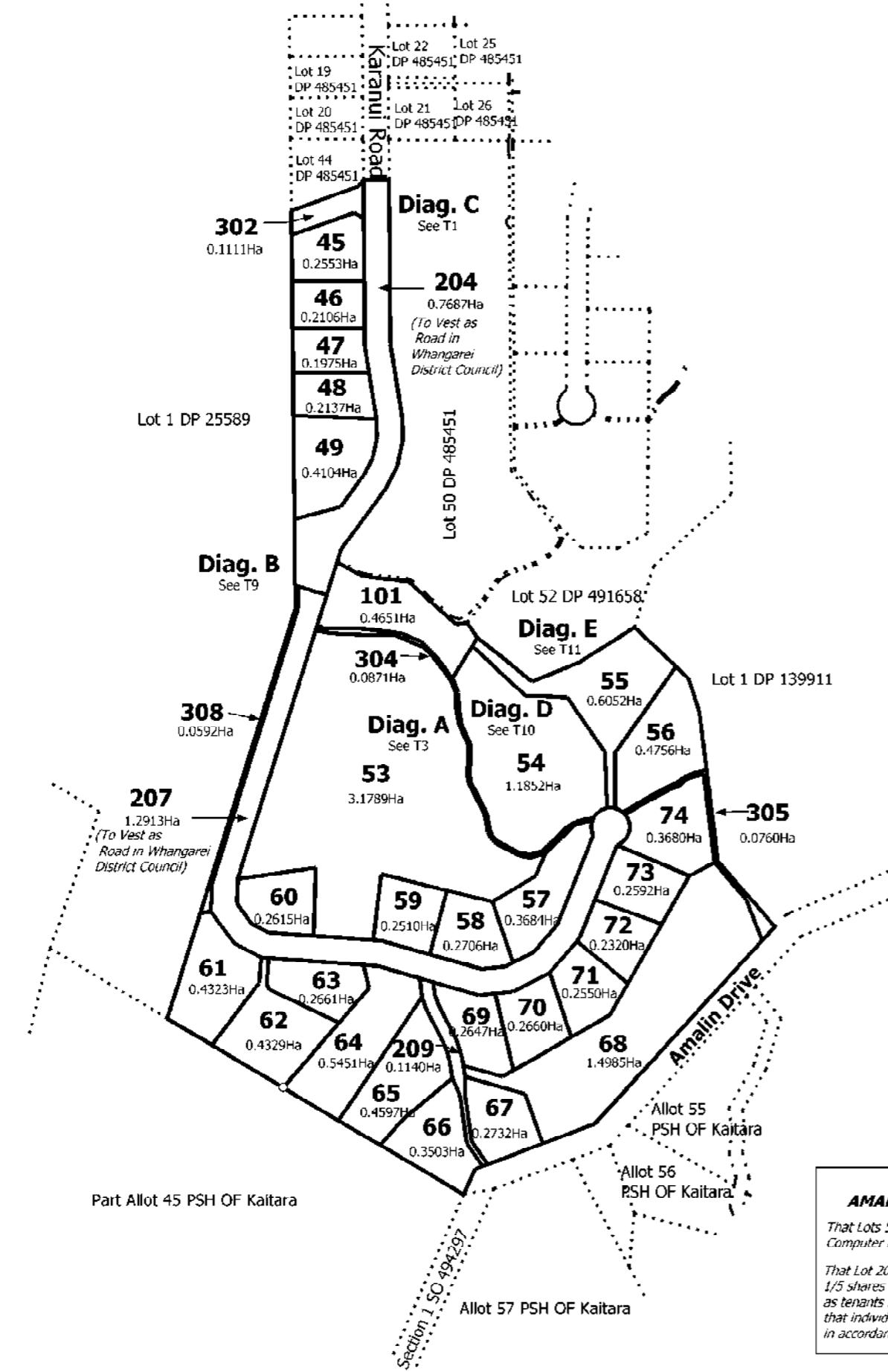
10793415.7 Consent Notice pursuant to Section 221 Resource Management Act 1991 - 18.5.2017 at 2:27 pm

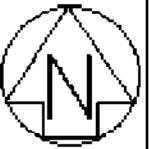
Subject to a right to drain water over part marked AP on DP 496877 created by Easement Instrument 10793415.9 - 18.5.2017 at 2:27 pm

The easements created by Easement Instrument 10793415.9 are subject to Section 243 (a) Resource Management Act 1991

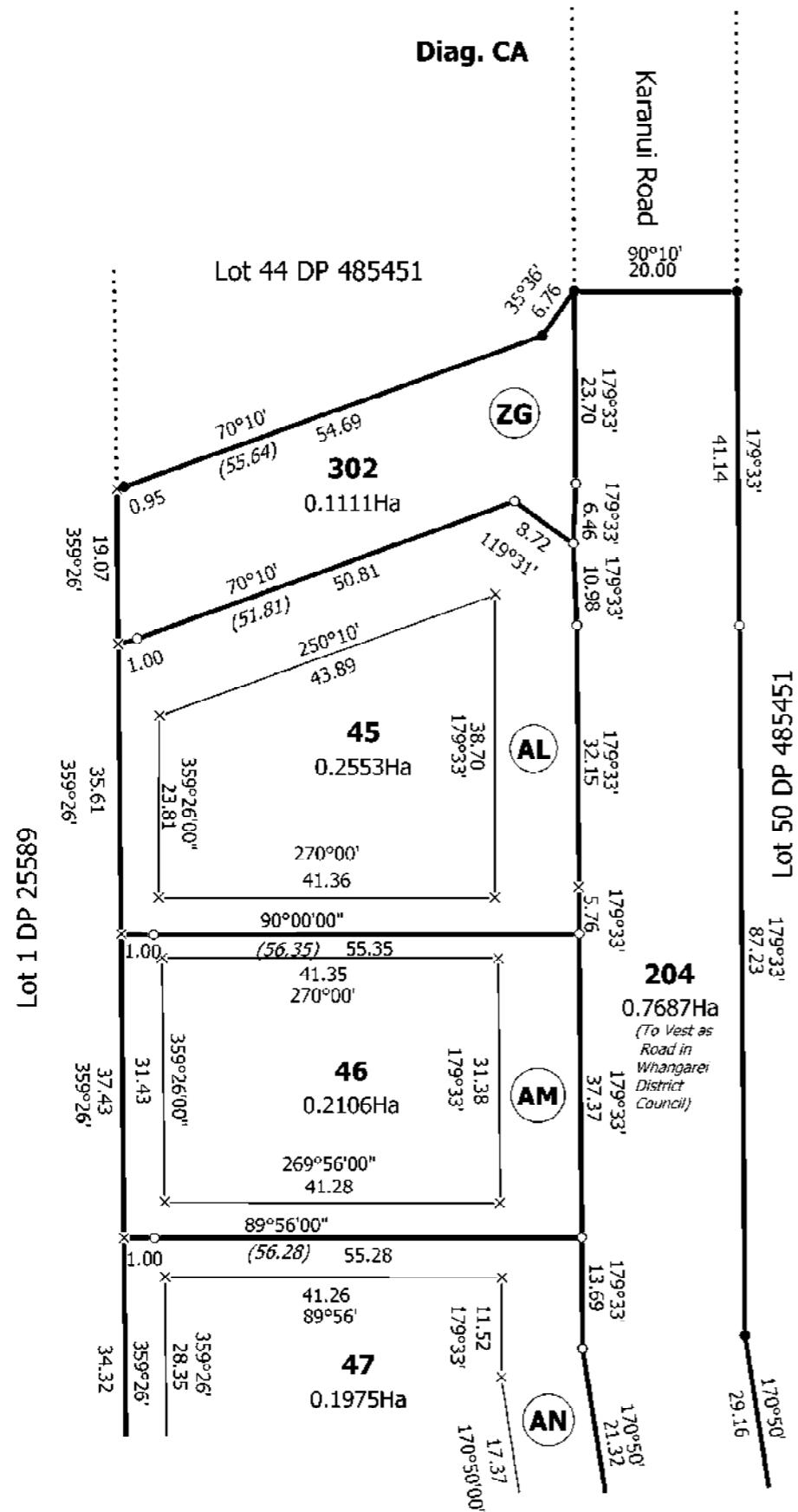
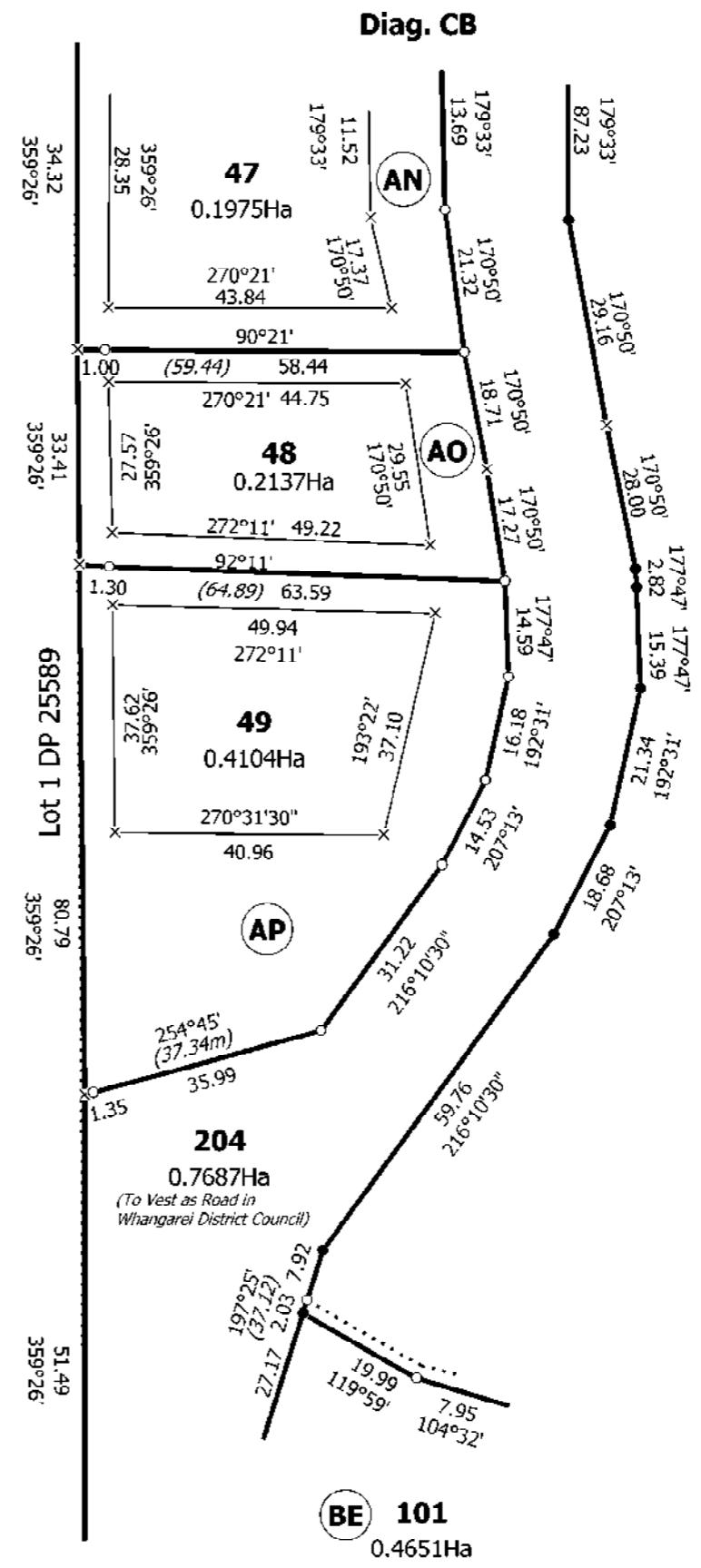
Land Covenant in Easement Instrument 10793415.12 - 18.5.2017 at 2:27 pm

12639695.3 Mortgage to ANZ Bank New Zealand Limited - 12.1.2023 at 10:35 am





Lot 50 DP 485451



T 2/12

Land District: North Auckland

Digitally Generated Plan

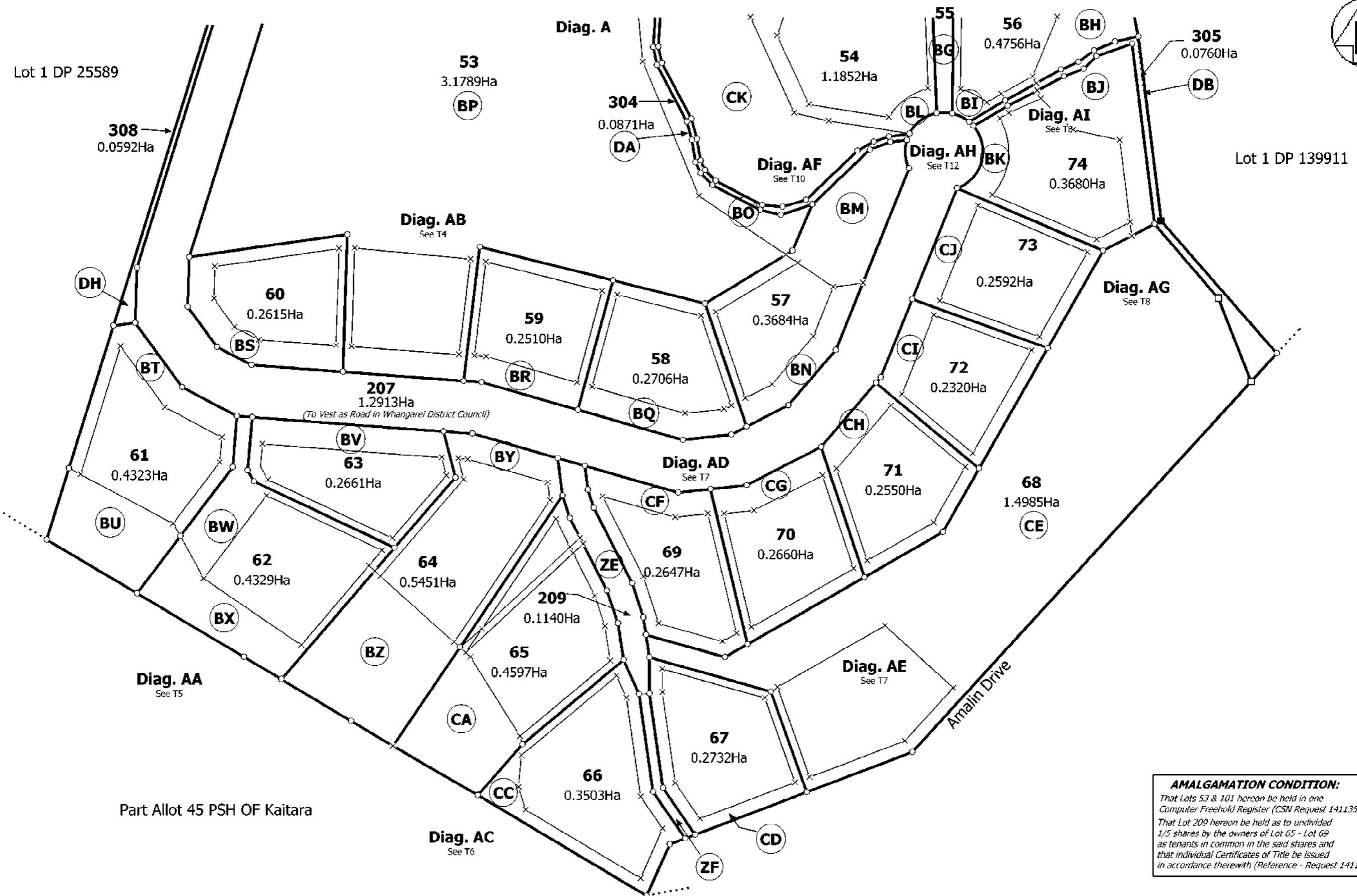
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LOTS 45-49, LOTS 53-74, LOT 101, LOT 204, LOT 207, LOT 209, LOT 302, LOT 304, LOT 305, & LOT 308 BEING A SUBDIVISION OF LOT 802 DP 491658

Surveyor: Dwayne Simon Reiher
Firm: Cato Bolam Consultants Ltd (Auckland)

Title Plan
DP 496877

Deposited on: 18/05/2017



T 3/12

Land District: North Auckland

LOTS 45-49, LOTS 53-74, LOT 101, LOT 204, LOT 207, LOT 209, LOT 302,
LOT 304, LOT 305, & LOT 308 BEING A SUBDIVISION OF LOT 802 DP
491658

Digitally Generated Plan
Generated on: 25/05/2017 12:23pm Page 9 of 18

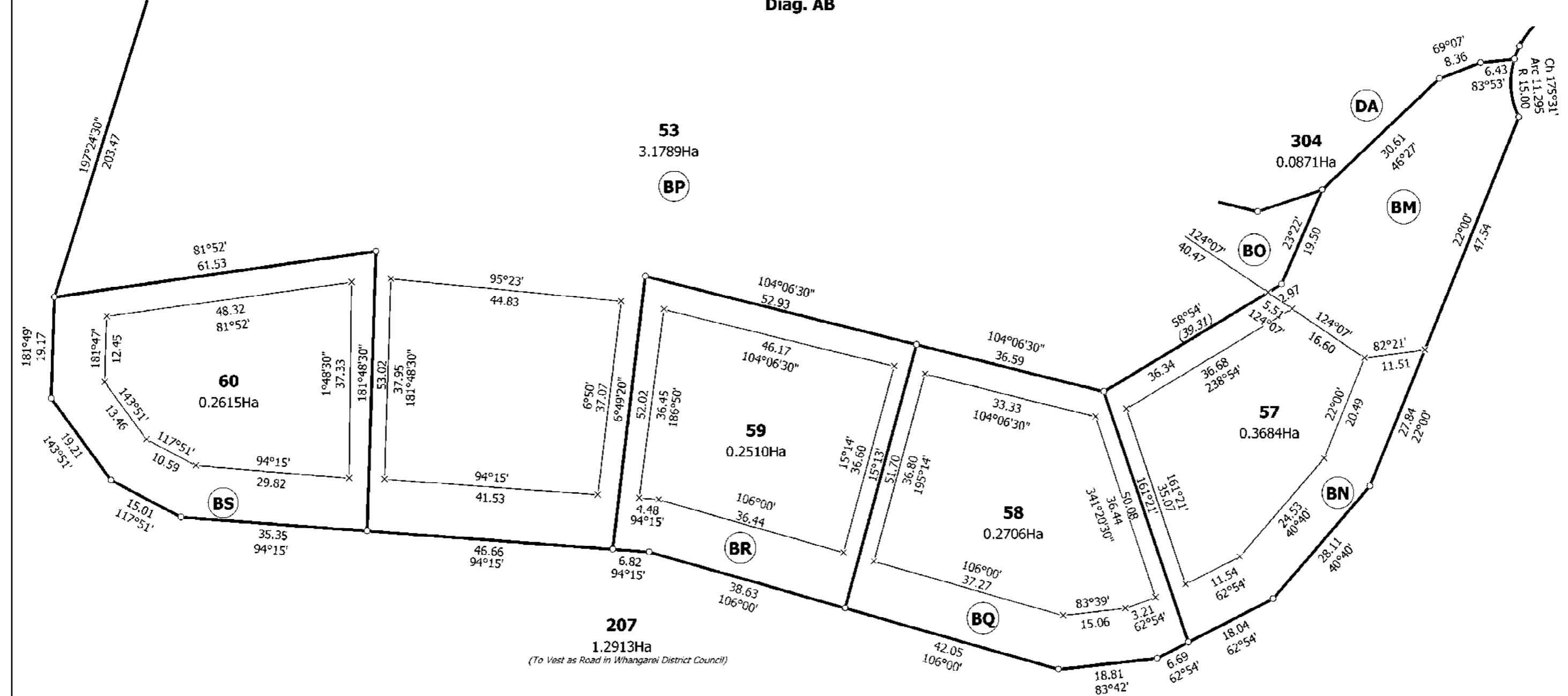
Surveyor: Dwayne Simon Reiher
Firm: Cato Bolam Consultants Ltd (Aucklar)

Title Plan
DP 496877

Deposited on: 18/05/2017



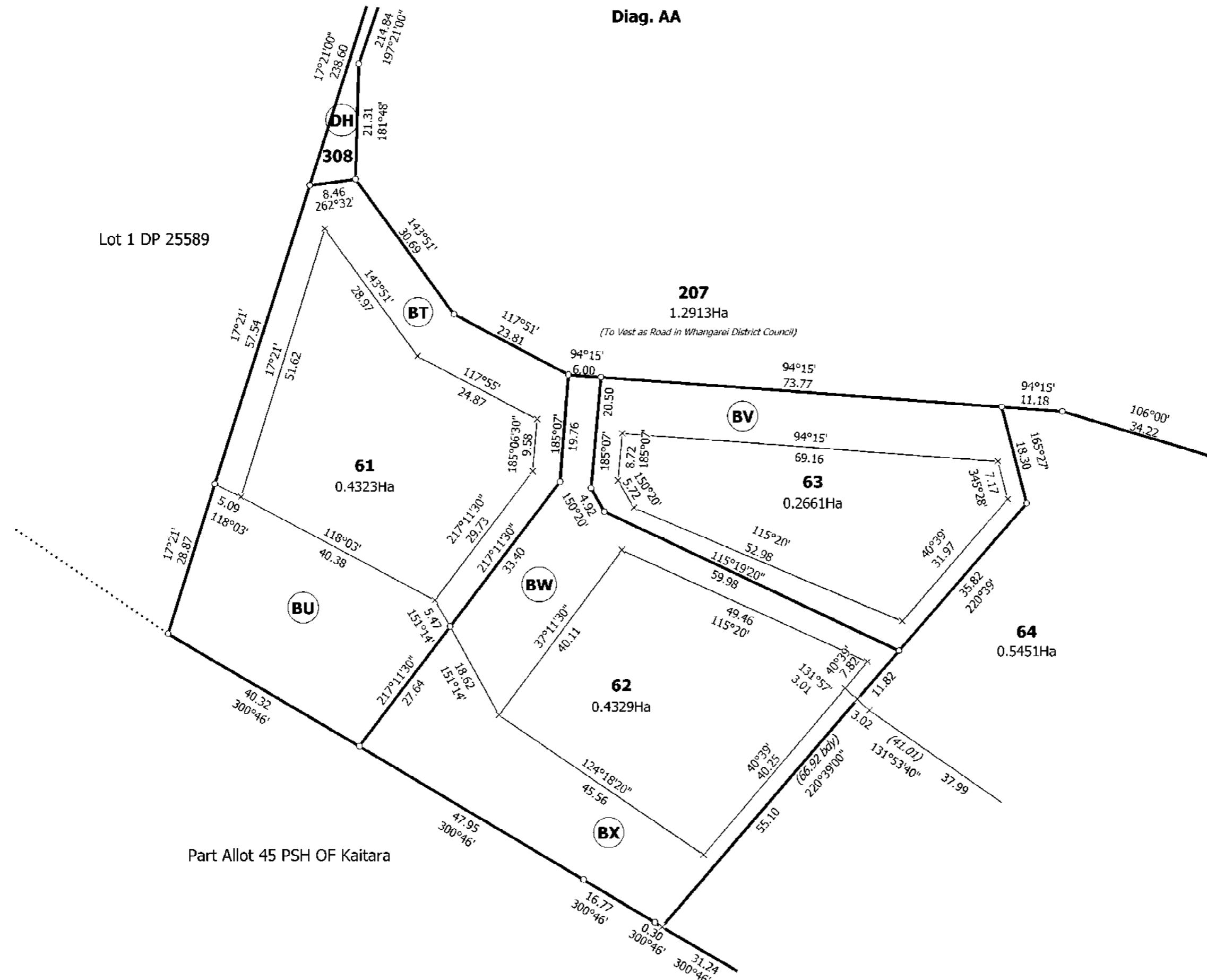
Diag. AB



Land District: North Auckland Digitally Generated Plan Generated on: 25/05/2017 12:23am Page 10 of 18	LOTS 45-49, LOTS 53-74, LOT 101, LOT 204, LOT 207, LOT 209, LOT 302, LOT 304, LOT 305, & LOT 308 BEING A SUBDIVISION OF LOT 802 DP 491658	Surveyor: Dwayne Simon Reiher Firm: Cato Bolam Consultants Ltd (Auckland)	Title Plan DP 496877 Deposited on: 18/05/2017
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**Diag. AA**

Lot 1 DP 25589



T 5/12

Land District: North Auckland

Digitally Generated Plan

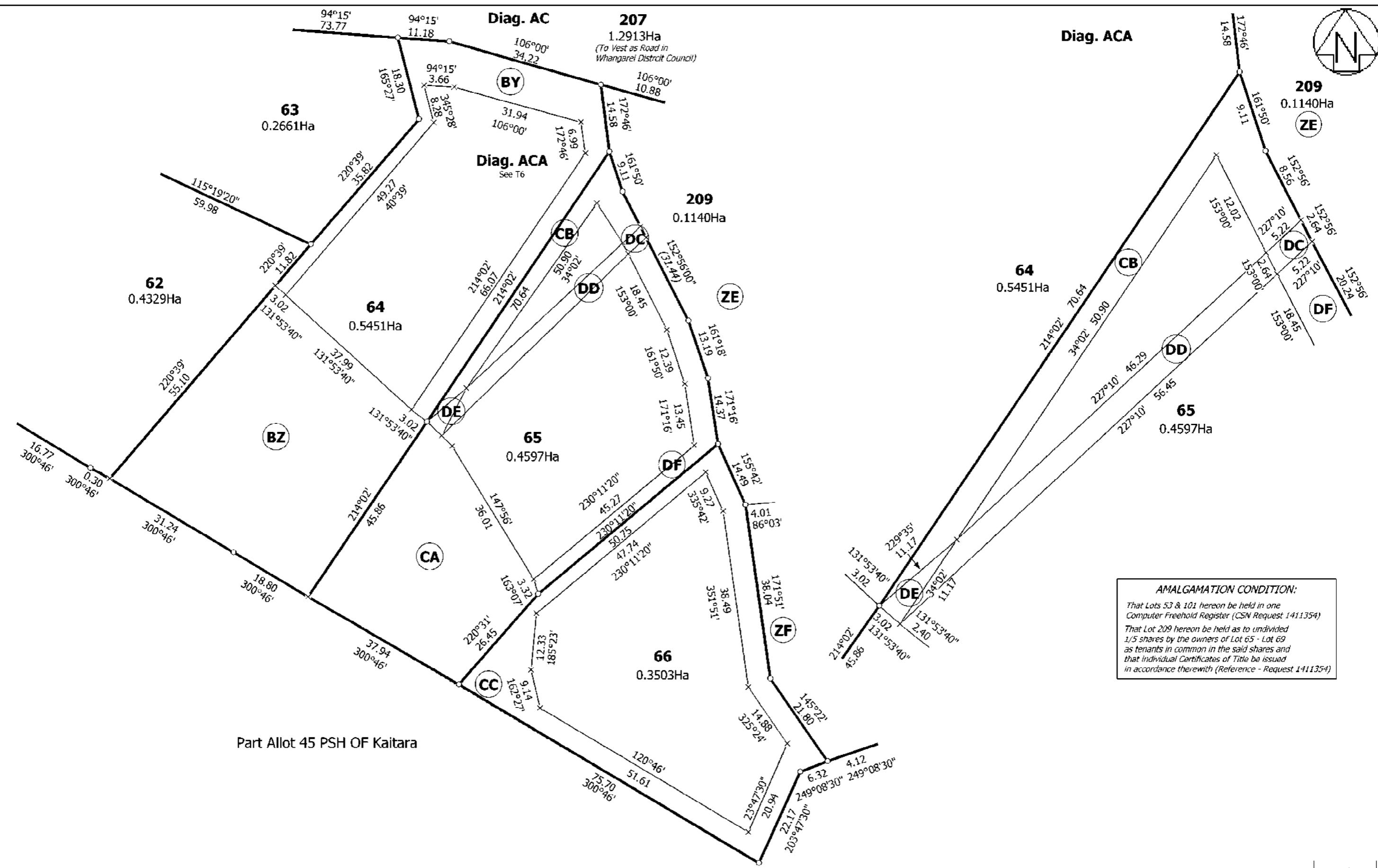
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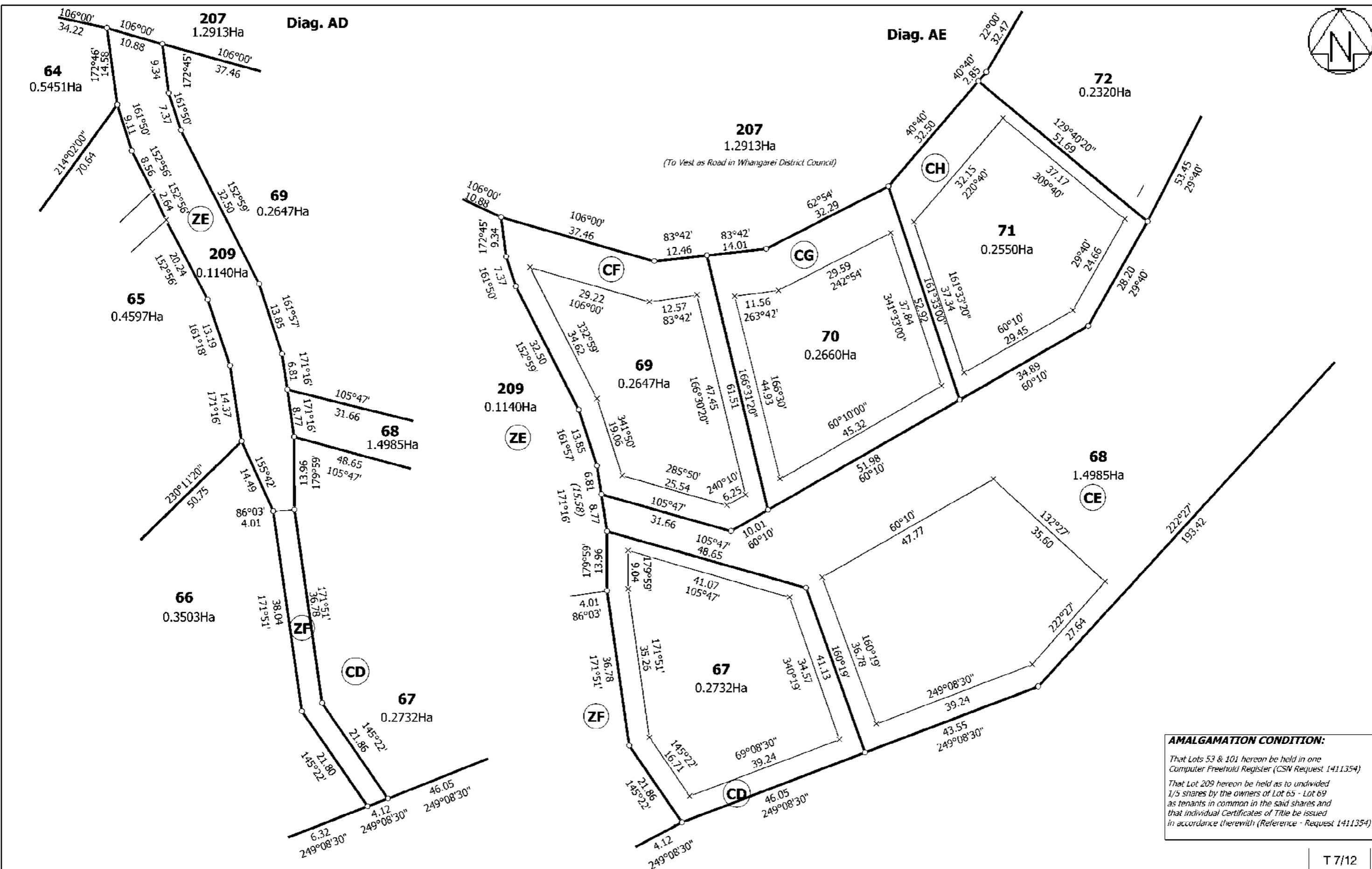
LOTS 45-49, LOTS 53-74, LOT 101, LOT 204, LOT 207, LOT 209, LOT 302,
LOT 304, LOT 305, & LOT 308 BEING A SUBDIVISION OF LOT 802 DP
491658

Surveyor: Dwayne Simon Reiher
Firm: Cato Bolam Consultants Ltd (Aucklar)

Title Plan
DP 496877

Deposited on: 18/05/2017

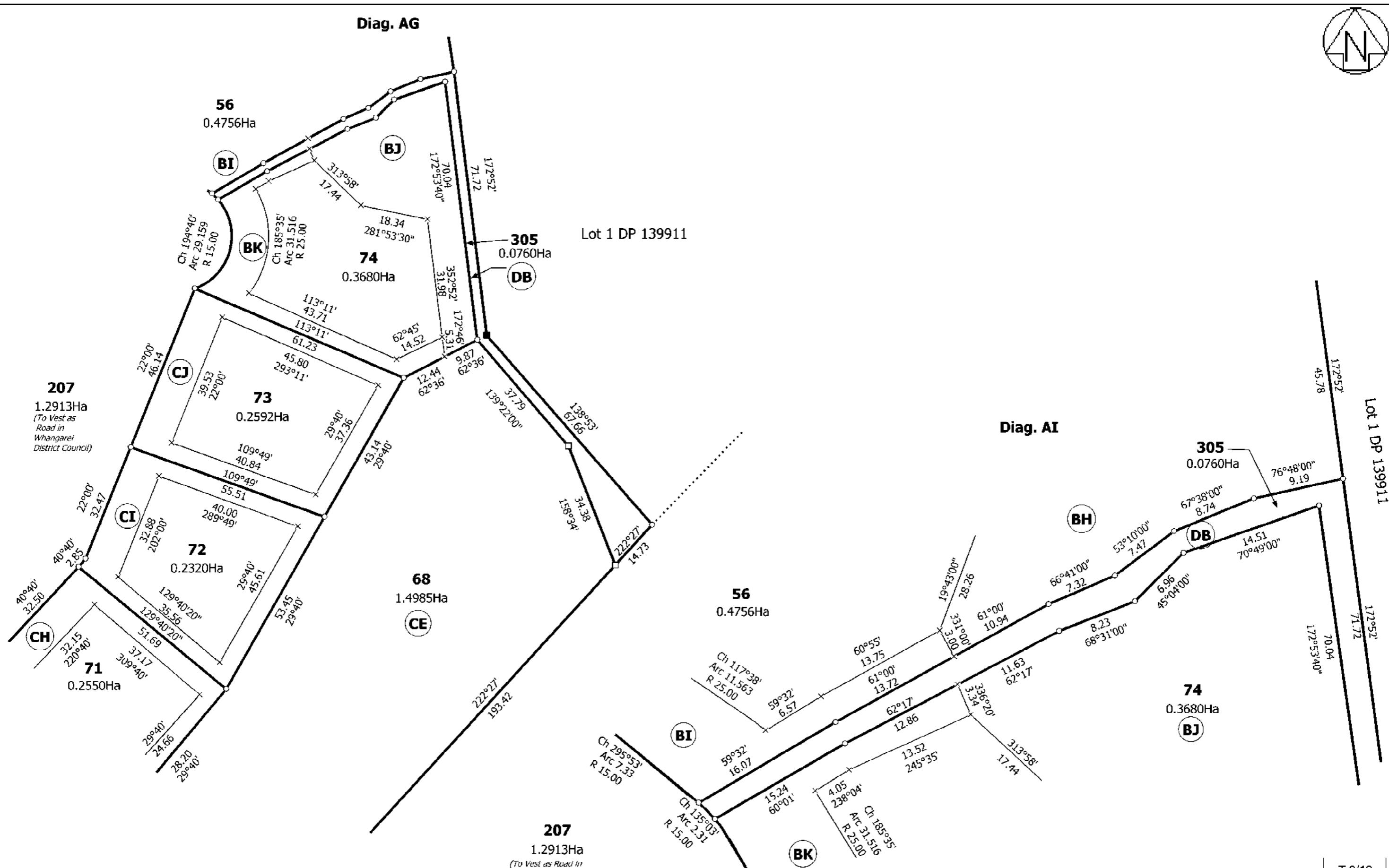




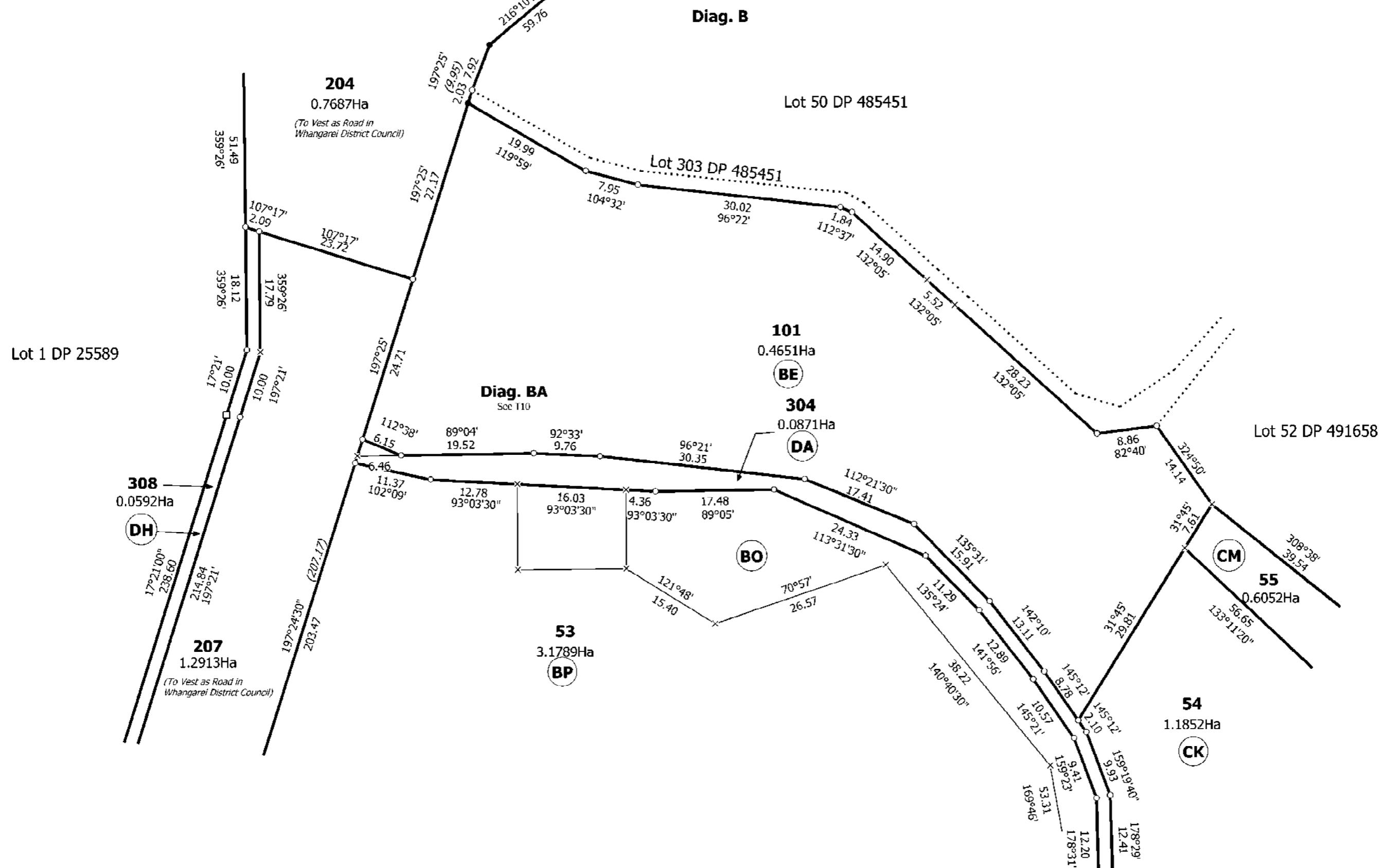
AMALGAMATION CONDITION:
That Lots 53 & 101 hereon be held in one
Computer Freehold Register (CSN Request 1411354)
That Lot 209 hereon be held as to undivided
1/5 shares by the owners of Lot 65 - Lot 69
as tenants in common in the said shares and
that individual Certificates of Title be issued
in accordance therewith (Reference - Request 1411354)

T 7/12

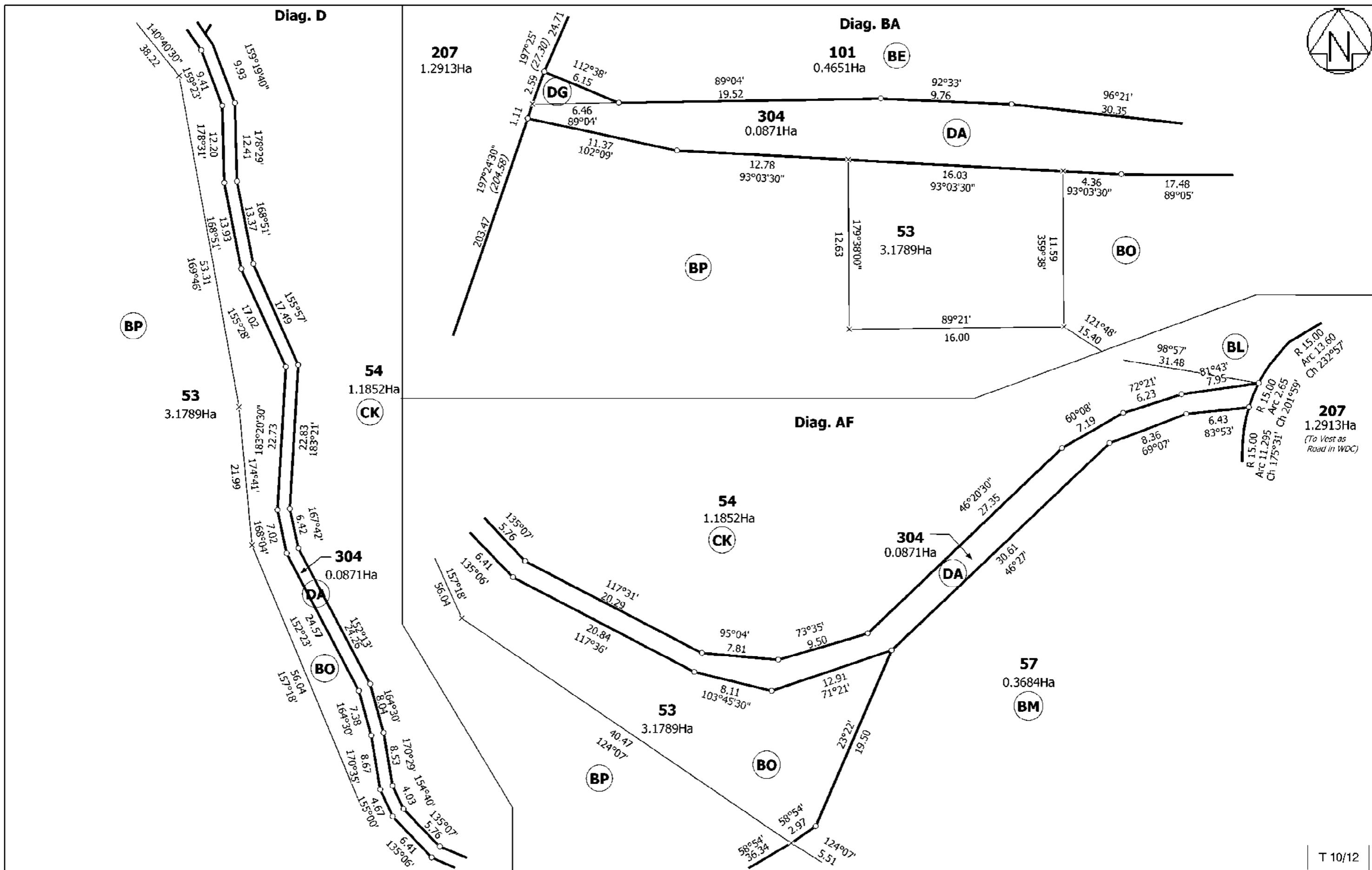
Land District: North Auckland Digitally Generated Plan Generated on: 25/05/2017 12:23am Page 13 of 18	LOTS 45-49, LOTS 53-74, LOT 101, LOT 204, LOT 207, LOT 209, LOT 302, LOT 304, LOT 305, & LOT 308 BEING A SUBDIVISION OF LOT 802 DP 491658	Surveyor: Dwayne Simon Reiher Firm: Cato Bolam Consultants Ltd (Auckland)	Title Plan DP 496877 Deposited on: 18/05/2017
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Land District: North Auckland Digitally Generated Plan Generated on: 25/05/2017 12:23am Page 14 of 18	LOTS 45-49, LOTS 53-74, LOT 101, LOT 204, LOT 207, LOT 209, LOT 302, LOT 304, LOT 305, & LOT 308 BEING A SUBDIVISION OF LOT 802 DP 491658	Surveyor: Dwayne Simon Reiher Firm: Cato Bolam Consultants Ltd (Auckland)	Title Plan DP 496877 Deposited on: 18/05/2017
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Land District: North Auckland Digitally Generated Plan Generated on: 25/05/2017 12:23am Page 15 of 18	LOTS 45-49, LOTS 53-74, LOT 101, LOT 204, LOT 207, LOT 209, LOT 302, LOT 304, LOT 305, & LOT 308 BEING A SUBDIVISION OF LOT 802 DP 491658	Surveyor: Dwayne Simon Reiher Firm: Cato Bolam Consultants Ltd (Auckland)	Title Plan DP 496877 Deposited on: 18/05/2017
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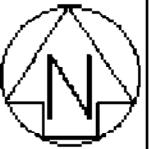
Land District: North Auckland

LOTS 45-49, LOTS 53-74, LOT 101, LOT 204, LOT 207, LOT 209, LOT 302,
LOT 304, LOT 305, & LOT 308 BEING A SUBDIVISION OF LOT 802 DP
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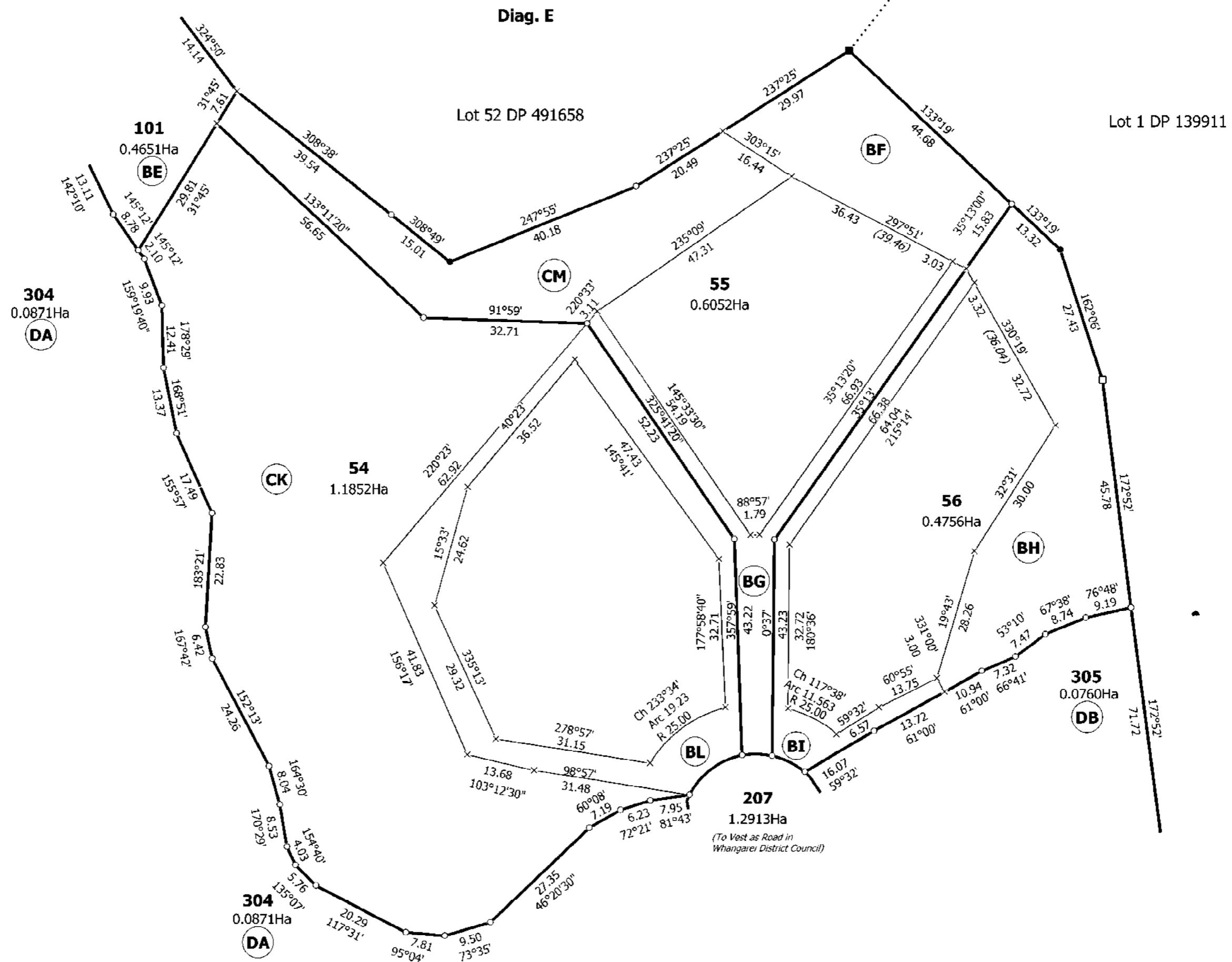
Surveyor: Dwayne Simon Reiher
Firm: Cato Bolam Consultants Ltd (Au)

Title Plan
DP 496877

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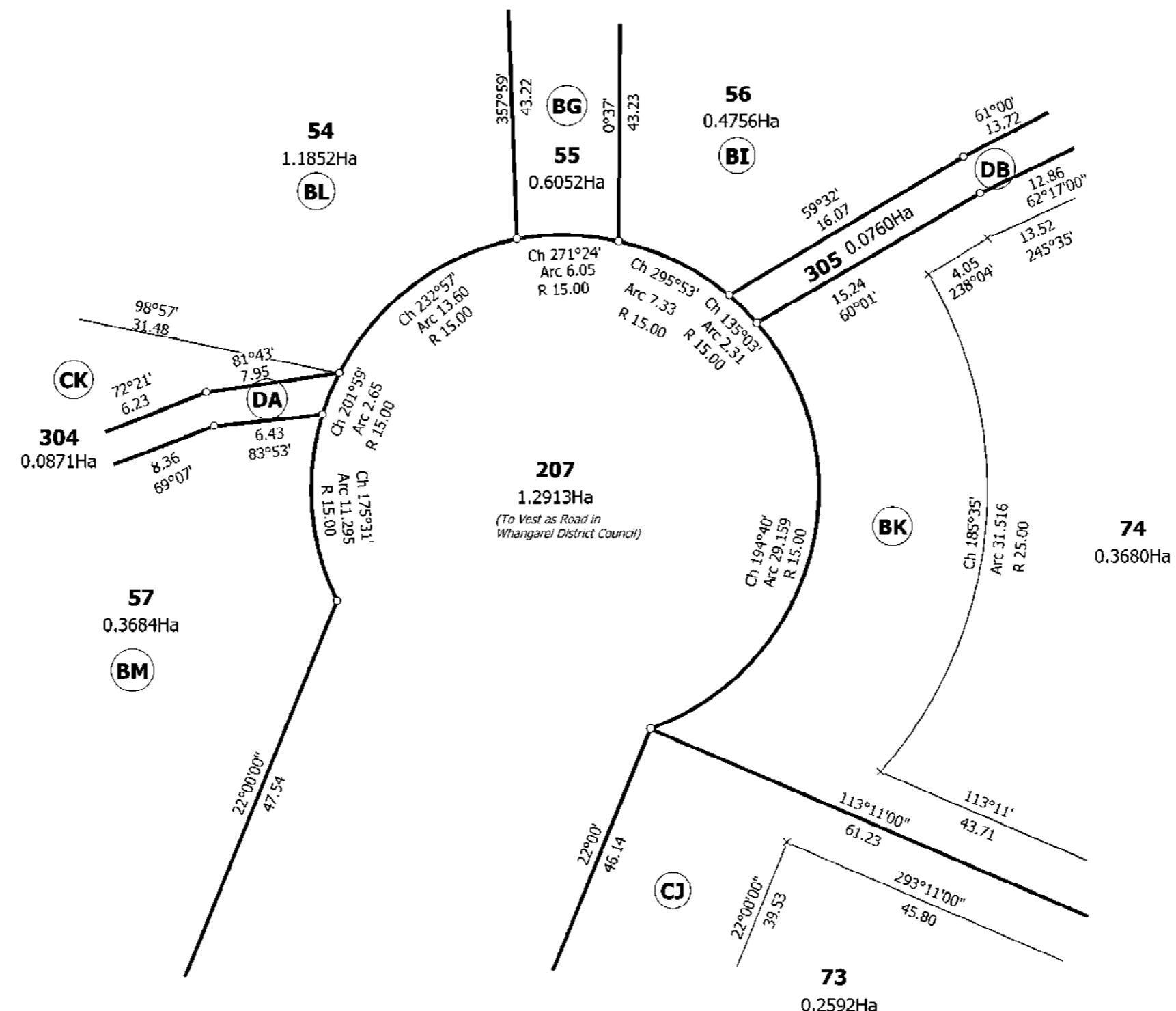


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Land District: North Auckland Digitally Generated Plan Generated on: 25/05/2017 12:23am Page 17 of 18	LOTS 45-49, LOTS 53-74, LOT 101, LOT 204, LOT 207, LOT 209, LOT 302, LOT 304, LOT 305, & LOT 308 BEING A SUBDIVISION OF LOT 802 DP 491658	Surveyor: Dwayne Simon Reiher Firm: Cato Bolam Consultants Ltd (Auckland)	Title Plan DP 496877 Deposited on: 18/05/2017
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**Diag. AH**

T 12/12

Land District: North Auckland

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Generated on: 25/05/2017 12:23am Page 18 of 18

LOTS 45-49, LOTS 53-74, LOT 101, LOT 204, LOT 207, LOT 209, LOT 302,
LOT 304, LOT 305, & LOT 308 BEING A SUBDIVISION OF LOT 802 DP
491658

Surveyor: Dwayne Simon Reiher
Firm: Cato Bolam Consultants Ltd (Aucklar)

Title Plan
DP 496877

Deposited on: 18/05/2017

**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 496877

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 SL1400005 ("the consent") for Lots 45 to 49, 53 to 74 ("the Lots") as effected by Deposited Plan No 496877 ("the Plan").

- 1) Any development shall comply with the Restrictions and recommendations identified in the Hawthorne Geddes Engineers & Architects Ltd engineering report reference 9266 dated 10/12/2013 held in file SL1400005 at Council unless an alternative engineering report prepared by a suitably experienced Chartered Professional Engineer is approved in writing by Council.
- 2) Where the developed total impervious area of any residential allotment (including concrete driveways / patios, etc) will exceed 650m², provide suitable evidence/design to illustrate that stormwater attenuation will be provided for all impervious surfaces to ensure compliance with Chapter 4, and more specifically Section 4.11 of Council's Environmental Engineering Standards 2010, to the satisfaction of the Senior Environmental Engineering Officer.
- 3) Mustelids and rodents shall not be kept on the Lots and no more than two cats (for Lots 45-49) and/or two dogs (which must be spayed or neutered), and always identifiable with microchips or named collars, shall be kept on each Lot. Dogs shall be securely contained on-site at all times. No cats shall be kept on Lot 53-74 inclusive.

All owners are to be aware that Pukenui Forest is a pest managed area with pest controls that may kill any pets that stray there and some of the Lots in the Karanui development itself may have on-going pest controls that can harm pets. If pets are trapped and harmed or killed as a consequence of those on-going pest controls, the owner shall have no right of complaint nor be able to take any proceedings in respect of that event.

- 4) No building may be erected within the 'no build areas' zone identified on the Plan.
- 5) There shall be no more than one residential unit per Lot.

- 6) The total building coverage on a Lot may not exceed 500m² or 5% of the net Lot area, whichever is the greater.
- 7) Building facade materials and finishes shall have a reflectance value of no more than 40%. Smaller architectural elements, such as joinery or other minor features, are excluded from this requirement. Windows shall not be mirror type glazing.
- 8) Roof surfaces shall have a reflectance value of no more than 30%.
- 9) Building heights shall be limited to 6.0 metres maximum as defined in the District Plan.
- 10) The maintenance of the swale drain and vehicle crossing within the road reserve (directly adjacent to each Lot) is the responsibility of the property owner. These structures shall be maintained consistent with the Maintenance Manual – Stage 3 (ref WH33367) by Cato Bolam dated 10 March 2017, held in file SL1400005 at Council. No modification to these swales or to vehicle crossings shall be undertaken without the approval of Council's Roading Manager. The constructions of any additional crossings require the approval of Council's Roading Manager.
- 11) All internal infrastructure is retained and managed by Lot owners on an on-going basis. Council shall only be responsible for maintenance of the carriageway within the legal road, recreational reserve and parking area. All other infrastructure including, but not limited to, vehicle crossings, swale drains, and any other stormwater infrastructure on legal road and private property, fencing, walkways, fire fighting infrastructure, and amenity/landscape planting is to be managed either by the Karanui Recreational and Environmental Protection Trust or adjacent Lot owners.
- 12) While the Urban Transition Environment remains in place no application may be made for any subdivision that would create extra Lots not otherwise authorised by the consent.
- 13) Dry stone walls are not to be removed. Dry stone walls on any property boundary and on the adjoining road berm shall be maintained to a good standard by the Lot owner.
- 14) Fencing installed by the consent holder at subdivision stage in accordance with the conditions of this consent (including any front fence, any fence adjoining a walkway, any riparian fence and the dog-proof fence) and shall be maintained by adjoining owners in accordance with (as relevant) shown in Figures 11 - 13, 16 and 17 "Karanui Management Plan – 390 Three Mile Bush Road, Kamo" by Evo Holdings Limited held in file SL1400005 at Council.
- 15) Fences or barriers within 10 metres of the roadside boundary of private Lots shall be less than 1.0 metre in height. Fencing between that 10 metre line and the road frontage of the house or other building on the Lot shall be less than 1.5 metres in height. Any barrier that lies between the road and the building on the Lot (and which is in addition to the low roadside barrier installed by the developer) should have a high level of porosity, with the solid component of the barrier not constituting more than 40% of the volume when viewed in elevation.

- 16) Any fence or barrier between the road face of the house or other building on the Lot and the road shall have similar reflectance values and hues to building roofs on the Lot.
- 17) Any fence or barrier not covered by the above controls shall be no higher than 2.0 metres.
- 18) Fences adjoining walkways and the dog control fence are to be maintained by the adjoining owner.
- 19) Any planting within 3.0 metres of the western boundary of Lots 45 to 49 is to achieve a height of no more than 2.5 metres.
- 20) Any planting between the road face of the house or other building on the Lot and the road shall achieve a height of no more than 1.5 metres, except for up to 4 specimen trees.
- 21) Any building within the Covenanted Building Areas as shown on the Plan shall be set back at least 8.0 metres from road boundaries and 3.0 metres from other boundaries.
- 22) Any ancillary building that extends forward of the centralline of the house in relation to the adjacent road corridor shall be of the same structure, form, material and colours as the house itself.
- 23) Any tanks on the western boundary of Lots 45-49 shall be buried to achieve a height of no more than 1.2 metres. All water tanks not on Lots 45-49 shall not be higher than 1.5 metres above the ground including risers and shall be screened from view from outside the Lots.
- 24) All private Lots utilised for residential purposes shall have a minimum 25,000 litre on-site water tank for water reuse. Tanks water supply to residential dwelling shall be filtered to a minimum 5 micron level with an inline device.
- 25) New tree planting shall be in accordance with the document called Figure 5: Karanui Management Plan Concept "Karanui Management Plan – 390 Three Mile Bush Road, Kamo" by Evo Holdings Limited held in file SL1400005 at Council.
- 26) The existing mature indigenous trees shown as being retained on document called Figure 15 Open Space Planting and Ecological Plan "Karanui Management Plan – 390 Three Mile Bush Road, Kamo" by Evo Holdings Limited held in file SL1400005 at Council and new planting as shown on Figure 15 may not be removed.
- 27) On Lots 53, 54, 57 and 101 no riparian planting may be removed and any riparian area potentially accessible by stock is to have fencing maintained in accordance with Figure 15 Open Space Planting and Ecological Plan "Karanui Management Plan – 390 Three Mile Bush Road, Kamo" by Evo Holdings Limited held in file SL1400005 at Council.
- 28) At building consent stage each Lot owner shall provide detailed investigations and plans of a wastewater disposal system that will suit the location and scale of their proposed dwelling. Wastewater disposal system must meet the following standards:
 - (a) be Advanced Secondary Treatment Systems,

- (b) be Reticulating Packed Bed Reactor (RPBR) or approved superior treatment system as supplied by the consent holder; and
- (c) be compliant with AS/NZS 1547:2002 and On Site Effluent Treatment National Testing Programme (OSETNTP).

29) The owners of Lots 47, 56, 57, 63 and 69 containing a fire fighting tank as shown in Engineering Design Plans, Sheet 58 'Water Tank Layout for Fire Fighting Purposes with Tank Source Details' dated 08/12/2016 held in file SL1400005 at Council shall maintain the fire fighting tank and associated infrastructure in good working condition. The tank must be kept full at all times and if emptied the tank shall be re-filled as soon as practically possible. For all other Lots served by a tank the location of the fire water supply is identified on the Water Layout for Fire Fighting Purposes plan.

DATED at Whangarei this 10th day of APRIL 2017

SIGNED for 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
Ricardo Giovanni Zucchetto
Post Approval & Development Contributions Officer

Hawthorn Geddes engineers & architects Ltd



In reply please quote: 9266 rev.1

10 December 2013

Evo Holdings
C/o Cato Bolam
PO Box 1919
Whangarei 0140

Attention: Simon Reiher

COPY

GEOTECHNICAL ENGINEERING REPORT FOR PROPOSED SUBDIVISION OF LOT 2 DP 25589 & Lot 2 DP 327650, 390 THREE MILE BUSH ROAD, KAMO

This report supersedes the previous version from 7th November 2013 due to amendments made in the original scheme plan. The information herein is based on the scheme plan provided by Cato Bolam Consultants, reference WH31531, sheets S1 - R5, S2 - R2, S3 - R4 & S4 - R4, dated 14/11/13.

Purpose

The purpose of this report is to present the results of a geotechnical investigation at the above property to provide advice on stability, foundations and on-site effluent disposal. This report is suitable as supporting information for subdivision consent application at Whangarei District Council (WDC).

Proposal

The subdivision site is situated south at 390 Three Mile Bush Road and consists of two large rural lots to be subdivided into 74 rural/ residential lots of between 1,800m² and 3.827ha. The attached Figures 1 – 3 show the proposed layout of the subdivision site as indicated on the scheme plan update.

WDC GIS maps indicate no public sewer network or water supply along Three Mile Bush Road. The new lots will require rain tank water supply and on site effluent treatment and disposal on each lot.

We expect earthworks to create roads, rights-of-way (ROW) and associated drainage will be relatively minor and typically less than 1.5m of cut or fill.

Site Description

The site is located south of Three Mile Bush Road, about 4km west of Kamo. The subdivision site is approximately rectangular shaped with Lot 2 DP 25589 approximately 19.4888ha and Lot 2 DP 327650 about 18.3654ha in size. The subdivision site extends some 1.2km south and 340m from the east to west. Pukenui Forest borders the site to the south.

The site has a gravel road entrance from Three Mile Bush Road leading to an existing dwelling with various sheds. The site is currently used for stock grazing.

Generally the site can be divided into two zones located north and south of a stream. The stream flows through the site from east to west and is some 750m from Three Mile Bush Road.

Topography

In general the site is divided into three zones as following:

- North of stream;
- Stream;
- South of stream adjoining Pukenui Forest.

The land is relatively flat a distance of some 600m from Three Mile Bush Rd apart from a distinctive remnant volcanic vent or scoria cone on Lot 100. Beyond this, the land slopes towards the stream initially at gradients of less than 8° and up to 20° in the southern part of Lot 50 and in some areas of Lot 51.

The paddocks north of the stream are divided by stone walls and have occasional boulders and rocks on the surface.

The lowest part of the site is the stream that flows near or along the boundaries of Lots 35, 36, 49, 50 & 51. A further stream tributary is also along the southern boundary of proposed Lot 52. A small area of wetland and associated with springs is in a gully that has formed approximately along the boundary of proposed Lots 53 and 54 to the south of the stream.

From the stream the land slopes up to a ridge. We assessed these slopes on Lots 57 – 60 including Lot 53 at about 10° – 15° and on Lots 54 – 55 at 8° – 15°. Pukenui Forest borders the southern boundary of the subdivision. From the ridge the land slopes to the east on Lots 70 – 74 at about 10° – 15°.

Surface erosion and minor instability was visible on the banks of the stream. This is very localised and exacerbated by stock.

We also observed exposed soil with frittering and erosion on the steeper slopes at the eastern corner of Lot 53 adjacent to Lots 54 & 57. This is associated with localised surface creep.

Council GIS Maps

Northland Regional Council (NRC) GIS maps define the following zones for the subdivision site:

Table 1 NRC GIS Maps

NRC Map	Item	Subdivision zone		Neighbouring sites
		Area north of stream	Area South of stream	
Environment	Water catchment: Waiarohia & Mangere	Main northland aquifer Waiarohia	No classification	2 groundwater bores on neighbouring properties to west (LOC 205184) & east (LOC 209381)
Hazards	Land Hazards catchment priority	No classification	Approximately Lots 67 to 74: Waiarohia-Raumanga catchment	South and east: Waiarohia-Raumanga catchment
Planning	Water and soil at risk aquifer of Northland	Waiarohia catchment to the north & east of the stream	No classification	Waiarohia catchment east of subdivision site

WDC GIS maps show the following classifications for the site:

Table 2 WDC GIS Maps

WDC Map	Item	Subdivision zone		Neighbouring sites
		Area north of stream	Area South of stream	
Land resources maps		Aquifer	No classification	WDC Reserve and DOC Land (Pukenui Forest)
Hazards	Instability	Low instability except small area on Lots 49 & 50 (medium instability)	Low instability, except small area on Lots 53 & 54 (medium instability)	N/A
	Effluent unsuitability	medium	medium	medium
	Effluent disposal potential	medium	medium	medium

Geological Setting

The Geological Map of Whangarei (Institute of Geological & Nuclear Science Ltd, 1:250,000) describes the northern area as "Basalt lava flows". The area south of the stream is described as Waipapa Group consisting of "massive to thin-bedded, lithic volcaniclastic sandstone and argillite" (Greywacke).

In general our on-site investigation confirms these geological descriptions of the underlying rock types.

Soil Conditions

A total of 39 hand auger boreholes HA1 to HA39 were drilled to depths of up to 2.9m. The borehole locations were surveyed with a hand held GPS device. The approximate locations of the boreholes are shown on Figures 1 – 3. The borehole logs are attached to this report.

The hand augers encountered soil consistent with the weathered products of the above geology.

Area north of the stream

HA1 to HA28 were drilled in the area north of the stream covering Lots 1 – 51 as indicated on Figures 1 and 2 and were dug up to 1.9 m below ground level (bgl). A distinctive topsoil layer was not encountered in these boreholes, except for HA11, HA12 and HA27.

Basalt rocks or hard gravel restricted the depths to which the hand augers could be drilled in this area. The hand augers encountered low to medium plastic, clayey silt was encountered in HA1 to HA28 with basalt/scoria gravels and rocks from approximately 0.6m bgl. Highly plastic clay was encountered from 0.7m to 1.0m bgl in HA23, HA25 and HA26.

Groundwater was encountered in HA24 at 0.9m, HA25 at 0.65m and HA26 at 1.8m bgl. We have also observed groundwater seepage adjacent to the stream. This is typical at the interface of the more permeable volcanic soils over the less permeable greywacke soil.

Shear vane tests were performed in the boreholes at nominal 0.5m intervals and the results are noted on the borehole logs. Typically all shear vane strengths were over 150kPa. Five boreholes had a single test result of less than 145kPa as shown in the table below.

Table 3 Shear Vane Results less than 145kPa – North of Stream

Borehole	Location	Depth of borehole (m)	Lowest shear strength in borehole (kPa) measured @ (m) depth
HA 15	Lot 30	1.9	90 @ 1.3m
HA 22	Lot 50	0.85	65 @ 1.3m
HA 23	Lot 32 & 33	1.5	120 @ 1.5m
HA 25	Lot 34	1.4	80 @ 0.9m – groundwater @ 0.65m
HA 26	Lot 51	1.8	60 @ 1.5m – groundwater @ 1.8m

Area south of the wetland

HA29 to HA39 are located south of the stream as indicated on Figure 3 and were dug up to 2.9m bgl. Topsoil was generally encountered in all these boreholes up to maximum 0.35m bgl, except for in HA39 on Lot 52 which had no topsoil. These boreholes had no obstructions such as rocks or gravel. Highly plastic clay and silt was encountered in HA29 to HA39. Soils were typically mottled yellow, orange/brown and light grey or white with occasional weathered rock/gravel fragments typical for Greywacke. Groundwater was not measured in boreholes HA29 to HA39.

Shear vane tests were performed in the boreholes at nominal 0.5m intervals and the results are noted on the attached borehole logs. Most of the measured shear vane strengths were over 100kPa indicating very stiff to hard soil properties. Isolated, lower shear strengths were measured in boreholes HA29, HA32 – HA34, HA36 and HA39 at between 75kPa – 100kPa. The summary table below lists the shear strengths measured south of the stream less than 90kPa.

Table 4 Shear Vane Results less than 90kPa – South of Stream

Borehole	Location	Bottom of borehole in m	Lowest shear strength in borehole (kPa) measured @ (m) depth
HA 33	Lot 58	2.9	70 @ 0.9m
HA 34	Lot 53	2.8	80 @ 2.5m
HA 36	Lot 67	1.9	75 @ 1.9m

Stability Assessment

We visually assessed the stability of the subdivision site. The area north of Lots 43 & 48 including Lot 52 is essentially flat with minor localised depressions and a prominent volcanic vent/ cone on Lot 100. South of Lots 43 and Lot 48, the land slopes towards the stream/ wetland area at about less than 10°, up to 14° on Lot 51, and up to 20° on the southern part of Lot 50.

Surface erosion is visible on the exposed, steeper banks of the stream. This does not affect stability of any building site shown on the attached plan.

There was no recent ground movement/slip visible in the area north of the stream and we assess the slopes as stable. This is consistent with low stability hazard on WDC hazard maps for this area.

The area south of the stream rises towards the southern ridge at slopes assessed at less than 16°. We assessed the slopes to the south of the ridge on Lots 61 – 70 at below 10°. Lots 71 – 74 are located along the ridge with east facing slopes of less than 14°.

The geology south of the stream is typical of greywacke derived soil which are typically stable at slopes of less than 3H:1V (18°). This is consistent with our observations of no observed instability affecting this area.

We observed the surface of exposed soils at the head of the gully between Lot 53 and Lot 57. Minor surface creep was observed in this localised area of steeper slopes. The observed erosion and frittering has been exacerbated by stock.

Apart from the localised area of surface creep we consider that the existing slopes south of the stream have adequate stability for the proposed subdivision.

We recommend no building on slopes steeper than 15° across the entire subdivision or the area affected by surface creep and erosion south of the stream. Based on our observations this will limit building on Lots 49 & 50 north of the stream as well as Lots 53, 54 and 57 south of the stream.

To construct roads and building platforms south of the wetland (Lots 53 – 74), earthworks of 1m – 2m will be required. We recommend that excavations be limited to no more than 2m and fill no more than 1.5m without specific engineering assessment. Fill shall not be placed on slopes steeper than 10°. Cut and fill batters should be formed at no steeper than 3H:1V (18°) without further engineering assessment.

On-site Effluent Disposal

For the proposed on-site effluent disposal on the subdivision site we have undertaken an assessment based on the permitted activity rules of the Regional Water and Soil Plan (RWSP) for Northland and in accordance with the Australian/New Zealand Standard – On-site domestic wastewater management (AS/NZS 1547: 2012).

Generally the potential effect of discharging effluent includes increased nutrient levels and pollution with faecal associated bacteria and viruses of the downstream waterways and aquifers.

The effects can be mitigated by providing a suitable level of treatment and discharge of the effluent with adequate groundwater clearances and separation distances from surface water including stormwater drains of the roads and right of ways (ROWS). It is also proposed to treat all effluent using secondary treatment systems and dispose via surface covered Pressure Compensated Dripper Irrigation (PCDI).

There are no groundwater bore on the subdivision site. Logs from groundwater bore on neighbouring sites indicate the groundwater level at greater than 5m bgl. We consider secondary treated effluent discharged to the surface will have less than minor affect on the aquifer.

It is also noted that adequately treated domestic effluent discharged to ground has less effect of downstream waterways than the current land use of stock grazing.

Soil Assessment Clause as per AS/NZS 1547: 2012

Area north of the stream

The boreholes HA1 – 28 and HA39 encountered imperfectly drained soil or category 4 – high/moderate structured clay loam – as described in AS/NZS 1547:2012. Groundwater is likely to be at least 5m bgl, apart from the eastern area on Lot 51 and Lots 34 - 36. In these areas groundwater was measured at 0.65 – 1.8m bgl in HA24 – 26.

We have identified areas unsuitable for effluent disposal on slopes assessed at greater than 10° and in within 15m of the stream. There are also some shallow depressions that may be prone to surface ponding on Lots 34 – 36 and Lot 51. Areas unsuitable for effluent disposal are shown on Figures 1 – 3.

Area south of the stream

Boreholes HA29 to HA38 encountered imperfectly drained soil as per category 5 – moderately structured clay loam – as described in AS/NZS 1547:2012. Groundwater was not encountered in the boreholes in this area and is likely to be below 5m bgl near the ridge.

We have identified the areas unsuitable suitable for effluent disposal bordering the steeper stream banks and steeper slopes on Lots 54, 57 & 58 and adjacent Pukenui Forrest.

Effluent Disposal Field

For both areas north and south of the wetland we have sized the field for effluent disposal based on the proposed secondary treatment and subsurface dripper irrigation. The main difference is in the Design Irrigation Rate (DIR) of 3.5mm/day for the area north and 3 mm/day for the area south of the stream. These rates are considered acceptable for these soil types and slope angles.

A summary of the disposal field sized in accordance with AS/NZS 1547:2012 is presented below:

Table 5 Summary of Disposal Field Sizing

3 bedrooms	5 people	
Roof water tank supply	180 litres/person/day	
Maximum theoretical volume of effluent	5 x 180 = 900 litres/day	
	South of stream	North of stream
Design irrigation rate	3 mm/day	3.5 mm/day
Irrigation area required	$900 \div 3 = 300\text{m}^2$	$900 \div 3.5 = 258\text{m}^2$
30% Reserve area required	100m^2	77m^2
Total effluent area	400m^2	335m^2

The indicative effluent disposal area has been sized based on a 3-bedroom home with roof collected tank water and upmarket fixtures producing some 900 litres of effluent per day, based on AS/NZS 1547:2012 design flows. The attached plans show that disposal fields can be situated on each lot considering adequate separation distances to surface water, road drains and areas marked unsuitable for effluent disposal as shown in Figures 1 – 3.

The WDC wastewater disposal investigation/site evaluation checklist, form EES-SEW1, is attached to this report.

The table below sets out the requirements of the NRC "Regional Water and Soil Plan" (RWSP) permitted activity rules for secondary treated effluent and shows how these rules can be complied with.

Table 6 RWSP Section 15 Permitted Activity Rules

RWSP Permitted Activity Requirement	Means of Compliance
Separation between the lowest point of the disposal system and groundwater >0.6m	Groundwater expected to be greater than 5m over most areas. Localised area with measured groundwater between 0.65m and 1.8m.
Minimum treatment levels for secondary treated effluent: $BOD_5 \geq 30 \text{ g/m}^3$ (Biochemical Oxygen Demand); $TSS \leq 45 \text{ g/m}^3$ (Total Suspended Solids)	Recommended treatment levels in accordance with rules.
15m separation between disposal area (including reserve) and groundwater bores.	No groundwater bores on site.
15m separation between the disposal and reserve area and any surface water.	15m separation to ROW roadside swales and stream shown on plan.
Distribution of the effluent.	Recommend surface covered PCDI for even distribution and to prevent clogging.
Design of the system in accordance with principles and procedures outlined in AS/NZS 1547:2012 'On-Site Domestic Wastewater Management'.	Typical disposal field including reserve area shown on plan. Building Consent to be based on specific design.
No surface runoff of any contaminants from the disposal area.	Mitigation measures referred to above to reduce contaminant loading and increase soil treatment/ plant uptake.
No more than minor contamination of ground or surface water beyond the disposal system or boundary.	Mitigation measures referred to above to reduce contaminant loading and increase soil treatment/ plant uptake.
The average volume of effluent discharged < 3m ³ /day.	Preliminary design suggests typical single house will have peak flow of around 0.9 m ³ /day.
The maximum volume of effluent discharge < 6m ³ /day.	Preliminary design suggests typical single house will have peak flow of around 0.9 m ³ /day.
A reserve area is allowed for and set aside.	Included in disposal area shown attached plan.
Maintenance of the treatment and disposal system.	Building Consent should include a maintenance agreement for treatment and disposal system.

Job No: 9266

Date: 10.11.2013

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Conclusions and Recommendations

Stability for House Sites

We observed minor creep related instability on steeper slopes at the head of a gully to the south of the wetland at the southern spring/ stream. We recommend no building on slopes steeper than 15°. We have also identified an area on the attached site plan that is not suitable for building due to observed surface creep.

The areas with slopes steeper than 15° or otherwise considered not suitable for building are limited to:

- The volcanic cone on Lot 100,
- Slopes steeper than 15° above the stream along the southern boundaries of Lots 49 & 50, and
- The slopes around a gully with surface creep observed near the boundaries of Lots 54, 55, 57 & 58 shown on the attached plan.

Some earthworks will be required to form access roads and house platforms. We recommend that excavations be limited to no more than 2m and fill no more than 1.5m without specific engineering assessment. Fill shall not be placed on slopes steeper than 10°. Cut and fill batters should be formed at no steeper than 3H:1V (18°) without further engineering assessment.

Soils on this site will be erosive. Roadside swales with vegetation (grass) will be adequate where stormwater velocities are less than 1m/s for events up to the 10% Annual Exceedance Probability (AEP). Where velocities exceed this value additional erosion controls will be required to limit velocities such as check dams. Alternatively swales can be rock lined to reduce erosion.

Subject to recommendations and restrictions outlined above, it is our opinion in terms of Sections 106 of the Resource Management Act that:

- (a) The land in respect of which a consent is sought, or any structure on the land, is not and is not likely to be subject to material damage by erosion, falling debris, subsidence, or slippage from any source; and
- (b) Any subsequent use that is likely to be made of the land is not likely to accelerate, worsen, or result in material damage to the land, other land, or structure by erosion, falling debris, subsidence, or slippage from any source.

Foundations

We consider the soils encountered in the boreholes comply with "good ground" in accordance with NZS 3604:2011, except that the soil is subject to shrink/swell movement (expansive soils).

The measured soil strengths indicate that the soil has sufficient bearing capacity for foundations sized in accordance with NZ 3604:2011.

We recommend that conventional concrete floor slab sized to NZS 3604 have perimeter footings embedded at least 450mm below cleared ground in the volcanic soils to the north of the stream (Lots 1 – 52) to reduce potential shrink swell movement. The area to the south of the stream with greywacke derived soils (Lots 53 – 74) shall have footings embedded at least 600mm below cleared ground.

On-Site Effluent Disposal

The following is a summary of the design requirements for Building Consent for on-site effluent disposal. Subject to these requirements being satisfied, we consider that the effects of on-site disposal from the proposed subdivision will not be discernible downstream of the site.

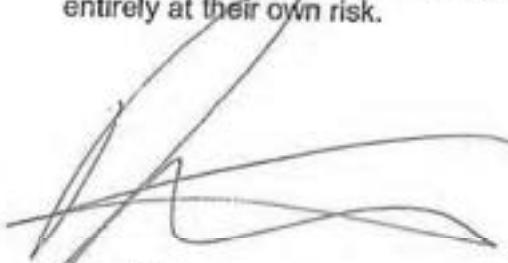
- Disposal shall be surface covered pressure compensated dripper irrigation following secondary treatment to the levels prescribed in AS/NZS 1547.
- Specific design shall be at building consent and be based on AS/NZS 1547 Category 4 soil for the area north of the stream (Lots 1 – 52).
- Specific design shall be at building consent and be based on AS/NZS 1547 Category 5 soil for the area south of the stream (Lots 54 – 74).
- Disposal fields shall be located entirely within the suitable effluent disposal area shown on the attached plan.

We conclude that subject to our recommendations there is sufficient land available for on-site effluent treatment and disposal on each proposed lot and that the land is suitable for the proposed subdivision.

Limitation

Recommendations and opinions in this report are based on data from the investigation described herein. The nature and continuity of subsoil conditions away from the boreholes is inferred and it is possible that actual conditions could vary from those assumed. Should subsoil conditions vary from those described in this report, it is essential that Hawthorn Geddes engineers and architects Ltd be contacted to confirm the applicability of the recommendations.

This report has been prepared solely for the benefit of our client Evo Holdings and the Whangarei District Council in relation to the subdivision consent application for which this report has been prepared. The comments in it are limited to the purpose stated in this report. No liability is accepted by Hawthorn Geddes engineers & architects Ltd in respect of its use by any other person, and any other person who relies upon any matter contained in this report does so entirely at their own risk.



Dean Botica
Hawthorn Geddes
engineers & architects Ltd

Report prepared by: Robert Hensel

Encl.:

- Figures 1-3: Hand auger locations on proposed sections (3 pages x A3)
- Borehole logs HA 1 - HA 39 (39 pages x A4)
- WDC form EES-SEW1 (5 pages x A4)



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CLIENT: EVO HOLDINGS LTD
PROJECT: PROPOSED SUBDIVISION
DRAWING: 390 THREE MILE BUSH ROAD, KAMO
HAND AUGER LOCATIONS

PROJECT No. 9266

FIG 02

WHANGAREI DISTRICT COUNCIL

Forum North • Private Bag 9023 • Whangarei 0148 • New Zealand
Telephone (09) 430 4200 • 0800 WDC INFO • Facsimile (09) 438 7632
Website <http://www.wdc.govt.nz> • mailroom@wdc.govt.nz

Form EES-SEW1 REV1

On-Site Wastewater Disposal Investigation/Site Evaluation Checklist for Resource Consent Application

This form is to be read in conjunction with AS/NZS 1547:2000 (or any amendments as applicable), and, in particular with Part 4: Means of Compliance

PART A – Contact Details

1 Applicant

Name: Evo Holdings.....

Property Address: 390 Three Mile Bush Road, Kamo.....

Lot/DP Number: Lot 2 DP 25589 & Lot 2 DP 327650.....

2 Consultant/Site Evaluator

Site Evaluator Name: Robert Hensel.....

Company Name: Hawthorn Geddes engineers and architects Ltd.....

Postal Address: PO BOX 575, Whangarei 0140.....

Business Phone: 438 7139..... Fax:

Mobile: Email: rh@hgcs.co.nz.....

IQP Registered²⁵ (see note below):

Yes No (If no, details of suitably registered IQP who will countersign the report are to be supplied below)

Name of IQP who is countersigning report: Dean Botica

Company Name: Hawthorn Geddes engineers and architects Ltd.....

Postal Address: PO BOX 575, Whangarei 0140

Business Phone: 438 7139....., Fax:

Mobile: Email: db@hgcs.co.nz.....

²⁵ It is a requirement that the Evaluator be IQP registered to carry out on-site effluent investigations/designs. If not, then evaluation/design will need to be countersigned by a suitably registered IQP.

PART B – Site and Soil Evaluation

1 Desk Study

Requirements (tick appropriate box)

Please complete **all** options (if more than one option applies to land under consideration, please clarify with supporting information).

WDC Requirement	Applies to Lot(s)	Comments
1 Hazard maps/GIS hazard layer – stability		
Low instability risk	All Lots	Except Lots 54, 50 & 53
Medium instability risk	Lots 50, 53	
High instability risk		
2 GIS hazard layer – effluent on slope stability		
Low disposal potential		
Moderate disposal potential	All Lots	
High disposal potential		
3 GIS hazard layer – effluent suitability		
Medium unsuitability	All Lots	
High unsuitability		
4 GIS hazard layer – flood susceptibility		
Is flood susceptible		
Is partially flood susceptible		
Is not flood susceptible	All Lots	
5 GIS land resource layer – streams		
Are there streams on or adjacent to land under investigation?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Lots 35, 36, 43, 50 – 55
6 GIS land resources layer – aquifers at risk		
Is land situated over or adjacent to aquifer?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Over Lots 1 – 51
7 annual rainfall (HIRDS)	1,500mm	

Important Note

It is to be noted that **all** information obtained off WDC GIS/Hazard Maps is to be taken as a guide **only**.

All information obtained from the above sites is to be confirmed by a specific site investigation as localised conditions could vary substantially. However, should the above data checks indicate the potential for a hazard/non-complying activity etc, this **must** be further investigated to confirm/deny the indicated situation.

2 Consultant/Site Evaluator

a) Determination of Soil Category (refer table 4.1.1 AS/NZS 1547:2000) (tick appropriate box)

Soil Category	Structure	Applies to Lot(s)	Comments
1 Gravels & Sands	Structureless (massive)		
2 Sandy Loams	Weakly Structured		
	Massive		
3 Loams	High/Moderate Structured		
	Weakly Structured or Massive		
4 Clay Loams	High/Moderate Structured	Lots 1 – 51	
	Weakly Structured		
	Massive		
5 Light Clays	Strongly Structured		
	Moderately Structured	Lots 52 – 74	
	Weakly Structured or Massive		
6 Medium to heavy clays	Strongly Structured		
	Moderately Structured		
	Weakly Structured or Massive		

Notes

Refer 4.1.A4 – Soil Assessment AS/NZS 1547:2000 for assessment criteria.

Details of the method used to determine soil type etc are to be clearly stated, along with positions of boreholes/test pits etc clearly marked on a site plan. Borelogs are to be provided. Photos should be included.

The site plan also clearly show the intended area for effluent disposal, along with any site features such as drains, water bores, overland flows etc, along with separation distance achieved.

On-Site Evaluation Continued

b) **Site Characteristics for Proposed Disposal Area:** (if there is a marked difference between sites, please fill in a separate form for each site and clearly note which site the assessment applies to) (tick appropriate box)

Details	Applies to site(s)
1 Flooding potential to proposed field and reserve field	
Fields will not flood, or	All Lots
Fields will flood in:	
20% AEP event	
5% AEP event	
1% AEP event	

2 Surface water separation to proposed field and reserve field

Main/reserve disposal field comply with NRC rules	All Lots
Main/reserve disposal field do NOT comply with NRC rules	

3 Winter groundwater separation to proposed field and reserve field

Main/reserve disposal field comply with NRC rules	All Lots
Main/reserve disposal field do NOT comply with NRC rules	

4 Slope of ground of proposed field and reserve field

Description

5 Shape of ground of proposed field and reserve field

<input type="checkbox"/> Waxing divergent	<input type="checkbox"/> Linear divergent	<input type="checkbox"/> Waning divergent
<input type="checkbox"/> Waxing planar	<input type="checkbox"/> Linear planar	<input type="checkbox"/> Waning planar
<input checked="" type="checkbox"/> Waxing convergent	<input type="checkbox"/> Linear convergent	<input type="checkbox"/> Waning convergent

Comments:

.....

.....

6 Intended water supply source	Applies to site(s)
Public supply	
Rainwater	All Lots
Bore	

7 Proposed method of disposal and recommended Daily Loading Rate (DLR)

Description: Subsurface dripper irrigation.....

DLR = 3mm/day for Lots 1 – 51

DLR = 3.5mm/day for Lots 52 – 74.....

Peak Loading factored in? Yes No

Comments:

.....

.....

8 Site Exposure	Description	Applies to Site(s)
Site(s) aspect		
Predominant wind direction	East and west	All Lots
Presence of shelter belts	Pukenui Forest	Lots 61 – 68
Presence of topographical features or structures	N/A	All Lots

9 Proximity of water bores (include adjacent properties)

Approximately 50m to east and west of subdivision boundaries

10 Visible evidence of slip/instability

Lot 53 at spring/stream, refer to report

11 Total suitable area available for type of effluent disposal proposed

Sufficient areas on all lots to suit 336m² or 400m² effluent fields

12 Setback areas proposed (if any)

15m from stream as on plans attached to the report.

Notes

- 1 If the WDC hazard maps/GIS indicate a flooding susceptibility on the site being evaluated, an on-site evaluation is to be carried out to determine the effects from 20%, 5% and 1% AEP storm events. This evaluation is to include all calculations to substantiate conclusions drawn. If necessary, include a detailed contour plan and photos.
- 2 NRC Water and Soil plan defines surface water as 'All water, flowing or not, above the ground. It includes water in continually or intermittently flowing rivers, artificial watercourses, lakes and wetlands, and water impounded by structures such as dams or weirs but does not include water while in pipes, tanks, cisterns, nor water within the Coastal Marine area'. By this definition, separation (complying with NRC rules) is to be maintained by both the proposed disposal and reserve areas from any overland flow paths and/or swale drains etc or Resource Consent will be required from NRC. Surface water is to be clearly marked on each site plan, showing the extent of a 1% AEP storm event, and detailing separation distances to main/reserve disposal areas.
- 3 Positions of the test borehole(s) to be shown, and borelogs to be provided. Separation (complying with NRC rules) is to be maintained by both the proposed disposal and reserve areas from winter groundwater levels or Resource Consent will be required from NRC. If the investigation is done outside of the winter period, allowance is to be made in determining the likely winter level.
- 4 Slopes of ground are to be compared with those recommended maximums for type of system proposed (refer Appendix 4.2B AS/NZS 1547:2000). Designs exceeding those maximums will require specific design to justify the proposal, and may also need Resource Consent from NRC.
- 5 Shape of ground is important as it will determine whether there is potential for concentrated overland flows from the upper slopes and also if effluent might be concentrated at base of slope of leaching occurs. Refer Figure 4.1B2 AS/NZS 1547:2000.
- 6 The proposed system (for residential developments) should be sized to accommodate an average three-bedroom house with five people. Site in holiday areas need to take peak loading into effect in determining daily volumes. The design must state what DLR was used to determine area necessary (including reserve area). If ground conditions are marginal for type of disposal proposed, then a soil permeability test utilising the constant head method is to be carried out across the proposed disposal area. Refer Appendix 4.1F AS/NZS 1547:2000.
- 7 The site aspect is important as a north-facing site that is not sheltered from wind and sun by shelterbelts or other topographical features or structures will perform far better than a south-facing site on the lee of a hill that is shaded from wind and sun etc.
- 8 If any effluent disposal area (including reserve area) proposed has or is adjacent to areas that show signs of instability, then a full report from CPEng (Geotech) will be required to justify the viability of the area for effluent disposal.
- 9 If there are any water bores on the subject property or adjacent properties then a site plan will be required showing bore positions in relation to any proposed effluent field(s).
- 10 If setback areas are proposed to mitigate effects, the extent and position(s) need to be shown on a site plan.

KARANUI MANAGEMENT PLAN

390 THREE MILE BUSH ROAD KAMO



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ALSO AVAILABLE FROM THE DEVELOPER:

Karanui Site Development Design Guide (Evo Holdings / Littoralis / Cato Bolam 2014)

Karanui Landscape and Visual Assessment (Littoralis 2014)

Karanui Geotechnical Report (Hawthorn Geddes 2013)

Karanui Traffic Report (Engineering Outcomes 2014)

Karanui Ecological Management Report (Cato Bolam 2014)

Cultural Impact Report (Te Kahu O Torongare Hapu– Ngararaturuua
Marae Trust 2013)

New Zealand Historic Places Trust Authority (31 January 2014)

Whangarei District Council Resource Consent for Karanui (date)

PURPOSE OF THE KARANUI MANAGEMENT PLAN

“Karanui” is a name derived from the local geology and landscape of the area, “kara” meaning basalt rock and “nui” meaning many rocks.

The Karanui development creates 75 lots for housing purposes and balance lots, over a site area of 37.89ha. The development is being undertaken under the Urban Transition Environment (UTE) provisions of the Whangarei District Plan.

The Karanui Management Plan outlines the concept behind the Karanui development and the obligations of owners within the development. The Management Plan is intended to be a “user-friendly” explanation of the basis on which Karanui was established, how the development is intended to develop and what conditions and covenants apply, both generally for the development as a whole and for individual landowners. The Management Plan is also a guide for the developing Karanui community to support a common vision for their neighbourhood, thereby supporting and strengthening the amenities and qualities of the place in which they have chosen to live.

The responsibility for the implementation of the Management Plan falls on the Karanui “Developer” (Evo Holdings Limited) initially and then to the individual property owners of the subdivision. These obligations are detailed from Page 14 under the heading “Management Elements”.

The Karanui Management Plan complements Whangarei District Council and Northland Regional Council resource consents and private covenants that apply at Karanui. It is not intended as a replacement for the legal obligations imposed by those resource consents and private covenants, which apply as a priority over any interpretation that may be implied under this Management Plan.

This Management Plan will guide subdivision and development and later ongoing management of Karanui in a flexible manner while ensuring an integrated approach to the sustainable management of the site’s attractive natural and physical resources, and a good level of certainty to future purchasers and developers of individual sites. The purpose of the Karanui Management Plan is therefore:-

- to provide for the use and enjoyment of Karanui for owners, their families and guests;
- to provide a basis for the development and rules which will give effect to the purposes and provisions of the Management Plan;
- to ensure buildings, structures and site are sympathetic to the landscape and character of the property as a whole;
- to provide for the restoration of native vegetation areas and to ensure the ongoing maintenance of those areas;

- to support local ecology through a regime for controlling plant pests, animal pests and predators;
- to provide for vehicle, pedestrian and flora and fauna linkages to the boundaries of Karanui, in a way that will provide for and integrate with future development of land to both the east and west; and
- to promote low impact design measures in order to reduce the adverse effects of stormwater runoff and wastewater disposal.

To achieve these aims, this Karanui Management Plan contains the following parts:-

1. The Management Plan provides a context by describing the history of the site, the Karanui development concept and the approvals given by the Whangarei District Council.
2. The intended subdivision layout and intended staging is illustrated on the Karanui Staging Plan.
3. The way in which Karanui is to be developed is identified on the Karanui Management Plan.
4. The natural and historic features to be protected are shown on the Karanui Features Plan.
5. The obligations on the Karanui Developer are outlined.
6. The obligations on purchasers of sites within the Karanui development are outlined.

There are a number of background reports referred to in this Management Plan. These, and larger copies of the plans, are available from Evo Holdings Limited and are also held on Whangarei District Council files.

KARANUI SUBDIVISION PLAN

The Karanui Subdivision (Scheme and Staging) Plan is shown in Figure 1. The development is further explained throughout this Karanui Management Plan.



Figure 1: Karanui Subdivision Plan

HISTORY OF THE KARANUI SITE AND LOCALITY

The history of the Karanui site and surrounding area has been reported on by Geometria Ltd in a report dated 5 November 2013. The following is summarised from that report.

Kamo was historically a centre of intensive Maori gardening based on utilisation of the rich volcanic soils of this area. The area around Karanui was used for kumara cultivation. The early Maori horticultural landscape of this area would likely have consisted of an elaborate mesh of low stone alignments marking out garden plots, paths providing access through the gardens, gardened mounds of stone and soil, and clearance mounds, along with undefended kainga and pa.

The Karanui land remained in the hands of its traditional Maori owners until the late 1860's after which the first European owners purchased the land. Henry Mclean and Neil Mclean purchased the land and had established the first stone wall on the northern road boundary and the northern part of the western boundary, by 1883, and extending 150m south along the western boundary by 1892. Records around this time identified the volcanic soil on the property, the line and name of the Mangere Stream running through the centre of the land, the line of the old dray road between Whangarei and the Bay of Islands on the boundary of the land and stone walls in the northern part of the land. A survey mark, "Woolleys Connecting Point" was shown on the knoll in the centre of the Karanui site. This knoll would have been a likely location for settlement or camping, and there are two more level areas which could be possible living terraces on the northern and eastern slopes. The knoll provides good views and is close to the stream and is a likely spot to set up camp on. An 1870s survey plan shows the bushline diving south and skirting around the south side of the knoll before heading off to the north east i.e. the knoll and the land between it and what would become Three Mile Bush Road was cleared prior to European ownership.

While there are remnants of 19th century walls still on the land it appears that most of the current stone walls were built as part of Depression-era work schemes - many local Maori and Dalmatians worked on these walls through the 1930's up to the period after World War II.

The stone walls remain as a major feature of the Karanui site. The total length of stone walls within the development is over 3.5km- this is more than 10% of the Three Mile Bush area's walls. The walls have generally been maintained excellent condition. They consist of a core of small hearting stones sandwiched between larger facing stones on the outside, with larger foundation stones at the bottom, and smaller stones nearer the top. Through stones are placed strategically to run between the two sides of the wall to tie the sides together and the top of the wall is capped with coping or capping stones. The ends of walls and sides of gateways, and corners of walls are faced with quoins or dressed corner stones.

In addition to the stone walls there is a rock heap known as a "consumption platform" located centrally within Karanui where stones have been carefully formed into a curving retaining wall that supports a flat bench above. This feature is more fully described in the archaeological report.

Elsewhere on the site small collections of rocks form a lasting reference to the clearance of the paddocks.

Archaeological and Historic features found on and around Karanui are shown on Figure 2.

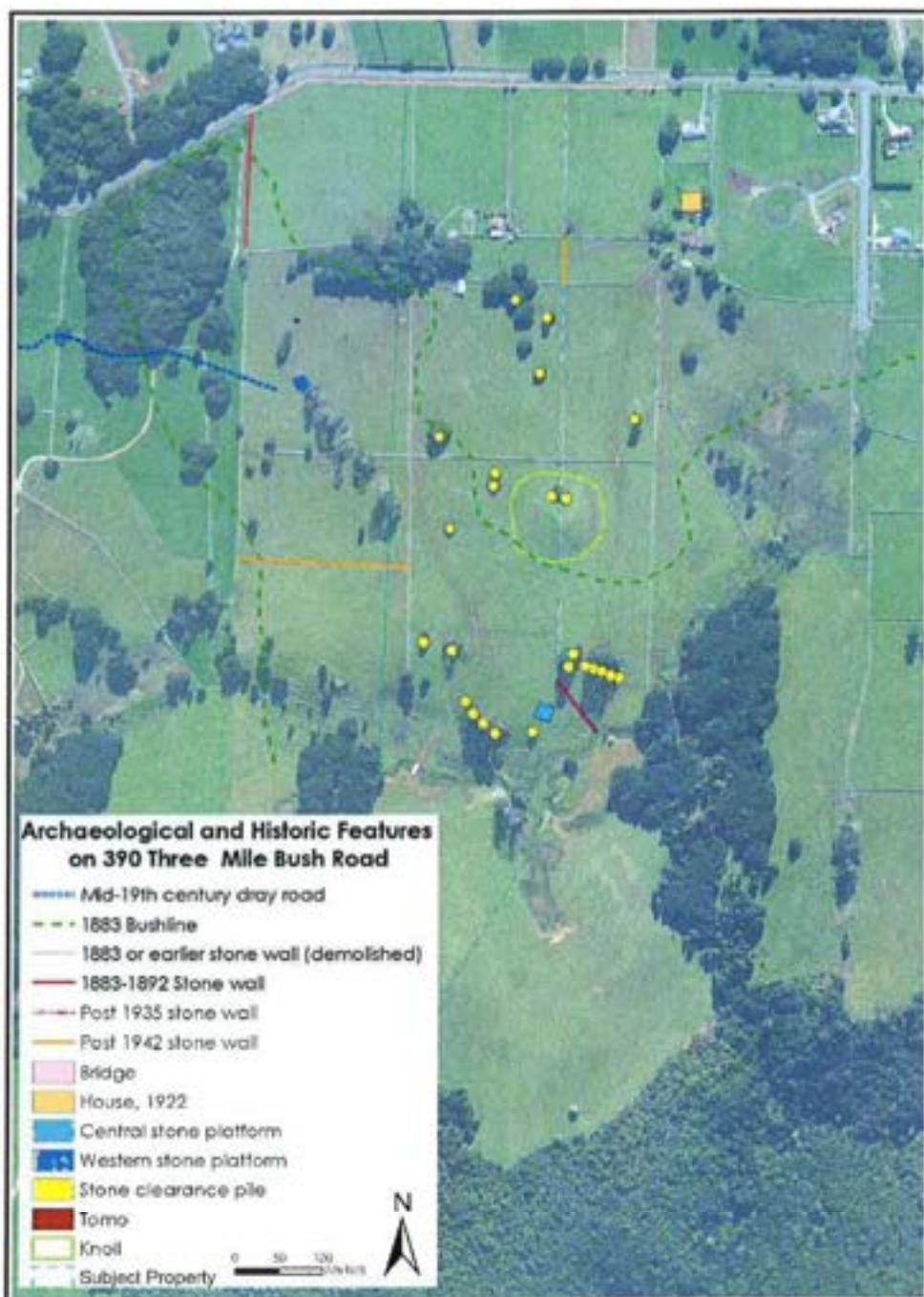


Figure 2: Archaeological and Historic features at 390 Three Mile Bush Road (from Geometria Ltd report dated 5 November 2013)

NATURAL AND PHYSICAL FEATURES

The physical character of the wider area within which Karanui sits, generally that area between Dip Road and approximately 500m to the east of Gum Town Road, strongly reflects the influence of the historic eruptions of the nearby scoria cones and a smaller, related peak that lies just to the west of Rotamate Road. The nearby Hurupaki and Ngararatanua volcanic cones serve as a pair of landmarks that are a reminder of the volcanic processes that have been so influential in the area's natural history. Those historic natural events have resulted in a moderately thick layer of well-drained volcanic soil and an abundance of small, dispersed rocks. Generally the terrain around Three Mile Bush Road is low and rolling, with pockets – including parts of the Karanui site – being almost flat.

Groves of indigenous hardwood species, predominantly taraire with scattered puriri (*Vitex lucens*) and totara, are also a feature of the wider area. These copses and scattered specimens are typically between 50 and 100 years of age, with a height in the order of 10-20m. They provide a picturesque quality to the rural landscape and a contrast to the more linear format of stone walls, fences, hedges and horticultural shelter belts that are other common features of the area. Domestic amenity plantings are also rapidly increasing throughout the more settled parts of the area.

Lying along the southern margins of the Three Mile Bush belt, Pukenui Forest is a large block of elevated and bush-clad terrain that serves as a defining backdrop to the area.

On the Karanui site itself, the land sits upon a wider expanse of flat to very gently undulating land that has resulted from volcanic activity, with approximately two-thirds of the northern part of the site being basically flat. This is an area underlain by basalt lava flows. An exception to the flat land here is the small volcanic knoll in the midst of Karanui that rises to around 15m above the adjacent terrain. Towards the rear of Karanui the land descends to a small stream that skirts the toe of the underlying hard volcanic rock. On the southern side of the stream and its associated wetland the land then rises steadily to the edge of the Pukenui Forest. The area south of the stream is described as Waipapa Group greywacke.

Soils on Karanui are consistent with the weathered products of the underlying geology. There is generally a shallow topsoil layer over the rock or degraded parent materials below.

Most of the property is in pasture, with scattered pine trees and mature native trees including puriri, totara, nikau, and mamaku. Aside from this, there are three areas of podocarp-broadleaf forest, dominated by taraire. These are shown on Figure 3 below. While there is limited understory vegetation, the tree canopy in these areas is relatively intact and supports a variety of native bird life including tui and wood pigeon. The quality of the southern forest area is generally higher than the other two areas due to its proximity to the Pukenui Forest.

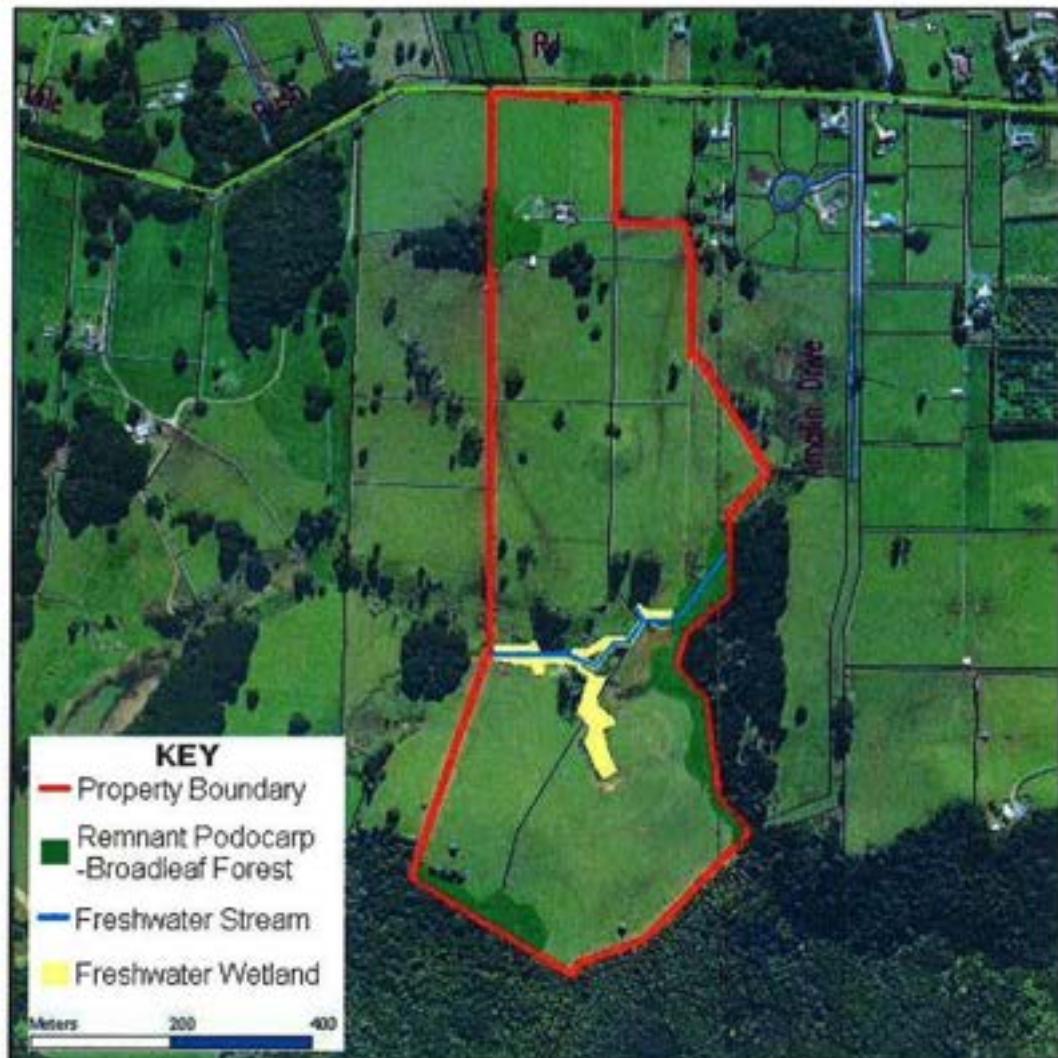


Figure 3: Ecological characteristics of Karanui

The stream in the southern part of Karanui runs from the area of remnant forest in the east, across the property, and continues down into the circle-shaped area of remnant forest on the neighbouring property to the west. The stream is predominantly soft-bottomed and varies in width from approximately 0.5m to 2m wide. The stream contains running water all year round but is quite shallow aside from the pool present in the east below a small waterfall.

Species identified as being present in the adjacent Pukenui Forest include banded kokopu, common bully, long-finned eel, Cran's bulley, freshwater crayfish (koura) and freshwater limpet. Depending on the presence of barriers to fish passage downstream, there is the potential for some or all of these species to be present on Karanui, particularly in the forested sections of the stream which is more favourable habitat for these species.

Several areas of continuous freshwater wetland surround the stream along the valley running from east to west. In its current state this can be described as a channel wetland dominated by exotic

rushes. Very few native species have been identified here, although there are a few small patches of spike sedge on the western side of the wetland.

Karanui is ideally placed to attract a wide variety of bird species from the neighbouring Pukenui Forest. Habitat likely to attract bird species includes remnant forest and wetland areas. Exotic bird species noted on site include greenfinch, blackbird, myna, and skylark. Native bird species include tui, pukeko, wood pigeon, silvereye, grey warbler, and paradise shelduck.

Weed species present include inkweed and kikuyu in the remnant forest, and blackberry and kikuyu in the wetland area, however none are present in significant quantities. In terms of pest animals, no evidence of large herbivores has been found, however presence of smaller animals such as possums, mustelids and rats is highly likely. This presence is potentially limiting colonisation of native birds to the property from Pukenui Forest.

SERVICES

Karanui is accessed from Kamo along Three Mile Bush Road. Kamo has a range of shopping, recreation and community services. Further afield, Whangarei has a wider range of services.

There is no public sewer network or water supply along Three Mile Bush Road. Power and telephone services are available and rubbish collection and postal services are also provided to the area.

THE KARANUI DEVELOPMENT CONCEPT

The Karanui development has been designed to be consistent with the zoning of the land which is "Urban Transition Environment" or "UTE". The intention of the Whangarei District Council when introducing the UTE was to provide for people who wish to live in close proximity to urban areas and associated amenities, but who preferred to live in areas that have a rural outlook, ambiance and amenity on a section large enough to achieve a high degree of privacy without being a maintenance burden. The Urban Transition Environment is in essence a residential zone with a rural outlook. It is not the intention, nor should it be the perception that this will be a transition to a 'future urban zone'.

The UTE's are situated on the fringes between (urban) Living and (rural) Countryside Environments where there has traditionally been a demand for this type of lifestyle. In addition to providing a rural outlook for the residential enclaves, the uninhabited areas are preserved for their recreational or conservation potential. Some of these areas contain high quality soils, so the protection of these areas for their food producing potential by avoiding fragmentation and overcapitalization of the land is also expected.

The UTE in the area of Karanui is shown on Figure 4 below (Karanui is marked with a red boundary).



Figure 4: Zoning

The UTE is based on the following Objectives:

1. Opportunities are provided for people to live in close proximity to urban areas and associated amenities, in a manner that safeguards rural character and ecological and productive values.
2. Building sites are grouped together to maximise the extent of openness and rural outlook between clusters, and are sensitively located to achieve the maximum available privacy.
3. Allotment sizes are no larger than necessary to provide sufficient area for dwellings, accessory buildings and curtilage.
4. The uninhabited spaces between residential clusters are retained indefinitely, whilst providing for flexibility regarding their ownership, ongoing management, and productive uses.
5. Provision is made for addressing reverse sensitivity issues, where the uninhabited spaces around clusters are, or can be, used for productive agricultural or horticultural activities.
6. Small scale non-residential activities are provided for where their effects are compatible with a residential lifestyle environment.

The Karanui development concept responds to these objectives by identifying the key elements of the character of the site and wider setting. These include:

- Clusters of residential lots introduce a low-density urban character onto the site, in locations that protect ecological areas and enable continued productive use of balance area.
- The clustered lots are sized and positioned to fit comfortably with existing features such as stone walls, vegetation patterns and terrain, and also to provide for adequate building space and provision for on-site wastewater disposal and to minimise problems with stormwater runoff;
- Defined open space areas around and between the clusters are intended to retain a rural character and outlook. These uninhabited spaces are retained indefinitely by way of open space covenant.
- The open space area next to the Three Mile Bush Road frontage is intended to retain a sense of openness and maintenance of rural character from that important public viewpoint. This will be further emphasised through low fencing and wide no build areas on the entry road to Karanui.
- The large farming blocks within Karanui will provide a pleasant rural feel reminiscent of the farming history of this area.
- The taraire-dominant tree belt that spans across much of the site is protected and further emphasised as a feature and forms part of a much wider pattern of groves of indigenous trees;

- The *small volcanic knoll* is protected as a feature in the midst of the site;
- The *small stream and its margins* is conserved and enhanced as a feature that marks the edge of volcanic influence and effectively splits off the southern part of the land;
- Water quality is upgraded by the elimination of direct stock pollution and the installation of stormwater buffer treatment areas;
- A *community focal point* is provided around a passive reserve (public reserve) and an adjacent tennis court (private reserve);
- Generous provision is made for *walkways and public access* in and around Karanui and linking to the Pukenui Forest. This provides a close relationship with Pukenui Forest and related areas of indigenous vegetation in the southern part of Karanui;
- The *farmed blocks* to be limited to the farming of grazing animals to provide a pleasant rural feel and to avoid potential negative effects of other types of farming activity on the residential lots;
- In addition, there is only limited provision made for other non-residential activities, further protecting the amenity of future residents.

The Karanui Management Plan Concept and Karanui Management Plan Circulation and Spatial Framework plans illustrate the “development” parts of this Management Plan, and are shown in Figures 5 and 6. Figure 9, showing proposals for archaeological and historic features, is also relevant.



Figure 5: Karanui Management Plan Concept

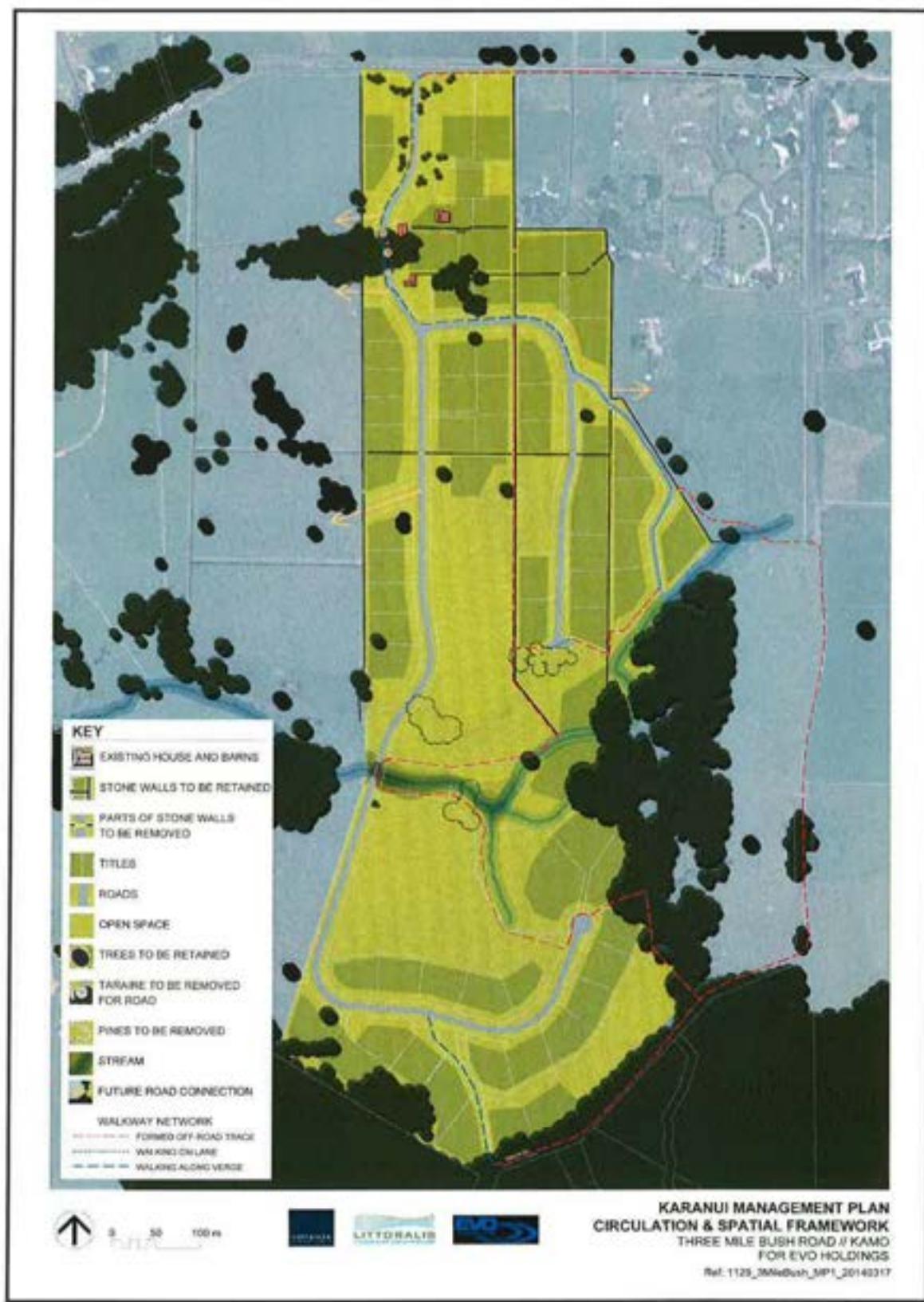


Figure 6: Karanui Management Plan Circulation and Spatial Framework

MANAGEMENT ELEMENTS

This part of the Karanui Management Plan sets out in detail the proposals and responsibilities for development and future management of Karanui. The obligations on individual land owners are highlighted in **bold red type** and are all matters that are also required under covenants relating to private sites, some of which follow from conditions of the Karanui Resource Consent issued by the Whangarei District Council (insert reference and date). The Developer's obligations are in **bold black type** and generally follow from conditions of the Karanui Resource Consent.

1. Stone Walls

The stone walls are one of the most important features of Karanui and adjacent properties. Where possible the development planning has sought to use current gateways through the walls and to minimise new openings. There are only limited places where a new break has been needed in order to achieve a functional layout (see Figure 6). In other places existing openings that are no longer needed will be reconstructed with matching stone walls, as will a portion of wall that was demolished to make way for a barn beside the taraire grove. During the closure of existing openings the shaped cornerstones that have supported the gateways will be salvaged and employed for the same role when carefully creating new openings. The capping stones will also be carefully reused.

One small gap that will need to be created lies immediately to the north of the volcanic knoll, where there will be a need for stock access to the eastern half of the small cone. This small stock route will need to cross the walkway where a stone laid base will be used, and cattle proof gates will be installed to ensure stock cannot access the walkway system.

- 1(a) Only the Developer may remove or alter stone walls and all works must be in accordance with Figure 6.
- 1(b) Sections of stone wall where new and/or enlarged access ways are required are to be carefully deconstructed and the surplus stones used to in-fill farm gates no-longer required.
- 1(c) The quoins or dressed corner stones of the enlarged and in-filled gates are to be reused in the new accessways.
- 1(e) All work shall be undertaken by an experienced dry stone wall mason in accordance with recognised best practise.
- 1(f) Deconstruction and modification of the stone walls is to be preceded and accompanied by detailed recording of the walls using photographs and measured drawings by the archaeologist, along with as-built survey identifying where modifications have occurred.
- 1(g) The stone walls, when altered (as necessary) as the development proceeds, are not to be removed and shall be maintained to a good standard.

2. Roads

Roading within Karanui is generally positioned to relate to the alignment of the stone walls. Future roading for linking to sites over the eastern and western boundaries is designed into the development so that Karanui can in future be integrated with those adjoining sites (see Figure 6).

The objective has been to keep the road corridor very simple by avoiding the use of kerb lines and footpaths, minimising road markings and reducing any contrast between the road surface and that of private access points. Where possible, driveways onto individual lots are to be amalgamated or shared between two sites, thereby allowing the main access to flow smoothly through the site with reduced interruptions from numerous crossings (see Figure 7). Letterboxes will be provided by the Developer and are to be clustered where possible, rather than being scattered along the roadside.



Figure 7: Multiple Driveways

The use of broad vegetated road swales allows the continuation of the grass theme from adjoining pasture or mown lawn to the very edge of the road.

Because of the UTE objective to maintain a typical rural unlit night sky street lighting within Karanui is generally not proposed. The only exception is a single overhead lamp at the main intersection with Three Mile Bush Road in the interests of pedestrian and traffic safety.

While the overall approach is to minimise clutter related to the road corridors, there are places where a degree of detail is being deliberately introduced to both reinforce local character and to act as a traffic calming device. The first occurs at the main road entrance to Karanui, where stone walls frame the road as a solid signal of a change of road environment after leaving the more arterial nature of Three Mile Bush Road (see Figure 8). A rumble strip of reinforced concrete, coloured and finished to relate to the stone walls runs across the road to give a change of texture and to effectively link the wall elements across the road surface.

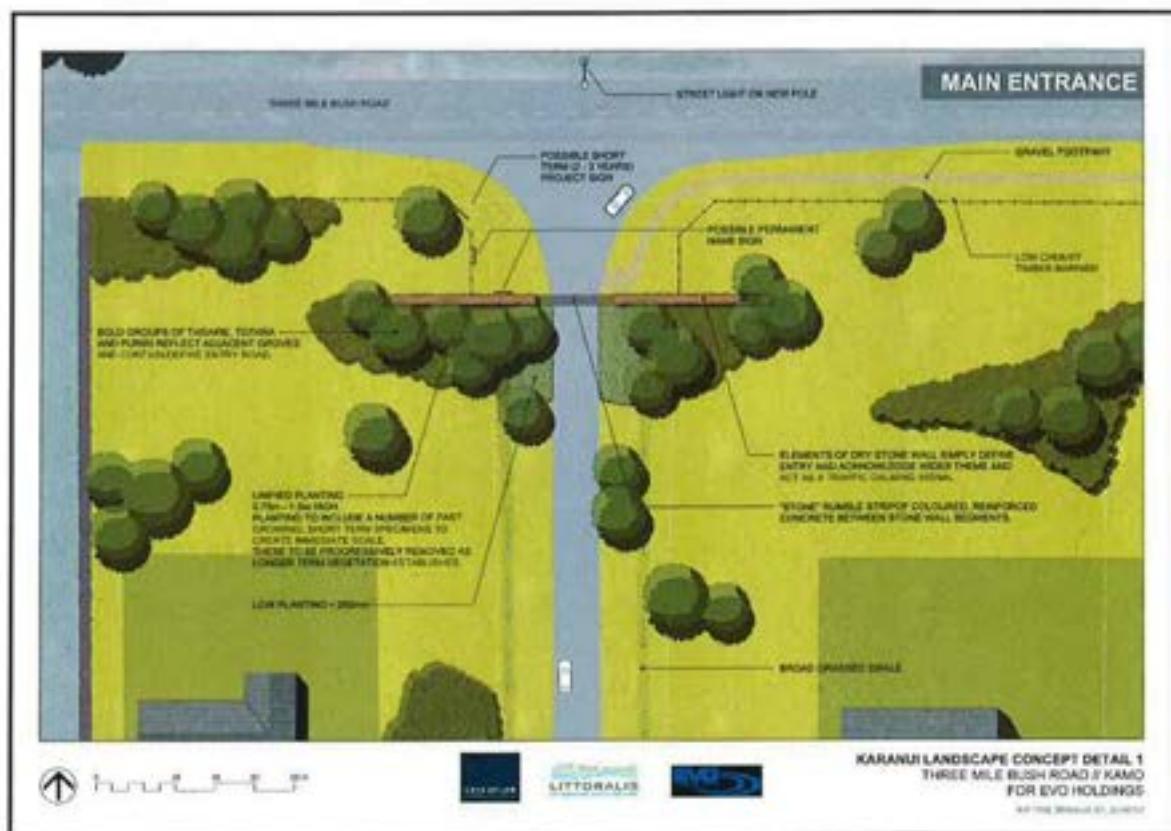


Figure 8: Karanui Main Entry Concept

Where the road passes through the taraire grove in the northern part of Karanui, and through other stone walls within the body of the site, the same technique is to be used, with the intention that the "squeezing" effect of the adjoining forest or walls will act to moderate traffic speeds.

There are a few locations where a bay of roadside car parking is provided for and in one location there is provision for a mid-block turning bay that extends to either side of the carriageway. These extensions to the road are to be finished in a permeable paving surface such as a gobi-blocks or Surepave. These extensions will not “read” as part of the road and avoid creating an expanse of asphalt, thereby assisting to contain the scale and simplicity of the road corridor.

The stream crossing is an area where the design focus has been to capitalise upon an opportunity for acknowledging local character whilst also incorporating subtle traffic control (see Figure 9). The intention here is to emphasise the presence of the stream with a stone “bridge” that overlays a more conventional culvert and structural base for the road. That “bridge” is to be created with a containing upstand of semi-dressed local volcanic stone that is linked with a concrete “stone” textured and coloured road surface. Instead of normal steel Armco barriers, the approach lines to the bridge will be protected by a tensioned cable detail that incorporates stained timber posts which echo many of the fencing details proposed for the project. A timber walkway will run alongside and below the stone “bridge” as part of the path network. The idea behind lowering this timber segment and keeping its handrail physically light in its construction is to allow for unimpeded views up the stream and its margins from the road crossing of the stream.

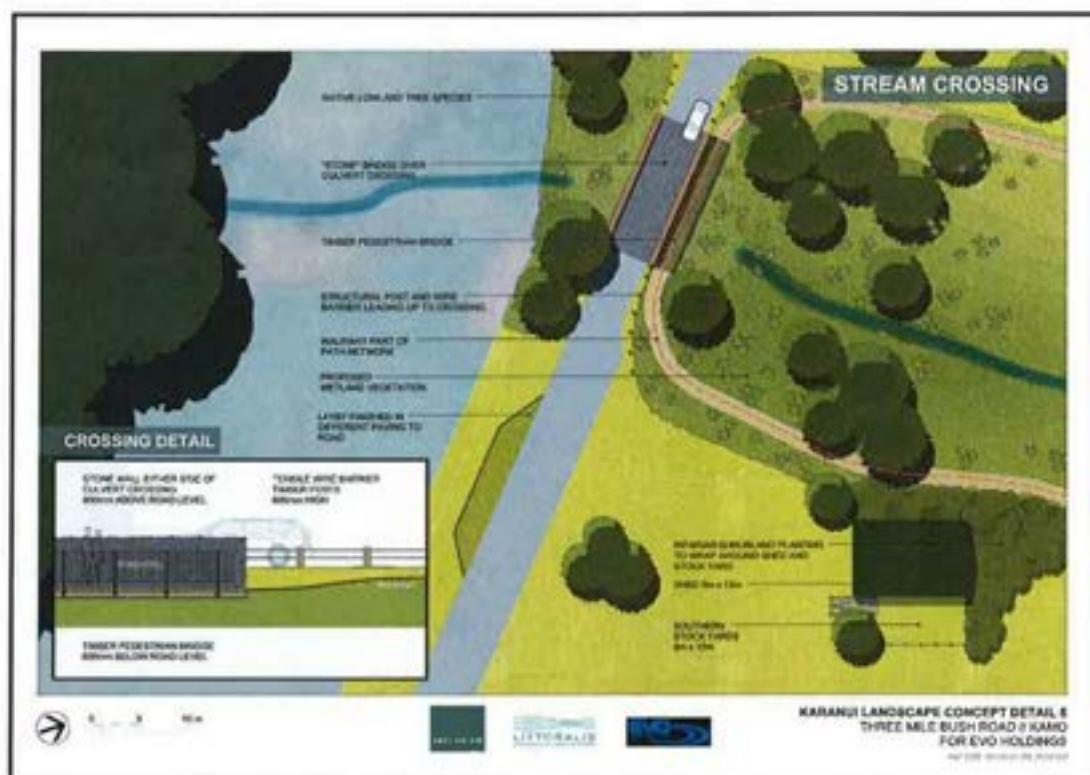


Figure 9: Stream Crossing Concept

- 2(a) All roading is to proceed in accordance with Figures 6, 7, 8 and 9.
- 2(b) There shall be no buildings erected on the future road linkage private lots (Lots 300, 301, 302 and 308).

3. Building Clusters and Staging

The various building clusters proposed are described as follows:

Cluster 1: Lots 1-9

This cluster has the strongest relationship with Three Mile Bush Road, the entry to the site and the native groves at that northern part of the property. These lots are larger than the average in the development (3,700m² average), the intent being to ensure a lower-density character as viewed from along Three Mile Bush Road and at the entry to the development.

Cluster 2: Lots 10-31

The central core cluster is the main part of Karanui where the tight grid of stone walls strongly defines the spatial structure. The arrangement of the walls and resulting structured format of the land sees this area lending itself to some of the highest levels of density. Much of it is influenced by the native grove and related clusters of trees on the northern edge of the cluster. This cluster has a much higher density than Cluster 1 (average site size 2,280m²).

Cluster 3: Lots 37-43

Cluster 3 is an enclave contained on 3 sides by walls and strongly influenced by the eastern face of the volcanic knoll. The eastern part of this area offers a low outlook to the indigenous bush on a neighbouring property to the south east, whilst the western portion adjoins the larger internal farmed lots. It has a higher than average density, consistent with its role as a “core” to the broader site (average lot size 2,065m²).

Cluster 4: Lots 32-36

Cluster 4 is a triangular wing, once again defined by stone walls and with a resulting limited outlook. This cluster is served by an intimate shared access that is distinct from the broader public road that leads to this area of the site. This area also has an outlook to the indigenous bush on a neighbouring property to the south east. The average site size of this more peripheral cluster is 2,871m².

Cluster 5: Lots 44-49

Cluster 5 is a more linear block, defined to the west by a stone wall of substantial overall length and to the east by the primary access road. Its theme is one of relatively compact sites (average size 2,541m²) that enjoy a relationship with the central pastoral space that projects into this part of the land. These sites also have a sense of connection with the western face of the volcanic knoll across the larger Lot 50 (which, combined with Lot 100, to create 4.2ha in area).

Cluster 6: Lots 51, 52, 54, 55, and 56

These relatively low-lying, larger sized lots (averaging 1ha) are most closely associated with the upper reaches of the stream as it flows through Karanui and with the backdrop of native trees standing immediately to the east. Lots 54-56 could equally be seen to associate more strongly with slightly elevated land to the south, depending upon where dwellings are to be constructed.

Cluster 7: Lots 57-60, 63, 69-74

Cluster 7 is a grouping that is strongly related to the linear central open space and, whilst of a similar average size (2,823m²), will experience a more spacious atmosphere generally than is sensed from the more contained lots to the north. Lot 53 (which when amalgamated with Lot 101 is 3.5 ha in area) is something of an “outlier” in this structure, but appropriately incorporated due to its role as custodian of a large chunk of the central open space and close relationship between its house location and the nearby buildings on smaller allotments.

Cluster 8: Lots 61, 62, 64-68

The southern-most Cluster 8 contains larger lots (averaging 5,500m²) which relate most strongly to the Pukenui Forest backdrop in terms of proximity, drifts of trees onto some of the lots and the orientation of terrain.

The clusters described above generally, although not always, align with the staging of development of Karanui as shown on Figure 1. The time within which each stage of the development will occur is not known exactly. It is possible that more than one stage will develop at the same time.

4. Open Space

The clustered lots, especially on the flat part of the land, are tightly contained within the relatively high stone walls that exist and in that respect will have an urban character. However the experience of moving to and from these more contained sites has been designed to emphasise the rural context. As such, the road and adjoining dedicated open space serve as a valuable means of promoting local character, consistent with the objectives of the UTE. An important principle underpinning the Karanui development has therefore been to maintain a strong sense of spaciousness throughout the site. Areas to be dedicated as open space are shown on Figure 10.

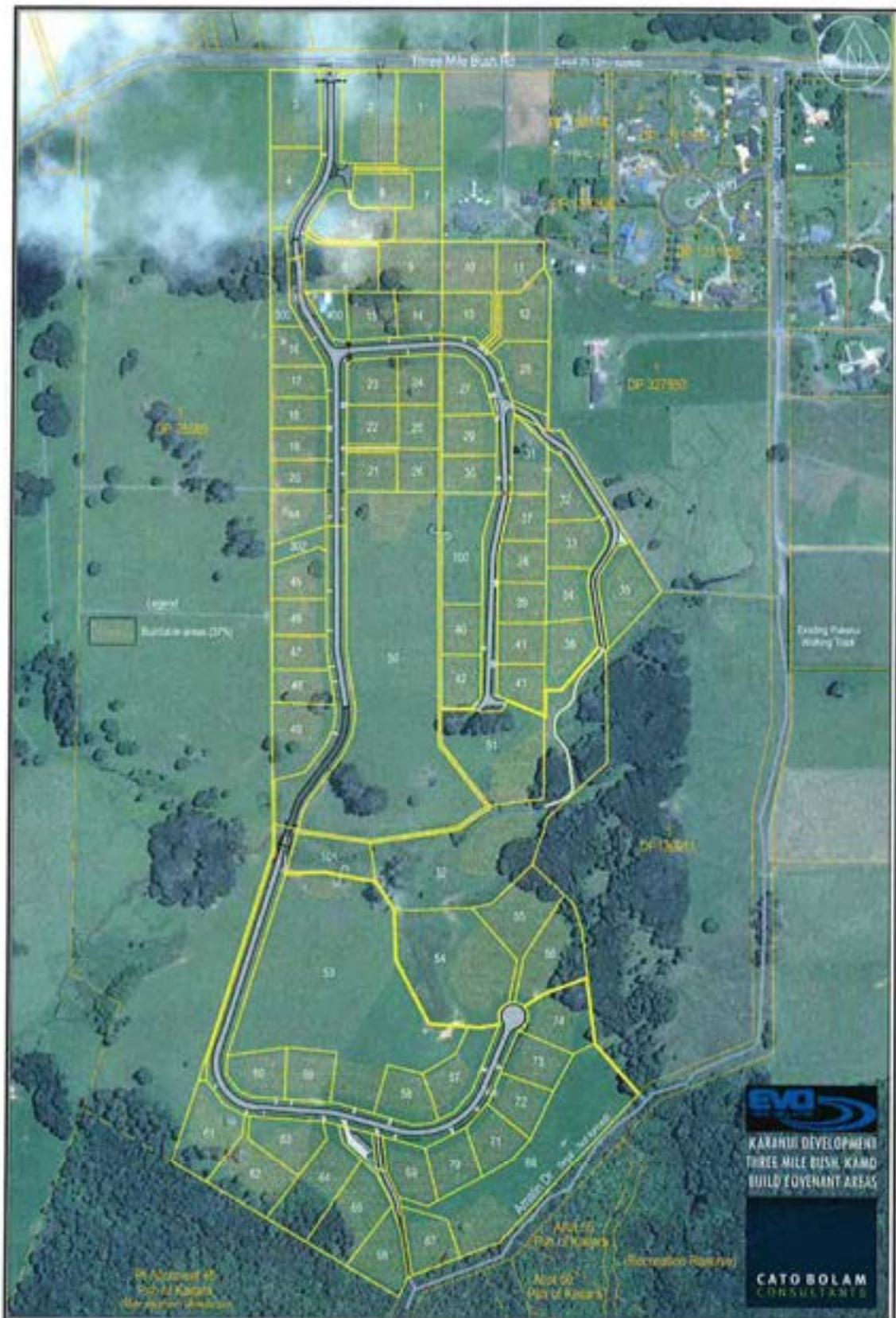


Figure 10: Covenanted Building Areas (no buildings permitted in the dedicated open space outside these areas)

The varied aspects experienced from the road corridor – from open space to stone walls to dense groves, intimate spaces and more expansive views – add up to offer a varied, interesting experience to anyone travelling along that road. They are also central to the sense of rural amenity that underpins the UTE objectives.

To further reinforce the rural and open space context, there is a pattern of covenanted building areas applying to many of the sites that identifies areas where buildings can and cannot be sited; specifically to conserve open space characteristics in adjacent public areas – see Figure 10.

A major example of this is the area parallel to Three Mile Bush Road, where there is a requirement to preserve open, grassed space that incorporates protected planting of 40m in width. Fences are also limited so that they are permeable structures – see Figure 11. The purpose of this belt is to conserve a sense of rural openness as experienced from Three Mile Bush Road, with new buildings pushed well back into the site behind the planting. This will create an impression of spaciousness with buildings being within the background. As seen on the Karanui Development Plan Figure 6, the planting in this area is positioned to create a filter that only allows portions of buildings to be experienced from the road, rather than allowing houses to be entirely exposed to view.

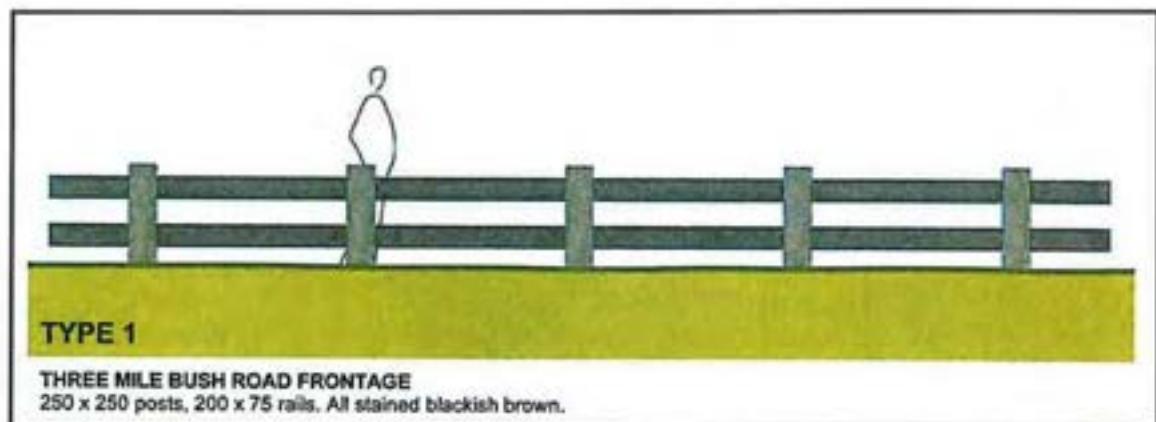


Figure 11: Three Mile Road Frontage Fencing

A similar strategy has been applied to the first section of the Karanui access road that leads up to the taraire grove. Generous setbacks continue to be in force and are supported by a newly planted vegetation structure. The approach is then continued through the central body of Karanui, but with development densities increasing and setbacks being less substantial. Despite relatively restricted site sizes, the concept uses planting to diffuse boundary lines and to flow back into private sites. This approach is aimed at “muddying” the distinction between private and public space, so that those using the road corridor have a sense of that space filtering on into private land, whilst the owners of the residential lots will experience the margins of the road reserve as part of their land. This is to be emphasised by the style of front boundary fencing promoted on non-farming sites – see Figure 12. The net effect is intended to be one of greater spaciousness from both perspectives.

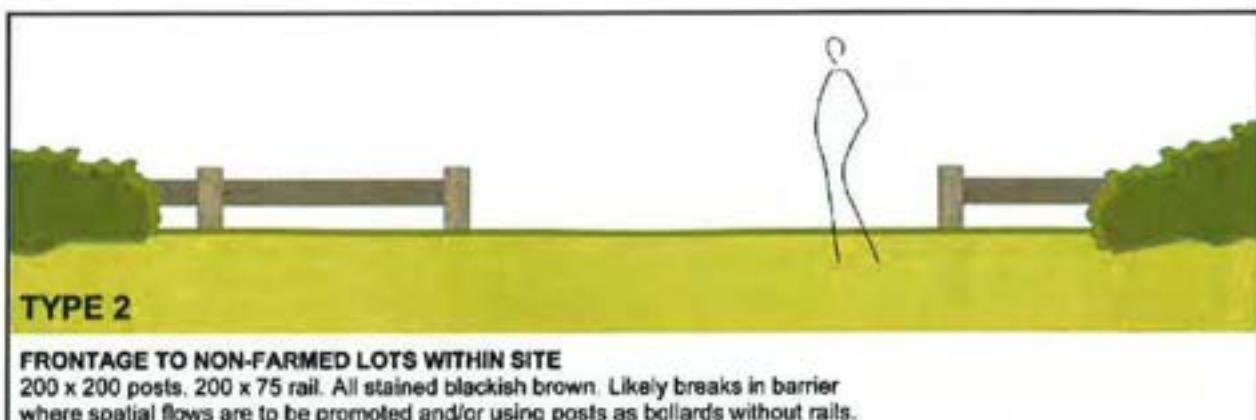


Figure 12: Non-Farmed Lot Fencing

A key component of open space is the large block of open space is located centrally within the site, comprising the large Lots 50 - 54, 100 and 101. Outside the covenanted building areas on some of these lots, this area will continue to be grazed under private ownership. Through creating this area and limiting building sites there will be a length of over 500m east of the Karanui access road kept clear of any buildings. Fencing is also to be of type shown on Figure 13.



Figure 13: Fencing Type Required on Farmed Blocks

- 4(a) The building areas shown on Figure 10 are the only areas within which buildings may be erected. No building is permitted outside these areas.
- 4(b) Front boundary fencing shall be erected in accordance with Figures 11 – 13.
- 4(c) Fencing installed by the Developer under 4(b) shall be maintained by subsequent owners in accordance with Figures 11 – 13

5. Site and Building Development Controls

In addition to the defined building areas various other site and building development controls apply to private sites in Karanui. These controls are illustrated on Figure 14 and explained in detail below

Site Development Controls

To support the spacious atmosphere that Karanui seeks to achieve there are controls over the level of "permeability" in the front parts of each private site. The objective of these controls is to allow the road-front portion of private sites to contribute to the openness of the road corridor, in a manner that sees housing set well back into the sites and not being dominant over the road.



Figure 14: Site Development Controls

As covered in Section 4 Open Space above, the Developer will install low roadside barriers along some frontages to avoid an unco-ordinated mixture of private roadside fences. Where a landowner wishes to establish any further fencing within 10m of the roadside boundary of private lots - such as for pet containment - any fence or barrier is required to be less than 1.0m in height. Fencing between that 10m line and the road side of the house or any other building on the site must be less than 1.5m in height. Any such barrier that lies between the road and any building on the site should have a high level of porosity, with the solid component of the barrier not constituting more than 20% of the volume when viewed in elevation. Dark finishes are encouraged. Figure 14 above illustrates how the development controls can be achieved on a typical site.

There is to be scope to plant up to 4 specimen trees within the front yard space. This will allow some front yard planting without affecting the openness of the site.

Building Development Controls

To promote an atmosphere where buildings are not unduly dominant over the open space character sought for Karanui, a number of building controls apply. These include a limit of one residential unit per site, requiring buildings to be single-storey, building coverage controls, construction to be of new materials, a low reflectance value for building finishes (i.e. a restriction against bright colours), ancillary buildings in front yards having the same construction type as the main house, restrictions on visible tanks and restrictions on temporary buildings and caravans. On Lots 1-4 all buildings must be connected to the main house, either directly or by way of a roofed link, and they must be of the same structure, materials, form and colour. This measure is intended to minimise any potential for a clutter of building adversely impacting upon this most "public" part of the site¹.

- 5(a) Any fence or barrier within 10m of the roadside boundary is required to be less than 1.0m in height.**
- 5(b) Fence or barriers within 10m of the roadside boundary of private lots are required to be less than 1.0m in height. Fencing between that 10m line and the road frontage of the house or other building on the site is to be less than 1.5m in height. Any barrier that lies between the road and the building on the site (and which is in addition to the low roadside barrier installed by the developer) should have a high level of porosity, with the solid component of the barrier not constituting more than 40% of the volume when viewed in elevation.**
- 5(c) Any fence or barrier between the road face of the house or other building on the site and the road shall have similar reflectance values and hues to building roofs on the site.**
- 5(d) Any fence or barrier not covered by the above controls shall be no higher than 2 metres.**
- 5(d) Any planting between the road face of the house or other building on the site and the road is to achieve a height of no more than 1.5m, except for up to 4 specimen trees.**
- 5(e) There shall be no more than one residential unit per site.**
- 5(f) The total building coverage on a site may not exceed 500m² or 5% of the net site area, whichever is the greater.**
- 5(g) Any building within the Covenanted Building Areas shown in Figure 10 must also be set back at least 8.0m from road boundaries and 3.0m from other boundaries.**
- 5(h) For building facades (ie walls), a reflectance value of materials and applied finishes not exceeding 40% is required. Smaller architectural elements, such as joinery, or other minor features, are excluded from this requirement. Windows shall not be mirror type glazing.**

¹ A small guideline booklet "Karanui Site Development" is available for owners. It includes suggestions about planting themes and approaches that are encouraged to foster the wider character of Karanui

- 5(i) For roof surfaces a reflectance value of 30% is the maximum.
- 5(j) Building heights are limited to 6.0m.
- 5(k) Any ancillary building that extends forward of the centreline of the house in relation to the adjacent road corridor shall be of the same structure, form, material and colours as the house itself. If located further back in the site – in relation to the road – than the centreline of the house, then the ancillary building shall have the same roof material and colour and the same wall and joinery colours as the house, but without the obligation to also match material types, unless approval is obtained from the Developer in writing.
- 5(l) On Lots 1-4 all buildings are to be connected to the main house, either directly or by way of a roofed link, and they must be of the same structure, materials, form and colour.
- 5(m) Owners may not erect any building other than a new building using new materials, unless approval is obtained from the Developer in writing.
- 5(n) No flat fibrolite or corrugated iron for the outer walls or facings of buildings may be used unless approval is obtained from the Developer in writing.
- 5(o) All tanks must be screened from view from outside the site.
- 5(p) Owners may not erect or permit any hut or shed of any kind to be used as temporary premises, other than during the period of construction of permanent buildings. The use of temporary building shall not be for a period longer than twelve months.
- 5(q) Owners may not erect or permit any caravan to be used as temporary premises, other than a caravan placed on the property for short term occupation for visitors for a period not exceeding two months in any twelve month period.

6. ²Vegetation Framework

The existing mature indigenous trees form an important part of the site's identity. A further framework of new specimen planting will be established to reinforce the established theme of indigenous groves that is found on the property and surrounding area. The major tree planted will be taraire but will also include other locally common trees such as puriri and totara (see Figure 15). Small "fingers" of planting will be added between the southern margin of Karanui to link the backdrop of Pukenui into the site. This linkage will be supported by the riparian planting. A broadly spaced row of trees is to be planted alongside the road as it runs through the mid part of Karanui, with the intention that this creates a rhythm and pattern which is reflective of the linear stone walls nearby, but deliberately contrasting with the indigenous groves in terms of line and composition in an effort to avoid diluting the strong, informal pattern of those natural clusters and belts. Within the

private lots themselves, structure of restricting planting to 1.5m in height is proposed to achieve a measure of coherence across the majority of the various private frontages. This strategy is also intended to provide some immediate structure to the settled areas and create a buffer between the public corridors and the more private parts of the private sites.

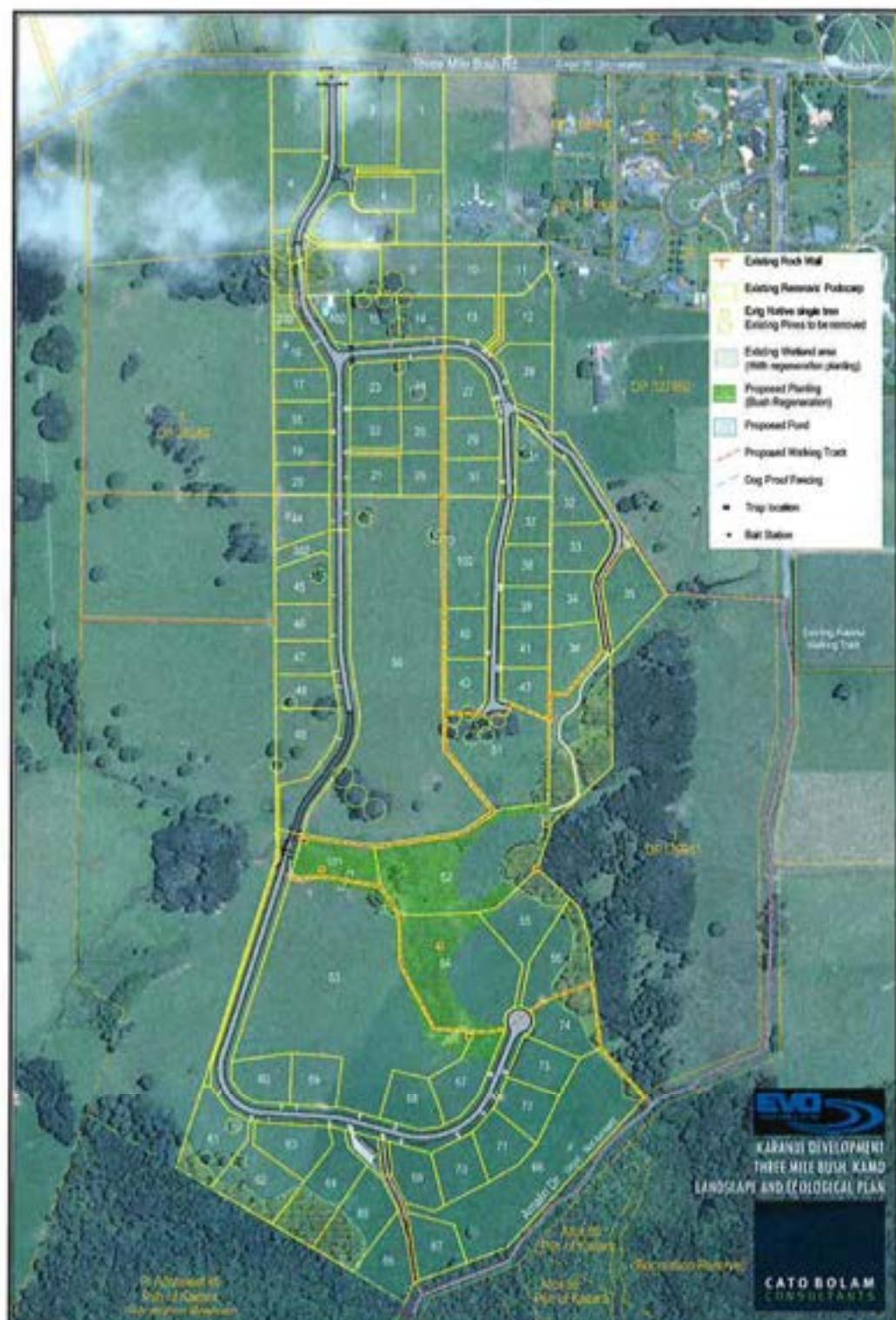


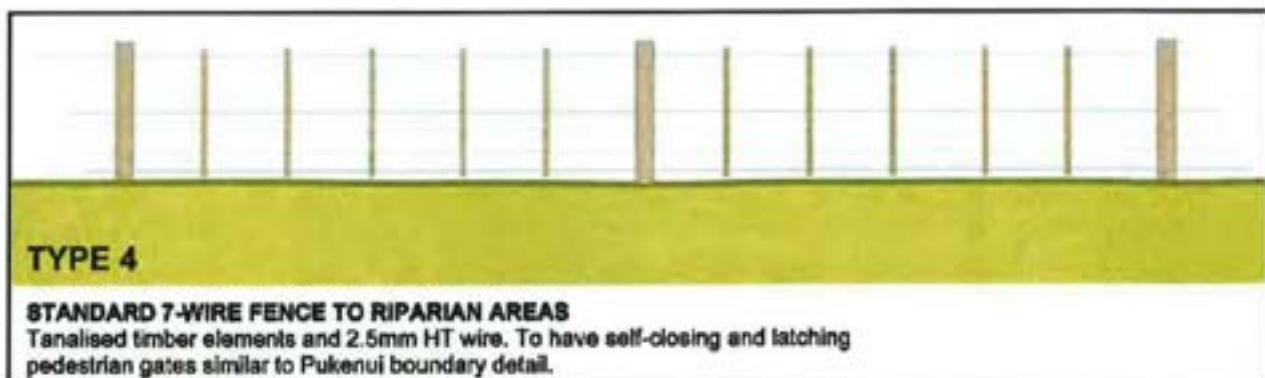
Figure 15: Open Space Planting and Ecological Plan

- 6(a) The only existing indigenous trees to be removed are those shown on Figure 6 (to allow for the road).
- 6(b) New tree planting shall be in accordance with Figure 5.
- 6(c) The existing mature indigenous trees shown as being retained on Figure 15, and new planting as shown on Figure 15 may not be removed.

7. Stream and Riparian Restoration

The stream corridor has historically deteriorated to a very degraded state after many decades of cattle access. This stream is one of the key opportunities to strengthen the natural structure of the site.

The stream will be widened and a broad margin either side of the watercourse will be protected from stock. The small ephemeral tributaries that swing off to the south will be incorporated into the system. In any area that may be accessible by stock fencing is to be erected in accordance with Figure 16.



TYPE 4

STANDARD 7-WIRE FENCE TO RIPARIAN AREAS
Tanalised timber elements and 2.5mm HT wire. To have self-closing and latching
pedestrian gates similar to Pukenui boundary detail.

Figure 16: Fencing Type Required on Riparian Margins Accessible to Stock

Locally common indigenous species are to be used in an intensive planting programme that will respond to the varying moisture regimes found in these low-lying areas. It is anticipated that all planting material would come from eco-sourced stock.

- 7(a) Riparian planting shall be in general accordance with Figure 15.
- 7(b) No riparian planting may be removed.
- 7(c) Any riparian area potentially accessible by stock is to be fenced in accordance with Figure 14.
- 7(d) Any riparian area potentially accessible by stock is to have fencing maintained in accordance with Figure 15.

8. Pest and Predator Control

Pest control is important because of Karanui's proximity to Pukenui Forest, a Department of Conservation administered Conservation Park and home to a number of threatened native species including the long-tailed bat, North Island kaka, and potentially the North Island brown kiwi. Pest control aims to both protect the natural areas within Karanui from damage by pest animals, and to contribute to the protection of native flora and fauna in the neighbouring forest.

The two pests likely to present the biggest problem to any planting in this area are rabbits and possums. Most damage is likely to occur shortly after planting and over this period regular checks will be made for possum or rabbit damage. Mustelids and rats are also a concern.

Subsequent to the development being established landowners are encouraged to continue to manage any pests that may be in the area. For rabbits (and hares), mustelids and rats, removing possible nesting sites such as heaps of logs, blackberry and rank grass will reduce local pest habitat.

Pest control is especially important at Karanui due to its proximity to Pukenui Forest, a Department of Conservation administered Conservation Park, and home to a number of threatened native species including the long-tailed bat, North Island kaka, and potentially the North Island brown kiwi (WDC and DoC, 2009). Pest control must therefore aim to both protect the natural areas within the development from damage by pest animals, and contribute to the protection of native flora and fauna in the neighbouring forest.

Control of the pest animals present will allow for the ongoing development and repair of the understory vegetation in the bush fragments, as well as relieving pressure on the wetland and bush restoration areas. It will also encourage native bird species such as tui and kereru to flourish in the area where they will have a marked improvement in breeding success. Pest control will have large benefits for all other native species including insect life along with native geckos and skinks.

Rats are the most important animal to control in order to allow birds to fledge chicks and for forest seedling regrowth. Poisoning using bait stations is the recommended control for rats. Bait stations can be purchased from Northland Regional Council or rural supply stores. Bait stations will keep the bait dry and safe from straying pets. The most important time for rat control is during late winter and early spring to allow native birds to fledge.

Possums could also be a potential problem as the planting matures. Options for control include poisoning, shooting and trapping. Trapping or poisoning of possums will probably be most effective. For possums a kill trap such as the Timms trap which is available from hardware shops is recommended. Bait should be changed every two days and should always be fresh. Cinnamon and aniseed sprinkled on fruit make good bait.

Cats and dogs are threats to the native birds in the area. Cats and dogs are limited in number and must be identifiable and unable to breed. Signs are to be erected to remind dog owners to keep their dogs on-leash when using the walkways within Karanui and no dogs may access the Pukenui Forest.

A dog-proof fence is to be erected at the Pukenui Forest boundary of the property and within the WDC paper road to the south of the property including a spring return auto latched gate all as per Figure 17.

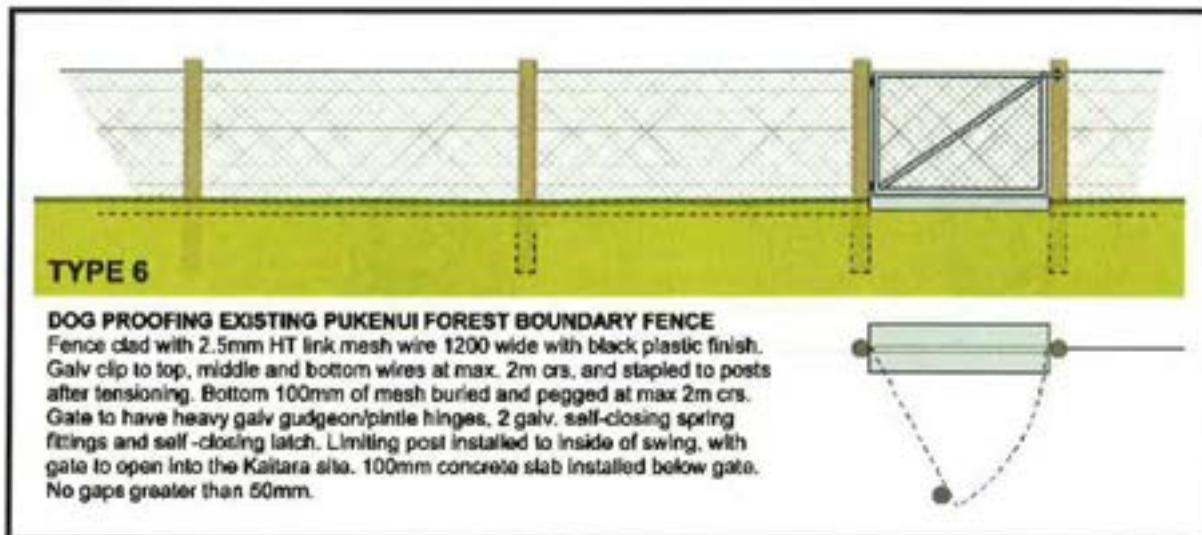


Figure 17: Fencing and Gate Type Required on Pukenui Forest Boundary

- 8(a) The Developer is responsible for pest control over the establishment period of the development for three years after approval for each stage, in accordance with the pest management plan approved by the Whangarei District Council.
- 8(b) A dog-proof fence is to be erected at the Pukenui Forest boundary of the property including a spring return auto latched gate, all as per Figure 16.
- 8(c) Signs are to be erected to remind dog owners to keep their dogs on-leash when using the walkways within Karanui and Council roads and no dogs may access the Pukenui Forest.
- 8(d) A memorandum is registered against each title with Kaitara advising landowners that the Pukenui Forest is a pest managed area with pest controls that may harm any pets that stray there and Karanui itself may have ongoing pest controls that can harm pets.
- 8(e) There shall be no keeping of mustelids and rodents and the keeping of dogs and cats is limited to no more than two (of each) which must be spayed, neutered and always identifiable with microchips or named collars.

9. Walkways

Providing a network of well-connected paths that also link into the Pukenui Forest is a key feature of the Karanui development. Not only are the walkways seen as an important amenity and means of experiencing the varying characters of different parts of the site, they are also seen to be a valuable social service which allows residents of the new neighbourhood to meet each other as they move around the area on foot. The network is configured to allow people to create a different routes and small circuits, especially when portions of the road corridor are also included in a walk.

Outside Karanui, the Developer will work with the Whangarei District Council to establish or improve walkway connections to work in with the Karanui walkway network for the benefit of the wider community. The current Department of Conservation track head at the end of the Amalin Drive formation is compromised in terms of limited parking and turning opportunities for vehicles and the need to walk through an unfenced corridor in a grazed paddock.

The Developer will install a gravel walkway replacing the existing grass and clay track on the extended Council owned Amalin unformed road. The Developer will upgrade and fence the existing Amalin Drive tramping track and install a day walkway between Amalin Drive car park and the Karanui access road and new car park, including farm access gates and crossing formation at existing gate in eastern wall. The Developer will seek that the owners of abutting neighbouring properties agree to maintain the fence at the boundary of the 2 metre wide walkway within the unformed road under the same obligation of boundary fencing as they would currently have at the road boundary. The Developer will then install a metal footpath along the south side of Three Mile Bush Rd from Amalin Dr to the Karanui entry off Three Mile Bush Road and seek that the Council form the footpath between Amalin Dr and the end of the existing path west of Smithville Rd. The Developer will seek an easement and then form a walkway from Amalin existing carpark to join with the eastern Karanui walkway on a goodwill basis until these areas get developed under the UTE provisions. These upgrades will then provide linkages between the Karanui walkways to Council roads and DOC walking tracks for day walkers, all on good quality metalled and bridged walkways.

Overall, the various routes followed by the path network enable walkers to experience a range of areas that include settled enclaves, pastoral margins, over the volcanic knoll, alongside the stream, alongside riparian wetlands and shrubland, and along short segments of low-speed road environment.

Paths will be established to a high standard in accordance with SNZ HB8630:2004, using materials that have a natural, informal nature whilst also being very durable. Gradients, steps and other details will be cater for the widest range of walking abilities and for use in sneakers regardless of season. Fencing will be erected in any area accessible by stock (see Figure 18).

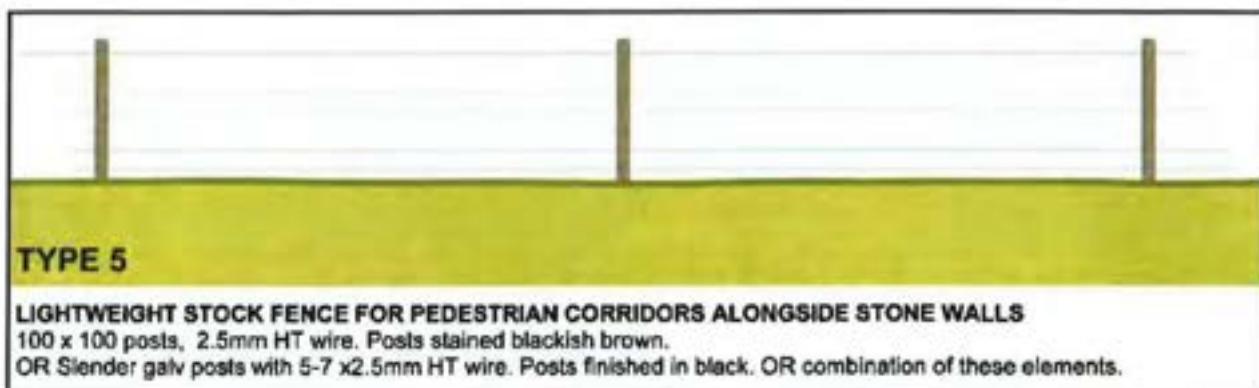


Figure 18: Fencing of Walkways Accessible to Stock

- 9(a) Walkways shall be constructed in accordance with Figure 5 and SNZ HB8630:2004.
- 9(b) Where they cross private property, walkways will be contained within a public easement.
- 9(c) Fences shall be established to define the walkways where they pass through pasture, and to protect the paths (and their users) from stock, in accordance with Figure 17.
- 9(d) Walkway fences are to be maintained by the adjoining owner.**

10. Pukenui Forest entry and track upgrade

The proximity of the southern part of the site to Pukenui Forest makes it an ideal place to gain access to the track network existing in that reserve. As part of the development of Karanui provision is to be made for car and coach parking in association with a proposed new Pukenui entrance point, as illustrated in Figure 19. This is not intended to totally replace the existing Amalin Drive entry to the Forest, but until Amalin Drive develops this new carpark and access will be the main entry.



Figure 19: Southern Carpark / Pukenui Forest Access

The parking area has been deliberately set off-road and is well contained within a framework of proposed indigenous planting. This separation gives added amenity to the public parking and access corridor whilst also conserving the spatial qualities of the road corridor and adjoining private allotments. Surfacing within the parking area is intended to continue a theme of permeable, informal all-weather cover that is established in a number of other proposed parking areas within the project. Incorporating a pou as part of the symbol entry to the forest has been discussed with local iwi, with final positioning subject to further liaison. It is intended that the Pukenui parking area and access corridor will be vested with the Whangarei District Council.

10(a) The Pukenui Forest carpark shall be developed in accordance with Figure 18.

11. Farmed Lots (Lots 50/100, 53/101 and 68)

On the farmed lots there are stock restrictions imposed in order to minimise effects on neighbouring land users (including heavy traffic movements) and also to minimise damage to soils and steeper slopes. Figure 5 illustrates defined locations for sets of small stockyards which are located in positions that do not compromise the flow of open space. A related dwelling and farm building position is also defined as part of the wider settlement layout and the need to maintain open space and the integrity of the volcanic knoll.

11(a) On Lots 50/100, 53/101 and 68 stock ratios are restricted to no more than ten stock units per hectare of grazable land area. No entire male cattle, sheep or horses are permitted and there shall be no regular stock trading. Any stock which are threatening, intimidating or intolerant to the noises, activities and visual effects of residential activity shall be removed from the site.

12. Reserve and Private Tennis Court

A small passive reserve is positioned at a road intersection immediately to the south of the taraire grove on Karanui. This reserve, to be owned by the Whangarei District Council, is a visual break within this most densely subdivided part of Karanui, and has a potential social function as a local meeting place for residents.

A single, privately owned tennis court is to be developed immediately opposite the reserve. This site will have a no build covenant and an easement in favour of public access. The tennis court area may need to be redeveloped at a later date as this area may be required for future access. However a tennis court will be retained.

A small, permeable parking bay is proposed for both the court and the park – see Figure 20.



Figure 20: Passive Reserve and Tennis Court

12(a) The reserve, tennis court and associated parking area is to be developed in accordance with Figure 19.

12(b) An easement in favour of public access shall be created on the tennis court land.

12(c) No buildings may be erected on the land on which the tennis court is located.

13. Archaeological and Historic Features

In respect of the archaeological and historic features on the site, the Developer is responsible for the following (see also Figure 21 and the stone wall requirements under Section 1):

13(a) Works for the construction of the new entrance road in the vicinity of a confirmed pre-1900 wall and which may contain associated archaeological features are to be monitored by an archaeologist.

13(b) The initial surface scrape for the new roads servicing the subdivision across the area shown as cleared of forest in 1883 and which may contain Maori archaeological features is to be monitored by an archaeologist.

13(c) Interpretational signage presenting the history of the farm and the significance of the stone-wall landscape is to be developed. This should be located in a public place such as the tennis courts, reserve or on the volcanic knoll which will afford views of the landscape. At a minimum this signage will include a historical narrative of the history of the property, a map of all historical features including walls, clearance piles, consumption platforms etc., and descriptions and photographs thereof.

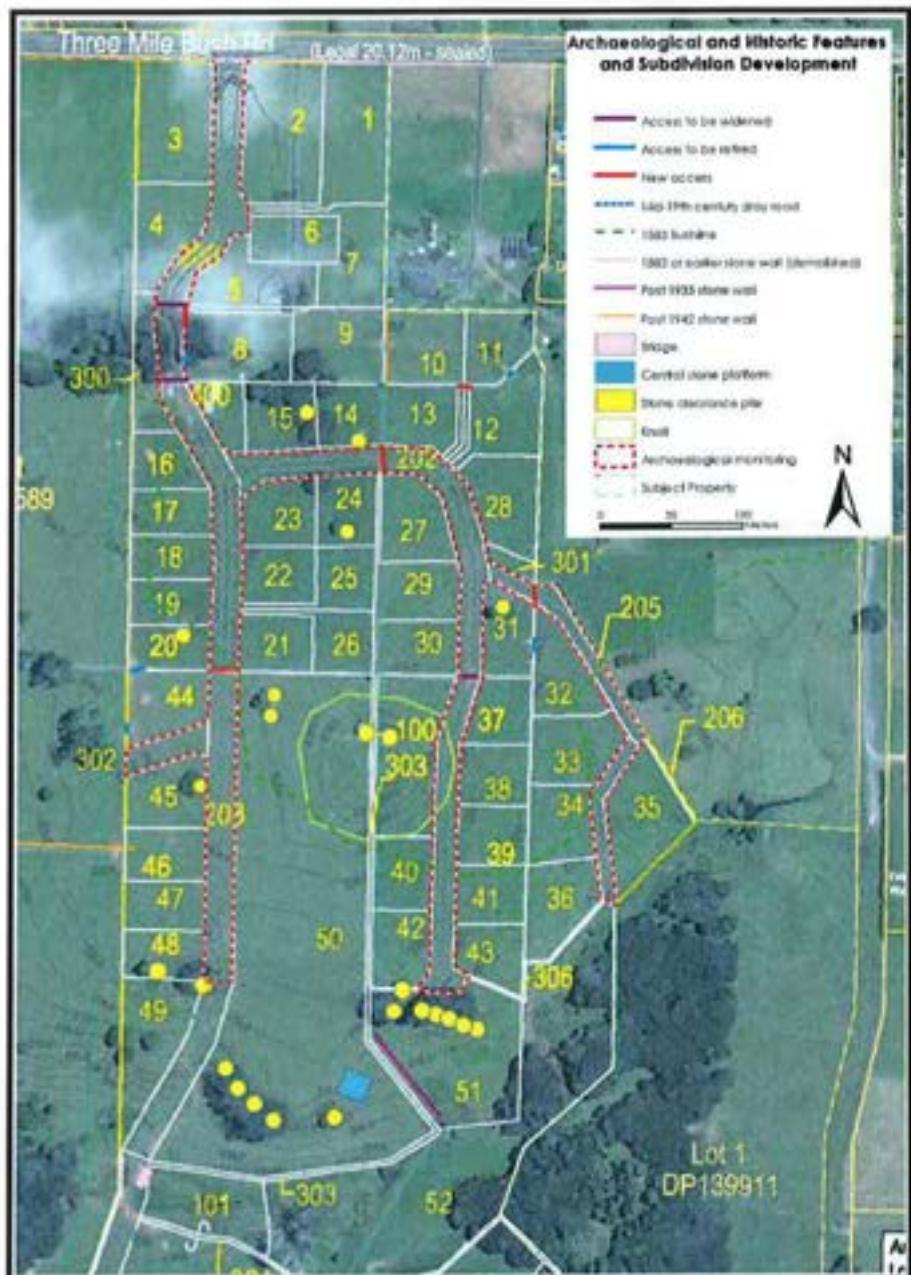


Figure 21: Archaeological and historic features

14. Discovery of Potential Archaeological and Sites/Places of Cultural Value

In some instances, such as natural erosion, archaeological material or even koiwi may become unearthed. The following protocol applies (Note: this applies to the Developer as well as subsequent landowners).

14(a) If subsurface evidence (e.g. signs of charred wood and rock and any other material which may indicate possible historic activities or bones of any kind) should be unearthed during

earthworks or construction, earthworks, other activities or natural events, the following protocol shall be followed:

- (i) Work shall cease in the vicinity of the remains immediately. Maori remains shall not be removed from their resting place and no other archaeological items shall be removed.
- (ii) The person undertaking monitoring works shall contact the New Zealand Historic Places Trust (NZHPT) and (if the remains may be of significance to Maori) Te Kahu O Torongare Hapu (TKOT) – Ngararatunua Marae Trust. If the remains are koiwi then the New Zealand Police shall also be advised. No work shall resume in the area of the remains until the the approval, as necessary, of the New Zealand Police, NZHPT and TKOT has been obtained.
- (iii) Any koiwi uncovered on the property shall be re-interred on the property in accordance with cultural requirements. Property owners shall allow access to such areas for re-interment and shall respect and not disturb these places.
- (iv) The individual lot owners, in conjunction with TKOT, shall keep a record of koiwi and archaeological remains interred on the property, including their locations.
- (v) Residents shall advise all visitors to their properties of areas that should not be disturbed.

15. Wastewater

Wastewater disposal will be by way of on-site septic tank systems. All wastewater discharge from individual lots needs to be treated by tertiary wastewater systems and discharged within the individual site with dripper lines in accordance with Hawthorne & Geddes Engineering Ltd Report dated 10 December 2013, the Northland Regional Council Water and Soils Plan and NZS 1547:2012.

- 15(a) At building consent stage each site owner shall provide detailed investigations and plans of a wastewater disposal system that will suit the location and scale of their proposed dwelling.
- 15(b) Sewerage Treatment Systems for the Karanui Development must meet the following standards by consent notice.
 - be Advanced Secondary Treatment Systems
 - be Reticulating Packed Bed Reactor (rPBR) or approved superior treatment system as supplied by Evo Holdings Ltd
 - be compliant with AS/NZS 1547:2002 and On Site Effluent Treatment National Testing Program (OSETNTP)

16. Stormwater

The Karanui development adopts Low Impact Design (LID) principles for managing stormwater runoff. All works have been designed in accordance with Auckland Regional Council Technical Publications 10 and 124, which are used as guideline documents in Whangarei District. The targets set are intended to remove 75% of the suspended solids from stormwater runoff and to reduce the speed of stormwater flow in storm events to 80% of the pre development flow.

To achieve these targets stormwater will be treated through specifically engineered swales and filter strips. As much water as possible will be directed through dispersed flows into the naturally dry and free draining volcanic soils to support the existing and proposed vegetation.

The large open swales on the edge of all roads are designed to treat all stormwater flow from the public roads and impervious surfaces from the private lots that flow naturally into them. These devices work by filtering stormwater through the natural volcanic soils and allowing the suspended solids to be trapped within organic matter and soils. The soils and plants within the swales also provide a degree of bio filtration and break down the contaminants. Vehicle crossings have been designed with slot drains to allow for the free drainage of the minor flows and the restriction of the more major storm events. The swales located within the flat volcanic land to the north of the stream also provide attenuation of stormwater runoff to compensate for the total site run off and groundwater recharge by limiting the speed at which these swales discharge flow.

It is important that these swales, vehicle crossings and filter strips are not impeded by any built structure or vegetation.

All lots are required to have 25,000 litre (minimum) on-site water tanks for water reuse. In addition and wherever possible lot owners should look to follow low impact design methodology for stormwater runoff by limiting impervious areas and allowing evenly dispersed flow of all stormwater from their tank overflows and impervious surfaces such as driveways, footpaths and any roof area not connected to water tanks. No concentrated discharges of stormwater flow are permitted from the site onto any other site or to the road swales other than that provided for by the approved development plans for Karanui which provide for some piped discharge of roof flows to swales as at the driveway flows vehicle crossing and specifically identified overland flow paths.

All lots within the southern area of the site being lots 53-74 must ensure that the dispersed flow from their roofs and impervious surfaces are directed to the road swales, open space or bush areas.

All treatment and attenuation systems need to be regularly inspected and maintained in line with the Karanui Stormwater Maintenance Manual. These systems are generally swales and filter strips located within the road reserve and will therefore be owned by the Council. However for the first 5 years of development the Developer must maintain these structures to ensure a well-established and operational asset is given to the Council following the period of most predicted building activity.

16(a) The Developer shall install stormwater infrastructure in accordance with the conditions of resource consent.

16(b) The Developer shall be responsible for maintenance of all publicly-owned treatment and attenuation systems in line with the Karanui Stormwater Maintenance Manual for the first 5 years after those systems are constructed.

16(c) All private lots are required to have 25,000 litre (minimum) on-site water tanks for water reuse.

16(d) No concentrated discharges of stormwater flow are permitted from the site onto any other site or to the road swales other than that provided for by the approved development plans for Karanui.

17. Water

All lots are required to have tank supply for their domestic water.

Water supply for fire-fighting has been planned in terms of the relevant standard PAS 4509:2008 for Karanui will have two separate 100mm PE80 dry rising mains located within the road berm with fire hydrants placed within 90m of building platforms for all lots apart from lot 52.

Water supply for the risers shall be buried 25,000lt tanks, two will be located in the recreational reserve lot 400 and another two in the car park area of lot 209. Both water supplies shall have a draw pipe installed beside the road. The breaching valve shall be compliant with fire coupling and set in a concrete surround and in galvanised steel lid clearly marked as dry riser inlet/outlet. The supply tanks shall have a constant feed supplied by adjacent dwellings lots 15 and 69, being a connection directly to the tank overflow from the lot. This supply feed shall have a float valve and to insure that when the fire tank is full the overflow shall be diverted to discharge at the appropriate dispersion trench or stabilised swale. These lots shall have appropriate consent notices to insure the construction and maintenance of this connection. Until the construction of dwellings on these sites it shall be the developers responsibility to maintain the necessary water supply.

The riser shall and hydrants shall be laid and tested to WDC EES2010 standards and be vested as a council asset. The Regional Fire Manager has confirmed that they shall carry out testing on the main every five years as part of their requirements.

Lot 52 shall require compliance with PAS 4910:2008 by consent notice for alternative supply storage of 7m² on site.

17(a) The Developer shall install water supply infrastructure in accordance with the conditions of resource consent.

17(c) All private lots are required to have 25,000 litre (minimum) on-site water tanks for water reuse.

17(d) Lot 52 is required to have its own fire-fighting systems established in accordance with PAS 4509:2008. Details shall be provided for Council approval at the stage of applying for any building consent.

18. Other Services

Power and telephone services are available to each lot. A vehicle crossing from the road onto the lot is also provided. Rubbish collection and postal services to the gate of each site are expected to be provided as the development proceeds.

19. Noise and Restrictions Against Non-Residential Activity

Karanui is a residential development. Apart from Lots 50/100, 53 and 68, where farming activities are envisaged and provided for, non-residential activities are limited to home based business that respect the character and ambience expected to be maintained at Karanui. Noise should not exceed normal standards relating to residential activity. The following obligations apply.

18(a) Noise generated by any activity, as measured at any point within the notional boundary of a residential unit on any mother site, may not exceed:

i) 50 dBA L10 between the hours of 0700 and 2200; and

ii) 35 dBA L10, and 60 dBA Lmax, between the hours of 2200 and 0700

provided that these rules shall not apply to limited duration events associated with farming activities.

18(b) No commercial or industrial activity is permitted that is not ancillary to a predominant residential use of the site.

18(c) Owners shall not operate either a Boarding Kennel or Cattery on their property or breed any pets.

18(d) Owners may not establish a landfill or change the contour of the land by more than one metre without approval of the Developer in writing.

18(e) Owners may not allow commercial heavy vehicles to be parked or operated from any site.

18(f) Any other non-residential activity is restricted to those that have no visual or noise impact and do not cause excessive traffic and shall require approval of the Developer in writing.



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WDC IQP #21

Document History and Status



**CATO BOLAM
CONSULTANTS**

SURVEYORS | PLANNERS | ENGINEERS

Revision	Date issued	Reviewed by	Approved by	Date approved	Revision type
A		Chris	Simon		For submission

Distribution of Copies

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Author	William Morunga
Director	Simon Reiher
Name of organisation	Evo Holdings Ltd
Name of project	Karanui Development – Stage 3
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Job number	WH33368

Signed Author	
Signed Director	

CATO BOLAM CONSULTANTS LTD

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1.0 INTRODUCTION

The proposal includes the construction of 27 rural residential lots with associated roading, stormwater drainage and servicing as part of the greater 74 lot development. The proposal includes public infrastructure with a public/private use and this manual serve to clarify the maintenance responsibilities for this infrastructure.

Stormwater from the individual lots will be discharged as sheet flow consistent with ARC TP124 wherever possible to replicate the existing situation. Roof tanks will be used for onsite water storage, stormwater attenuation and overflow discharge of these structures will also require consideration to avoid point discharge. These on site devices will be specifically designed at building consent stage, the engineering plans give some direction. Flows will be generally directed to the low points created by the road swales or natural filter strips, which have been designed for sufficient treatment of all road and driveway areas as well as private impervious areas in line with WDC and ARC TP10 standards. The swales require smooth grassed finish and must be maintained as such to be effective treatment devices. Roof flows that cannot practically discharge by dispersion device on their site will have a connection to piped system or will discharge directly by pipe to stabilised discharge at the vehicle crossing in the swale. The swales will discharge flow at stabilised outlets to the central stream through the site in line with the current natural discharge of stormwater from the site.

Overland flow paths have been designed to follow the roading layout wherever possible and within open grassed areas. These swales will maintain flow within their formation with no area of over flow onto buildable lots.

A dry attenuation pond constructed in stage 1b has been designed and constructed in September 2015 to allow for attenuation of the northern catchments which shall compensate flow of impervious areas for Lot 54-60 and road area which are unable to drain to an attenuation device. This pond shall be maintained by the owner of Lot 50.

Lots 61-74 shall attenuate flow from each individual site with private attenuation tanks which will then discharge to dispersal devices on each site. The attenuated roof flow shall compensate for any proposed impervious area unable to flow to the tank. These tanks shall be maintained by each lot owner. The access way to Lots 64-88 discharge at a dispersion device in Lot 65 and shall be maintained by owner of Lot 65.

Rock walls on site form part of the historic site context and landscape. The wall also extends into the road reserve to provide visual 'gates' to control vehicle speeds. It has been noted that although these rock walls sit partly within the Whangarei District Council land the Council has no maintenance responsibility for them.

As Built drawings have been included in Appendix B2. It is required to maintain structures to a level consistent with the approved plans. We note that minor variations in design may occur through construction, as such reference should be made to the approved as built plans when undertaking any structural works in line with this maintenance manual.

Attenuation of Lot 61-74 will be achieved with onsite tanks.

2.0 MANAGEMENT DEVICES

2.1 Grass Swales

Legal Status of Grass Swale Maintenance and Responsibilities

The site contains grass swales located within the road berms and through specified easements as detailed in Appendix B of this maintenance manual. These devices are required for treatment and conveyance of stormwater and are owned by Whangarei District. However maintenance responsibility shall rest with the adjacent lot owner who is responsible for the ongoing maintenance of these devices. For clarity the swales within the right of way pedestrian access to Pukenui Forest area shall be the responsibility of the owner of Lot 65. For the purposes of establishing the road berms to an acceptable standard, it is proposed the developer shall be responsible for the formation of all vehicle crossings over the road swales and maintain the swales for a period of 3 years following issue of titles for each individual stage.

2.1.1 Details of Proposed Maintenance Methods

2.1.1.1 Litter

Following storms and at no less than monthly intervals, an inspection of the outlet and the surroundings of the swale will be conducted. Any litter or debris should be removed and disposed of. Disposal of litter and debris must comply with all local and regional control programs. Only suitable disposal and recycling sites may be used.

2.1.1.2 Erosion Inspection

Inspections to identify areas of erosion in the swale should be carried out annually by a suitably qualified inspector. A specialist stormwater engineer should be consulted if deemed necessary by the inspector. The efficiency and erosion potential is also affected by rutting caused by traffic driving on the swale. If any wheel marks are evident these should be filled and regressed immediately.

Any areas that are eroded should be reinstated promptly with topsoil and grass.

2.1.1.3 Grass Mowing

The grass in the swales should be mowed regularly and maintained at a length of approximately 150mm.

It is recommended that a regular mowing contract be entered into and that this contract be included as part of this maintenance manual.

2.1.1.4 Planting/Wetland Vegetation

Planting and Vegetation in wetland swales should be checked annually to insure growth is not blocking channel and area is free of weeds that could affect water flow.

2.1.1.5 Structural Inspection

The outlet structure for the swale consists of cess-pit overflow to piped reticulation or rock rip rap discharges to the existing stream channel at the low point in the swales. The cess-pit should maintain at least a 50mm proud of the swale to allow minor ponding of storm flows.

The swales are also proposed to flow through culverts and slot drains constructed for vehicle crossings and under rock walls. These culverts and slot drains should maintain at least a 50mm proud of the swale to allow minor ponding of storm flow. The vehicle crossing shall be formed to allow overtopping of the slot drain in high flow events.

Visual inspections of the cess-pit, culverts, vehicle crossings and outlet structures should be carried out during litter inspections. If these inspections should identify any repair or maintenance required to the inlets and outlets, a qualified engineer or registered plumber should be appointed to advise of remedial works required.

Repairs to any structural component of the cess pit should be made promptly

Sediment is designed to fall into the sediment trap at the base of the cess-pit. This sediment area should be inspected annually and is required to be cleaned out when 30% of usable volume remains (15cm from the outlet orifice).

Sediment shall be cleaned out of sediment trap with the use of a vacuum truck, and sediment shall be disposed of to a certified landfill.

2.2 Tanks and Outlet Structure

2.2.1 Legal Status of Tank Maintenance and Responsibilities

Each site will contain its own private water storage tank for the catchment and reuse of roof water and Lots 61-74 shall have specific on site attenuation tanks. The outlet of the attenuation tanks must be maintained to insure the appropriate detention of storm events. The overflow from these tanks and discharge from all impervious area is required to be dispersed over a wide area to replicate sheet flow prior to exiting the lot boundaries as specified in each lot covenant.

2.2.2 Details of Proposed Maintenance Methods

2.2.2.1 Litter

Following storms and at no less than monthly intervals, an inspection of the inlet and outlet structures of the stormwater tanks will be conducted. Any litter or debris should be removed and disposed of. Disposal of litter and debris must comply with all local and regional control programs, only suitable disposal and recycling sites should be used.

2.2.2.2 Erosion

Inspections to identify areas of erosion in the filter strip or dispersion trench should be carried out annually by a suitably qualified inspector to insure no channelization of flows is occurring. A specialist stormwater engineer should be consulted if deemed necessary by the inspector.

Any areas that are eroded should be reinstated promptly.

2.2.2.3 Structural Inspection

Visual inspections of the tank and the outlet structures should be carried out during litter inspections. If these inspections should identify any repair or maintenance required to the inlets and outlets, a qualified engineer or registered plumber should be appointed to advise of remedial works required.

Repairs to any structural component of the tanks or outlet structure that alters the position or concentration of water discharge should be made promptly.

2.3 Rock Wall

2.3.1 Legal Status of Rock Wall Maintenance and Responsibilities

The site contains several kilometres of rock walls some of which abut or run through the road reserve. Rock walls within the road reserve shall not be maintained by the Whangarei District Council and will be the responsibility of the adjacent land owner.

2.3.2 Details of Proposed Maintenance Methods

2.3.2.1 Litter

Following storms and at no less than monthly intervals, an inspection of the surroundings of the wall should be conducted. Any litter or debris should be removed and disposed of. Disposal of litter and debris must comply with all local and regional control programs. Only suitable disposal and recycling sites may be used.

2.3.2.2 Stone Fall

Minor vandalism and severe weather may cause capping stones or other minor stones to be displaced. These can be replaced if able by inexperienced persons. Inspection of the wall should be conducted annually for minor stone fall.

2.3.2.3 *Structural Inspection*

Following any major event on the walls structure an inspection shall be carried out by an experienced stone mason. Works shall be undertaken by the stone mason as necessary to insure the wall is structurally stable and in line with the surrounding wall.

2.4 Maintenance Frequency

The following is a Summary table of the above legal and operational maintenance requirements.

Item	Frequency	Completed by Whom	
		Within 5 years of issue of Title	Follow 5 years of issue of Title
<u>Swales</u>			
Litter check inlet and outlet, in particular orifice screen.	Monthly and following storm	Evo Holdings Ltd	Adjacent Lot Owner
Erosion control	Monthly and following storm	Evo Holdings Ltd	Adjacent Lot Owner
Grass Mowing	Monthly and as required	Evo Holdings Ltd	Adjacent Lot Owner
Structural inspection	Annually or as required by consent	Evo Holdings Ltd	Adjacent Lot Owner
<u>Tanks and Outlet</u>			
Litter	Monthly and following storm	Lot Owner	Lot Owner
Erosion control	Monthly and following storm	Lot Owner	Lot Owner
Structural inspection	Monthly	Lot Owner	Lot Owner
<u>Rock Walls</u>			
Litter	Monthly and Following Storms	Evo Holdings Ltd	Adjacent Lot Owner
Rock Fall	Annually	Evo Holdings Ltd	Adjacent Lot Owner
Structural inspection	Annually	Evo Holdings Ltd	Adjacent Lot Owner

APPENDIX A

A1 – CONSTRUCTION MAINTENANCE LOG

**KARANUI DEVELOPMENT
390 THREE MILE BUSH ROAD, KAMO**

Grassed Road Swales

Maintenance and Monitoring Log

Date of Inspection:

Inspection Type:

Item	Checked Yes	No	Satisfactory	Unsatisfactory	Comments/Work undertaken
Litter					
Erosion Inspection					
Grass Mowing					
Structural Inspection					

Action to be taken

Yes

No

Details of action required/inspector's comments:

Inspectors Signature _____

Date: _____

Reinspection Follow up

Reinspection Date: _____

Site reinspection was satisfactory
Next routine inspection is scheduled for _____ Date: _____

Site reinspection was unsatisfactory

Comments:

Inspector's Signature: _____ Date: _____

**KARANUI DEVELOPMENT
390 THREE MILE BUSH ROAD, KAMO**

Tanks and Outlet

Maintenance and Monitoring Log

Date of Inspection:

Inspection Type:

Item	Checked Yes	No	Satisfactory	Unsatisfactory	Comments/Work undertaken
Litter					
Erosion Inspection					
Structural Inspection					

Action to be taken

Yes

No

Details of action required/inspector's comments:

Inspectors Signature _____

Date: _____

Reinspection Follow up

Reinspection Date: _____

Site reinspection was satisfactory
Next routine inspection is scheduled for _____
Date: _____

Site reinspection was unsatisfactory

Comments:

Inspector's Signature: _____ Date: _____

**KARANUI DEVELOPMENT
390 THREE MILE BUSH ROAD, KAMO**

Rock Walls

Maintenance and Monitoring Log

Date of Inspection:

Inspection Type:

Item	Checked Yes	Checked No	Satisfactory	Unsatisfactory	Comments/Work undertaken
Litter					
Stone Fall					
Structural Inspection					

Action to be taken

Yes

No

Details of action required/inspector's comments:

Inspectors Signature _____

Date: _____

Reinspection Follow up

Reinspection Date: _____

Site reinspection was satisfactory
Next routine inspection is scheduled for _____
Date: _____

Site reinspection was unsatisfactory

Comments:

Inspector's Signature: _____ Date: _____

In reply please quote: 9266

03 April 2017

Evo Holdings Ltd
c/- Cato Bolam Ltd
PO Box 1919
Whangarei 0140

Attention: Simon Reiher

GEOTECHNICAL COMPLETION REPORT
FOR EARTHWORKS AT KARANUI ESTATE - STAGE 3

Introduction

Subdivision consent has been granted to subdivide the above property. The subdivision will be developed in 3 Stages.

The purpose of this report is to present a summary of our observations and test results for fill compaction and provide a statement on the suitability of the land for building development (NZS 4404 Schedule 2A) for Stage 3 of the subdivision (Lots 53 - 74) as required by the subdivision consent, and in accordance with the Whangarei District Council Environmental Engineering Standards.

Previous Report

A site suitability report was prepared by Hawthorn Geddes Engineers and Architects Ltd (dated: 10 December 2013, Job No. 9266 Rev 1). The geotechnical investigation for this report identified volcanic soils to the north of the stream and greywacke derived soils to the south of the steam. Stage 3 of the subdivision is the area south of the stream.

The site suitability report advised that apart from a localised area of surface creep the existing slopes south of the stream have adequate stability for the proposed subdivision. It recommended no building on slopes steeper than 15° across the entire subdivision or the area affected by surface creep and erosion on Lots 53, 54 and 57 south of the stream.

The report recommended that excavations be limited to no more than 2m and fill no more than 1.5m without specific engineering assessment. It also recommended no fill be placed on slopes steeper than 10° and batters be formed at no steeper than 3H:1V (18°) without further engineering assessment.

The soils encountered in the investigation identified soils complied with "good ground" in accordance with NZS 3604:2011, except that the soil is subject to shrink/swell movement (expansive soils).

Engineering Works

Earthworks undertaken for Stage 3 included excavations of up to 1.5m and fill of less than 1m for the new road. In addition level building platforms have been created on several lots. Building sites that have been filled include Lots 56 -58, Lot 62 and, Lots 72 to 74.

The attached As-Built (provided by Cato Bolam Consultants) shows the extent of earthworks.

Earthworks covered by this report were carried out from January 2017 through to March 2017. This work was undertaken primarily under the direction of Murray Smith. Machinery used on site comprised various excavators, water cart, dump trucks and padfoot roller. All fill material was obtained on site. Fill material comprised cohesive silt and clay with moderate to high plasticity.

Compaction Specification

The specification for placement and compaction of fill was based on the requirements of NZS 4431:1989 Code of Practice for Earth fill for Residential Development.

Fill was required to be placed in layers at an appropriate moisture content and compacted with a padfoot roller to achieve the following requirements:

- Average Air voids of not less than 10%, with no single result more than 12%
- Minimum corrected shear vane of not less than 120 kPa.

Testing and Monitoring

Prior to placing any fill inspections were undertaken to observe topsoil stripping and benching of slopes. All sites were adequately prepared prior to placing engineered fill.

Nuclear Densometer testing (NDT) was performed of fill placed on building platforms created on Lots 56 -58, Lot 62, Lot 72- 74. Tests were performed at nominal 0.5 height intervals as the fill was being placed. Test results are attached.

Some tests did not comply with the specification due to low moisture content and high air voids. Where the fill was rejected the material was conditioned, re-compacted and tested again for compliance until it met the requirements of the specification.

We also observed compaction of the fill. Approved fill was visually assessed as having appropriate moisture content and the compaction plant was observed "walking out" indicating an adequate level of compaction.

Batters have generally been formed at appropriate gradients. On Lot 54 the excavated batter has been formed at steeper than 2H:1V, which is more than the recommended batter of 3H:1V.

Recommendations for Future Development

General - Lots 53 - 74

Based on the NDT results and our observations, we consider engineered fill and natural ground is appropriate for supporting the residential buildings on shallow foundations.

We consider ground conditions for building platforms on Lots 53 – 74 are consistent with "good ground" to NZS 3604 except that the soils are expansive.

The sites are suitable for conventional concrete floor slabs sized to NZS 3604. Perimeter footings shall be embedded at least 600mm below finished ground to minimise potential shrink/swell movement. Alternatively waffle-raft or Ribraft type floor systems can be used. Waffle-raft foundations shall be designed for Class M moderately expansive soils in accordance with AS 2870. Waffle-rafts may either be specifically designed or based on the standard designs from AS 2870.

Further earthworks shall be limited to the following, without specific engineering assessment:

- Fill shall not be placed on slopes steeper than 10°
- Excavations be limited to no more than 2m
- Fill be limited to no more than 1.5m, and
- Cut and fill batters should be formed at no steeper than 3H:1V (18°).

Subject to recommendations outlined in this report we consider in terms of Section 71 of the Building Act:

- (a) the land on which the building work is to be carried out is not subject nor likely to slippage; and
- (b) the building work is not likely to accelerate, worsen, or result in slippage.

Specific Recommendations for Lots

Lot 54

No building within 3m of the excavated batter steeper than 3H:1V, unless the base of the slope is buttressed. This could involve constructing a 1m high retaining wall at the base of the slope and back filling with soil.

Lots 57

No further earthworks on this lot without specific engineering assessment

Lot 68

This lot contains uncontrolled fill. This fill is not suitable for buildings supported on shallow foundations without further engineering assessment.

Limitation

This report has been prepared solely for the benefit of our client Evo Holdings Ltd and the Whangarei District Council in relation to the resource consent for which this report has been prepared. The comments in it are limited to the purpose stated in this report. No liability is accepted by Hawthorn Geddes Engineers & Architects Ltd in respect of its use by any other person, and any other person who relies upon any matter contained in this report does so entirely at their own risk.

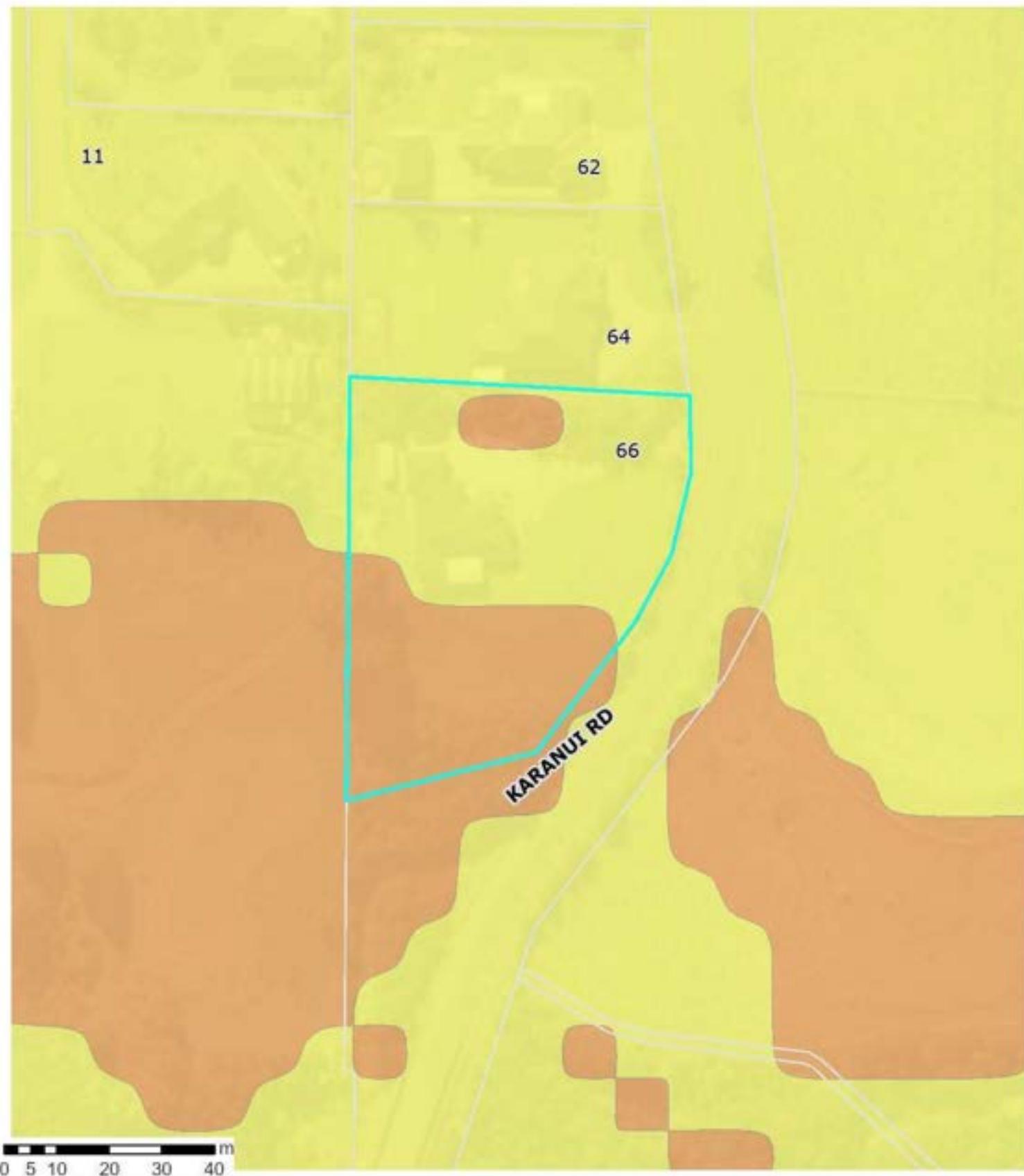


Dean Botica
Hawthorn Geddes
engineers & architects ltd

Report prepared by: Tiana Epati

Encl: WDC Form B	(x2 A4 Pages)
Cato Bolam contour plans	(x3 A3 Pages)
NDM Test Reports	(x16 A4 Pages)
Site Inspection Reports & Photos	(x7 A4 Pages)

Land Instability



Landslide Susceptibility Zone

- High (Red)
- Moderate (Orange)
- Low (Yellow)

Whangarei District Council holds indicative information on land stability hazard for Whangarei. 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/documents/council-reports/hazard-reports/land-stability/landslide-susceptibility-technical-report.pdf>

22 September 2025

Scale 1:1,000



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 2025

Scale 1:1,000



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>.

The information displayed is schematic only and serves as a guide. It has been compiled from Whangarei District Council records and is made available in good faith but its accuracy or completeness is not guaranteed. Parcel Information is sourced from the Land Information New Zealand (LINZ) Data Service.
CROWN COPYRIGHT RESERVED. © Copyright Whangarei District Council



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

23 September 2025

Scale 1:1,000

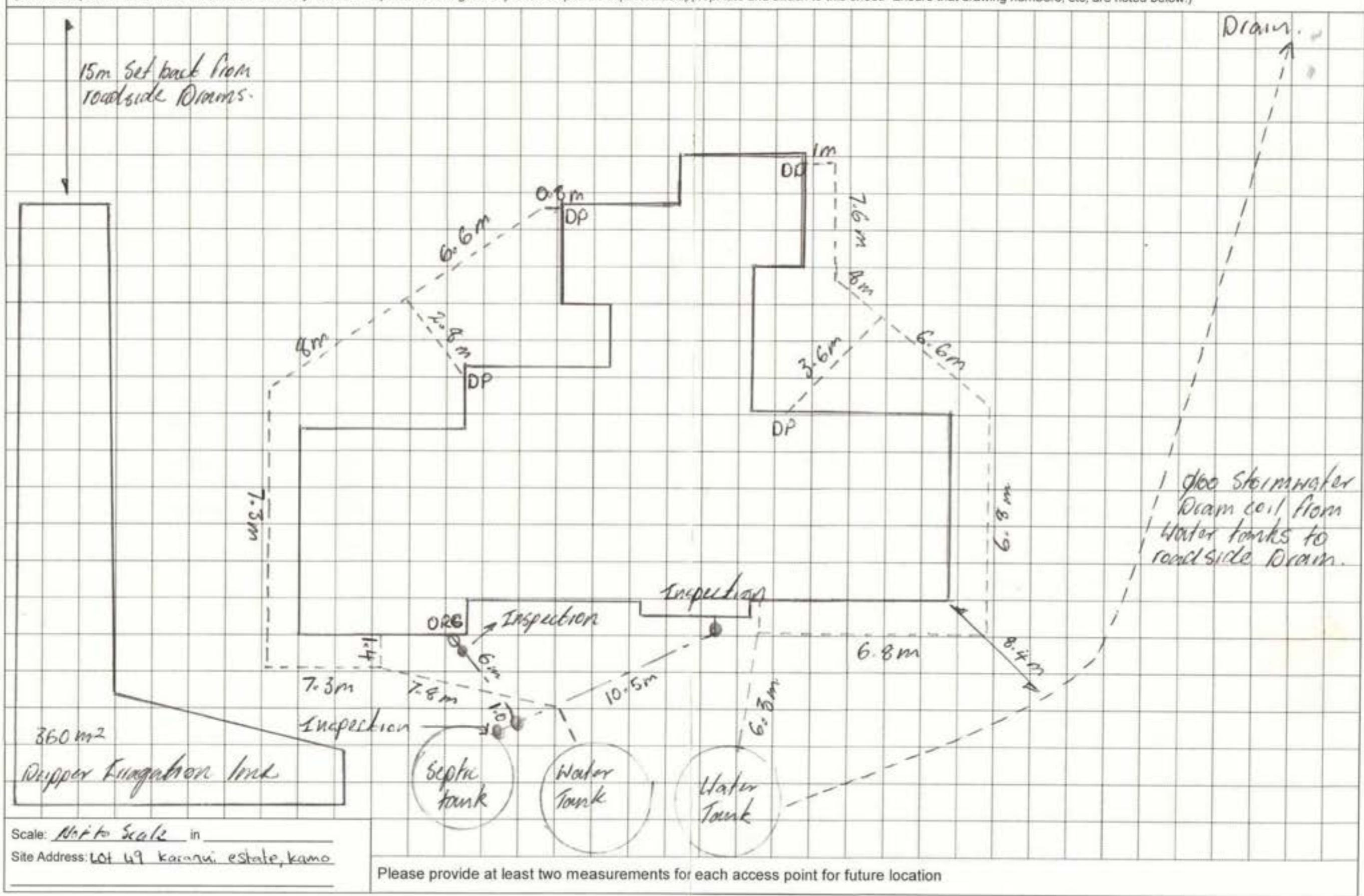


Water, Wastewater and Stormwater – Map Legend

Water	Stormwater	Stormwater Catchment and Flood Management	Wastewater
Water Point	Stormwater Point	Overland Flow Paths 2021	Wastewater Point
Actuator	End Structure	Modelled Catchment Flowpaths 2021	Backflow Device
 WDC	 WDC	 0.2 ha to 0.4 ha	 WDC
 Private	 Private	 0.4 ha to 1.0 ha	 Private
Backflow Device	Fitting Node	 1.0 ha to 3.0 ha	End Structure
 WDC	 WDC	 3.0 ha to 100.0 ha	 WDC
 Private	 Private	 100.0 ha and above	 Private
Bore	GPT	Surface Depression Ponding Areas 2021	Fitting Node
 WDC	 WDC	 0.200000 - 0.600000 m	 WDC
 Private	 Private	 0.600001 - 1.200000 m	 Private
End Structure	Manhole	 1.200001 - 2.000000 m	Manhole
 WDC	 WDC	 2.000001 - 4.000000 m	 WDC
 Private	 Private	 4.000001 - 9.910000 m	 Private
Fitting Node	Pump	Overland Flow Paths 2017	Meter
 WDC	 WDC	Catchment Area 2017	 WDC
 Private	 Private	 0.2 - 1.0 Ha	 Private
Hydrant	Stormwater Inlet	 1.0 - 2.0 Ha	Motor Control Centre
 WDC	 WDC	 2.0 - 5.0 Ha	 WDC
 Private	 Private	 > 5.0 Ha	 Private
Meter	Valve	Depression Storage Areas 2017	Pump
 WDC	 WDC	 Depression Storage Areas	 WDC
Meter Manifold			 Private
 WDC			Valve
 Private			 WDC
Pump	Stormwater Line		 Private
 WDC	Abandoned Pipe		Wastewater Line
 Private			Abandoned Pipe
Valve	Culvert		
 WDC	 WDC		Main
 RED	 Private		 Rising Main (Pressure)
 Private			 Sewer Gravity Main
Water Line	Drainage		 Private
Abandoned Pipe	 WDC		 Other
 WDC	 Private		Process Pipework
Trunk Main	Main		 WDC
 WDC	 WDC		 Private
 Private	 Private		Service Line
Other Main	Service Line		 WDC
 WDC	 WDC		 Private
 Private	 Private		Wastewater Area
Process Pipework	Surface Drain		Chamber
 WDC	 WDC		 WDC
 Private	 Private		 Private
Reticulation	Stormwater Area		Pressure Sewer System
 WDC	Basin		 Public
 Private	 WDC		 Private
Service Line	Chamber		
 WDC	 WDC		
 Private	 Private		
Water Area			
Chamber			
 WDC			
 Private			
Reservoir			
 WDC			
 Private			

PART C: As Built Services Plan

(To 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, are noted below.)



Rates LIM Report

As at: Monday, 22 September, 2025

Property Number 166827
Legal Description LOT 49 DP 496877
Assessment Number 0032031976
Address 66 Karanui Road Te Kamo 0185
Record of Title(s) 732463
Land Value \$550,000
Capital Value \$1,300,000
Date of Valuation 01-July-2024

Effective Date (used for rating purposes) 01-July-2025

Meter Location

Rates Breakdown (up to 30 June 2026)

Rates Charge	Charge Total
General Residential - Lifestyle	\$1,604.52
Stormwater	\$79.00
Uniform Annual General Charge	\$901.00
Regional Council Services	\$229.89
Regional Economic Development	\$16.72
Regional Emergency & Hazard Management	\$67.31
Regional Flood Infrastructure	\$41.66
Regional Land and Freshwater Management	\$166.43
Regional Pest Management	\$109.47
Regional Rescue Services	\$8.87
Regional Sporting Facilities	\$16.09
Regional Transport Rate	\$30.40
Annual Charge Total	\$3,271.36

Opening Balance as at 01/07/2025 \$0.00

Rates Instalments	Total
20/07/2025 Instalment	\$820.36
20/10/2025 Instalment	\$817.00
20/01/2026 Instalment	\$817.00
20/04/2026 Instalment	\$817.00
Rates Total	\$3,271.36

Balance to Clear \$2,451.00

Building Consent No: BC1701523

Section 51, Building Act 2004

Issued: 24 January 2018

Project Information Memorandum No: PM1700375

The Building

Street address of building: 66 Karanui Road
Kamo 0185

Legal description of land where building is located: LOT 49 DP 496877
LLP: 129079

Building name: N/A

Location of building within site/block number: N/A

Level/unit number: N/A

The Owner

K J Smith
S K Smith
6 Scarborough Lane
Kamo 0112

Phone number: N/A
Mobile number: 021498761
Facsimile number: N/A
Email address: N/A
Website: N/A

Street address/registered office: 66 Karanui Road
Kamo 0185

First point of contact for communications with Council/building consent authority.

Contact Person

K Fowler Homes (Northland) Limited
PO Box 1968
Whangarei 0140

Phone number: 4384840
Mobile number: 021438481
Facsimile number: 4384845
Email address: waynep@fowlerhomes.co.nz
Website: www.fowlerhomes.co.nz

Building Work

The following building work is authorised by this consent:

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.

This building consent is subject to the following conditions:

Section 90 Building Act 2004

Section 90 Building Act 2004 Inspections by Building Consent Authorities applies. This building consent is subject to the condition that agents authorised by the building consent authority are entitled at all times during normal working hours or while work is being done to inspect land on which building work is being or is proposed to be carried out and building work that has been or is being carried out on or off the building site and any building.

Nominated Inspections are carried out to ensure that the building work is in accordance with the building consent. Completed Inspections will be classified as pass, or pass subject to remedial work or failed status.

1. See attached schedule of site requirements for inspections and documentation required.
2. To confirm compliance of the specific engineered foundation, structure and durability a Producer Statement PS4 for the construction monitoring is required. This must be appropriate and to the level identified in the Producer Statement PS1 or by agreement with the Building Consent Authority. This is to ensure the building work performed is in accordance with the approved building consent and the engineering assumptions and design parameters are met.

Compliance Schedule

A compliance schedule is not required for the building.

Attachments

No attachments.

Additional Information

1. The applicant must control dust nuisance created by any site or building works.
2. Toilet facilities must be provided within reasonable distance of the construction site. Ground discharge is no longer acceptable.
3. Lapsing of building consent. For the purposes of S52(b) of the Building Act 2004, the period after which this consent will lapse if the building work to which it relates does not commence will be 12 months from the date of issue.
4. To confirm compliance an Energy Works Certificate will be required (Electrical).
5. The owner of the wastewater system shall enter into a service agreement with the installer and a copy of the agreement shall be given to the Inspector prior to issue of Code of Compliance Certificate.
6. Building advice that a maintenance schedule is recommended for the ongoing performance of the building elements to ensure they meet their serviceable life please consult with your designer to develop a specific maintenance programme or another helpful source of information is the BRANZ web site <http://www.maintainingmyhome.org.nz/maintenance-guides/maintenance-schedule>.



7. To confirm compliance a Producer Statement PS3 construction is required from a suitably qualified and experienced person. The constructor/ contractor to ensure the building work performed is in accordance with the approved building consent for the onsite waste water disposal system, in addition to this the following is also required:
 - As built
 - Maintenance agreement
 - Energy works certificate (electrical)

A handwritten signature in black ink, appearing to read 'Soanes'.

Donna Soanes
Support Assistant – Building Processing
On behalf of Whangarei District Council

24 January 2018

Date

SITE DESCRIPTION

Territorial authority: Whangarei District Council
 Lot: 49
 D.P.: 496877
 Site Area: 4,104m²
 House Area: 242.50m² (Over Foundation)
 Site Coverage: 5.91%
 Wind Zone: High
 Snow Loading: N0
 Ceiling Height: +2,420mm
 Earthquake Zone: Zone 1
 Exposure Zone: Zone C
 Climate Zone: Zone 1
 F.F.L. = 0
 F.G.L. = -150mm



GENERAL NOTES:

Anti-slip: To all access routes both internal & external, provide anti-slip surface complying with NZBC D1/AS Table 2 (except surfaces in side Entry Doors of housing maybe considered dry areas).

Boundary setbacks are to foundation slab, NOT cladding face.

DRAINAGE:

Supply a 1:100 scale 'As - Built drawing of drains and fittings to the territorial authority and to the owner on completion.

uPVC pipes, bends, junctions, fittings and joints to AS/NZS 1254 and AS/NZS 1260.

Provide inspection points as per NZBC E1/AS1 clause 3.7
Access for Maintenance.

Allow for steps of landscaping to all external doors so steps from F.F.L. to F.G.L. are no greater than 190mm.

All pipes in concrete to have Deno tape (synthetic fabric based tape impregnated and coated with organic petroleum based compounds) applied.

Pipes shall incorporate expansion joints in accordance with Chapter 8 of NZBC 7643.

Hot water pipes to be sized in accordance to NZBC G12 and Nzs 4305:1996 Mains pressure.

Contractor to coordinate all drains laid under building with foundation construction setout to ensure min depth and fall requirements are achieved.

Drains installed under building shall be:

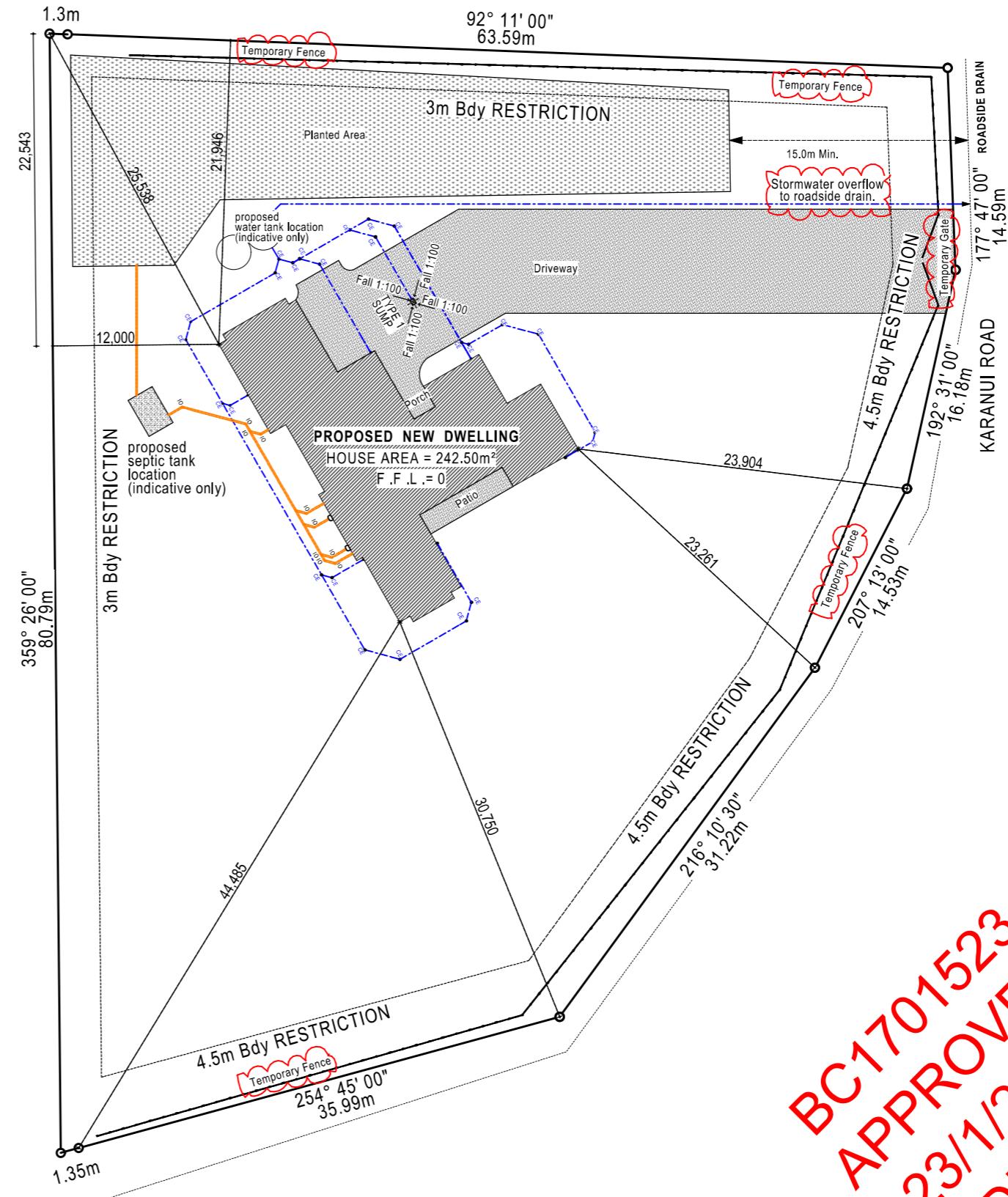
- A) Straight and even gradient
- B) Separated from building foundation by at least 25mm, and
- C) When passing through concrete, sleeved or wrapped in a durable and flexible material to allow for expansion and contraction.

Drains passing beneath buildings with a concrete slab on ground shall have in addition to the above:

- A) 50mm clearance from top of the pipe to the underside of the slab, and
- B) Junctions beneath the building joining at an angle of not more than 45°.
- C) Cleaning access either side of slab.

SITE PLAN

Scale: 1:400



LEGEND:

Paint finished 10mm min gib board lined H1.2 treated timber studs framing @600 ctrs.

SD Smoke detector

carpet Selected carpet to these areas

Selected tiles over water-proof membrane, any tiles at entryways to be ceramic finish to comply with NZBC D1/AS1 clause 2.13(Table 2 -wet slip resistance).

concrete Exposed concrete to these areas

DB Distribution board

MB Meter Board (600H x 400W)

GENERAL NOTES:

Where downlights are to be installed, only CA 80, CA 135, IC or IC-F downlights are permitted in private or rental dwellings. (Note that IC downlights can only be used with insulation that passes the needle flame test of AS/NZS 60598 2.2 clause 11.5). Recessed downlights that are not labelled as above are not permitted to be installed into residential buildings.

All interior doors to be paint finished MDF hollow core doors with selected hardware by client.

All internal doors to be 1980mm. All windows and doors dimensions shown are rough openings only - site verify prior to fabrication.

Gib Aquafine to all wet areas with 2 coats of enamel paint finish to unplied walls.

All lintels to be as per truss manufacturers specifications and details.

All glazing to comply with NZS 4223.

Hot water pipes to be sized according to NZBC G12 & NZS 4305:1996. Mains pressure 15mm dia. allow 12m max pipe length, pipe length beyond this must be lagged.

Finished floor level to be maintained at 150mm above finished ground level, 100mm min from paving.

Anti-slip: To all access routes both internally and externally, provide anti-slip surface complying with NZBC D1/AS1 Table 2 (surface in side entry doors of housing maybe considered dry areas).

EXTERIOR CLADDING (PRIMARY):
70 Series Brick Veneer cladding on 50mm cavity

ROOF CLADDING:

25° Gerard corona shake metal tile roofing with 600mm and 120mm overhang/soffit to framing on Thermakraft 215 self-supporting roof underlay on 50x40mm H1.2 battens depending on gauge @ 370mm center max on approved roof trusses @ 900 center max.

Fixing Type S = 2/90 x 3.15 gun nails.

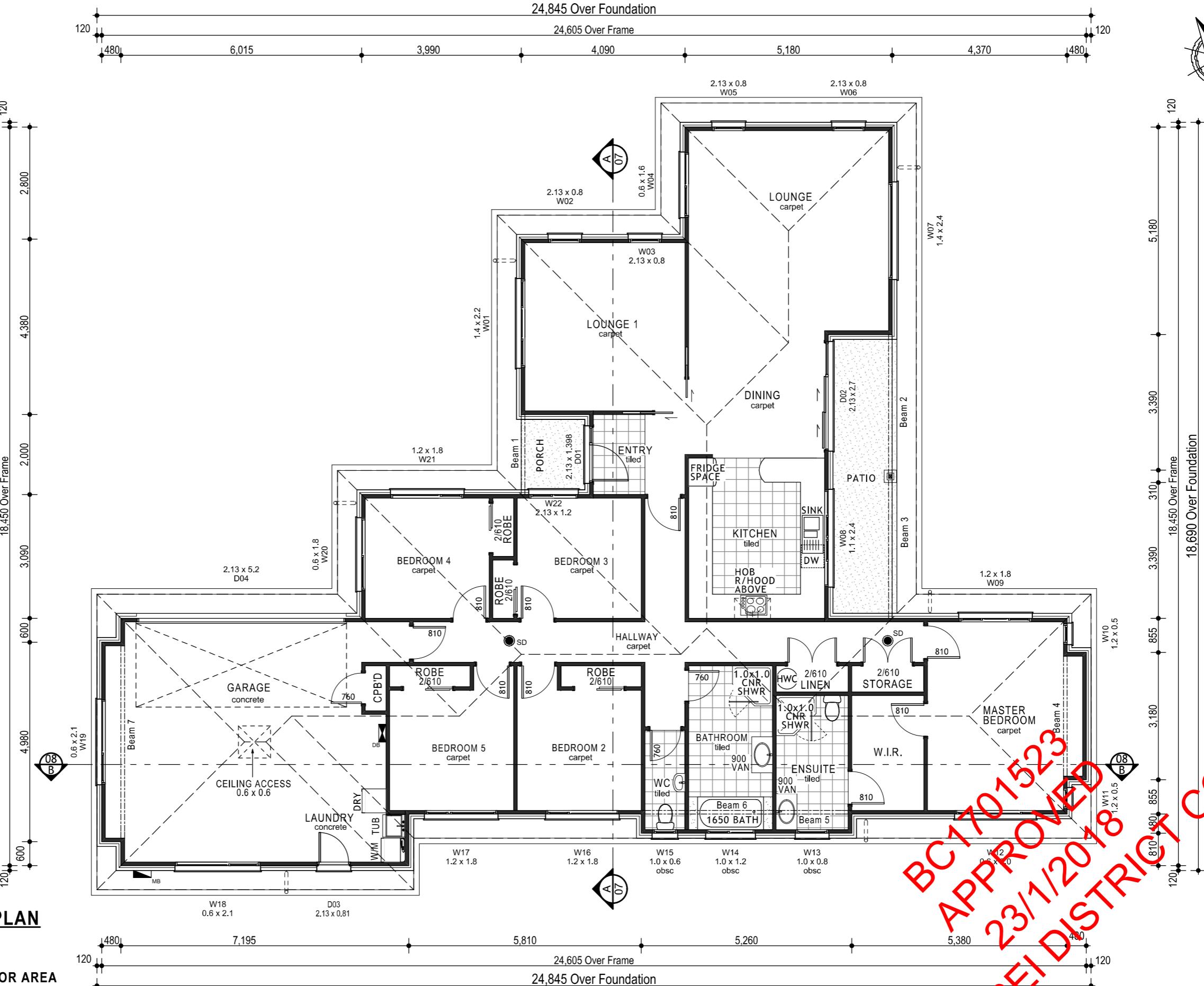
FLOOR PLAN

SCALE 1:100

HOUSE FLOOR AREA

=231.20m² (OVER FRAME)

=242.50m² (OVER FOUNDATION)



BC1701523 APPROVED 23/1/2018 WHANGAREI DISTRICT COUNCIL

JOB TITLE:	DRAWING TITLE:	LEGAL DESCRIPTION:	NOTES:	DATE OF ISSUE:	DESIGNER:	SCALE:	SHEET:
SMITH 4	FLOOR PLAN	LOT: 49 DP: 496877 ADDRESS: Karanui Estate, Kamo, Whangarei, 0185	-Subject to council approval. -All measurements to be confirmed on site by the contractor prior to the commencement of work. -All construction to comply with the NZBC/NZS:3604 alongside with all standards alike. Fowler Homes has the sole and exclusive right to the copyright in all Prelim, Sketches, Contract Drawings and Contract Documentation	19 January, 2018	TDZ	1:100	4
				AMENDMENT DATE:	VERSION:	JOB #:	OF: 28
					VC1.0.0		



GENERAL NOTES:

Notes: Install all proprietary products in accordance with their manufacturer's instructions, unless otherwise stated. Refer also to Architectural specification

ROOF CLADDING:

Selected 25° Gerard corona shake metal tile roofing with 600mm and 120mm overhang/soffit to framing on Thermakraft 215 self-supporting roof underlay on 50x40mm H1.2 battens depending on gauge @ 370mm center max on approved roof trusses @ 900 center max. Fixing Type S = 2/90 x 3.15 gun nails.

SOFFITS:

Painted finished uPVC jointed 4.5mm Silkline

EXTERIOR CLADDING (PRIMARY):

70 Series Brick Veneer cladding on 50mm cavity

WINDOW JOINERY:

Selected powder coated aluminium framed windows (selected series). All windows dimensions shown are rough opening only, verify site prior to fabrication.

DOORS:

All other doors to be powder coated aluminium framed door joinery (selected series). Garage door to be coloursteel sectional flat panel door and opener with x2 remotes.

FOUNDATION & SLAB CONSTRUCTION:

Ribraft system 85mm Thick 25MPa concrete slab (min) with SE82 mesh, 30mm top cover on 1100 x 1100 x 220 thick polystyrene infill panels over 0.25mm DPM on 25mm Sand Blinding & 150mm well compacted hardfill. 3/HD12 bars reinforcing to perimeter footing.

GLAZING:

Note: All windows shall be constructed in accordance with NZS 4211 to suit location. All glazing shall be to NZS 4223 Pt 3 Human Impact Safety requirements (i.e. Grade A safety glazing material to bathroom windows & full height glazing). Bathrooms to have obscured glass.

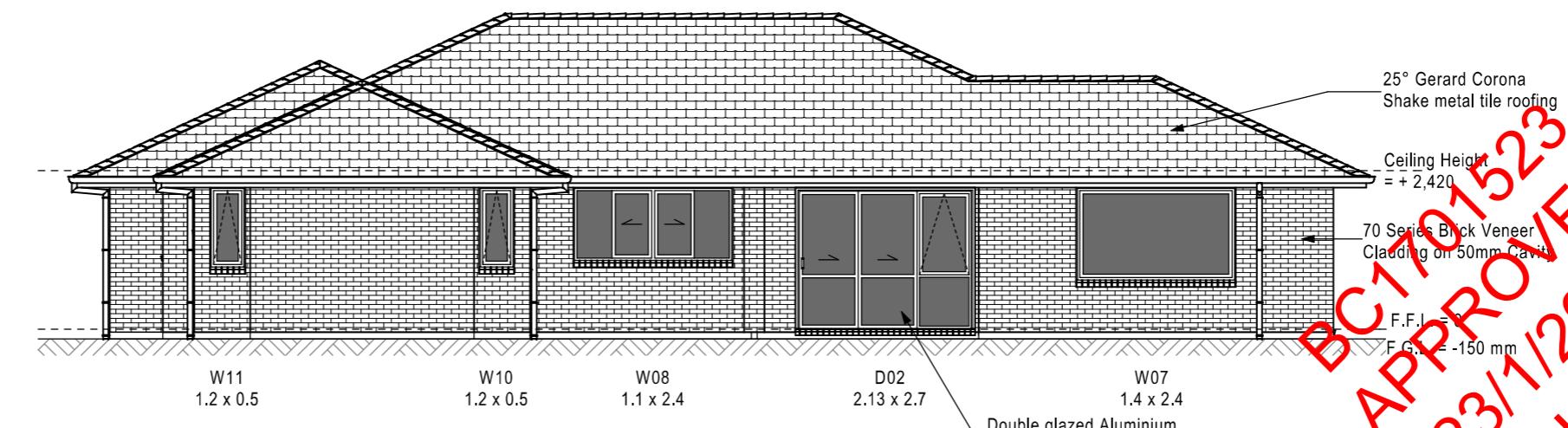
'A' grade safety glass to all doors without transoms. WANZ support bars to all doors and windows.



NORTH ELEVATION

SCALE 1:100

BUILDING ENVELOPE RISK MATRIX		
All Elevation		
Risk Factor	Risk Severity	Risk Score
Wind zone (per NZS 3604)	High risk	1
Number of storeys	Low risk	0
Roof/wall intersection design	Low	0
Eaves width	Very high risk	5
Envelope complexity	Low risk	0
Deck design	Low	0
Total Risk Score:		6



EAST ELEVATION

SCALE 1:100



JOB TITLE:

SMITH 4

DRAWING TITLE:

ELEVATIONS

LEGAL DESCRIPTION:

LOT: 49

DP: 496877

ADDRESS: Karanui Estate, Kamo, Whangarei, 0185

NOTES:

-Subject to council approval
-All measurements to be confirmed on site by the contractor prior to the commencement of work
-All construction to comply with the NZBC/NZS 3604 alongside with all standards alike.

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DATE OF ISSUE:

19 January, 2018

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DESIGNER:

TDZ

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AMENDMENT DATE:

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VERSION:

JOB #:

OF: 28

6

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GENERAL NOTES:

Notes: Install all proprietary products in accordance with their manufacturer's instructions, unless otherwise stated. Refer also to Architectural specification

ROOF CLADDING:

Selected 25° Gerard corona shake metal tile roofing with 600mm and 120mm overhang/soffit to framing on Thermakraft 215 self-supporting roof underlay on 50x40mm H1.2 battens depending on gauge @ 370mm center max on approved roof trusses @ 900 center max. Fixing Type S = 2/90 x 3.15 gun nails.

SOFFITS:

Painted finished uPVC jointed 4.5mm Silkline

EXTERIOR CLADDING (PRIMARY):

70 Series Brick Veneer cladding on 50mm cavity

WINDOW JOINERY:

Selected powder coated aluminium framed windows (selected series). All windows dimensions shown are rough opening only, verify site prior to fabrication.

DOORS:

All other doors to be powder coated aluminium framed door joinery (selected series). Garage door to be coloursteel sectional flat panel door and opener with x2 remotes.

FOUNDATION & SLAB CONSTRUCTION:

Ribraft system 85mm Thick 25mpa concrete slab (min) with SE82 mesh, 30mm top cover on 1100 x 1100 x 220 thick polystyrene infill panels over 0.25mm DPM on 25mm Sand Blinding & 150mm well compacted hardfill. 3/HD12 bars reinforcing to perimeter footing.

GLAZING:

Note: All windows shall be constructed in accordance with NZS 4211 to suit location. All glazing shall be to NZS 4223 Pt 3 Human Impact Safety requirements (i.e. Grade A safety glazing material to bathroom windows & full height glazing). Bathrooms to have obscured glass.

'A' grade safety glass to all doors without transoms. WANZ support bars to all doors and windows.



SOUTH ELEVATION

SCALE 1:100

BUILDING ENVELOPE RISK MATRIX		
All Elevation		
Risk Factor	Risk Severity	Risk Score
Wind zone (per NZS 3604)	High risk	1
Number of storeys	Low risk	0
Roof/wall intersection design	Low	0
Eaves width	Very high risk	5
Envelope complexity	Low risk	0
Deck design	Low	0
Total Risk Score:		6



WEST ELEVATION

SCALE 1:100



JOB TITLE:

SMITH 4

DRAWING TITLE:

ELEVATIONS

LEGAL DESCRIPTION:

LOT: 49
DP: 496877

ADDRESS: Karanui
Estate, Kamo,
Whangarei, 0185

NOTES:

-Subject to council approval
-All measurements to be confirmed on site by the contractor prior to the commencement of work
-All construction to comply with the NZBC/NZS 3604 alongside with all standards alike.

Fowler Homes has the sole and exclusive right to the copyright in all Prelim, Sketches, Contract Drawings and Contract Documentation

DATE OF ISSUE:

19 January, 2018

DESIGNER:

TDZ

SCALE:

1:100

AMENDMENT DATE:

VERSION: VC1.0.0

JOB #:

OF: 28

BC1701523
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23/12/2018

Whangarei District Council

File: 15482

11 October 2017

SUITABILITY REPORT

Karanui Road, Kamo

(Lot 49 DP 496877)

1.0 Introduction

Richardson Stevens Consultants (1996) Ltd has been engaged by K Fowler Homes to investigate the suitability of their property (Lot 49 DP 496877) for residential construction. The purpose of the report is to assess the suitability of the building site making foundation and earthworks recommendations and detail the design of an on-site wastewater disposal system.

2.0 Site Description/ Proposal

This 4104m² property is located on the western side of Karanui Road, approximately 370m from its intersection with Heartstone Place. The property is generally gentle to moderately sloped towards the south and southeast, with an existing cut along the northern boundary resulting in a level building platform within the northern area. Ground coverage is currently grass, with shrub controlling the steeper slopes in the southern corner.

It is proposed to construct a 243m², five-bedroom dwelling founded on a RibRaft floor system.

3.0 Desk Study

A desk study has been undertaken which included the review of local geological maps.

3.1 Geology

The GNS 1:250,000 scale geological map for Whangarei indicates that the property is located within an area that is underlain by Kerikeri Volcanic Group, described as follows: "Basalt lava and volcanic plugs."

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3.2 Subdivision Report

The underlying subdivision was reported on by Hawthorn Geddes Engineers and Architects Ltd. This report is entitled "Geotechnical Engineering Report For Proposed Subdivision of Lot 2 DP 25589 and Lot 2 DP327650, 390 Three Mile Bush Road, Kamo" dated 10 December 2013. The following conclusions and recommendations relate to the property in question:

Foundations

- "We consider the soils encountered in the boreholes comply with "good ground" in accordance with NZS 3604:2011, except that the soil is subject to shrink/swell movement (expansive soils)."
- "The measured soil strength indicates that the soil has sufficient bearing capacity for foundations sized in accordance with NZS 3604:2011."
- "We recommend that conventional concrete floor slab sized to NZS 3604 have perimeter footings embedded at least 450mm below cleared ground in volcanic soils to the north of the stream (Lots 1-52) to reduce potential shrink swell movement. The area to the south of the stream with greywacke derived soils (Lot 53-74) shall have footings embedded at least 600mm below cleared ground level."

On-site Effluent Disposal

- "Disposal shall be surface covered pressure compensated dripper irrigation following secondary treatment to the levels prescribed in AS/NZS 1547."
- "Specific design shall be at building consent and be based on AS/NZS 1547 Category 4 soil for the area north of the stream (Lots 1 – 52)."

4.0 Field Investigation

A Technician from this office visited the property on 3 and 9 October 2017 to undertake a walkover inspection and three Scala Penetrometer tests. The walkover inspection did not observe any signs of concern at the building site in relation to the proposal.

Several boreholes were attempted throughout the property but were unable to reach depths greater than 0.3m due to the rocky nature of the soils encountered. The Scala Penetrometer tests were performed across the building area. These tests confirmed that Ultimate Bearing Capacities greater than 300kPa are available from just below surface.

See attached Appendix B for site testing results.

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5.0 Suitability Assessment

The Whangarei District Council has designated this property as being within a zone of low instability hazards. The following is a definition of the Low Instability Hazard Zone: "Erosion or landslide morphology is not apparent. Not considered to be at risk of instability. May, however, be at risk as a result of natural events, or development. Steeper slopes may be subject to soil creep."

5.1 Expansive Soils

The clayey soils encountered on-site are likely to be subject to volumetric change with seasonal changes in moisture content (wet winters / dry summers); this is known as expansive or reactive soils. Apart from seasonal changes in moisture content other factors that can influence soil moisture content include:

- Influence of garden watering and site drainage.
- The presence of large trees close to buildings.
- Initial soil moisture conditions during construction, especially during summer and more so during a drought. Building platforms that have dried out after initial excavation should be thoroughly wet prior to any floor slabs being poured.

Based on the visual characteristics of the subsoils encountered in the investigations at the building site, we consider that the soils are Class M (moderately reactive) as per AS2870.

5.2 Earthworks

The following are earthworks recommendations for the proposed development;

- The building site should be shaped to assist in the run-off of stormwater and avoid any ponding of rainwater.
- The over steepened bank along the northern boundary will need to be battered back to angles no greater than 1V:3H. Alternatively, the bottom of the bank could be suitably retained with the rest of the bank battered to suit.
- Un-retained fills are limited to a maximum depth of 1.0m.
- Any proposed cuts/embankments exceeding 1.5m shall be retained.
- Cuts are limited to a maximum depth of 1.5m without further review by Chartered Professional Engineer.
- Cut and fill batter should be sloped at angles less than 1V to 3H.

We also recommend that the following methodology be adopted: Topsoil should be stripped from all cut and fill areas, stripping operations extending well beyond cut and fill extents to avoid peripheral (outer boundary) fill contamination. Stockpiles of topsoil and unsuitable material should be sited well clear of the works on suitable areas of natural ground. All sloping

ground should be benched prior to the placement of any fills or drainage works and be inspected by a suitably qualified engineer. Once filling is completed it should be tested for its compaction by a suitably qualified engineer generally in accordance with NZS4431:1981 (Earthfill for Residential Development).

5.3 Foundations

It is proposed to construct a single storey dwelling on a RibRaft floor slab. To account for the expansive Class M soils, we recommend that the RibRaft is designed in accordance with AS2870. It is recommended that the RibRaft slab be placed on a minimum of 150mm of compacted granular hardfill extending 1.0m beyond the building envelope. To stiffen the foundation system, we recommend increasing the floor mesh size to SE72, and adding an additional HD12 bar in the base of the perimeter footing.

6.0 Wastewater Assessment

It is proposed to construct an effluent disposal field for the proposed dwelling which will have five bedrooms. A five-bedroom dwelling equates to a design occupancy of 7 persons/day. NZS1457:2012 requires that for households with standard fixtures sourcing water from rainwater tanks, a flow of 180L/person/day be used, therefore the total design flow is 1260L/day.

Due to the recommendations from the subdivision report and available land, we recommend the use of a secondary treatment plant loading surface pressure compensating drip irrigation line as these systems use lower application rates and are easily laid around the boundary.

We have assessed the soil as category 4 as per AS/NZS 1547:2012. Using a daily loading rate of 3.5mm/day, a field of 360m² is required.

Appended are the design calculations, installation details and plans.

7.0 Stormwater Assessment

It is our understanding that stormwater attenuation was accounted for during the subdivision stage of the development. The Consent Notice for the development states the following;

- *"Where the developed total impervious area of any residential allotment (including concrete driveways/patios, etc) will exceed 650m², suitable evidence shall be provided to illustrate that stormwater attenuation will be provided for all impervious surfaces to ensure compliance with Chapter 4, and more specifically Section 4.1 of Council's Environmental Engineering Standards 2010, to the satisfaction of the Senior Environmental Engineering Officer.*

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- *All tanks shall not be higher than 1.5m above the ground including risers and shall be screened from view from outside the lots."*

As new impervious surfaces to be created for the proposed development total less than 650m², stormwater attenuation will not be required for the proposed development. All overflows from the rainwater storage tanks should discharge to the stormwater connection at the property. As noted above, tanks should not be higher than 1.5m above the ground. The rainwater storage tanks should also be positioned to allow enough fall for the tank overflow to be gravity fed for its discharge purposes.

8.0 Conclusions

It is the conclusion of Richardson Stevens Consultants (1996) Ltd that the building area is suitable for the proposal provided the recommendations and limitations stated within this report adhered to.

We also conclude that in terms of Section 72 of the Building Act 2004;

- (a) the building work to which an application for a building consent relates will not accelerate, worsen, or result in slippage or subsidence on the land on which the building work is to be carried out or any other property; and
- (b) the land is neither subject to nor likely to be subject to slippage or subsidence.

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9.0 Limitations

This report has been prepared solely for the benefit of our client and the Whangarei District Council. The purpose is to determine the engineering suitability of the proposed residential building, in relation to the material covered by the report. The reliance by other parties on the information or opinions 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.

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.

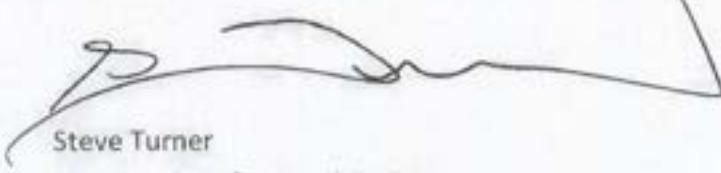
If during the construction process, conditions are encountered that differ from the inferred conditions on which the report has been based, the site should be examined by a suitably qualified engineer to determine if any modification of the design based upon this report is required.

Prepared by:



Bradley Vuletich
Engineering Technician

Approved by:



Steve Turner
Chartered Professional Engineer

Richardson Stevens Consultants (1996) Ltd

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APPROVED
23/1/2018
WHANGAREI DISTRICT COUNCIL

RECEIVED

15 AUG 2018

WHANGAREI DISTRICT COUNCIL
BUILDING CONTROL



File: 15482

8 February 2018

INSPECTION REPORT

Karanui Road, Kamo

(Lot 49 DP 496877)

K Fowler Homes has commissioned RS Eng Ltd to inspect the compacted hardfill for a new dwelling located at Karanui Road, Kamo (Lot 49 DP 496877).

One site inspection was undertaken by a technician from our consultancy. The extent of this inspection is summarised as follows;

7 February 2018

Hardfill was found to a maximum depth of approximately 0.4m. Three Scala Penetrometer tests were carried out across the building platform. The Scala tests encountered Ultimate Bearing Strengths greater than 300kPa from the surface (see attached).

It was noted that no topsoil was present during our initial subsoil testing at the property. We are therefore satisfied that the building site has been adequately stripped of topsoil.

It is the conclusion of RS Eng Ltd that the stripped site and compacted hardfill have been completed correctly for the proposal. A PS4 covering our inspection is attached.

Prepared by:

Bradley Vuletich
Engineering Technician

Approved by:

Steve Turner
Chartered Professional Engineer

RS Eng Ltd





DEC

Form 7

Code Compliance Certificate BC1701523

Section 95, Building Act 2004

Issued: 06 December 2018

The Building

Street address of building: 66 Karanui Road
Kamo 0185

Legal description of land where building is located: LOT 49 DP 496877

LLP: 129079

Building name: N/A

Location of building within site/block number: N/A

Level unit number: N/A

Current, lawfully established use: Detached Dwelling

Year first constructed: 2018

The Owner

K J Smith
S K Smith
66 Karanui Road
Kamo 0185

Phone number: N/A

Mobile number: 021498761

Facsimile number: N/A

Email address: kylie.smith@goldenbay.co.nz

Website: N/A

First point of contact for communications with the building consent authority:

Contact Person

K Fowler Homes (Northland) Limited
PO Box 1968
Whangarei 0140

Phone number: 4384840

Mobile number: 021438481

Facsimile number: N/A

Email address: waynep@fowlerhomes.co.nz

Website: www.fowlerhomes.co.nz

Street address/registered office: 66 Karanui Road
Kamo 0185

Building Work

Building Consent Number:

Issued by:

New Dwelling

BC1701523

Whangarei District Council

Code Compliance

The building consent authority named below is satisfied, on reasonable grounds, that -

(a) The building work complies with the building consent.



Stephanie Brown
Support Assistant – Building Processing
On behalf of Whangarei District Council

06 December 2018

Date



The information displayed is schematic only and serves as a guide. It has been compiled from Whangarei District Council records and is made available in good faith but its accuracy or completeness is not guaranteed.

22 September 2025
Scale 1:1,000

Parcel Information is sourced from the Land Information New Zealand (LINZ) Data Service.
CROWN COPYRIGHT RESERVED. © Copyright Whangarei District Council.



Operative District Plan – Map Legend

District-Wide Matters

Energy, Infrastructure and Transport

- 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
- 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

Hazards and Risks

- Coastal Erosion Hazard 1
- Coastal Erosion Hazard 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
- Heritage Area Overlay
- Sites of Significance to Maori
- 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

- Air 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

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

Rural Zones

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

Commercial and Mixed Use Zones

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

The information displayed is schematic only and serves as a guide.

It has been compiled from Whangarei District Council records and 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.

Land parcel Information is sourced from the Land Information New Zealand (LINZ) Data Service. The LINZ land parcel information may be updated by LINZ at any time from that time, which may result in misalignments with Whangarei District Council information.

STATEMENT OF PASSING OVER

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