

LAND INFORMATION MEMORANDUM NO: LM2301474

Received: 14 Nov 2023

Issued: 20 Nov 2023

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

APPLICANT

G Hessel, J Davis
C/- Meyer Real Estate
PO Box 409126
Snells Beach 0942

SITE INFORMATION

Property ID: 117290
Street Address: 1830 Ngunguru Road Whangarei 0173
Legal Description: LOT 2 DP 361651

This is a Land Information Memorandum only.

Full payment has been made for this Land Information Memorandum.

1: PROPERTY DETAILS.

- Location Map
- Deposited Plan: DP 361651
- Record of Title: 250180

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

- Consent Notice dated 20/01/2006 – Interest Number 6808957.3

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 WDC 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, moderate, and high zones and refer:

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

This property is in an area identified as a Flood Susceptible Area.

See map attached 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 proposes to replace the existing Natural Hazards chapter in the District Plan Operative in Part 2022 with a new Natural Hazards chapter and new rules for subdivision and land use in hazard prone areas.

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>

This property is in an area that has been identified to contain:

- Acid Sulphate Soil Risk

A copy of the Opus Acid Sulphate Soil guidance document dated August 2015 can be found on the Whangarei District Council website.

For information refer:

<https://www.wdc.govt.nz/Council/Council-documents/Policies/Acid-Sulphate-Soil-Planning-Policy>

Whangarei District Council holds information on the liquefaction vulnerability of the district. The site is located within an area classified as Liquefaction vulnerability category undetermined.

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.

- Pipeline Assets Map

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

- As-Built Services Plan from file BC1700484

Pursuant to Section 51 of the Building Act 2004 and Section 451 of the Local Government Act 1974, any future building work that encroaches upon any Council Pipe or Utility must obtain written consent from the Waste & Drainage and/or Water Services Manager/s prior to works commencing.

For information refer: <https://www.wdc.govt.nz/Council/Council-documents/Policies/Building-Over-Public-Sewers-Policy>

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

Information on Valuation and Rates 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 Consents and Code Compliance Certificates issued for this property are attached.

- BC1100842 – 2 New Retaining Walls
Building Consent – Issued 19/10/2011
Code Compliance Certificate – Issued 02/04/2012

- BC1700484 – New Dwelling
Building Consent – Issued 10/07/2017
Code Compliance Certificate – Issued 12/03/2018

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 Settlement Zone Residential Sub-Zone.
See map attached and refer to Part 3: Area Specific Matters - Chapters - Rural zones.
<https://www.wdc.govt.nz/Services/Property/Planning/Operative-District-Plan>

This property is located in a Coastal Environment.
See map attached and refer to Part 2: District Wide Matters - General District Wide Matters - Coastal Environment
<https://www.wdc.govt.nz/Services/Property/Planning/Operative-District-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/s.

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.

A copy of Cook Costello “Design Summary – Retaining Walls” dated 6/03/2011 from file BC1100842, is attached for your information

A copy of Cook Costello “Geotechnical Report” dated 03/10/2016 from file BC1700484, is attached 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.

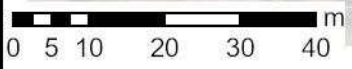
A LIM is not a suitable search of Council's records for the purposes of the National Environmental Standards (NES) for soil contamination of a potentially contaminated site.

Signed for and on behalf of Council:



W Copeland
Property Assessment Officer

Property Map



- New Subdivisions**
- Proposed Pre-223
 - 223 Certificate

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

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

20 November 2023
Scale 1:1,000



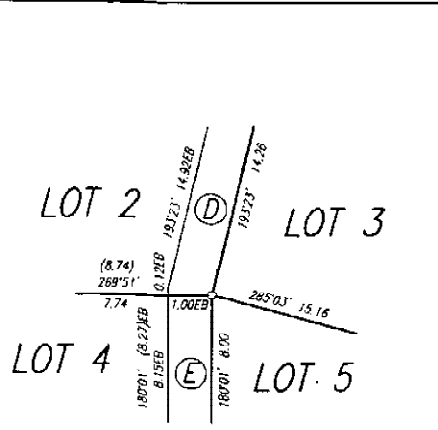


DIAGRAM B
Not to Scale

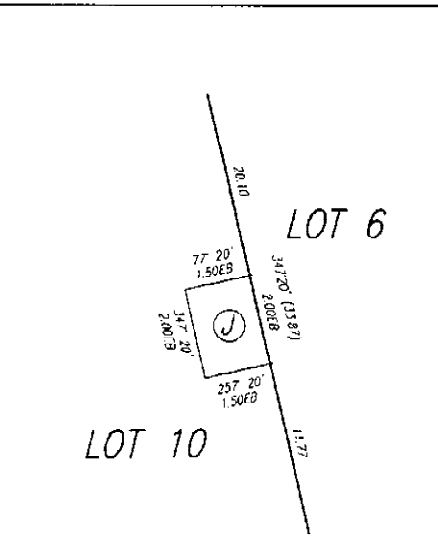


DIAGRAM C
Not to Scale

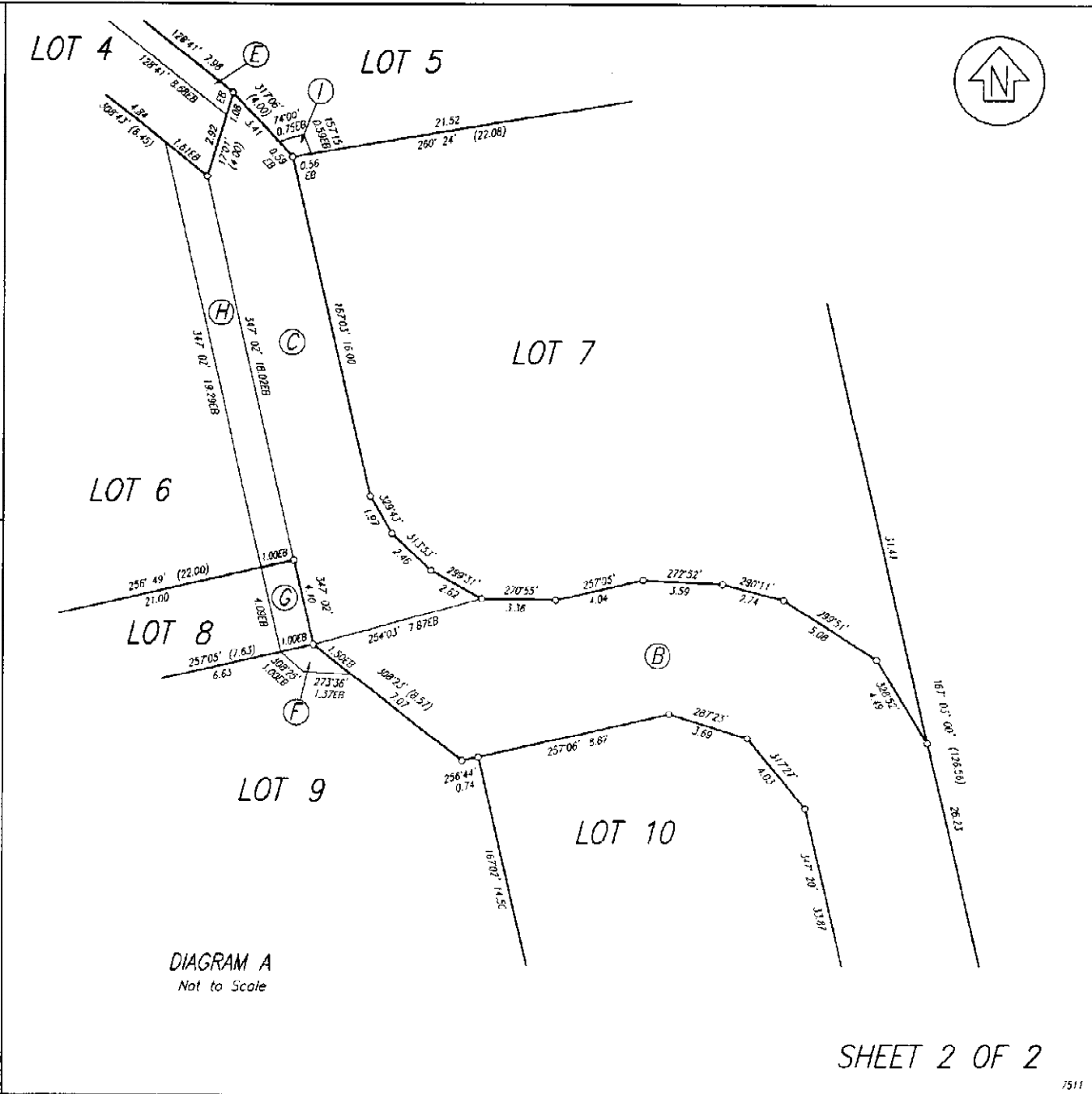


DIAGRAM A
Not to Scale

Approvals Roads shown are legal

Class of Survey: Class 1

Total Area

Comprised in

I, Sarah Rose Harding of Whangarei being a person entitled to practice as a licensed cadastral surveyor, certify that -
(a) The surveys to which this dataset relates are accurate, and were undertaken by me or under my direction in accordance with the Cadastral Survey Act 2002 and the Surveyor-General's Rules for Cadastral Survey 2002/2.
(b) This dataset is accurate, and has been created in accordance with that Act and those Rules.

S.R. Harding 13/02/2006
(Signature) (Date)

Field Book p. Traverse Book p.
Reference Plans

Examined Correct

Approved as to Survey by Land Information NZ on
21/3/2006

Deposited by Land Information NZ on
31/3/2006

File Approved AKLM 99/03
Received 1 FEB 2006
Instructions DP361651

SHEET 2 OF 2

LAND DISTRICT North Auckland
Survey Blk. & Dist. IV Whangarei
NZMS 261 Sheet Rcd Map No.

Lots 1 to 11 Being a Subdivision of
Part Waiteuku 2B No1 Blk

TERRITORIAL AUTHORITY Whangarei District
Surveyed by LANDS & SURVEY LTD
Scale As Shown Date: September 2005



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




R.W. Muir
Registrar-General
of Land

Identifier **250810**
Land Registration District **North Auckland**
Date Issued 31 March 2006

Prior References
NA14B/1467

Estate Fee Simple
Area 647 square metres more or less
Legal Description Lot 2 Deposited Plan 361651

Registered Owners

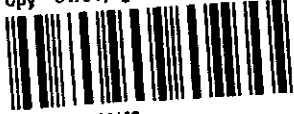
Guy Robert Hessell as to a 1/2 share
Jenny Maree Davis as to a 1/2 share

Interests

6808957.3 Consent Notice pursuant to Section 221 Resource Management Act 1991 - 31.3.2006 at 9:00 am
Subject to a right of way, rights to transmit telecommunications and drain stormwater easements over part marked A and walkway easement over part marked D on DP 361651 created by Easement Instrument 6808957.5 - 31.3.2006 at 9:00 am
Appurtenant hereto is a right to walkway easement created by Easement Instrument 6808957.5 - 31.3.2006 at 9:00 am
The easements created by Easement Instrument 6808957.5 are subject to Section 243 (a) Resource Management Act 1991
Subject to a right (in gross) to convey electricity easement over part marked A on DP 361651 in favour of Northpower Limited created by Easement Instrument 6808957.6 - 31.3.2006 at 9:00 am
The easements created by Easement Instrument 6808957.6 are subject to Section 243 (a) Resource Management Act 1991
Land Covenant in Easement Instrument 6808957.7 - 31.3.2006 at 9:00 am
11947057.3 Mortgage to Westpac New Zealand Limited - 11.12.2020 at 2:35 pm

CONO 6808957.3 Cons

Copy - 01/01, Pgs - 017, 30/03/06, 10:32



DocID: 312393468

IN THE MATTER of the Resource Management Act 1991 ("the Act")

A N D

IN THE MATTER of a subdivision consent as evidenced by Land Transfer Plan No. 361651

A N D

IN THE MATTER of a Consent Notice issued pursuant to Section 221 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 by the Council as conditions of approval for the subdivision as effected by Land Transfer Plan No. 361651 ("the plan")

1. Vehicle access to lots 1 and 3 on the plan shall only be obtained from the right of way shown marked on the plan with the letter "A".
2. Any development on the properties being lots 1 through 11 on the plan shall comply with the recommendations and restrictions specified in the engineering report entitled "Ngunguru Motor Camp Stormwater Management" compiled by Richardson Stevens Consultants (1996) Limited dated 7 June 2005, a copy of which is attached hereto, and in particular shall:
 - (i) Direct all stormwater from individual lots to on-site soakage pits with overflow outlets from lots 1, 2 and 3 on the plan and rights-of-way marked "A", "B" and "C" on the plan.
 - (ii) Collect water from roofs for drinking with any overflow to be either discharged into each lots own soakage pit or bypass the infiltration pits.

③ CONO
SD
DAIAS/1267

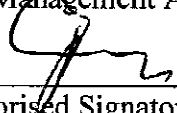
- (iii) Direct stormwater from rights-of-way to a soakage pit beneath the pavement.
- (iv) Design on-site disposal pits for lots 1, 2 and 4 through 10 on the plan at the time that building consent applications for buildings on these properties are lodged for consideration.

DATED at Whangarei this

20th day of *JANUARY*

2006

SIGNED for THE WHANGAREI DISTRICT COUNCIL pursuant to the authority of the Council given pursuant to the Local Government Act 2002 and the Resource Management Act 1991



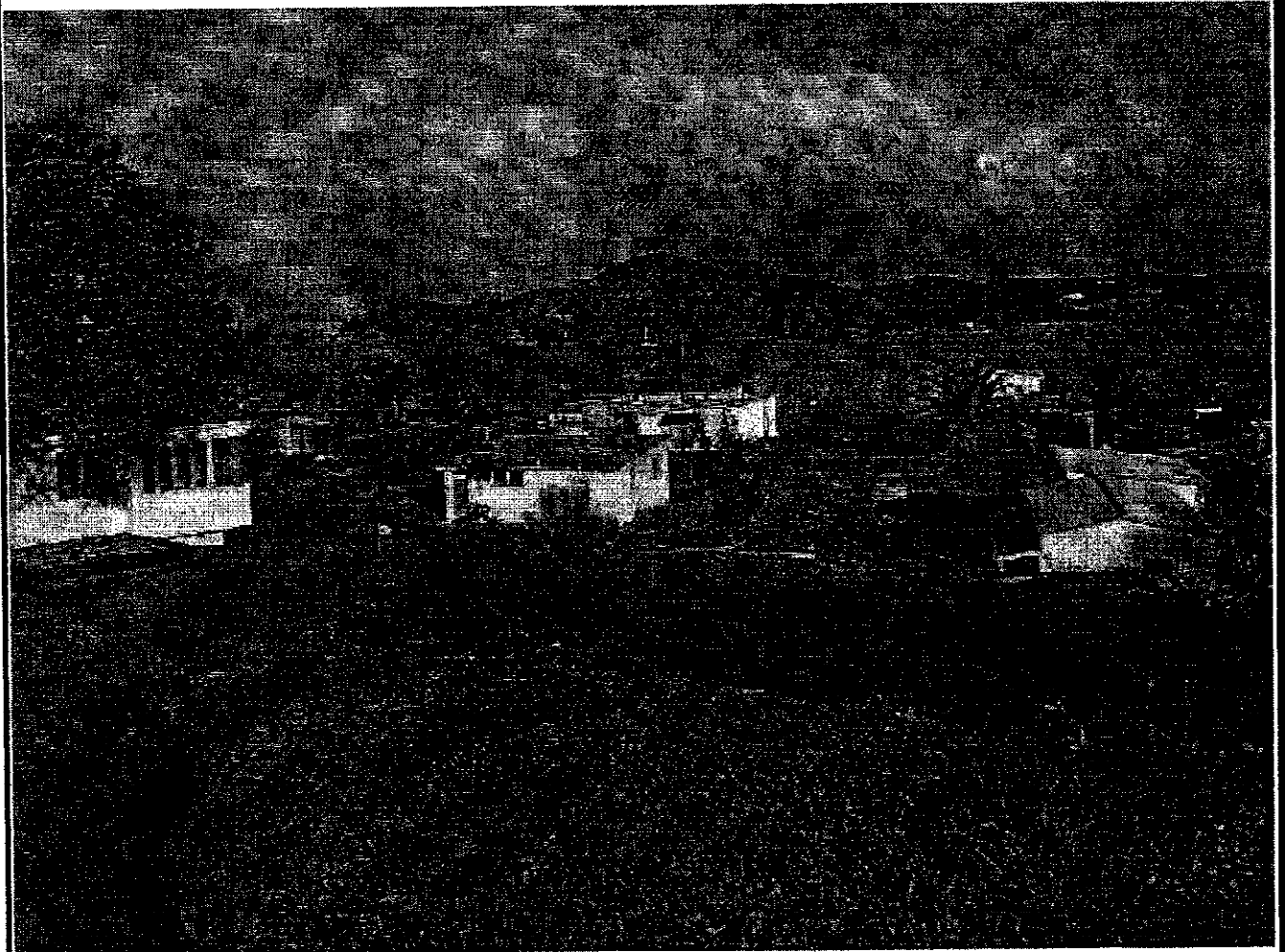
Authorised Signatory

Extract Copy

ENGINEERING REPORT

For

NGUNGURU MOTOR CAMP
STORMWATER MANAGEMENT



RICHARDSON STEVENS CONSULTANTS (1996) LTD.

Date: 07/06/05
File Number: 6242
Report By: GUY WOOD

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Subsoil Investigations	4.
Percolation Testing	5.
System Design and Calculations	6.
Site Plan	11.
Stormwater Soakage Pit Detail	12.



Email: engineers@richardsonstevens.co.nz



Grant Stevens
B.E., M.I.P.E.N.Z. (Civil, Structural)
Chartered Professional Engineer

Steve Turner
B.E., M.I.P.E.N.Z. (Civil, Structural)
Chartered Professional Engineer

CIVIL & STRUCTURAL ENGINEERS, 2 SEAVIEW RD, WHANGAREI. PH: 09 438 3273, FAX: 09 438 5734

Engineering Report for Stormwater Management Lot 16, DP 323830, Ngunguru

Introduction

The client proposes to subdivide Lot 16, DP 323830. It has been requested that Richardson Stevens Consultants design a stormwater management system to comply with condition 1(i) of the Resource Consent condition which requires details of stormwater control, inclusive subdivision reticulation, disposal, connections and associated calculations to be shown on the engineering plans.

Site Description/ Proposed Development

This is a 6589m² site located off Ngunguru Road with another entrance Papaka Road. The site is flat, but split into three levels. The lower level is the largest and contains 8 of the proposed 11 lots. Ground cover is lawn. Some mature trees are to remain on the site.

A right-of-way is to be constructed off Papaka Road to access Lots 4-10 on the lower level. There will also be a right-of-way off Ngunguru Road to access Lots 1-3 on the upper levels. The subdivision scheme plan prepared by Lands & Survey Ltd is attached.

Site Investigations

Two boreholes and soakage tests were carried out on the site. The bores were dug to a depth of 1.0m by Richardson Stevens Consultants on the 2nd June 05; the soil type is sand on the lower level and low-medium clay overlying greywacke on the upper levels. No groundwater was encountered in the subsoil investigations. Rapid soakage tests were carried out in the boreholes. The result after 7 minutes of testing on the lower level was 580mm and 310mm was recorded on the upper level after 30 minutes. The bore log and soakage tests results are attached in the appendices.

From these tests Richardson Stevens Consultants conclude that the soil type on the lower level of the site is a category 1 soil, sand, rapidly drained and that on the upper slopes is a category 5 soil, light clay, poorly drained (as per NZS 1547:2000).

Stormwater Control

Lots 1 – 3

These Lots are underlain by clay over weathered greywacke rock. This soil type does not have sufficient infiltration capacity to achieve full on-site disposal of stormwater. Stormwater connections to the roadside drain along Ngunguru Road are therefore required to service these Lots. To provide stormwater treatment however to comply with the requirement of ARC TP10 stormwater from impervious surfaces (excluding roofs), should be directed to the stormwater connections via infiltration pits. The pits will need to have sufficient capacity to handle one-third of the 2-year storm event (ARC TP10 requirement). Our calculations indicate that for an impervious area of 100m² a pit 2.7m x 1.2m x 1.5m deep will be required. Roof water is expected to be collected in storage tanks. The overflow from these tanks should be piped to the stormwater connection downstream of the infiltration pit as water quality from sources used for drinking water can be assumed to be free of contaminants of concern to the environment. The stormwater connections will need to be installed at the subdivision stage however the on-site disposal pits for lots 1 and 2 should left until building consent stage as the actual size and location required cannot be determined until that time.

Lots 4 – 10

The sandy soils on the lower portion of the subdivision (Lots 4-10) are suitable for on-site disposal of stormwater. Calculations appended indicate that a pit size of 1.7m x 1.2m x 1.0m would be required for every 100m² of impervious surface for a 10 year event. Roof water is expected to be collected in storage tanks with overflow to a nominal soakage pit. No stormwater connections are therefore proposed for these Lots. The size and location of the on-site disposal pit for each Lot will need to be included with the building consent applications.

ROW A

This ROW is 40m². Soils are clay over weathered greywacke. A pit size of 1.2m x 1.2m x 1.0m deep is required to comply with the ARC TP10 requirements. This pit will need to be installed under the paved surface due to space limitations. A 150mm thick reinforced concrete pavement is therefore recommended for this ROW to span over the pit. The overflow/outlet from the pit will discharge via a 100mm stormwater connection to the water table drain along Ngunguru Road.

ROW B & C

This ROW has an imperious area of some 400m². Soils are free draining sand. An infiltration pit size of 6.5m x 0.6 wide x 1.0m deep is required to comply with ARC TP10 requirements. As with ROW A the pit will need to be installed under the pavement due to space limitations. The pit is only 600mm wide therefore a 125mm pavement is considered adequate, however an additional layer of 665 mesh should be laid over the trench to account for any possible settlement. The overflow/outlet from the pit will discharge via a 225mm diameter culvert to Ngunguru River. An Enviropod or similar filter will be required in the sump to prevent clogging of the soakage pit.

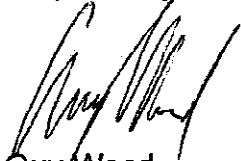
Conclusions

Richardson Stevens Consultants conclude that all stormwater from individual lots should be directed to on-site soakage pits with overflow outlets from Lots 1 – 3, and ROW A, B & C. This does not include water from roofs as this is to be collected for drinking and any overflow will be either discharged into its own soakage pit or bypass the infiltration pits. Stormwater from the right-of-ways should be directed to a soakage pit beneath the pavement as shown on the site plans included in the appendices. The design is based on a soakage rate of 1000mm/hr on the lower slopes and 300mm/hr on the upper slopes.

Note

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 holes are inferred and it should be appreciated that actual conditions could vary from those assumed.

Prepared by:



Guy Wood
Graduate Engineer

Authorised by:



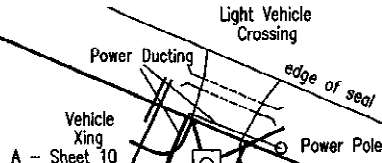
Steve Turner
Chartered Professional Engineer

RICHARDSON STEVENS CONSULTANTS (1996) LTD.



NGUNGURU ROAD

Lot 1



Lot 2



Lot 3

Lot 4

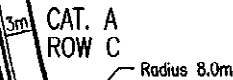
Lot 5

Vehicle Xing A - Sheet 10

Lot 6

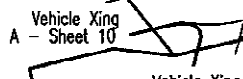


Lot 7



Lot 8

Lot 9



Lot 10

Lot 10

Lot 11

Vehicle Xing A - Sheet 10

CAT. B ROW B

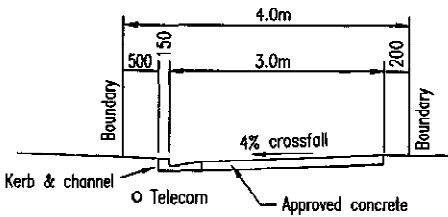
PAPAKA ROAD Sealed

Heavy Vehicle Crossing, B SHEET 10

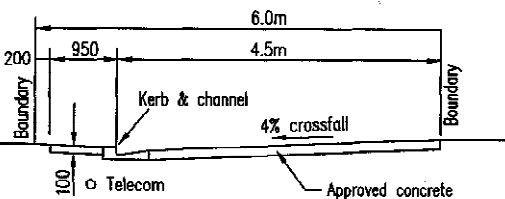
Street Sign as per WDC EES Sheet 6 (Final position to be determined)

Note:

All works are to be constructed to WDC EES, Sheets 3, 6, 8, 10 & 11.



CATEGORY A SHEET 8
ACCESS FOR UP TO 4 DWELLING UNITS



CATEGORY B SHEET 8
ACCESS FOR 5 TO 8 DWELLING UNITS

RC 38725 P037799.SD

LANDS & SURVEY

LAND & ENGINEERING SURVEYORS
RESOURCE MANAGEMENT CONSULTANTS
CADASTRAL & TOPOGRAPHICAL MAPS
TOURIST & AERIAL MAPS
GPS & SPATIAL INFORMATION SERVICES
WINDSORED PO Box 714, 70 Heyburn Street, Tel 08 438 7300 Fax 08 438 4227
DUNEDIN (HQ) 87 Victoria Street, Tel 08 438 0624 Fax 08 438 2807
WELLSFORD (Dist) Rodney Street, Tel 08 453 7300
(Incorporating HODGES & ELRICK LTD)

Proposed Engineering Plans for Ngunguru Motor Camp

Prepared for
Collector #5 Trust Company Limited

SHEET

(A3)

DRAWN PD	CHECKED PD	SCALES	SERIES 1 OF 12
TRACED KH	DATE June 2005	1:500	REF 7511

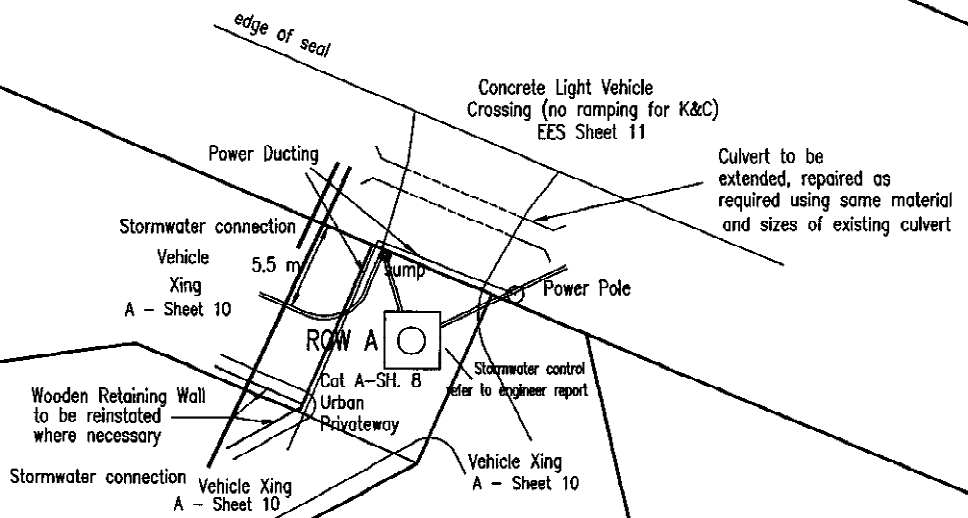
NGUNGURU ROAD



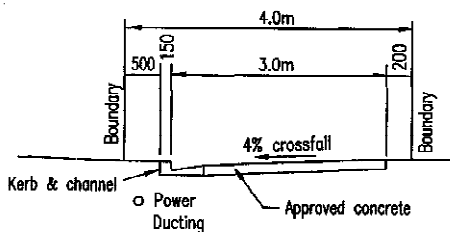
Lot 1

Lot 2

Lot 3



Note:
All works are to be constructed to WDC EES, Sheets 3, 8, 10 & 11.



CATEGORY A SHEET 8
ACCESS FOR UP TO 4 DWELLING UNITS

RC 38725 P037799.SD

LANDS & SURVEY

LAND & ENGINEERING SURVEYORS
RESOURCE MANAGEMENT CONSULTANTS
CADASTRAL & TOPOGRAPHICAL MAPS
TOURIST & AERIAL MAPS
GPS & SPATIAL INFORMATION SERVICES
MURDOCHVILLE (Vic) 87 Victoria Street, Tel 09 439 8854 Fax 09 439 8887
WELLSFORD (Tas) Hobart Street, Tel 01 423 7500
(incorporating HODGES & ELRICK LTD)

Proposed Engineering
Plans for
Ngunguru Motor Camp

Prepared for
Collector #5 Trust Company
Limited

SHEET

(A3)

DRAWN PD	CHECKED PD	SCALES	SERIES 2 OF 12
TRACED KH	DATE June 2005		REF 7511



NGUNGURU ROAD

Lot 1

100mm uPVC Connection

LH IL 6.00
LL 7.12
IL 5.90

Lot 2

100mm uPVC Connection

MH C IL 5.60
LL 6.97
IL 5.50

Lot 3

150mm uPVC

MH B IL 2.03
LL 2.78
IL 1.99

Lot 4

100mm uPVC Connection

Lot 5

CH 73.79

Lot 7

CH 70.00

Lot 6

CH 60.00

MH A IL 1.46
LL 2.00
IL 1.38

Existing MH 7

Existing Sewer

CH 40

Existing Sewer

Existing MH 8
IL 1.32
LL 3.04
IL 1.03

Lot 8

Lot 9

Lot 10

Lot 11

PAPAKA ROAD

All works are to be constructed to WDC EES Sheets 12, 14, 23, 24

FC 38725 P037786.SD

Proposed Sewer Main Plans for Ngunguru Motor Camp

SHEET (A3)

Prepared for Collector #5 Trust Company Ltd.

SCALE	1:250
DATE	June 2005
NO.	7511

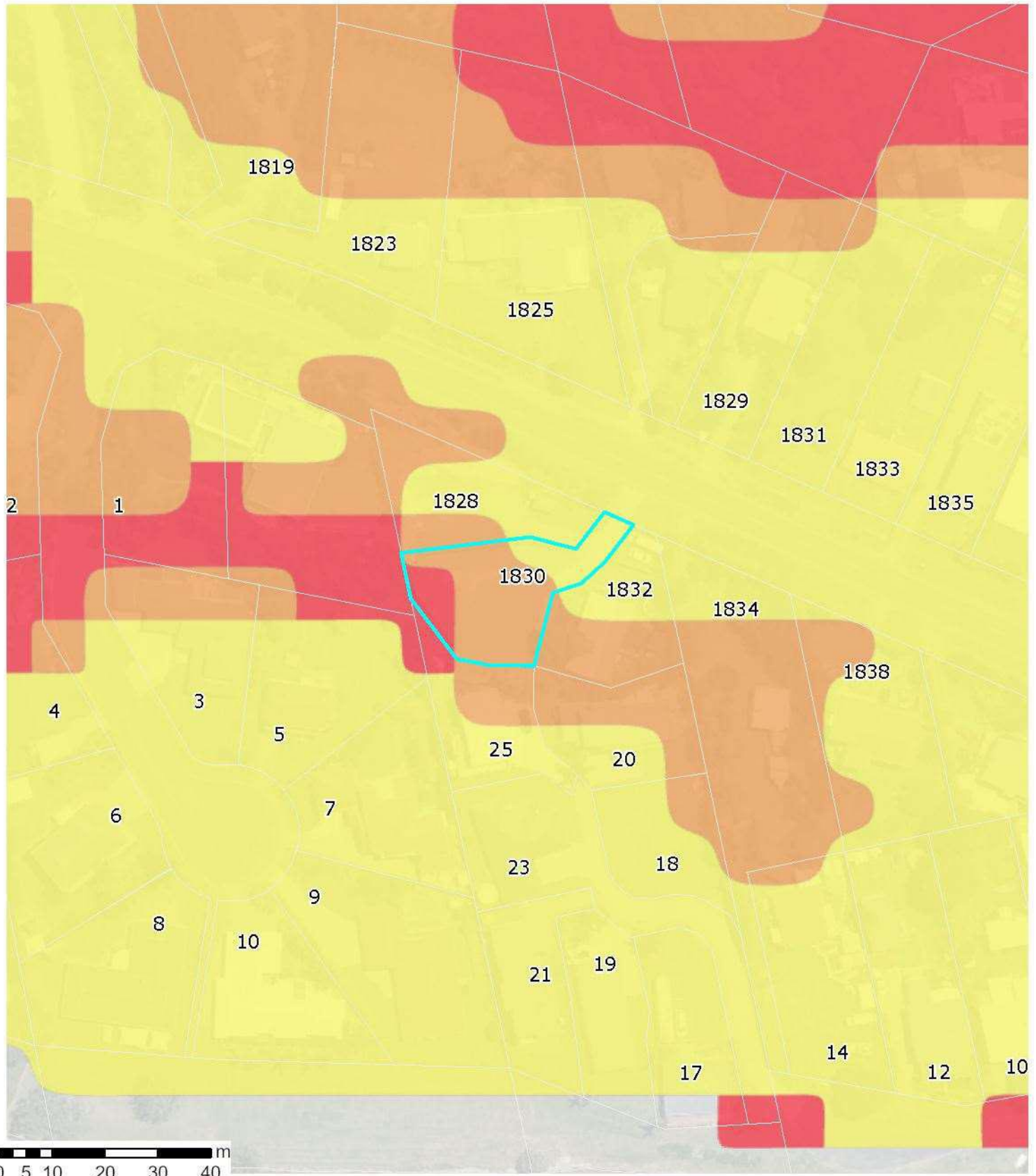
LANDS & SURVEY

LAND & ENGINEERING SURVEYORS
RESOURCE MANAGEMENT CONSULTANTS
CADASTRAL & TOPOGRAPHICAL MAPS
TOURIST & AERIAL MAPS
GPS & SPATIAL INFORMATION SERVICES

INCORPORATING HODGES & ELRICK LTD

MEASUREMENTS TO THE 1:500 SCALE SHALL BE TO THE NEAREST 1:500 SCALE. ALL MEASUREMENTS SHALL BE TO THE NEAREST 1:500 SCALE. ALL MEASUREMENTS SHALL BE TO THE NEAREST 1:500 SCALE.

Land Stability



Landslide Susceptibility Zone

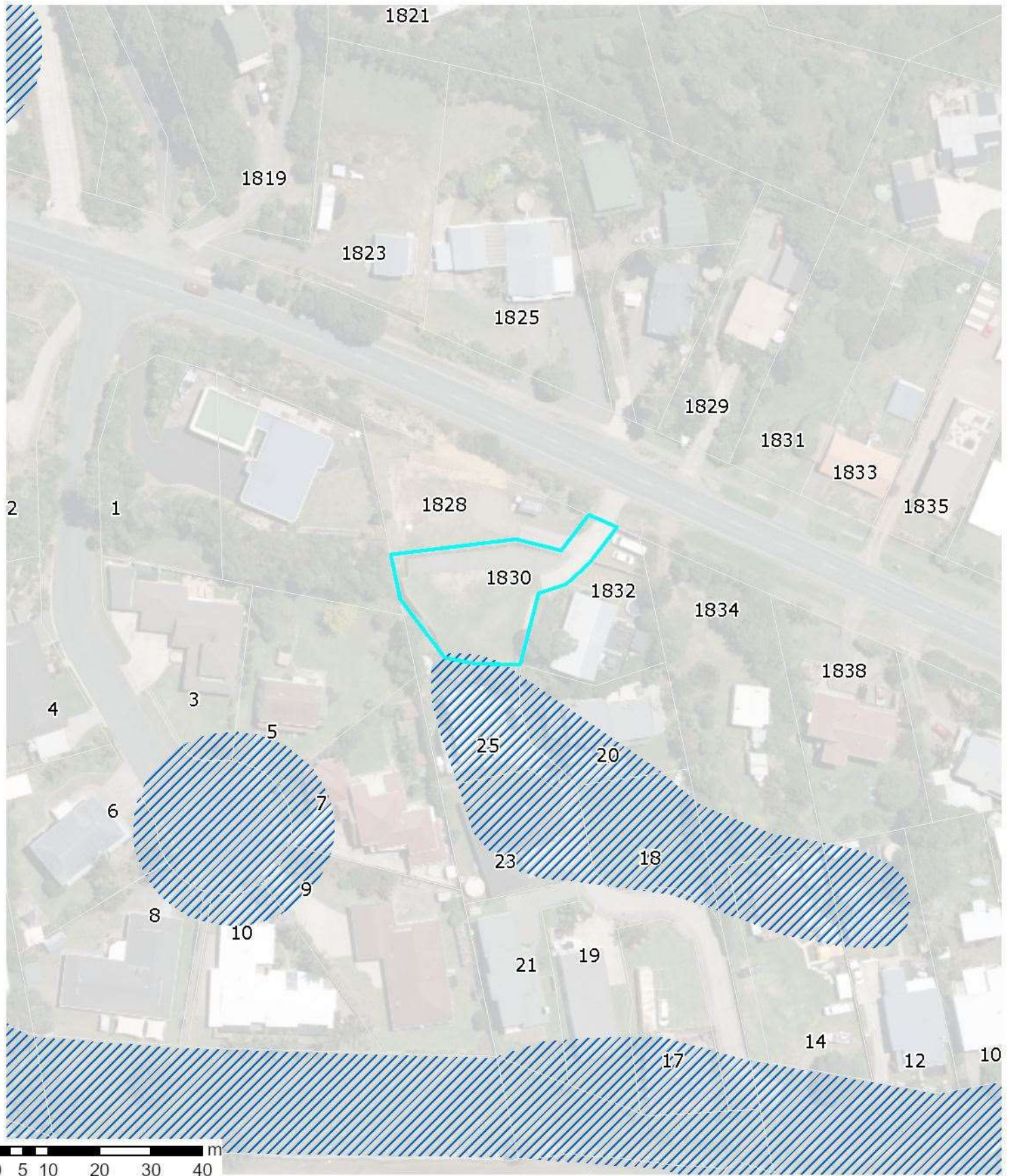
-  High
-  Moderate
-  Low



Whangārei District Council holds indicative information on land stability hazard for Whangārei. The Whangārei 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>

20 November 2023
Scale 1:1,000



Flood Susceptibility Review



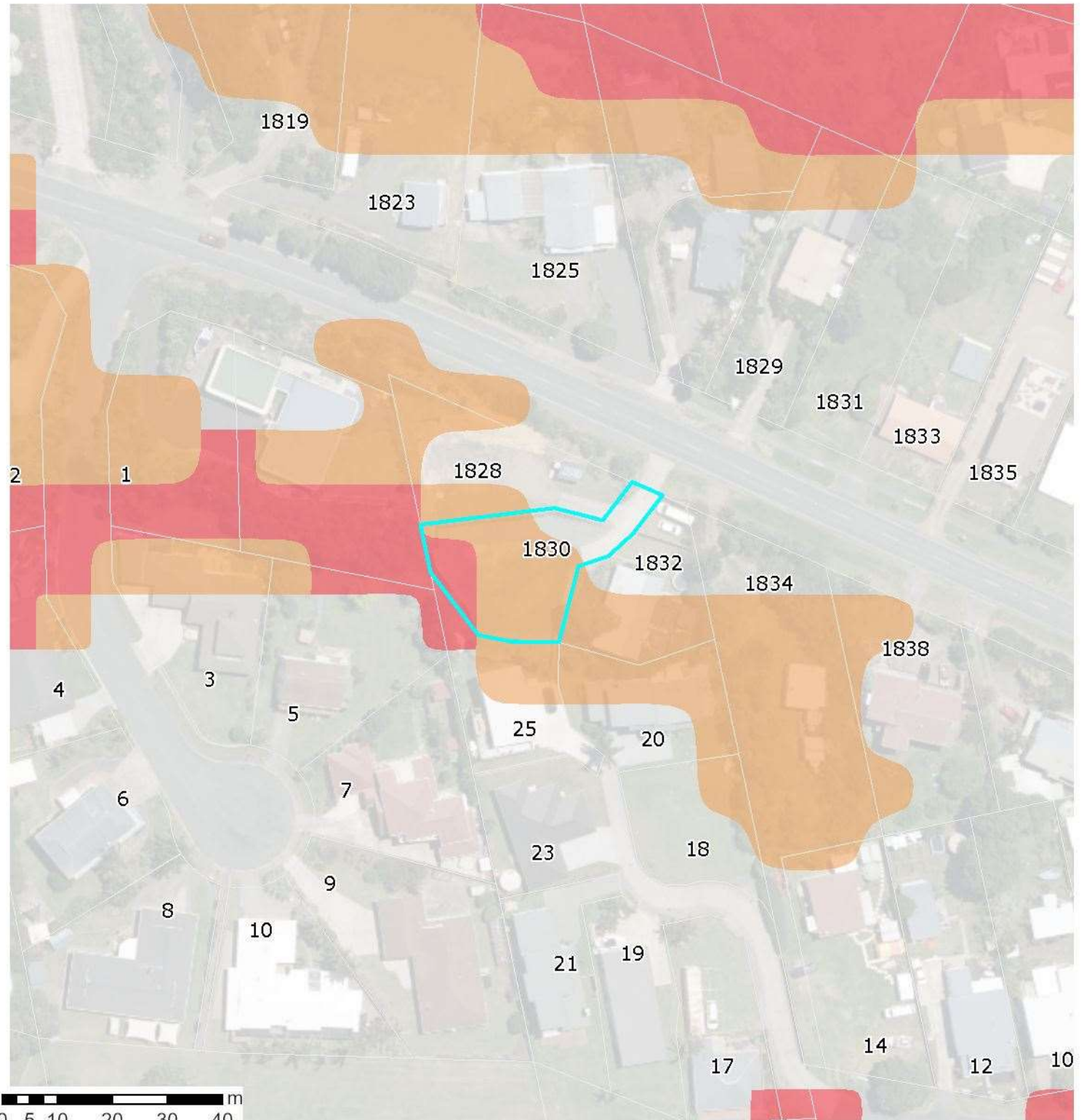
-  Flood Susceptible Accepted by Council Decision for District Plan
-  Variation not accepted by Council

Flood susceptibility areas are symbolized to show both the information from the District Plan Flood Susceptible Areas: 'Accepted by Council Decision' (in diagonal blue) and Additional Flood Susceptible Areas: 'Yet to be accepted by Council' (in diagonal green). Floods information shown is approximate and should not be used as a replacement for site specific investigation and assessments. The absence of hazard information shown does not mean that there is none, only that the information may not yet have been collected.

20 November 2023
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

20 November 2023

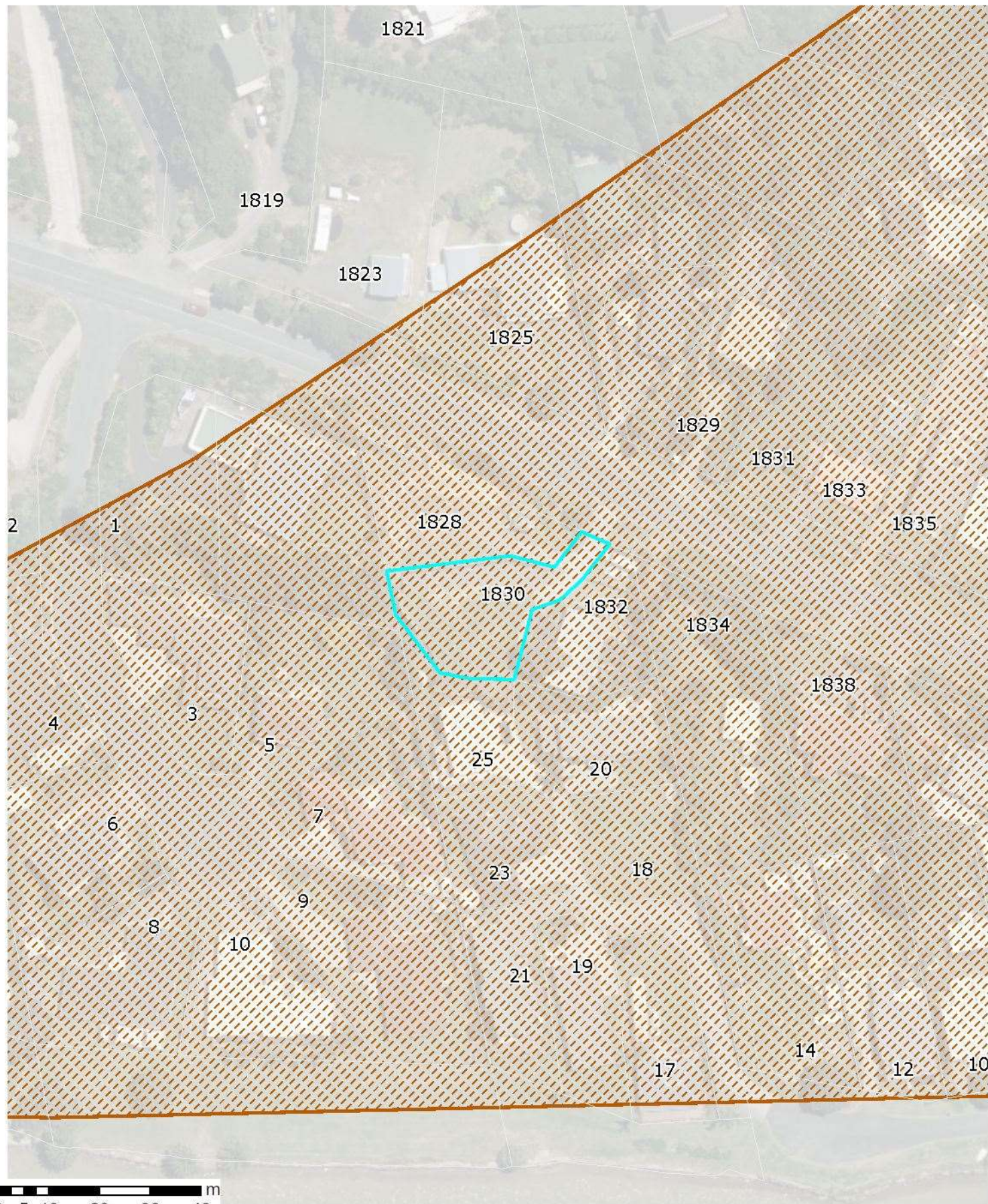
Scale 1:1,000





Information provided on this map forms part of Plan Change 1 – Natural Hazards.
To view the proposed 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.
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Acid Sulphate Soil (Risk/Confirmed)



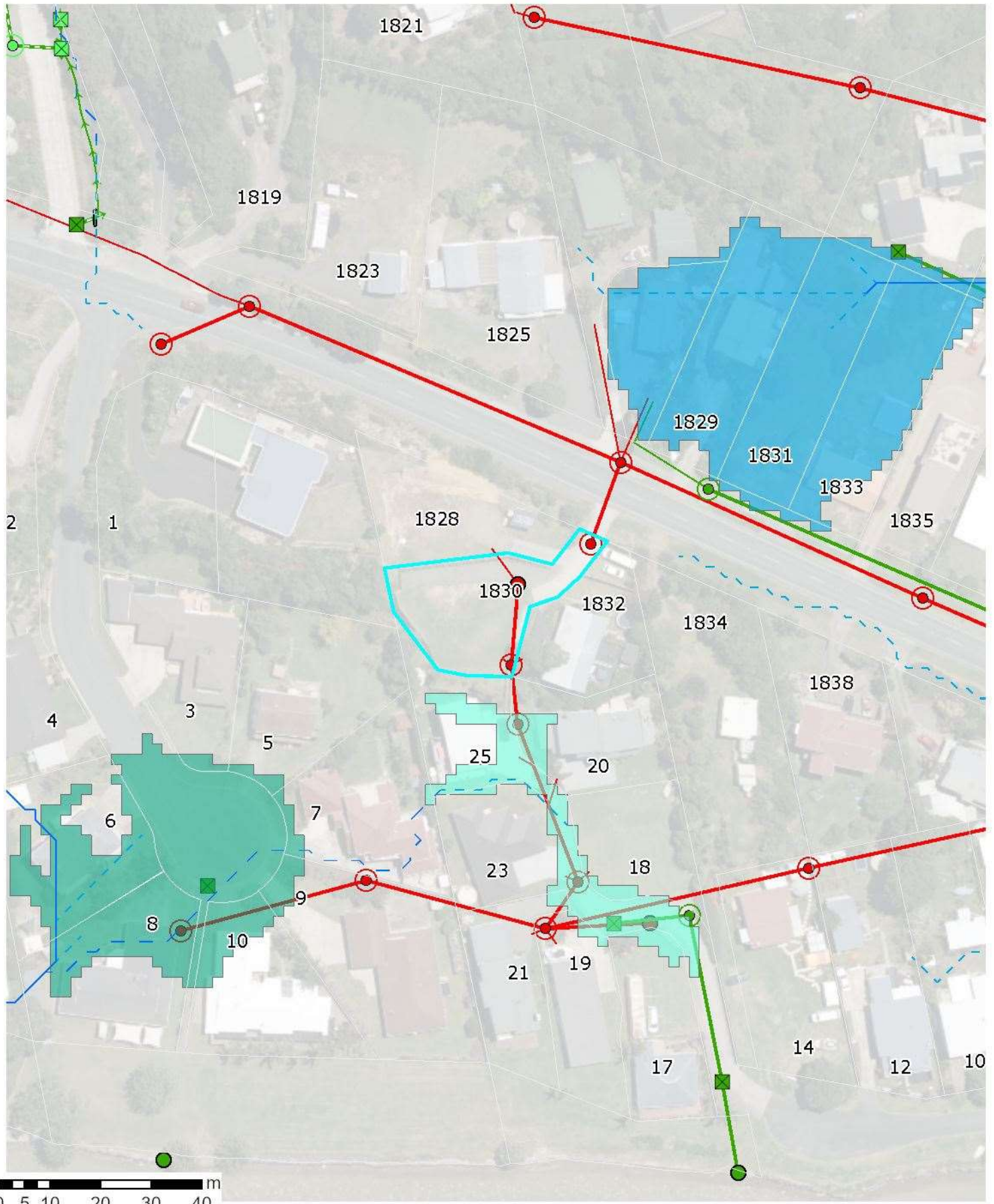
-  Confirmed Acid Sulphate Soil
-  Acid Sulphate Soil Risk

These soils, where present, can generate acidic groundwater and may require consideration with regard to land drainage and selection of building materials for buried structures.

20 November 2023
Scale 1:1,000



Pipeline Assets



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.

20 November 2023
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.
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Pipeline Assets – Map Legend

Water

- Water Point**
- Actuator
 - WDC
 - Private
 - Backflow Device
 - WDC
 - Private
 - Bore
 - WDC
 - Private
 - End Structure
 - WDC
 - Private
 - Fitting Node
 - WDC
 - Private
 - Hydrant
 - WDC
 - Private
 - Meter
 - WDC
 - Meter Manifold
 - WDC
 - Private
 - Pump
 - WDC
 - Private
 - Valve
 - WDC
 - Private

Water Line

- Abandoned Pipe
- Trunk Main
 - WDC
 - Private
- Other Main
 - WDC
 - Private
- Process Pipework
 - WDC
 - Private
- Reticulation
 - WDC
 - Private
- Service Line
 - WDC
 - Private

Water Area

- Chamber
 - WDC
 - Private
- Reservoir
 - WDC
 - Private

Stormwater

- Stormwater Point**
- End Structure
 - WDC
 - Private
 - Fitting Node
 - WDC
 - Private
 - GPT
 - WDC
 - Private
 - Manhole
 - WDC
 - Private
 - Pump
 - WDC
 - Private
 - Stormwater Inlet
 - WDC
 - Private
 - Valve
 - WDC
 - Private

Stormwater Line

- Abandoned Pipe
- Culvert
 - WDC
 - Private
- Drainage
 - WDC
 - Private
- Main
 - WDC
 - Private
- Process Pipework
 - WDC
 - Private
- Service Line
 - WDC
 - Private
- Surface Drain
 - WDC
 - Private

Stormwater Area

- Chamber
 - WDC
 - Private

Stormwater Catchment and Flood Management

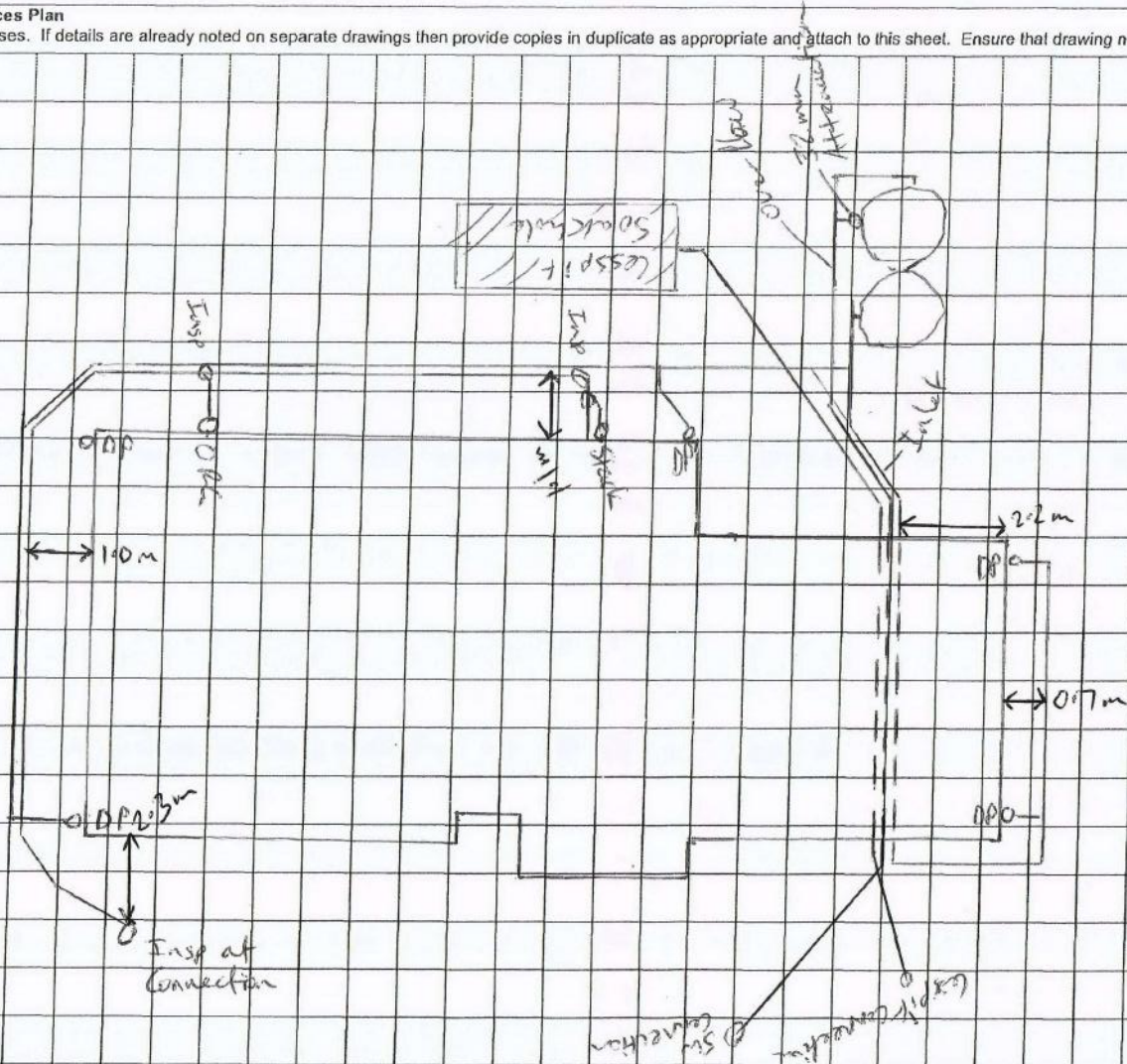
- Overland Flow Paths 2021**
- Modelled Catchment Flowpaths 2021
- 0.2 ha to 0.4 ha
 - 0.4 ha to 1.0 ha
 - 1.0 ha to 3.0 ha
 - 3.0 ha to 100.0 ha
 - 100.0 ha and above
- Surface Depression Ponding Areas 2021
- 0.200000 - 0.600000 m
 - 0.600001 - 1.200000 m
 - 1.200001 - 2.000000 m
 - 2.000001 - 4.000000 m
 - 4.000001 - 9.910000 m
- Overland Flow Paths 2017**
- Catchment Area 2017
- 0.2 - 1.0 Ha
 - 1.0 - 2.0 Ha
 - 2.0 - 5.0 Ha
 - > 5.0 Ha
- Depression Storage Areas 2017
- Depression Storage Areas

Wastewater

- Wastewater Point**
- Backflow Device
 - WDC
 - Private
 - Bore
 - WDC
 - Private
 - End Structure
 - WDC
 - Private
 - Fitting Node
 - WDC
 - Private
 - Manhole
 - WDC
 - Private
 - Meter
 - WDC
 - Private
 - Motor Control Centre
 - WDC
 - Private
 - Pump
 - WDC
 - Private
 - Valve
 - WDC
 - Private
- Wastewater Line**
- Abandoned Pipe
 - Main
 - Rising Main (Pressure)
 - Sewer Gravity Main
 - Private
 - Other
 - Process Pipework
 - WDC
 - Private
 - Service Line
 - WDC
 - Private
- Wastewater Area**
- Chamber
 - WDC
 - Private
 - Pressure Sewer System
 - Public
 - Private

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.)



Scale: Not to scale in _____

Site Address: _____

Please provide at least two measurements for each access point for future location



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

Rates LIM Report

As at: Friday, 17 November, 2023

Property Number 117290
Legal Description LOT 2 DP 361651
Assessment Number 0034030201
Address 1830 Ngunguru Road Whangarei 0173
Record of Title(s) 250810
Land Value \$550,000
Capital Value \$1,225,000
Date of Valuation 01-July-2021
Effective Date (used for rating purposes) 01-July-2022
Meter Location

Rates Breakdown (up to 30 June 2024)

Rates Charge	Charge Total
General Residential	\$1,282.93
Sewage Disposal - Residential	\$902.00
Uniform Annual General Charge	\$701.00
Regional Council Services	\$180.61
Regional Economic Development	\$11.77
Regional Emergency & Hazard Management	\$50.50
Regional Emergency Services Rate	\$11.44
Regional Flood Infrastructure	\$36.56
Regional Land and Fresh Water Management	\$154.11
Regional Pest Management	\$88.06
Regional Sporting Facilities	\$16.37
Regional Transport Rate	\$43.17
Annual Charge Total	\$3,478.52

Opening Balance as at 01/07/2023 **\$-0.05**

Rates Instalments	Total
20/07/2023 Instalment	\$871.52
20/10/2023 Instalment	\$869.00
20/01/2024 Instalment	\$869.00
20/04/2024 Instalment	\$869.00
Rates Total	\$3,478.52

Balance to Clear **\$2,572.39**

1100842..



WHANGAREI
DISTRICT COUNCIL

Building Consent No: BC1100842
Section 51, Building Act 2004

Issued: 19 October 2011
Project Information Memorandum No: PM1100567

Forum North, Private Bag 9023
Whangarei 0148, New Zealand
Telephone: +64 9 430 4200
Facsimile: +64 9 438 7632
Email: mailroom@wdc.govt.nz
Website: www.wdc.govt.nz

The Building

Street address of building: 1830 Ngunguru Road
Whangarei 0173

Legal description of land where building is located: LOT 2 DP 361651
LLP: 114627

Building name: N/A
Location of building within site/block number: N/A
Level/unit number: N/A

The Owner

M J Day
PO Box 278
Whangaparoa 0943

Phone number: N/A
Mobile number: N/A
Facsimile number: N/A
Email address: mike@hookedonprint.co.nz
Website: N/A

Street address/registered office: 1830 Ngunguru Road
Whangarei 0173

First point of contact for communications with council/building consent authority

Contact Person

Cook Costello Limited
2 Norfolk Street
Whangarei 0110

Phone number: 4389529
Mobile number: N/A
Facsimile number: N/A
Email address: mark@coco.co.nz
Website: N/A

Building Work

The following building work is authorised by this consent:

2 New Retaining Walls

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

Under section 90 of the Building Act 2004, agents authorised by the Council (acting as a Building Consent Authority) are entitled, at all times during normal working hours or while building work is being done, to inspect-

- ii) land on which building work is being or is proposed to be carried out; and
- iii) building work that has been or is being carried out on or off that building site; and
- iiii) any building

See attached list of required inspections.

Compliance Schedule

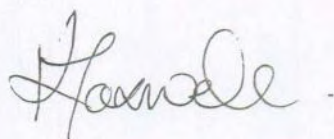
A compliance schedule is not required for the building.

Attachments

The Project Information Memorandum for the building work covered by this building consent.

Additional Information

1. Dust Nuisance
The applicant must control dust nuisance created by any site or building works.
 2. Toilet Facilities
Toilet facilities must be provided within reasonable distance of the construction site. Ground discharge is no longer acceptable.
 3. Location of council sewer line under northern wall to be accurately plotted and marked
-

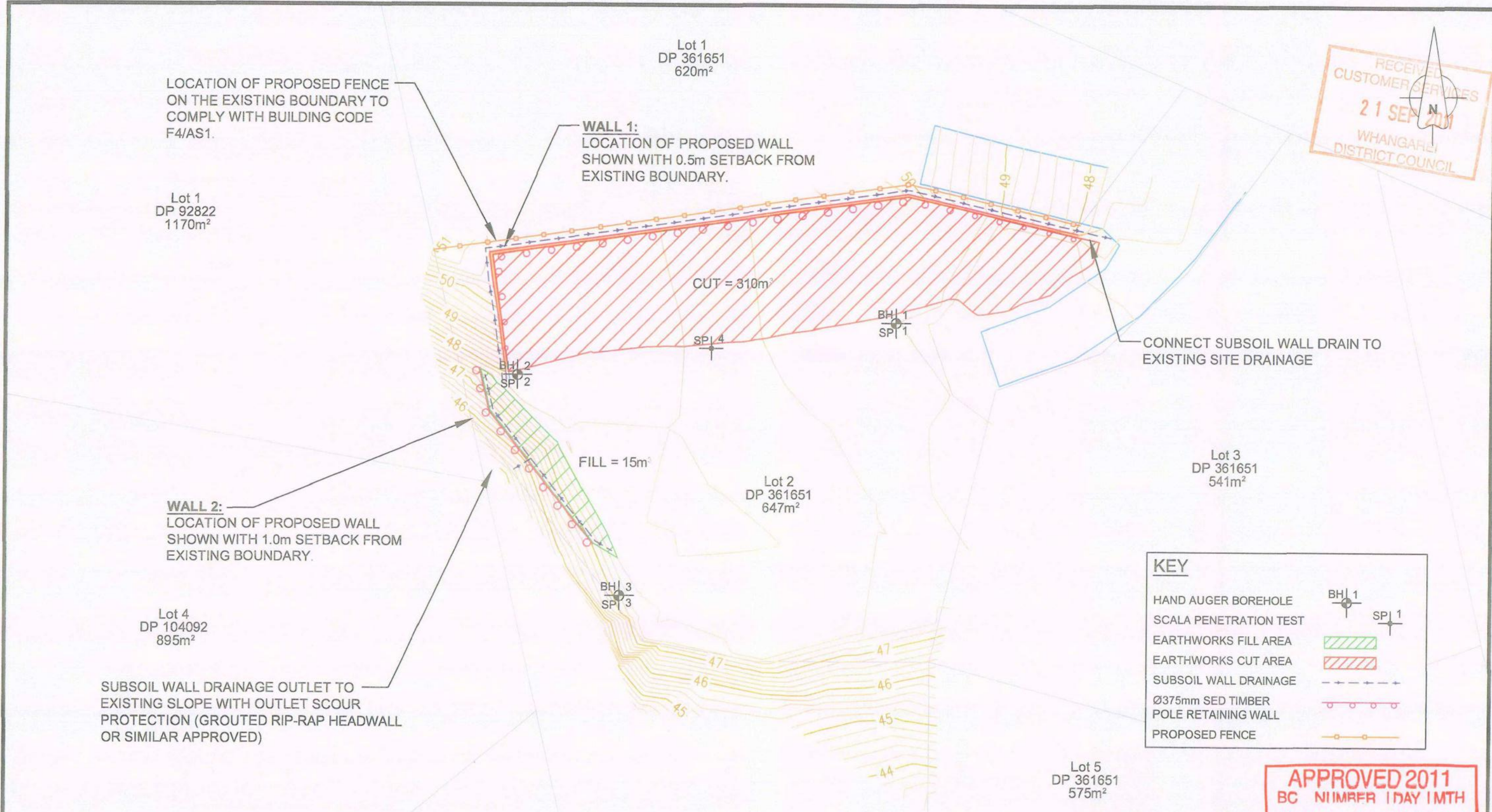


Kayla Maxwell
Support Assistant – Building Consent Issuing

On behalf of: Whangarei District Council

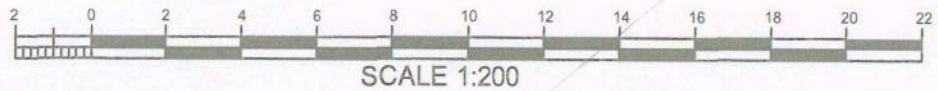
19 October 2011

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CUSTOMER SERVICES
21 SEP 2011
WHANGAREI
DISTRICT COUNCIL



KEY

HAND AUGER BOREHOLE	BH 1
SCALA PENETRATION TEST	SP 1
EARTHWORKS FILL AREA	
EARTHWORKS CUT AREA	
SUBSOIL WALL DRAINAGE	
Ø375mm SED TIMBER POLE RETAINING WALL	
PROPOSED FENCE	



APPROVED 2011
BC NUMBER DAY MONTH
00842 1910
WHANGAREI DISTRICT COUNCIL

IMPORTANT NOTE: PRODUCER STATEMENTS
PS4 WILL NOT BE ISSUED AT COMPLETION OF WORKS UNLESS ALL FEEDBACK INSPECTIONS HAVE BEEN NOTIFIED TO COOK COSTELLO AND COMPLETED DURING CONSTRUCTION

Consulting Engineers
cook | costello
Civil, Structural & Natural Resource Engineers
Norfolk House, 2 Norfolk Street, Whangarei
P 64 9 438 9529 F 64 9 430 4282 E ccl@coco.co.nz

CLIENT

CLEMENTS CONTRACTORS LTD
1830 NGUNGURU ROAD, NGUNGURU
PROPOSED SITE PLAN

THIS DESIGN AND DRAWING IS COPYRIGHT OF COOK COSTELLO LTD AND SHALL NOT BE USED OR REPRODUCED WITHOUT WRITTEN AUTHORITY

SURVEYED CCL	REVISION	DATE	SHEET
DESIGNED MP			2
DRAWN MP			SERIES A
CHECKED			REF 11591
APPROVED	DATE	SCALE	
	17/08/11	1:200	
CAD FILE	11591-mp-site plan-170811	PLOT DATE	17/08/11 ORIG. SIZE A3

RECEIVED
CUSTOMER SERVICES
21 SEP 2011
WHANGAREI
DISTRICT COUNCIL

Table 1
Retaining wall dimensions

Wall	Height (max)	Pole Ø (mm)	Bore Ø 'b' (mm)	Spacing (m)	Embedment Depth 'd' (m)	Depth to Doubled Rails
1	3.0m	375	525	1.3m	4.0m min	1.0m
1	2.5m	325	475	1.3m	3.2m min	1.0m
1	2.0m	275	425	1.3m	2.5m min	1.0m
1	3.0m	225	375	1.3m	1.8m min	1.0m



Typical Section for wall 1
Not to scale

- 200mm topsoil cap to drainage material.
- 150 x 75mm H5 RS timber rails. Rails fastened to the back of each pole with 2/100 x 4.0mm HDG FH nails. stagger timber rail joints at each row over poles.
- 7 - 20mm clean scoria or similar free draining coarse granular material to back of retaining wall. Drainage material to be wrapped with Terratex 160N (or equivalent approved) non-woven geotextile separation layer. Geotextile joints to be formed in accordance with Manufacturers requirements allowing for pipework penetrations.
- Two sets of staggered rails at base of wall (refer to Table 1 for height of doubled-up rails)
- 110mm perforated drainage pipe to back of wall at bottom rail level. Minimum 100mm thick layer of scoria bedding material (or similar approved) to drainage pipe. Drain outlet to be connected to proposed piped site drainage.
- High density H5 treated timber pole (spacing as per Table 1) raked at 6° (1h:10v). Paint all cut edges and ends of all treated timber with a copper naphthenate based brush-on preservative.
- Minimum 17.5Mpa concrete encasement with minimum 75mm cover to sides and base. Hole must be thoroughly cleaned out before placing concrete.

NOTE:

1. This drawing is not to be scaled
2. All timber poles to be high density
3. Timber pole cantilever retaining structure has been designed in accordance with:
 - AS/NZS 1170
 - NZS 3603
 - NZBC B1/VM4
4. Design has been based on the following assumptions:
 - Retained slope = 0° max
 - Base slope = 0° max
 - Retained surcharge = 20kpa
 - Undrained shear strength $c_u=75$.
 - Retained soil effective friction angle = 28°

IMPORTANT NOTE: PRODUCER STATEMENTS
PS4 WILL NOT BE ISSUED AT COMPLETION OF WORKS UNLESS ALL REQUIRED TESTS AND INSPECTIONS HAVE BEEN NOTIFIED TO COOK COSTELLO AND COMPLETED DURING CONSTRUCTION

APPROVED 2011
BC NIIMFR 1DAY 1MTH
00842 1910
WHANGAREI DISTRICT COUNCIL
BCA

Consulting Engineers
cook | costello
Civil, Structural & Natural Resource Engineers
Norfolk House, 2 Norfolk Street, Whangarei
P 64 9 438 9529 F 64 9 430 4282 E ccl@coco.co.nz

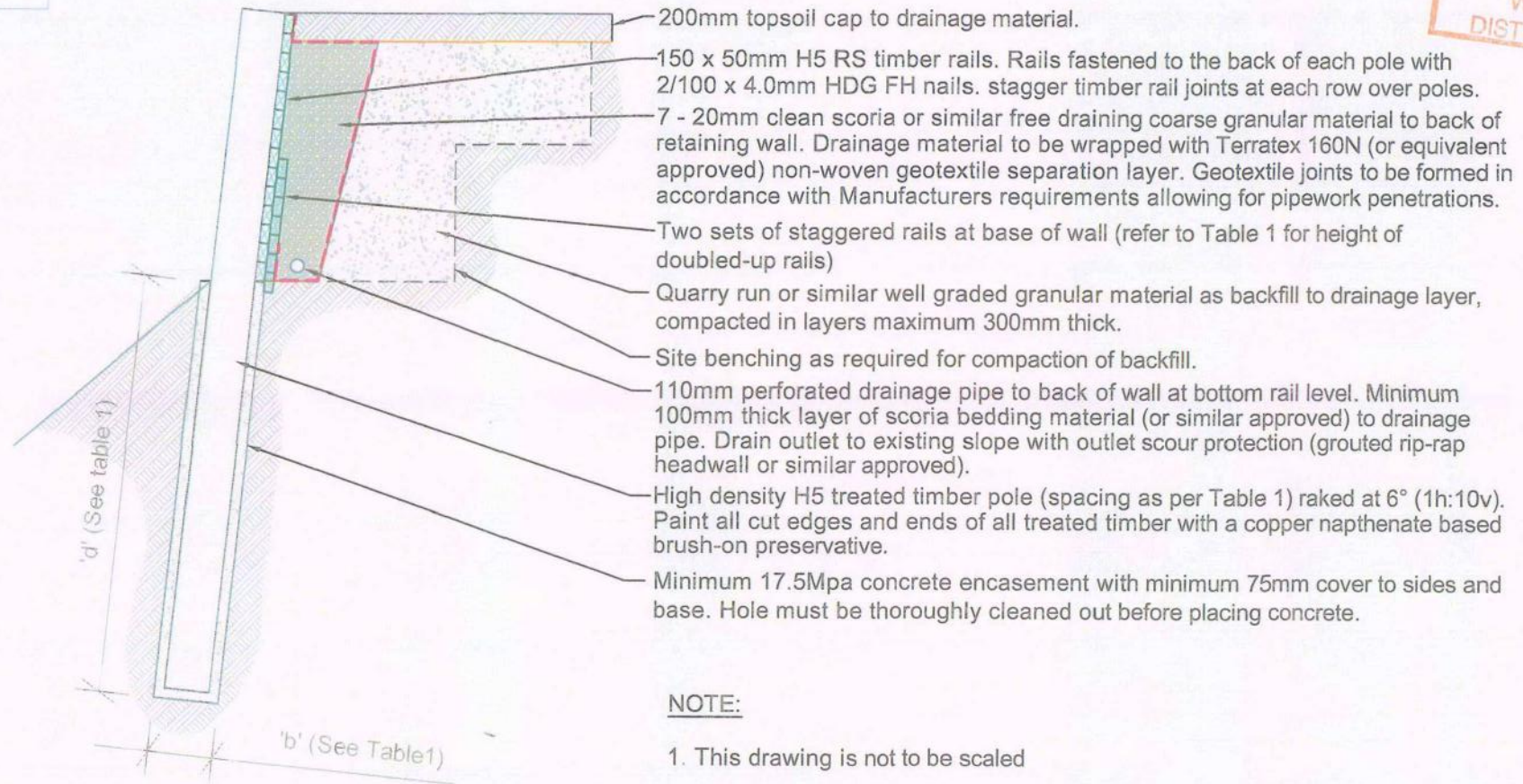
CLIENT
CLEMENTS CONTRACTORS LTD
1830 NGUNGURU ROAD, NGUNGURU
TYPICAL SECTION FOR RETAINING WALL 1

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SURVEYED CCL	REVISION	DATE	SHEET
DESIGNED MP			3
DRAWN MP			SERIES A
CHECKED [Signature]	DATE	SCALE	REF 11591
APPROVED [Signature]	17/08/11	NTS	
CAD FILE 11591-mp-site plan-170811	PLOT DATE 17/08/11	ORIG. SIZE A3	

Table 1
Retaining wall dimensions

Wall	Height (max)	Pole Ø (mm)	Bore Ø 'b' (mm)	Spacing (m)	Embedment Depth 'd' (m)	Depth to Doubled Rails
2	1.5m	375	525	1.2m	3.6m min	0.5m



Typical Section for wall 2
Not to scale

NOTE:

- This drawing is not to be scaled
- All timber poles to be high density
- Timber pole cantilever retaining structure has been designed in accordance with:
 - AS/NZS 1170
 - NZS 3603
 - NZBC B1/VM4
- Design has been based on the following assumptions:
 - Retained slope = 0° max.
 - Base slope = 40° max.
 - Retained surcharge = 5kpa
 - Undrained shear strength $c_u=75$
 - Retained soil effective friction angle = 28°

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CUSTOMER SERVICES
21 SEP 2011
WHANGAREI
DISTRICT COUNCIL

IMPORTANT NOTE: PRODUCER STATEMENTS

PS4 WILL NOT BE ISSUED AT COMPLETION OF WORKS UNLESS ALL REQUIRED TESTS AND INSPECTIONS HAVE BEEN NOTIFIED TO COOK COSTELLO AND COMPLETED DURING CONSTRUCTION

APPROVED 2011
BC NUMBER DAY MONTH
00842 1910
WHANGAREI DISTRICT COUNCIL
BCA

Consulting Engineers
cook | costello
Civil, Structural & Natural Resource Engineers
Norfolk House, 2 Norfolk Street, Whangarei
P 64 9 438 9529 F 64 9 430 4282 E ccl@coco.co.nz

CLIENT

CLEMENTS CONTRACTORS LTD
1830 NGUNGURU ROAD, NGUNGURU
TYPICAL SECTION FOR RETAINING WALL 2

SURVEYED	DESIGNED	DRAWN	CHECKED	APPROVED	DATE	SCALE	REVISION	DATE	SHEET
CCL	MP	MP	MP		17/08/11	NTS			4
									SERIES A
									REF 11591
CAD FILE 11591-mp-site plan-170811					PLOT DATE 17/08/11 ORIG. SIZE A3				

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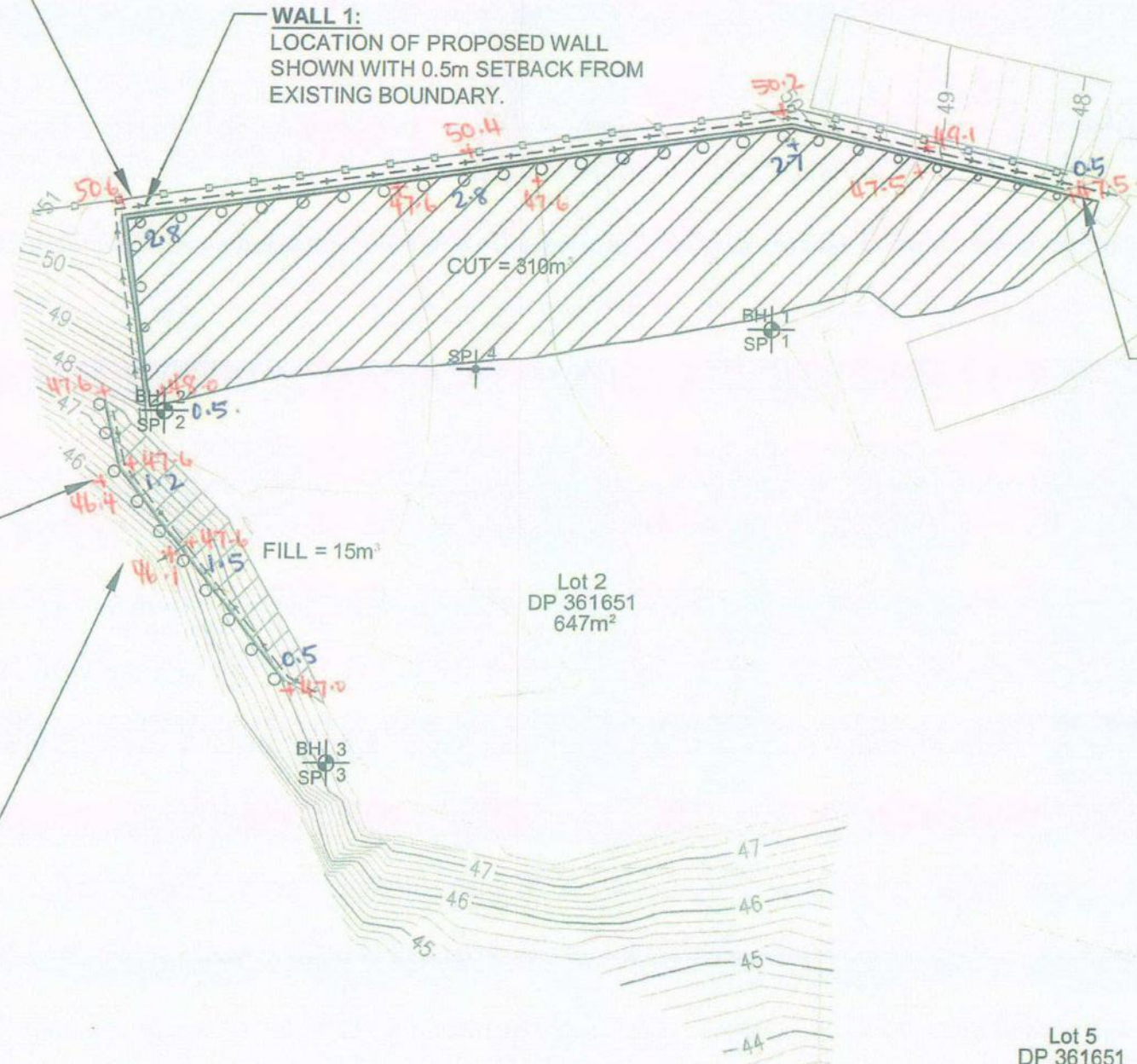
LOCATION OF PROPOSED FENCE ON THE EXISTING BOUNDARY TO COMPLY WITH BUILDING CODE F4/AS1.

Lot 1
DP 92822
1170m²

Lot 1
DP 361651
620m²

WALL 1:
LOCATION OF PROPOSED WALL SHOWN WITH 0.5m SETBACK FROM EXISTING BOUNDARY.

RECEIVED
28 SEP 2011
WHANGAREI DISTRICT COUNCIL
BUILDING CONTROL



CONNECT SUBSOIL WALL DRAIN TO EXISTING SITE DRAINAGE

WALL 2:
LOCATION OF PROPOSED WALL SHOWN WITH 1.0m SETBACK FROM EXISTING BOUNDARY.

Lot 4
DP 104092
895m²

Lot 2
DP 361651
647m²

Lot 3
DP 361651
541m²

SUBSOIL WALL DRAINAGE OUTLET TO EXISTING SLOPE WITH OUTLET SCOUR PROTECTION (GROUTED RIP-RAP HEADWALL OR SIMILAR APPROVED)

KEY	
HAND AUGER BOREHOLE	BH 1
SCALA PENETRATION TEST	SPI 1
EARTHWORKS FILL AREA	
EARTHWORKS CUT AREA	
SUBSOIL WALL DRAINAGE	
Ø375mm SED TIMBER	
POLE RETAINING WALL	
PROPOSED FENCE	

Lot 5
DP 361651
575m²

Proposed ground elevation +0.0
Proposed wall height 0.0

Lot 4
DP 361651
501m²

IMPORTANT NOTE: PRODUCER STATEMENTS
PS4 WILL NOT BE ISSUED AT COMPLETION OF WORKS UNLESS ALL REQUIRED TESTS AND INSPECTIONS HAVE BEEN NOTIFIED TO COOK COSTELLO AND COMPLETED DURING CONSTRUCTION

Consulting Engineers
cook | costello
Civil, Structural & Natural Resource Engineers
Norfolk House, 2 Norfolk Street, Whangarei
P 64 9 438 9529 F 64 9 430 4282 E ccl@coco.co.nz

CLIENT
CLEMENTS CONTRACTORS LTD
1830 NGUNGURU ROAD, NGUNGURU
PROPOSED SITE PLAN

THIS DESIGN AND DRAWING IS COPYRIGHT OF COOK COSTELLO LTD AND SHALL NOT BE USED OR REPRODUCED WITHOUT WRITTEN AUTHORITY

SURVEYED	DESIGNED	DRAWN	CHECKED	APPROVED	DATE	REVISION	DATE	SHEET
CCL	MP	MP			17/08/11	1	17/08/11	1

CAD FILE 11591-mp-site plan-170811

APPROVED 20112
BC NUMBER 1 DAY 1MTH
SERIES A
DATE 17/08/11 SCALE 1:200 REF 11591
WHANGAREI DISTRICT COUNCIL
BCA



Consulting Engineers



cook | costello

Civil
Structural
Geotechnical
Environmental
Industrial
Project
Management

Norfolk House
2 Norfolk St
Whangarei
P 64 9 4389 529
F 64 9 4304 282
E ccl@coco.co.nz

Kerikeri
P 64 9 407 4409
F 64 9 407 4409
E ccl@coco.co.nz



Our ref: 11591
Your ref:

6 March 2011

Whangarei District Council
Forum North,
Private Bag 9023
Whangarei

Re: Design Summary - Retaining Walls, 1830 Ngunguru Road, Ngunguru

Dear Sir/Madam,

Regarding your client's (Mike Day) property at 1830 Ngunguru Road, Ngunguru; we write to confirm our design proposal for the proposed retaining walls.

1. Background Information

We have referred to the following information during preparation of the design:

- NZMS 290 Sheet Q 06/07, SOILS and ROCK TYPES,
- Site soil investigations by Cook Costello Ltd, August 2011 (see attached bore logs),
- Site topographical survey by Cook Costello Ltd, August 2011 (see attached site plan).

2. Ground investigations

Geotechnical field investigations were carried out at the site on 17 August 2011. The investigations consisted of:



- Visual inspection, walkover and site photographs.
- Four Dynamic Cone Penetrometer (scala) tests,
- Three hand auger boreholes (BH) between 2m and 3m deep, to identify subsurface soil properties and the presence of groundwater.

The locations of field tests are shown on drawing 11591-A-1 (attached). Scala and Borehole reductions are also attached.

Soil recovered from BH1 (1.6m deep) was generally described as very silty CLAY; orange or brown, mottled white; slight moisture increasing with depth, sensitivity decreasing from quick to sensitive at depth. Groundwater was not found below existing ground level.

Soil recovered from BH2 (2.5m deep) was generally described as silty CLAY; orange brown, mottled orange and white to uniform colour at depth; wet, sensitivity decreasing from quick to moderately sensitive at depth. Groundwater was not found in BH2.

Soil recovered from BH3 (3.0m deep) was generally described as silty CLAY; orange brown, mottled white to uniform colour at depth; moist, sensitivity decreasing from extra sensitive to moderately sensitive at depth. Groundwater was not found in BH3.

2. Assumptions

In order to produce this design, we have made some assumptions based on our current understanding of the project objectives. These assumptions are as follows:

Wall 1;

1. The maximum retained height of the wall will be 3.0m,
2. Wall foundation soil (cohesive) parameters: $\gamma=18\text{kN/m}^3$; $C_u=75\text{kPa}$,
3. Retained fill material (cohesive) soil parameters: $\gamma=17\text{kN/m}^3$; $\phi'=28^\circ$,
4. Backfill behind the wall will be compacted granular fill, including clean granular drainage material with perforated drain coil immediately behind the wall,
5. An allowance in the design of 20kPa surcharge for future building on the neighbouring property (1828 Ngunguru Road),
6. The visual impact of bulge in the wall railings is required to be minimal.

Wall 2;

7. The maximum retained height of the wall will be 1.5m,
8. Wall foundation soil (cohesive) parameters: $\gamma=18\text{kN/m}^3$; $C_u=75\text{kPa}$,
9. Retained fill material (cohesive) soil parameters: $\gamma=17\text{kN/m}^3$; $\phi'=28^\circ$,
10. Backfill behind the wall will be compacted granular fill, including clean granular drainage material with perforated drain coil immediately behind the wall,
11. An allowance in the design of 5kPa surcharge for light loading above the wall,
12. The visual impact of bulge in the wall railings is required to be minimal.

However, if it becomes apparent that any of the assumption above are incorrect (either prior to or during construction), please inform the engineer immediately as this may affect the wall design.

3. Recommended Design

Retaining wall 1 to the north of the property:

- Maximum wall height 3.0m, 7.0m long 375mm S.E.D high density timber poles to H5 treatment, at 1.3m spacing.
- Minimum pole embedment depth 4.0m.
- Railings to be 150x75mm; single railing to 1.0m depth of fill, double railing for fill depth greater than 1.0m.

Retaining wall 2 to the west of the property:

- Maximum wall height 1.5m, 5.1m long 375mm S.E.D high density timber poles to H5 treatment, at 1.2m spacing.
- Minimum pole embedment depth 3.6m.
- Railings to be 150x50mm; single railing to 0.5m depth of fill, double railing for fill depth greater than 0.5m.

The attached drawing (11591-A-3 & 11591-A-4) provides construction details for the proposed retaining wall maximum heights for retaining wall 1 of 3.0m, 2.5m, 2.0m and 1.5m should your client wish to use poles of varying diameters.

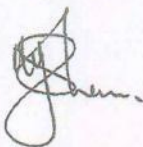
Please note that doubling up of railings can be reduced if the visual impact of rail bulge is acceptable to the client.

In addition to the design, in if a PS4 is required from us for the construction work, we will need to inspect the works at the following stages:

1. Excavation of foundation holes,
2. Installation of poles prior to placement of concrete,
3. Construction of railings & installation of drainage to the back of the wall and drainage material,
4. Compaction of granular backfill to wall 2.

Please contact me if you have any questions regarding the above.

Yours faithfully,



Mark Shaw
Chartered Professional Engineer
CPEng, MIPENZ, CEng(UK), MInstP





Code Compliance Certificate BC1100842
Section 95, Building Act 2004
Issued: 02 April 2012

The Building

Street Address of building: 1830 Ngunguru Road
Whangarei 0173

Legal Description of land where building is located: LOT 2 DP 361651
LLP: 114627

Building name: N/A
Location of building within site/block number: N/A
Level unit number: N/A
Current, lawfully established use: N/A
Year first constructed: 2011

The Owner

M J Day
M Day
1830 Ngunguru Road
Whangarei 0173

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

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

Contact Person

M J Day
1830 Ngunguru Road
Whangarei 0173

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

Street address/registered office: 1830 Ngunguru Road
Whangarei 0173

Building Work

2 New Retaining Walls

Building Consent number

BC1100842

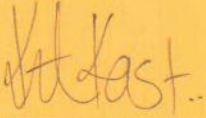
Issued by:

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.



Kylee Akast
Support Assistant – Code Compliance

On behalf of: Whangarei District Council

02 April 2012

Building Consent No: BC1700484

Section 51, Building Act 2004

Issued: 10 July 2017

Project Information Memorandum No: PM1700116

The Building

Street address of building: 1830 Ngunguru Road
Whangarei 0173

Legal description of land where building is located: LOT 2 DP 361651
LLP: 116427

Building name: N/A

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

Level/unit number: N/A

The Owner

K A Stubbs
P S Stubbs
361 Matapouri Road
RD 3
Whangarei 0173

Phone number: N/A

Mobile number: N/A

Facsimile number: N/A

Email address: N/A

Website: N/A

Street address/registered office: 1830 Ngunguru Road
Whangarei 0173

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

Contact Person

A1 Homes Northland
PO Box 183
Ruakaka 0151

Phone number: 4330200

Mobile number: 021588351 021729724

Facsimile number: 4330209

Email address: mark.russell@a1homes.co.nz

Website: N/A

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

Under section 90 of the Building Act 2004, agents authorised by Council (acting as a Building Consent Authority) are entitled, at all times during normal working hours or while building work is being done, to inspect:

- ii) land on which building work is being or is proposed to be carried out; and
 - iii) building work that has been or is being carried out on or off that building site; and
 - iiii) any building.
1. See attached schedule of site requirements for inspections and documentation required.
 2. A copy of your Electrical Certificate will be required.
 3. A Producer Statement PS4 is required for palisade walls.
 4. A Producer Statement PS4 is required for compacted fill.
 5. A Producer Statement PS4 from CPENG is required for the inspection of pile excavation to ensure foundation extend through the fill and pin into natural ground beneath; and confirm ground condition as anticipated and provide advice as appropriate for acid sulphate risks.

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. Builder to ensure that palisade wall clearance from council SS manhole is as per approved plan.

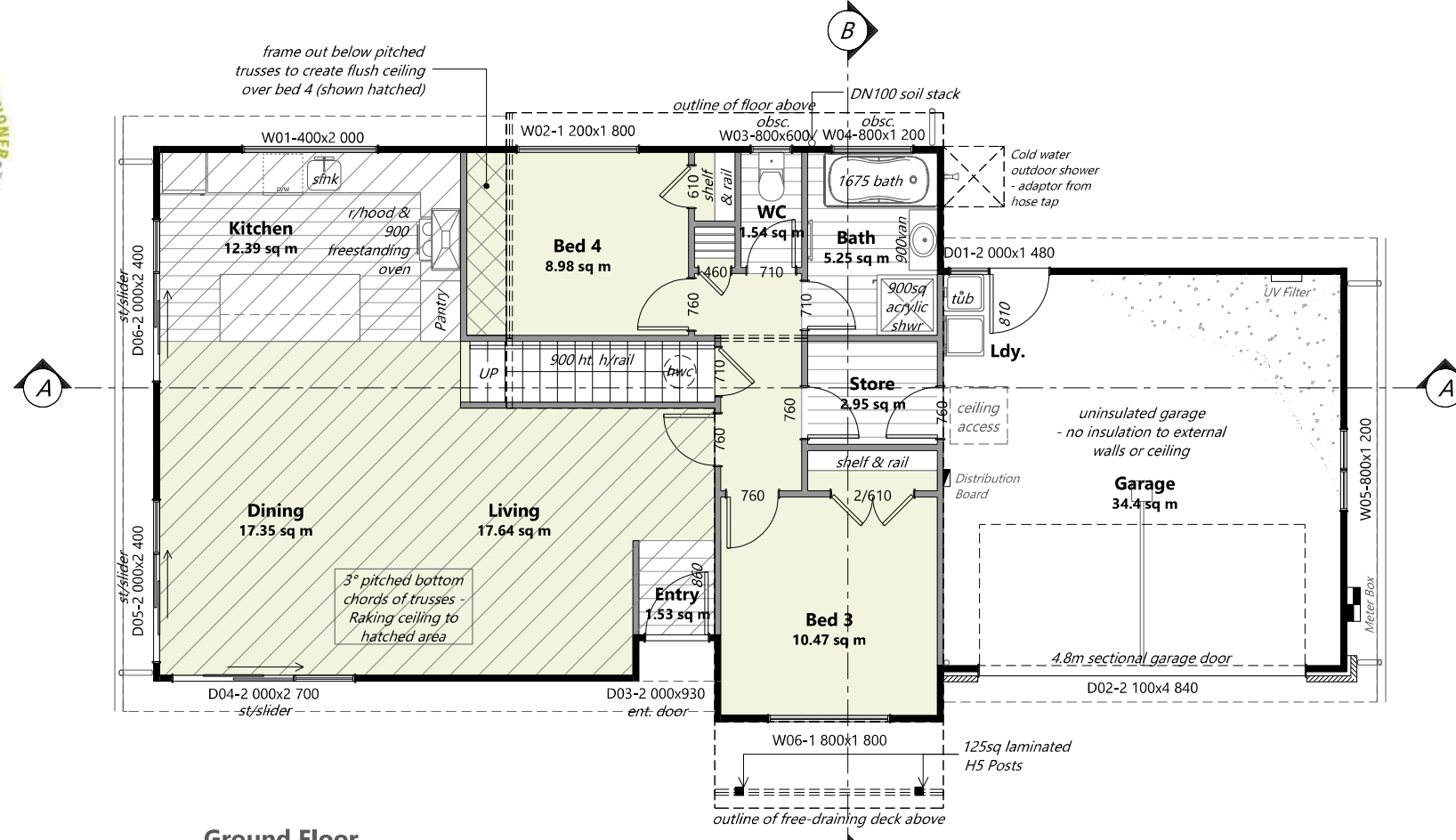


Enka Boylan

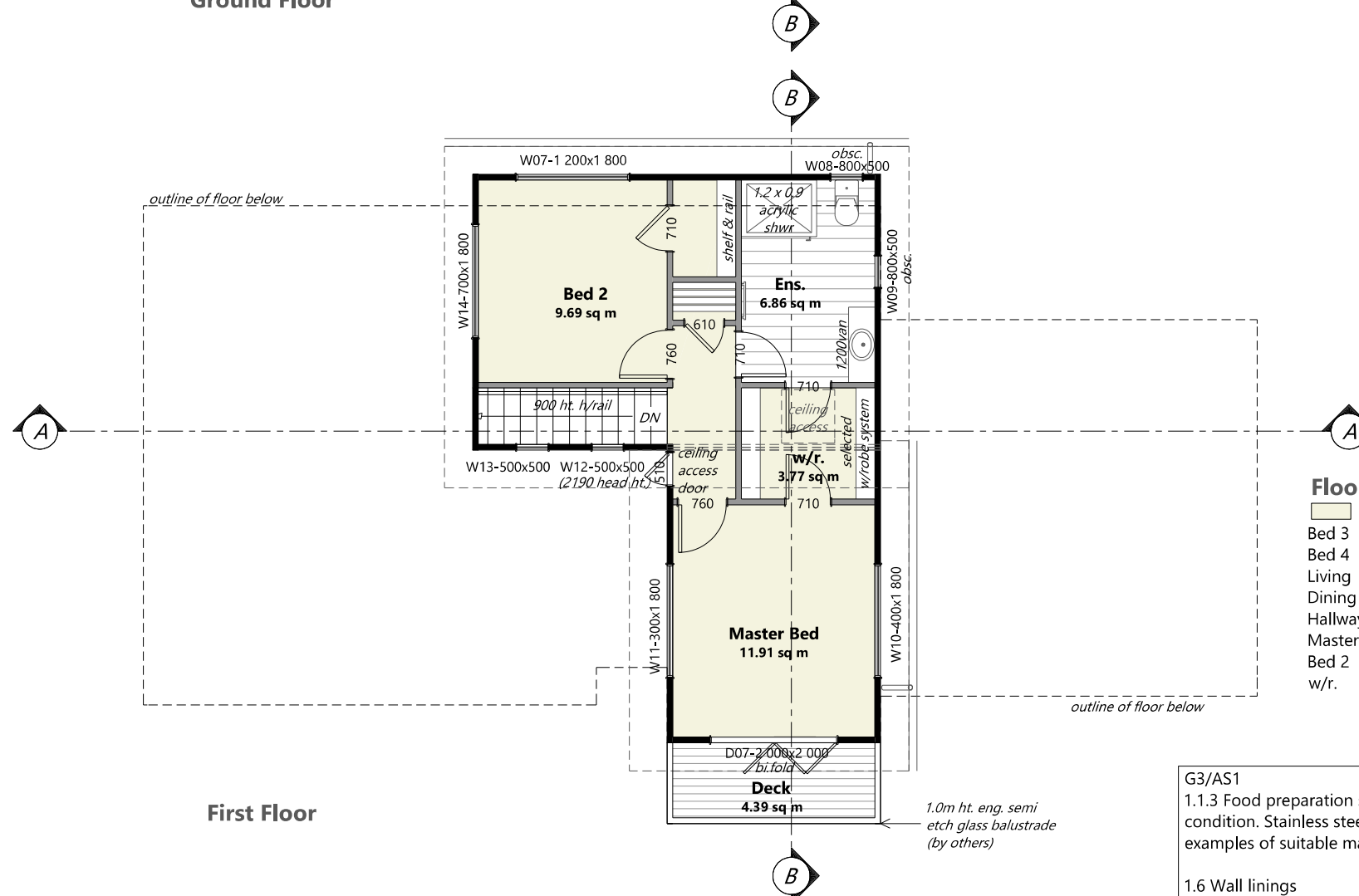
Support Assistant – Building Processing
On behalf of Whangarei District Council

10 July 2017

Date



Ground Floor



First Floor

Cladding Key:

- JH 180 Linea w/board
- Firth 100S Architectural Honed Block - Stack Bond

Exterior Joinery Schedule

Number	Size	Qty	Room Name
D01	2 000x1 480	1	Garage
D02	2 100x4 840	1	Garage
D03	2 000x930	1	Entry
D04	2 000x2 700	1	Dining
D05	2 000x2 400	1	Dining
D06	2 000x2 400	1	Kitchen
D07	2 000x2 000	1	Master Bed/Deck
W01	400x2 000	1	Kitchen
W02	1 200x1 800	1	Bed 4
W03	800x600	1	WC
W04	800x1 200	1	Bath
W05	800x1 200	1	Garage
W06	1 800x1 800	1	Bed 3
W07	1 200x1 800	1	Bed 2
W08	800x500	1	Ens.
W09	800x500	1	Ens.
W10	400x1 800	1	Master Bed
W11	300x1 800	1	Master Bed
W12	500x500	1	Stairwell
W13	500x500	1	Stairwell
W14	700x1 800	1	Bed 2

Floor Finishes:

- Carpet = 96.9m²
- Wet Area = 30.8m²
- Concrete = 34.4m²
- Bed 3
- Bed 4
- Living
- Dining
- Hallways, cupd.s & wdrbs
- Master Bed
- Bed 2
- w/r.
- Bathroom
- WC
- Kitchen
- Entry
- Store
- Ensuite
- Garage
- Laundry

G3/AS1
1.1.3 Food preparation surfaces shall be easily maintained in a hygienic condition. Stainless steel, decorative high pressure laminate, and tiles are examples of suitable materials for these surfaces.

1.6 Wall linings
Wall linings adjacent to appliances and facilities shall have surfaces that can be easily maintained in a hygienic condition. Stainless steel, decorative high pressure laminate, tiles, wallboards with painted or applied impervious coatings or films, are examples of suitable materials for these surfaces.

Cautionary Notes:
Always cross reference the foundation plan with the framing plan prior to setting out

Joinery sizes shown are box sizes & are preliminary only.
Site measure and confirm all joinery sizes, reporting to designer any changes, PRIOR to ordering joinery. No liability shall be held by designer for incorrect supply of joinery.

Refer to all written dimensions, DO NOT scale off drawings.

Construction Notes:
Electric hobs with vented r/hood.
Polybutylene water supply pipes.
Hot water supply pipes shall be thermally insulated to comply with H1/AS1 5.0
Mains pressure 180L HWC with tempering valve & seismic restraint in accordance with NZBC: 2004 section G12.
The delivered hot water temperature at any sanitary fixture used for personal hygiene shall not exceed 55°C

Tapered edge joints in ceilings
To reduce the risk of cracks caused by substrate movement, back-blocking of tapered edge joints is required in the following situations.

- When timber battens have been used:
Any area containing 3 or more tapered joints
- When steel battens have been used:
Any area containing 6 or more tapered joints

Please confirm layout & fittings of kitchen & bathrooms etc before foundation commences

A landing min 900deep shall be provided at the top & bottom of every flight of stairs where the rise of the flight is more than 600mm. Handrails are required to one side of all stairs with 4 or more risers - NZBC D1/AS1: Access routes

Separation between electric hob and the Gib lined wall:
Cut out for hob: min. 55mm from back of bench top.
Overhead clearances: not less than 650mm from hob surface to range hood
Side clearances: Where dimension to any vertical combustible surface is less than 150 mm, surface shall be protected to a min. height of 150 mm above hob for full dimension (width or depth) of cooking surface area.
Protection of combustible surfaces: 5mm thick ceramic tiles or graphic glass is suitable to protect 10mm Gib board.

Stairs to comply with NZBC:D1 access; main private max 190rise, min 280 tread. Wall mounted grab rail @900ht from tread nosing

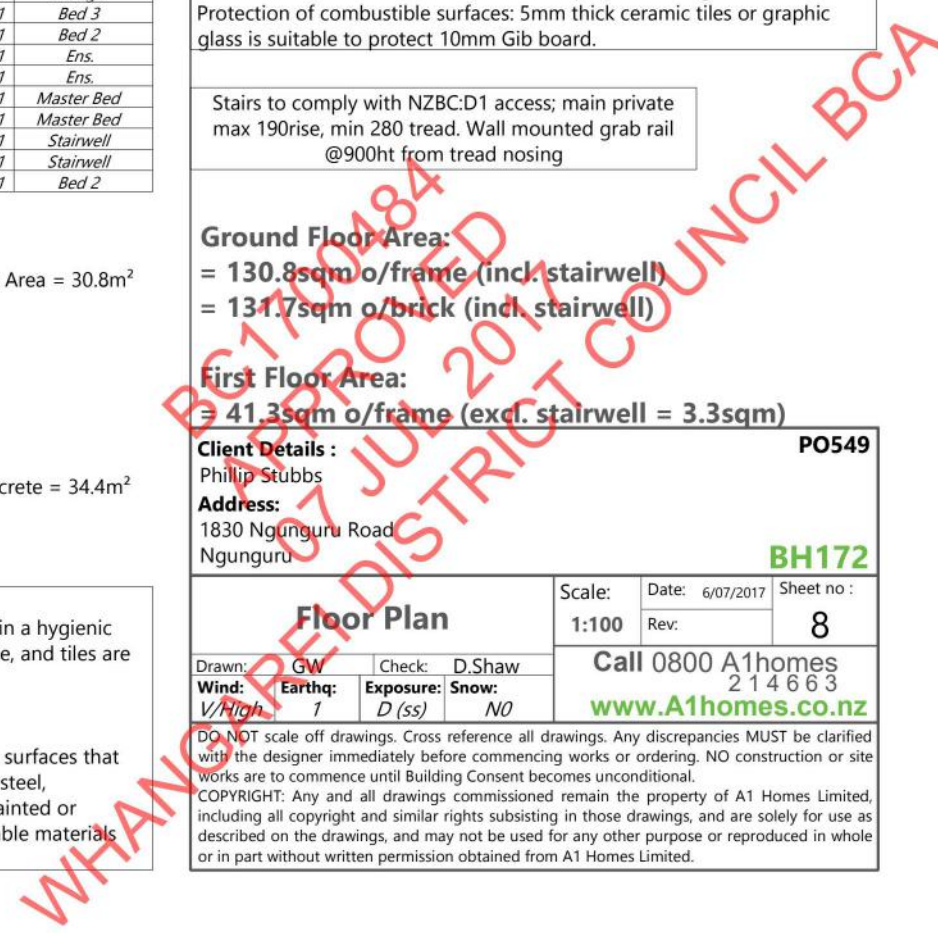
Ground Floor Area:
= 130.8sqm o/frame (incl. stairwell)
= 131.7sqm o/brick (incl. stairwell)

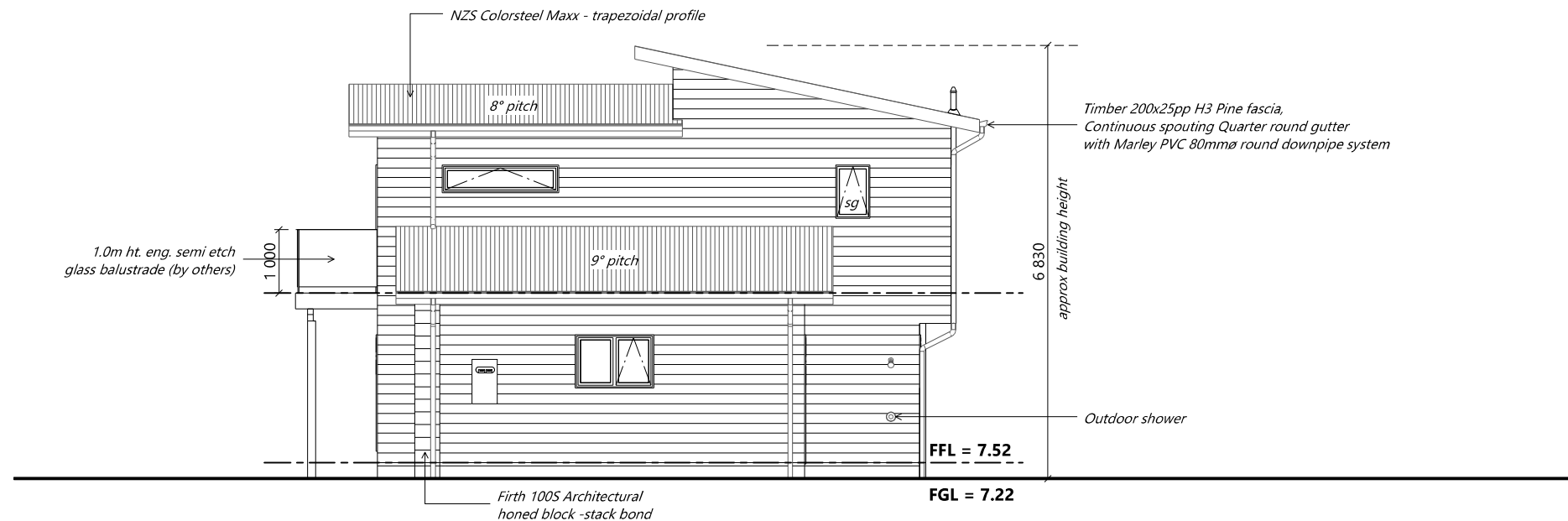
First Floor Area:
= 41.3sqm o/frame (excl. stairwell = 3.3sqm)

Client Details : **PO549**
Phillip Stubbs
Address:
1830 Ngunguru Road
Ngunguru **BH172**

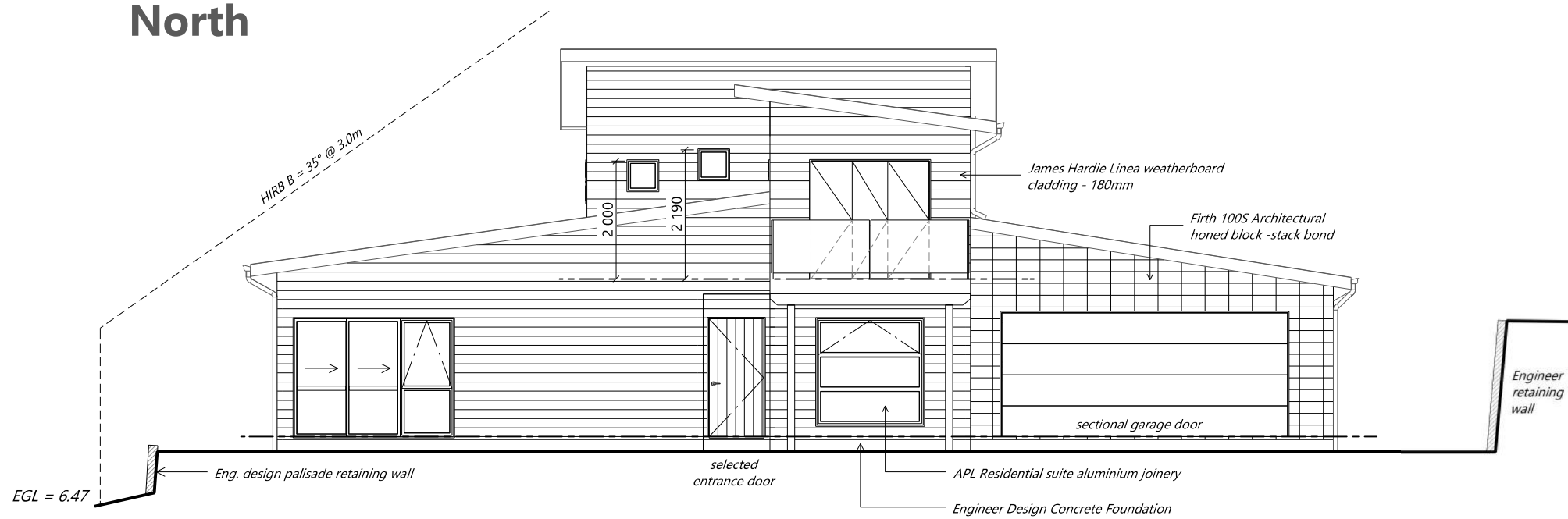
Scale: 1:100		Date: 6/07/2017	Sheet no : 8
Rev:			
Drawn: GW	Check: D.Shaw	Call 0800 A1homes 2 1 4 6 6 3 www.A1homes.co.nz	
Wind: V/High	Earthq: 1	Exposure: D (ss)	Snow: NO

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North



East

NZBC D1/AS1 Access Routes:
Concrete (min 150mm below FFL) or H5 timber step to all access points (owners care)
Acceptable Slip Resistance for Walking Surfaces:

- Portland cement concrete
- Broomed (Class 5 or 6) or wood float finish (Class U2)

Concrete surface finishes complying with NZS 3114.

- Coated and sand/grit impregnated

The sand/grit, which is sprinkled over the complete surface of the final paint coating, should be a hard angular material such as silica sand or calcined bauxite. The particle size should not be less than 0.2 mm so that it is not submerged by the coating and not greater than about 2-3 mm so that it remains tightly bound to the surface.

- Exposed aggregate finish
- crushed aggregate
- Asphaltic concrete
- Concrete pavers
- Dry press concrete
- Interlocking concrete block paving to NZS 3116.
- Anti-slip tapes

- will normally require regular replacement to remain effective. To ensure foot contact, tapes should be placed at right angles to the line of travel and be spaced at no more than 150 mm centres.

Cautionary Notes:

BUILDING CONTRACTOR TO ASSESS SITE TO ENSURE DAYLIGHTING & BUILDING RESTRICTIONS ARE COMPLIED WITH.
NO LIABILITY FOR ENCROACHMENT SHALL BE HELD BY DESIGNER IF SITE IS NOT SURVEYED BY A REGISTERED SURVEYOR PRIOR TO COMMENCEMENT OF FOUNDATIONS.

Construction Notes:

Glazing in accordance with NZS 4223 & 2008 plus amendments
All glazing low-e clear float except for obscure glass to bathrooms & wc
Double glazing to all window and door joinery excluding garage
sg = Safety glass

Aluminium joinery head heights to be 2.0m unless noted otherwise (excludes entry box unit).
Refer to floor plan for door & window sizes. Joinery schedule & sizes to be confirmed by pre-cut manufacturer & joinery fabricator PRIOR to manufacture by way of communication via e-mail, phone or other.

HIRB = Height in Relation to Boundary

Safety restrictor stays:

ss = safety stays
- a restrictor fitted to limit the maximum opening so that a 100mm sphere cannot pass through

Window restrictors are required to the following sized openings where the adjacent Ground Level is 1.0m below FFL or greater;
- openings less than 1.0m wide with sill ht within 760mm of FFL
- openings more than 1.0m wide with sill ht within 1000mm of FFL

Window restrictors are also required to outward opening windows that may protrude into walk paths
- Refer to Site plan for 'walk paths'

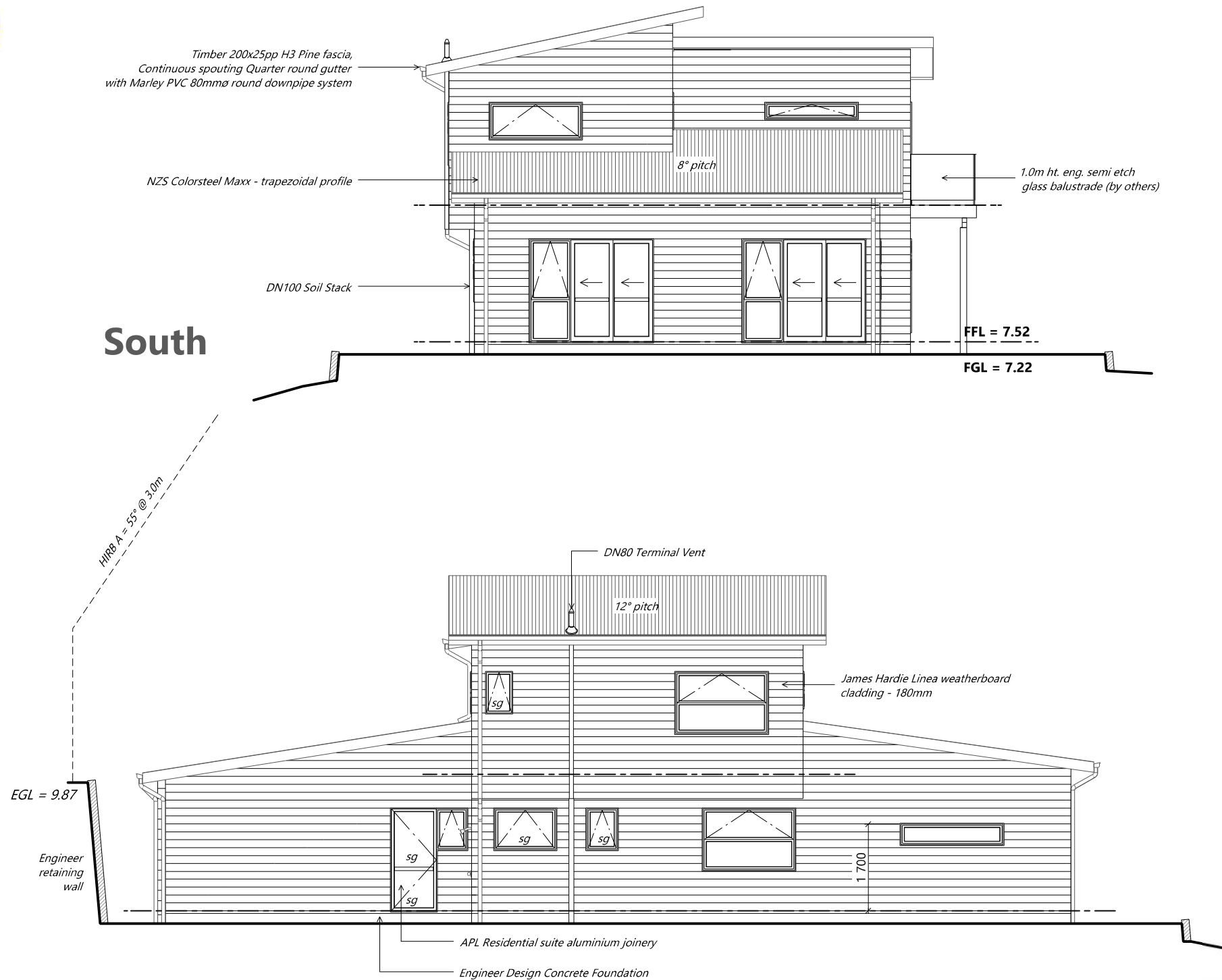
Building Envelope Risk Matrix

Risk Factor	Risk Severity	Risk Score
Wind zone (per NZS 3604)	V/High risk	2
Number of storeys	Medium risk	1
Roof/wall intersection design	V/High risk	5
Eaves width	Medium risk	1
Envelope complexity	Medium risk	1
Deck design	Medium risk	2
Total Risk Score: 12		

Client Details : PO549
Phillip Stubbs
Address:
1830 Ngunguru Road
Ngunguru
BH172

Elevations		Scale: 1:100	Date: 6/07/2017	Sheet no: 9
Drawn: GW	Check: D.Shaw	Call 0800 A1homes 2 1 4 6 6 3		
Wind: V/High	Earthq: 1	Exposure: D (ss)	Snow: NO	www.A1homes.co.nz

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South

Timber 200x25pp H3 Pine fascia,
Continuous spouting Quarter round gutter
with Marley PVC 80mm round downpipe system

NZS Colorsteel Maxx - trapezoidal profile

DN100 Soil Stack

8° pitch

1.0m ht. eng. semi etch
glass balustrade (by others)

FFL = 7.52

FGL = 7.22

HIRB A = 55° @ 3.0m

DN80 Terminal Vent

12° pitch

James Hardie Linea weatherboard
cladding - 180mm

EGL = 9.87

Engineer
retaining
wall

1.700

APL Residential suite aluminium joinery

Engineer Design Concrete Foundation

West

NZBC D1/AS1 Access Routes:

Concrete (min 150mm below FFL) or H5 timber step to all access points (owners care)

Acceptable Slip Resistance for Walking Surfaces:

- Portland cement concrete
- Broomed (Class 5 or 6) or wood float finish (Class U2)

Concrete surface finishes complying with NZS 3114.

- Coated and sand/grit impregnated

The sand/grit, which is sprinkled over the complete surface of the final paint coating, should be a hard angular material such as silica sand or calcined bauxite. The particle size should not be less than 0.2 mm so that it is not submerged by the coating and not greater than about 2-3 mm so that it remains tightly bound to the surface.

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Double glazing to all window and door joinery excluding garage
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Aluminium joinery head heights to be 2.0m unless noted otherwise (excludes entry box unit).

Refer to floor plan for door & window sizes. Joinery schedule & sizes to be confirmed by pre-cut manufacturer & joinery fabricator PRIOR to manufacture by way of communication via e-mail, phone or other.

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Window restrictors are also required to outward opening windows that may protrude into walk paths

- Refer to Site plan for 'walk paths'

Building Envelope Risk Matrix

All Elevations		
Risk Factor	Risk Severity	Risk Score
Wind zone (per NZS 3604)	V/High risk	2
Number of storeys	Medium risk	1
Roof/wall intersection design	V/High risk	5
Eaves width	Medium risk	1
Envelope complexity	Medium risk	1
Deck design	Medium risk	2
Total Risk Score: 12		

Client Details : PO549

Phillip Stubbs

Address:

1830 Ngunguru Road
Ngunguru

BH172

Elevations	Scale:	Date: 6/07/2017	Sheet no :
	1:100	Rev:	10

Drawn: GW	Check: D.Shaw	Call 0800 A1homes 2 1 4 6 6 3 www.A1homes.co.nz	
Wind: V/High	Earthq: 1		
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cook | costello
Consulting Engineers



Geotechnical Report

**1830 Ngunguru Road, Ngunguru
Lot 2 DP 361651**

For Phillip Stubbs



cook | costello

Consulting Engineers

3 October, 2016

Project Number: 13099

BC1700484
APPROVED
07 JUL 2017
WHANGAREI DISTRICT COUNCIL BCA

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1. INTRODUCTION

It is proposed to construct a new residential dwelling at the property of Phillip Stubbs on Lot 2 DP 361651, 1830 Ngunguru Road, Ngunguru.

Cook Costello have been briefed to provide a geotechnical report for the proposed development. This report considers the following aspects of site development:

- Existing stability of the site
- Effects of the development on stability
- Stormwater management
- Suitable building foundations
- Assessment of the stability of the building site in terms of Section 72 of the Building Act, 2004

A site plan is attached in Appendix 1 showing the property boundaries and associated site investigations.

1.1. Relevant Documentation

- AS 2870: 2011 - Construction of residential slabs and footings
- NZS 3604: 2011 - Timber framed buildings
- NZS 4402:1986 - Methods of testing soils for civil engineering purposes.
- NZ Building Code: B1/VM4

Good Ground – means any soil or rock capable of permanently withstanding an ultimate bearing pressure of 300kPa (i.e. an allowable bearing of 100kPa using a factor of safety of 3.0) but excludes;

- a) Potentially compressible ground such as topsoil, soft soils such as clay which can be moulded easily in the fingers, and uncompacted loose gravel which contains obvious voids,
- b) Expansive soils being those that have a liquid limit of more than 50% when tested in accordance with NZS4402 Test 2.2 and a linear shrinkage of more than 15% when tested from the liquid limit in accordance with NZS 4402 Test 2.6 and,
- c) Any ground which could foreseeably experience movement of 25mm or greater for any reason including one or a combination of the following: land instability, ground creep, subsidence, seasonal swelling and shrinking, frost heave,

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changing ground water level, erosion, dissolution of soil in water, and effects of tree roots.

- Whangarei District Council: 2016 – GIS Maps

2. SITE DESCRIPTION

The property is located at 1830 Ngunguru Road in Ngunguru. The site is accessed via a shared driveway off Ngunguru Road to the north of the site. The subject site is set one property back from Ngunguru Road. The legal description of the site is Lot 2 DP 361651 and the total size of the lot is 647m².



Figure 1. Aerial photograph showing the subject property

The property has a flat contour, however earthworks have been undertaken on the site. It appears that historically there has been some cut undertaken on the northern side of the property with fill placed on the southern side of the site. In 2011 further earthworks involving cut along the northern property boundary were undertaken with the cut being retained. Fill was placed on the western side of the site, with a retaining wall constructed along most of the western property boundary. There is a steep embankment along the southern property boundary where the land slopes down to the south at angles up to 45°. There is a 2m high timber retaining wall at the base of the steep embankment, within the neighbouring property to the south.

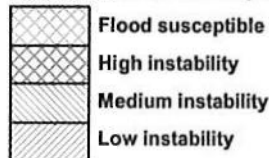
The proposed construction of the new dwelling is a lightweight timber structure with linea weatherboard cladding. The proposed foundation system is unknown at the time of this report. The proposed dwelling may be single or double storey.

There was no evidence of any slips or land subsidence within the property or surrounding properties at the time of the site visit.

Whangarei District Council hazard maps show the property lies within high, medium and low risk stability areas. The high risk area is restricted to the western side of the property. The majority of the proposed building platform is within the medium risk instability zone, while the driveway is zoned as low risk of instability. The neighbouring property to the south is located within a flood zone. A minor portion of the subject property, along the southern lot boundary, is located within the flood zone.



Figure 2. WDC hazard map showing stability risk and flood susceptibility



3. GEOLOGY

The soil type in the area is defined on NZMS290 Sheet Q06/07 Hukerenui - Whangarei (SOILS) as Marua clay loam; well to moderately well drained.

The rock type in the area is defined on NZMS290 Q06/07 Hukerenui - Whangarei (ROCK TYPES) as A1₂: Alluvium: mud, sand and gravel with minor peat, forming river bed and flood plain deposits up to 60m thick; unconsolidated to very soft. Unweathered.

The Institute of Geological and Nuclear Sciences Geology of the Whangarei Area define the geology of the site as unconsolidated to poorly consolidated mud, sand, gravel and peat deposits of alluvial swamp and estuarine origin.

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rootlets from approximately 1.7mbgl, suggesting some degree of uncontrolled fill along the southern side of the lot.

Test ID	Start Depth (mBGL) ¹	Depth (mBGL) ¹	Scala Penetrometer (mm/Blow)	Inferred Ultimate Bearing Capacity (kPa)
SP1	1.60	1.60	<28mm/blow	>300
SP2	2.50	2.50	<28mm/blow	>300
SP3	3.00	3.37	>50mm/blow	<200
		3.87	<50mm/blow	>200
		4.01	<28mm/blow	>300
SP4	0.00	0.06	<28mm/blow	>300
SP5	0.00	0.07	<50mm/blow	>200
		0.16	<28mm/blow	>300
SP6	0.00	0.10	≤50mm/blow	≥200
		0.14	<28mm/blow	>300
SP7	0.00	0.13	>50mm/blow	<200
		0.25	<28mm/blow	>300
		0.48	<50mm/blow	>200
		2.70	>50mm/blow	<200
		3.30	<50mm/blow	>200
		4.33	<28mm/blow	>300
SP8	0.00	0.08	>50mm/blow	<200
		1.89	<50mm/blow	>200
		2.15	<28mm/blow	>300

¹ mBGL: metre Below Ground Level

Table 2. Summary of Scala penetrometer results

Scala penetrometer results show that an ultimate bearing capacity (UBC) in excess of 300kPa (100kPa allowable) is available from approximately 0.2m below ground within the cut area of the site. However UBC >300kPa is identified from approximately 4.4m below the existing ground level within the area of expected uncontrolled fill on the southern side of the lot (worst case SP7).

Uncorrected bearing capacities derived from Scala penetrometer tests were estimated using the procedure presented by M.J. Stockwell in the paper 'Determination of allowable bearing pressure under small structures (June 1977)'.

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5. SITE STABILITY

The proposed building platform is flat with some cut to fill undertaken on site. It appears that some historical cut and filling has been undertaken on the site, with some uncontrolled fill placed on the southern side of the subject property. Further cut along the northern property boundary was undertaken in 2011 which has been retained. Some of the excess cut material was compacted along the western property boundary and this was also retained. The southern property boundary slopes down steeply to the neighbouring property below to the south at slope angles up to 45°. This appears to be the historical uncontrolled fill embankment.

No evidence of instability was observed within the property at the time of the site inspection. The site is considered to be consistent with the above geological description and is underlain by soils interpreted as residual weathered alluvial silts and sands. The site contains a building site that is considered suitable for the development as proposed. The proposed development is unlikely to have a detrimental effect on the site stability, provided the development is carried out in a responsible manner and in accordance with recommendations stated within this report.

6. STORMWATER

All stormwater resulting from development works and newly formed impermeable surfaces for the property, including overflow from roof water collection tanks shall be collected and piped to the Council stormwater system within Ngunguru Road.

In no instance is concentrated storm water to be discharged onto slopes without being specifically assessed, as this will be detrimental to slope stability.

6.1. Stormwater Attenuation

Whangarei District Council requires attenuation of stormwater runoff in certain circumstances, and for this proposed development it is anticipated that attenuation will be required. WDC requires that the runoff from the developed site is to be less than 80% of the existing site including an allowance of 20% for climate change for a 100 year rainfall event. The most convenient means to achieve this is to collect roof runoff from the buildings and direct to a storage tank for attenuation.

This method can also be used to compensate for other impervious surfaces which cannot be readily collected and attenuated (i.e. driveways, paved areas, paths).

Specific design of stormwater attenuation may be required once the layout and final configuration of the development is established and can be completed as part of the Building Consent application.

6.2. Stormwater Tank Installation

Stormwater tanks are proposed to be buried at the site. These may be situated as close to Retaining Wall 2 (along the western property boundary) as practicable however must be offset from Retaining Wall 1 situated along the northern property boundary. To ensure the integrity of the retaining wall is maintained the tanks must be offset by a minimum of the height of the wall; this would be 3m from Retaining Wall 1. Alternatively, specific design of the tanks including bracing of Retaining Wall 1 may reduce the offset required.

7. FLOOD SUSCEPTIBILITY

The southern edge of the subject property is located within an area indicated as flood susceptible within Whangarei District Councils GIS maps. However the flood zone will be restricted to the base of the fill embankment; the proposed building site is elevated approximately 4 – 4.5m above this level. Therefore flooding is not considered to be an issue at the site.

8. SLOPE STABILITY ANALYSIS

8.1. Site Stability

The likelihood of slope failure is quantified by means of a Factor of Safety and is determined by the ratio of stabilising forces to destabilising forces. An acceptable slope will generally have a factor safety of 1.2 to 1.5 with a normal FOS value of 1.5 for subdivisions or housing development. The factors of safety adopted by engineers in geotechnical design have been developed to accommodate uncertainties in geometric accuracy, soil properties, analysis method, and the validity of assumptions made.

The modelled FOS does not assure safety from instability or slope movement but indicates a reduced likelihood of failure. The likelihood of failure for different levels of Factors of Safety is approximately:

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Factor of Safety	Likelihood of Failure Per Annum
1.1	1:10
1.3	1:50
1.5	1:200
1.7	1:1000

Table 3. Slope stability likelihood of failure

Generally the higher the risk category for the asset under consideration, the higher the design FOS to be adopted. The likelihood of slope failure was modelled as a circular failure using SLIDE analysis software to determine the existing stability of the slope under various conditions and to assess the likelihood of failure affecting the proposed dwelling.

The likelihood of any slope failure is dependent on the ratio of forces causing and resisting movement. Factors causing movement include the slope gradient, weight of soil, ground water, surcharge, and the factors resisting movement include slope support, soil strength parameters. Groundwater plays a critical role in slope stability, and soil shear strength when wet may be reduced to less than half of the strength when dry.

8.2. Soil Parameters

The soil parameters used for slope stability analysis are tabulated below.

Soil Type	Density (γ) kN/m ³	Effective Cohesion c' kPa	Effective Friction Angle ϕ' deg
Silty CLAY	18	5	25
Uncontrolled FILL	18	2	22
Weathered Alluvial Deposits	22	10	35

Table 4. Soil parameters used for slope stability analysis

These parameters have been selected based on the materials encountered on site, and engineering judgement.

8.3. Slope Stability Analysis

A typical slope stability analysis through Section A was undertaken using a combination of contour data obtained in 2011 at the time of construction of the retaining walls and clinometer data measured through the uncontrolled fill embankment along the southern boundary. Section A was analysed using SLIDE software to establish the risk of slope failure, set back distances from the edge of steep slopes and recommended foundation treatments.

The location of Section A used for the stability analysis is indicated on the site plan attached as Appendix 1. Slope stability results are attached as Appendix 3.

8.3.1. Existing Surface

The existing surface of the site has been modelled with the existing retaining wall at the back of the building platform, uncontrolled fill embankment at the front and neighbouring retaining wall below. Balanced cut to fill has been assumed on site, with uncontrolled fill from historical cuts on site placed at the front of the building platform.

The existing surface of the site was modelled under normal groundwater conditions, with the water table assumed just below the weathered alluvial deposit interface at approximately 5.5m below ground level at the front of the building platform.

The analysis shows failure surfaces with a Factor of Safety (FOS) < 1.5 extending approximately 2.6m into the site from the top of the fill embankment. The lowest FOS occurring through the steep fill embankment is shown as 1.1.

The existing surface was also modelled under adverse groundwater conditions where the ground surface is saturated following a heavy rainfall event or failed drainage. Failure surfaces with FOS < 1.2 extend approximately 6.7m into the site from the top of the fill embankment. The lowest FOS occurring through the steep fill embankment is shown as 0.6.

8.3.2. Finished Surface

The finished surface was modelled with a uniformly distributed load of 20kN/m^2 applied at the proposed building platform to represent the future dwelling.

Under normal groundwater conditions and assuming a concrete slab foundation, the proposed dwelling would need to be offset from the top of the steep fill embankment by approximately 4m to achieve the required FOS > 1.5 through the building platform.

Under adverse groundwater conditions and assuming a concrete slab foundation, the proposed dwelling would need to be offset from the top of the steep fill embankment by approximately 7m to achieve the required FOS > 1.2 through the building platform.

Alternatively, a palisade wall has been modelled along the top of the steep fill embankment. 250mm SED timber piles at 0.75m centres have been used for the purpose of the slide model. Piles extend a minimum of 5m below the existing ground level pin into the assumed underlying weathered deposits. With the use of a palisade wall, a FOS > 1.5 and FOS > 1.2 is achievable under normal and adverse groundwater conditions.

8.3.3. Summary

A summary of the Factors of Safety through the building property for the existing and finished surfaces under normal and adverse ground conditions is tabulated below:

Groundwater	Factor of Safety (FOS)	
	Existing Surface	Finished Surface
Normal groundwater	1.1	>1.5
Adverse groundwater	0.6	>1.2

Table 5. Summary of slope stability analysis results

The analysis confirms that a minimum Factor of Safety of 1.5 is available under normal groundwater conditions and 1.2 under adverse conditions provided the house is either setback from the top of the steep fill embankment by 7m, or a palisade wall is constructed along to top of the steep embankment. Results of the slope analysis indicate that installation of drainage and maintenance of stormwater systems is critical at this site.

9. FOUNDATIONS AND RETAINING

Many of the soils located within the Northland region are considered to be expansive soils. There are three basic types of soil naturally occurring in the Northland Area: sand, silt and clay. Clay soils are generally classified as "expansive." This means that a given amount of clay will tend to expand (increase in volume) as it absorbs water and it will shrink (lessen in volume) as water is drawn away. The action of seasonal shrink/swell of soils can have a significant impact on foundations of structures and also on other components of developments such as services, claddings, windows, doors, pavements etc. It is evident from historical reports and site inspections that the effect of expansive soils is a major problem in Northland.

It is considered that the building site does not meet the requirements for Good Ground as defined in the New Zealand Building Code. Foundations will require design in accordance with AS2870 for Class M moderately expansive soils or a specific engineered design for expansive and plastic soils. This will require design by a Chartered Professional Engineer with relevant geotechnical experience.

For a concrete slab foundation, it is recommended the slab is of stiffened raft or waffle raft design to help mitigate the effects of expansive soils. This will need to be underpinned with piles to extend through the uncontrolled fill at the front (southern side) of the building platform.

For a suspended timber floor, piles will also need to extend through the uncontrolled fill at the front (southern side) of the building platform.

It is expected that there is uncontrolled fill of up to 2 – 3m deep on the southern side of the property. Inspection will be required at the time of pile excavation to ensure foundations extend through the fill and pin into natural ground beneath.

The proposed dwelling will need to be offset 7m from the top of the steep fill embankment along the southern property boundary. Alternatively, a palisade wall will be required. This should be constructed along the top of the steep fill embankment, consisting of 250mm short end diameter (SED) timber piles at 0.75m centres, extended a minimum of 5m below the existing ground level. These will need to be bored and concreted rather than driven, to avoid disturbance to close neighbouring properties. The proposed dwelling can then be constructed up to the palisade wall.

An alternative option is to place the rainwater and stormwater attenuation tanks on the southern side of the building platform, near the southern lot boundary. The uncontrolled fill across the building platform could be removed and re-compacted at the same time as excavation for the tanks. Inspection will be required to ensure all uncontrolled fill is removed and suitably re-compacted in accordance with NZS4431. The tanks will act as a form of in-ground retaining, removing the need for a palisade wall. The proposed dwelling will then be set-back from the top edge of the steep fill embankment by at least the diameter of the tanks. Piling will not be required if the uncontrolled fill is removed and suitably re-compacted.

The existing Retaining Wall 2, located along the western property boundary, has been designed for a light surcharge of 5kPa. Where building loads are calculated to be greater than 5kPa, a setback distance from Retaining Wall 2 will be required.

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10. CONCLUSIONS AND RECOMMENDATIONS

Geotechnical investigations indicate that the proposed building site is presently unstable, however subsoil properties have adequate strength parameters necessary for the proposed development. Development will need to be carried out in accordance with proper engineering practice and the following recommendations:

1. Foundations will require specific engineering design to accommodate the effects of expansive soils. The site soils are considered to be moderately expansive and classified as Class M in accordance with AS2870.
2. For a concrete slab foundation, it is recommended the slab is of waffle raft or stiffened raft design. This will need to be underpinned with piles to extend through the uncontrolled fill at the front (southern side) of the building platform.
3. For a suspended timber floor, piles will also need to extend through the uncontrolled fill at the front (southern side) of the building platform.
4. It is expected that there is uncontrolled fill of up to 2 – 3m deep on the southern side of the property. Inspection will be required at the time of pile excavation to ensure foundations extend through the fill and pin into natural ground beneath.
5. The proposed dwelling will need to be offset 7m from the top of the steep fill embankment along the southern property boundary. Alternatively, a palisade wall will be required. This should be constructed along the top of the steep fill embankment, consisting of 250mm short end diameter (SED) timber piles at 0.75m centres, extended a minimum of 5m below the existing ground level. These will need to be bored and concreted rather than driven, to avoid disturbance to close neighbouring properties. The proposed dwelling can then be constructed up to the palisade wall.
6. An alternative option is to place the rainwater and stormwater attenuation tanks on the southern side of the building platform, near the southern lot boundary. The uncontrolled fill across the building platform could be removed and re-compacted at the same time as excavation for the tanks. Inspection will be required to ensure all uncontrolled fill is removed and suitably re-compacted in accordance with NZS4431. The tanks will act as a form of in-ground retaining, removing the need for a palisade wall. The proposed dwelling will then be set-back from the top edge of the steep fill embankment by at least the diameter of the tanks. Piling will not be required if the uncontrolled fill is removed and suitably re-compacted.

7. The existing Retaining Wall 2, located along the western property boundary, has been designed for a light surcharge of 5kPa. Where building loads are calculated to be greater than 5kPa, a setback distance from Retaining Wall 2 will be required.
8. Any excess fill material shall be disposed of off-site.
9. All stormwater from the property shall be collected and piped to the Council stormwater system within Ngunguru Road.
10. Specific design of stormwater attenuation may be required once the layout and final configuration of the development is established and can be completed as part of the Building Consent application.
11. To ensure the integrity of Retaining Wall 1 (situated along the northern property boundary) is maintained the stormwater tanks must be offset at least the height of the wall; this would be 3m from Retaining Wall 1. Alternatively, specific design of the tanks may reduce the offset required.

Providing that the above-mentioned recommendations are followed then the conclusion drawn from the site investigation and analysis of the property as identified above, is that the site is capable of developed as proposed, and in terms of Section 71 and 72 of the Building Act 2004, it can be confirmed that:

- i. The land on which the building work is to take place is not likely to be subject to subsidence or slippage,
- ii. The building work itself is not likely to accelerate or worsen or result in subsidence or slippage of that land or any other property.

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11. LIMITATIONS

This report has been prepared for the benefit of Phillip Stubbs as our client with respect to geotechnical investigation for residential development and for Whangarei District Council approval of the proposal as defined in the brief. It shall not be relied upon for any other purpose. The reliance by other parties on the information or opinions contained in this report shall, without our prior review and agreement in writing, be at such parties' sole risk.

Opinions and judgments expressed herein are based on our understanding and interpretation of current regulatory standards, and should not be construed as legal opinions. Where opinions or judgments are to be relied on they should be independently verified with appropriate legal advice. Any recommendations, opinions, or guidance provided by Cook Costello in this report are limited to technical engineering requirements and are not made under the Financial Advisers Act 2008.

Recommendations and opinions in this report are based on data from hand augered boreholes with shear vane measurements and Scala penetrometer testing undertaken on site. The nature and continuity of subsoil conditions away from the boreholes and Scalas are inferred and it must be appreciated that actual conditions could vary considerably from the assumed model.

During excavation and construction the site should be examined by an Engineer or Engineering Geologist competent to judge whether the exposed subsoils are compatible with the inferred conditions on which the report has been based. It is possible that the nature of the exposed subsoils may require further investigation and the modification of the design based on this report. In any event it is essential that the firm is notified if there is any variation in subsoil conditions from those described in the report as it may affect the design parameters recommended in the report.

Cook Costello have performed the services for this project in accordance with the standard agreement for consulting services and current professional standards for environmental site assessment. No guarantees are either expressed or implied.

There is no investigation which is thorough enough to preclude the presence of materials at the site which presently, or in the future, may be considered hazardous. Because regulatory evaluation criteria are constantly changing, concentrations of contaminants present and considered to be acceptable now may in the future become subject to different regulatory standards which cause them to become unacceptable and require further remediation for this site to be suitable for the existing or proposed land use activities.



S George
Engineering Technician
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G Harding
Chartered Professional Engineer
CPEng, IntPE(NZ), BE, BSc, MIPENZ

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Code Compliance Certificate BC1700484

Section 95, Building Act 2004

Issued: 12 March 2018

The Building

Street address of building: 1830 Ngunguru Road
Whangarei 0173

Legal description of land where building is located: LOT 2 DP 361651
LLP: 116427

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: 2017

The Owner

K A Stubbs
P S Stubbs
1830 Ngunguru Road
RD 3
Whangarei 0173

Phone number: N/A

Mobile number: 021992499

Facsimile number: N/A

Email address: N/A

Website: N/A

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

Contact Person

A1 Homes Northland
PO Box 183
Ruakaka 0151

Phone number: 4330200

Mobile number: 021729724

Facsimile number: N/A

Email address: mark.russell@a1homes.co.nz

Website: N/A

Street address/registered office: 1830 Ngunguru Road
Whangarei 0173



DEC

Building Work

New Dwelling

Building Consent Number:

BC1700484

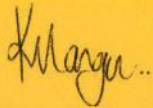
Issued by:

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.



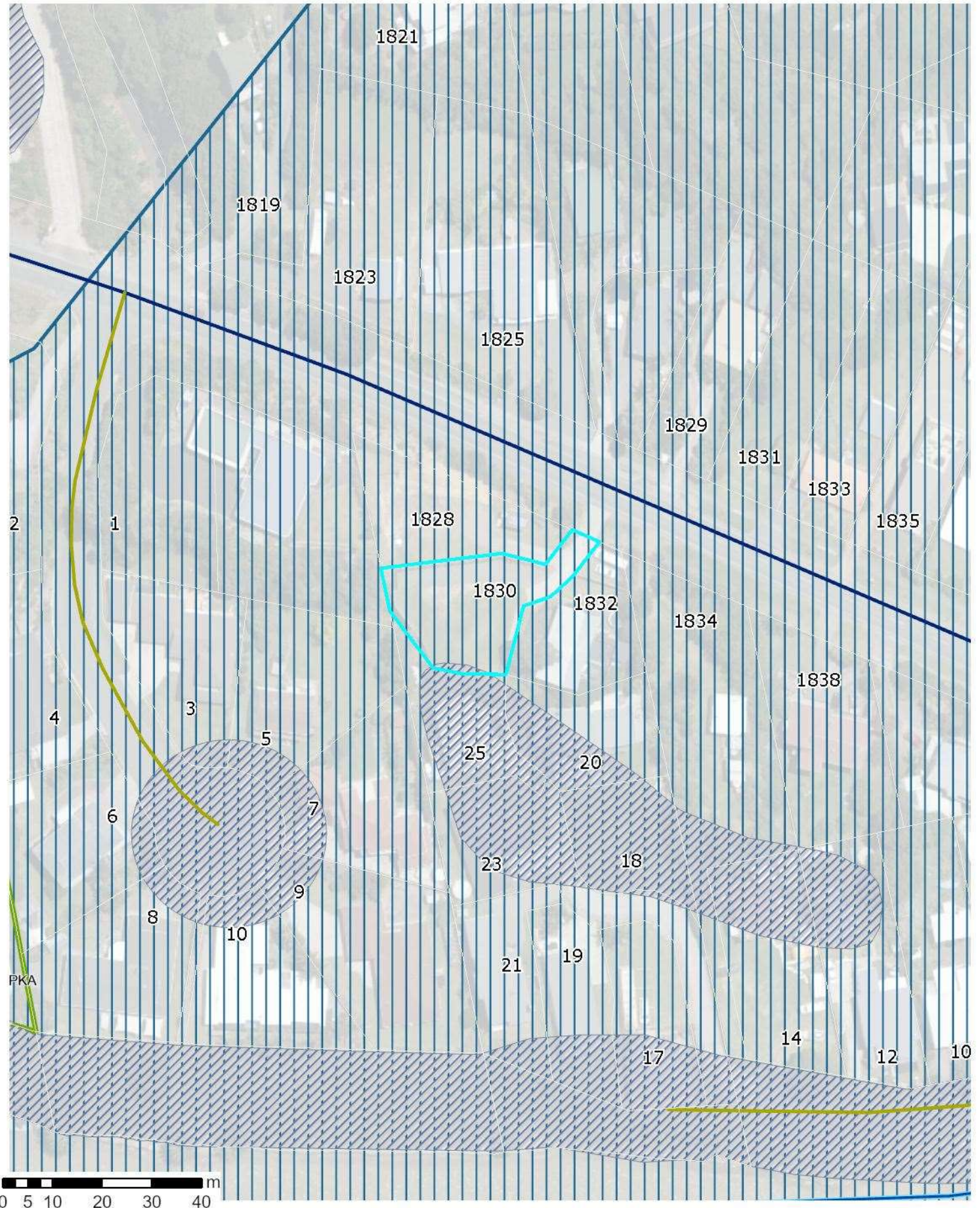
Kylee Mangu

Support Assistant – Building Processing
On behalf of Whangarei District Council

12 March 2018

Date

Operative District Plan - District-Wide Matters



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.

20 November 2023
Scale 1:1,000

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Operative District Plan – Map Legend

District-Wide Matters




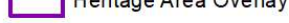
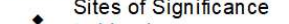

Energy, Infrastructure and Transport

-  Airport Runway
-  Indicative Road
-  National Road
-  Regional Road
-  Arterial Road
-  Primary Collector Road
-  Secondary Collector Road
-  Access Road
-  Low Volume Road
-  Strategic Road Protection Area
-  Strategic Railway Protection Line
-  Rescue Helicopter Flight Path
-  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
-  Papakāinga

Natural Environment Values

-  Esplanade Priority Area
-  Coastal Marine Area (CMA) boundary
-  Goat Control Areas
-  QRA Quarrying Resource Area
-  QRA Mining Area
-  QRA Buffer Area
-  QRA 500m Indicative Setback
-  Outstanding Natural Feature
-  Outstanding Natural Landscape

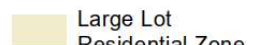
General District-Wide Matters

-  Air Noise Boundary
-  Outer Control Boundary
-  Helicopter Hovering Area
-  Noise Control Boundary Overlay
-  Rail noise alert area
-  Rail vibration alert area
-  Coastal Environment Overlay
-  Outstanding Natural Character Area
-  High Natural Character Area

Area Specific Matters

-  Multi Title Site
-  Designation
-  Precinct
-  Development Area

Residential Zones

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

Rural Zones

-  Settlement Zone Residential Sub-Zone
-  Settlement Zone Centre Sub-Zone
-  Settlement Zone Industry Sub-Zone
-  Rural Production Zone
-  Rural Lifestyle Zone
-  Future Urban Zone
-  Strategic Rural Industries Zone
-  Fonterra Kauri Milk Processing SRIZ – Ancillary Irrigation Farms

Commercial and Mixed Zones

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

Industrial Zones

-  Light Industrial Zone
-  Heavy Industrial Zone

Open Space and Recreation Zones

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

Special Purpose Zones

-  Airport Zone
-  Hospital Zone
-  Port Zone
-  Ruakaka Equine Zone

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