

Land Information Memorandum

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LAND INFORMATION MEMORANDUM NO: LM2400453

Received: 28 Mar 2024

Issued: 11 Apr 2024

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

APPLICANT

J P G Lenssen, A C Lenssen
6 Pahau Avenue
Tikipunga
Whangarei

SITE INFORMATION

Property ID: 165537
Street Address: 6 Pahau Avenue, Whangarei 0112
Legal Description: LOT 26 DP 492043

This is a Land Information Memorandum only.

Full payment has been made for this Land Information Memorandum.

1: PROPERTY DETAILS.

- Location Map
- Record of Title: 714228
- Deposited Plan: DP 492043

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

- Interest Number 10319474.4 Dated 02/02/2016

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

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

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

See map attached indicating this property is located within low zone 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.

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 identified as a Flood Susceptible Area.

See map attached and refer:

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

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

Any overland flow path shown provides an indicative understanding of routes where surface stormwater may flow during rainfall events.

Any depression storage area/surface depression ponding area shown provides an indicative extent of ponding that may form occur if the outlet to the ponding area is blocked or where the outlet capacity is exceeded eg a pipe is either blocked or the design capacity of the pipe is exceeded during a rainfall event.

Refer Water, Wastewater and Stormwater map attached and for further information please contact the Waste and Drainage Department on 09 430 4200.

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.

- Water, Wastewater and Stormwater Map

As-Built Drainage Plan for this property from the building file is attached.

- As Built Services Plans from BC1600320

For further information regarding Council Water Supply please refer:

<https://www.wdc.govt.nz/Services/Water-services/Water-Supply>

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

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

Outstanding water balance as at today's date is \$0.00.

A final reading of the water meter will be required.

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

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

- BC1600320 – New Dwelling
Building Consent Issued – 21/04/2016
Code Compliance Certificate Issued – 03/11/2016

Copy of Applications (e.g. Vehicle Crossing Permit and/or Public Utility Service) for this property are attached as listed below:

- PU161100 – Water Meter Only
Received – 29/03/2016
- VC160047 – Vehicle Crossing
Issued – 21/04/2016

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 General Residential Zone.
See map attached and refer to Part 3: Area Specific Matters - Chapters - Residential zones.

<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/>](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.

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:





P Luwes
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.

11 April 2024
Scale 1:500

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





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

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




R. W. Muir
Registrar-General
of Land

Identifier 714228
Land Registration District North Auckland
Date Issued 12 February 2016

Prior References

704858

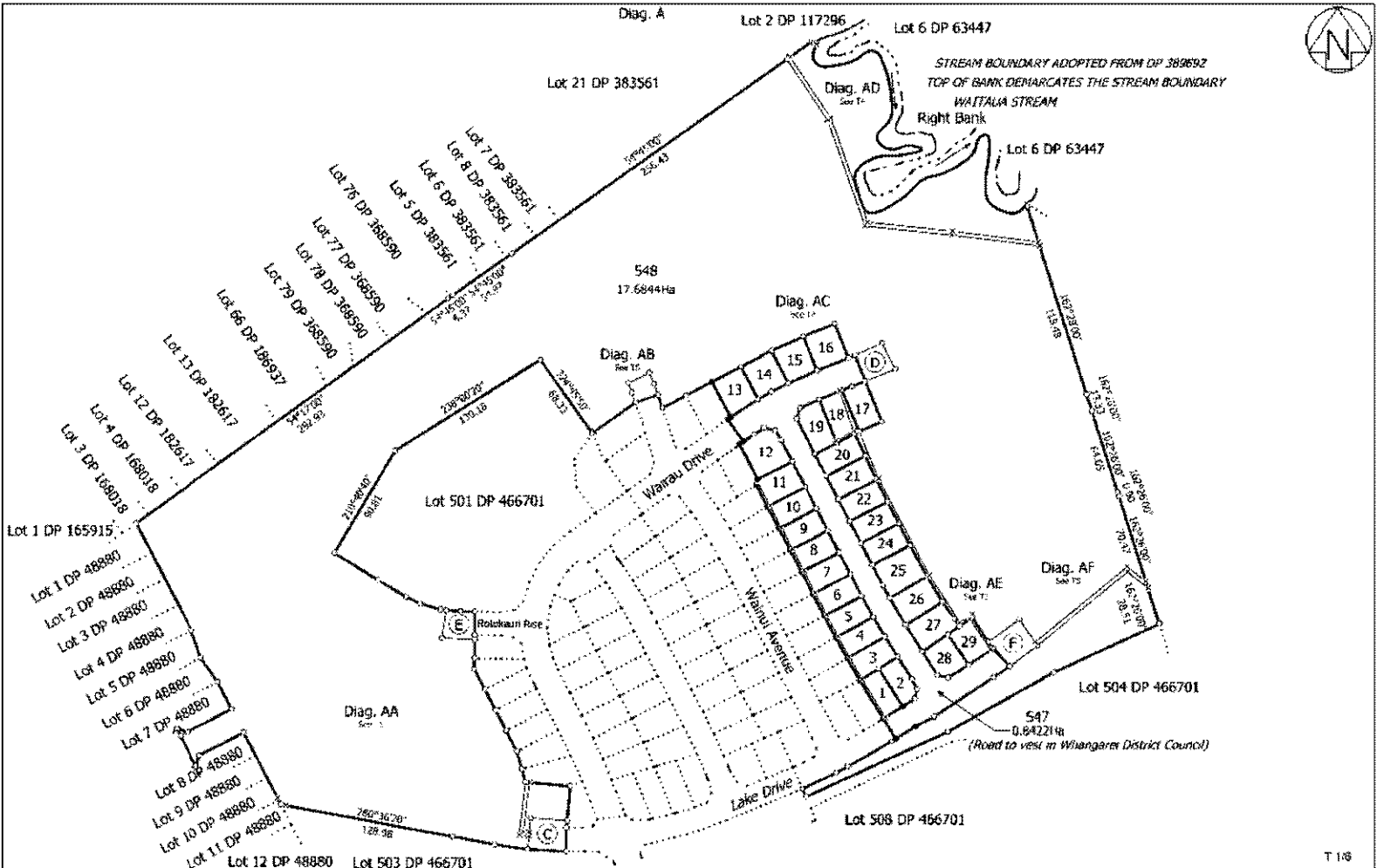
Estate Fee Simple
Area 770 square metres more or less
Legal Description Lot 26 Deposited Plan 492043

Registered Owners

Joseph Patrick Gabriel Lenssen and Anna Catherine Lenssen

Interests

10319474.4 Consent Notice pursuant to Section 221 Resource Management Act 1991 - 12.2.2016 at 12:54 pm
Land Covenant in Easement Instrument 10319474.7 - 12.2.2016 at 12:54 pm
Fencing Covenant in Transfer 10392470.3 - 11.4.2016 at 4:28 pm



Land District: North Auckland Digitally Generated Plan <small>Scale: 1:12,229 @ A4 Paper Size A11</small>	LOTS 1 TO 29 AND LOT 547 TO 548 BEING A SUBDIVISION OF LOT 513 DP 486278	Surveyor: Charlotte Frances Nissen Firm: Blue Wallace Surveyors	Title Plan LT 492043 Approved on: 17/02/2016
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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. 492043

A N D

IN THE MATTER of a Consent Notice issued
pursuant to Section 221 of the Act
by WHANGAREI DISTRICT
COUNCIL ("the Council")

IT IS HEREBY CERTIFIED that the following condition to be complied with on a continuing basis by the subdividing owner and subsequent owners was imposed by the Council as a condition of approval for the subdivision as effected by Land Transfer Plan No. 492043 ("the plan")

Any development to be undertaken on lots 1 through 29 on the plan shall comply with the restrictions and recommendations identified in the engineering geotechnical investigation report reference 1050-125904-01 compiled by Harrison Grierson Consultants Limited and dated June 2008, a copy of which is available from Council under reference SD1200080 on P120361, unless an alternative engineering report prepared by a suitably experienced chartered professional engineer is approved in writing by the Council.

DATED at Whangarei this 02 day of FEBRUARY 2016

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



Authorised Signatory
Ricardo Giovanni Zucchetto
Post Approval & Development Contributions Officer



HARRISON
GRIERSON

TASMASTER INVESTMENT LTD

Proposed Subdivision, 1a Gillingham Road, Kamo

Subdivision Baseline Geotechnical Investigation



June 2008
HG Ref 1050-125904-01
Doc Ref rep-tll-GE001V2-mmk-jag

HARRISON GRIERSON CONSULTANTS LIMITED

Document Control Record

Client TASMASTER INVESTMENT LTD

Project Proposed Subdivision, 1a Gillingham Road, Kamo

HG Ref. 1050-125904-01

Doc Ref. rep-til-GE001V2-mmk-jag


Document Subdivision Baseline Geotechnical Investigation Report

ISSUE AND REVISION RECORD

Status Final

Date of Issue June 2008

Originator 
Mark Kiryakos - Manager Geotechnical Engineering

Co-Author 
Robert Smith - Geotechnical Technician

Approved for Issue 
Phil Williams - Director

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Email auckland@harrisingrierson.com

1.0 INTRODUCTION

Harrison Grierson Consultants Limited (HGCL) was engaged by Tasmaster Investment Limited (Tasmaster) to undertake geotechnical investigation and assessment for proposed subdivision at 1a Gillingham Road in Kamo.

The investigation was undertaken in order to assess the subsurface conditions and to identify potential geotechnical issues and recommended solutions for the proposed subdivision. The objective of the investigation was also to provide geotechnical information to support Subdivision and Landuse Consent applications to the local Territorial Authority.

A geotechnical investigation was carried in December 2007 at this site followed by interpretation of the results and geotechnical assessment.

The investigation comprised a site walkover assessment, machine excavated test pits, machine borehole drilling and insitu testing. This was accompanied by a desk study and was followed by laboratory testing and engineering assessment. The site's current stability was assessed together with the site's suitability for development. The assessment took into consideration the Whangarei District Council (WDC) requirements for subdivision consent.

This report presents the factual results of the investigation together with the results of the geotechnical assessment. The report summarises the evaluation of geotechnical constraints and provides engineering recommendations where appropriate.

2.0 SITE DESCRIPTION

2.1 LOCATION

The site is located approximately 1.5km North-East of Kamo Township and approximately 5km North of Whangarei Central Business District (CBD).

The site consists of three adjoining properties with a total area of approximately 57ha. The legal description of the site consists of three amalgamated titles.

These are:

- LOT 1 DP 389692
- LOT 2 DP 389692
- LOT 6 DP 1583

There is a paper road showing crossing the site towards the north. As shown in HGCL Drawing No. 125904-GE01, the site is irregularly shaped and is mostly

pastoral land. Residential properties border most of the site along the western and southern boundaries. Vacant land borders the site along the eastern portion of the southern boundary. There is a school on the south-western corner of the site, near a 90° bend along Corks Road.

The northern boundary is bordered by residential properties and vacant land. Along the eastern boundary, the meandering Waitaua Stream borders the site.

2.2 TOPOGRAPHY

The attached site plan (HGCL Drawing No. 125904-GE01) includes contour lines of the existing ground levels. The site is predominantly north and northeast facing and slopes moderately (average slope angles of 5° to 10°) from Gillingham and Corks Road towards Waitaua Stream, where it becomes reasonably flat. The site is divided into the following main areas of differing topographical features: (refer Drawing No. HGCL 125904-GE05).

- Area 1: The ground within the central part of the site, north of the watercourse, slopes generally at 5°. This area occupies approximately 50% of the site total area.
- Area 2: This is the area on the southern side of the watercourse behind the residential properties along Corks Street. The ground also generally slopes to the northeast at 5°.
- Area 3: The area within the south-eastern corner of the site. The ground generally slopes to the north at 5°. It is divided by a short watercourse which is identified in the WDC GIS map to be a potential flood zone. This flood zone extends to the site's southern boundary where it runs through vacant land.
- Area 4: The area within the north-western corner of the site. On average the ground slopes at 10°-15°. It is bordered by residential properties along the northern and western boundaries.
- Area 5: The area near the south-western corner below Lot 7 of DP 1583, which is currently occupied by a school, is sloping down towards the north and northeast by 10° and 5° respectively. The ground in this area has been identified in the WDC GIS map to be within a Mining Hazard Area 3.
- Area 6: A narrow watercourse runs through the middle of the site starting at the Corks Road end of the site, and runs the entire length of the site towards the east. The ground on both sides of the watercourse has moderate to steep sloping ground (10° to 20°) towards the watercourse within the upper portion of the watercourse. The ground in this area has been identified in the WDC GIS map to be within a potential flood zone as well as a Mining Hazard Area 3 area.

- Area 7: The ground on both sides of the watercourse becomes moderately sloping (5° to 10°) along the majority of the watercourse until it joins up with the Waitaua Stream. This area has been identified in the WDC GIS map to be within a potential flood zone.
- Area 8: This is the area along the western bank of the meandering Waitaua Stream, which is rather complex, with the ground topography varying from a flat to a steeply sloping topography towards the stream. Steep banks are present at some locations with slope angles of up to 20°. This area has been identified in the WDC GIS map to be within a potential flood zone. There are some trees leaning towards the stream or growing in a curved direction due to slope movement downslope or towards the stream.

Basalt outcrops were observed at various locations along the Waitaua Stream as well as within the lower portion of the watercourse. Basalt boulders were observed at various locations within the north-eastern portion of Area 1 as well as within Waitaua Stream and the lower portion of the watercourse.

The locations of the above areas are shown on the attached HGCL Drawing No. 125904-GE05.

2.3 DRAINAGE AND FLOODING

The site generally drains into the above-mentioned watercourse and also directly into the Waitaua Stream. No evidence of surface water ponding was observed throughout the site except for the low-lying areas in the immediate vicinity of the watercourse and Waitaua Stream as well as areas near the water troughs and dirt track in the centre of the site.

No flood assessment has been carried out as part of the investigation. However, the GIS maps of the WDC indicate a potential flood zone along the banks of the Waitaua Stream and the watercourse as discussed in Section 2.2.

2.4 VEGETATION AND TREES

At the time of fieldwork, the site was predominantly vegetated by pasture. Shrubs and mature small and large trees are located along the boundaries and along the watercourse and stream. Groves of tall Totara trees were also scattered around the site with the main grove located towards the north-eastern end of the site. These were roughly twenty to thirty meters in height. Some other small and large trees were found scattered throughout the site.

2.5 EXISTING STRUCTURES

The site is currently vacant, mostly covered in fenced grass paddocks used for grazing cattle. Although the site appears cleared of most of the original native

vegetation, it does not appear to have been developed for any other use in the past.

There is a residential building and garage located at the Gillingham Road entrance. A large shed is located near the Gillingham Road entrance, which is used to house farm equipment and a tractor. There is also a very large hay shed located amongst the large grove of Totara trees towards the north-western section of the site.

For ease of access of livestock and farm machinery the watercourse is bridged in places by concrete culverts. The remains of what appears to be an old concrete weir were observed within the south-eastern portion of the stream.

Water troughs are scattered throughout the site, which are fed by black 30mm diameter PVC flexible piping, which runs down the centre of the site from the entrance, off Gillingham Road.

The presence of an approximately 100mm diameter PVC pipe was noted running from the centre of the site down slope towards the south of the site and exiting near the watercourse. This most probably is transporting ponding water that collects near the livestock water troughs and dirt track in the centre of the site.

A WDC GIS map shows a municipal concrete sanitary sewage pipe is connected to the residential properties along Corks Road and Gillingham Road. The pipe is approximately 400mm in diameter, generally buried beneath the ground surface at varying depths and connected by a series of manholes. The pipe is exposed above ground at various sections along its route where the grounds elevation is too low. This is notable in the north-eastern portion of the site where Waitaua Stream enters the site.

The pipeline runs along the north-eastern boundary of the site, along and crossing Waitaua Stream. The pipeline is supported above ground on concrete piers and is bridging a low-lying section of the stream.

A similar pipeline runs along the bottom of the watercourse joining up with the northern end pipeline where the watercourse joins the Waitaua Stream. Another pipeline runs along the boundary line on the north-western corner of the site where a section of the pipeline runs along the boundary parallel to Gillingham Road. There is also a section of a sanitary sewage pipeline that runs along the boundary parallel to Corks road that leads into the adjacent school property site.

3.0 PROPOSED DEVELOPMENT

The proposed development is understood to consist of a residential subdivision comprising residential lots of varying sizes.

It is also understood that it is intended to preserve the existing watercourse and the trees near the north-western corner. The access to the future subdivision will be via vacant access lots on the site's western and southern boundaries, as shown on the attached site plan. Typically, internal roads and Rows' will be required to access the subdivision lots.

In order to undertake the proposed development, some earthworks will typically be required involving cut and fill operations to prepare building platforms and the internal roads. Bridges or culverts may be required to allow vehicle access over the existing watercourse as well as connections to the underground services.

Given the size of the site drainage measures will also be required and are envisaged to utilise the existing watercourse and Waitaua Stream.

4.0 EXISTING DEVELOPMENTS IN THE VICINITY OF THE SITE

Residential properties are present along the site's south-eastern and south-western boundaries as well as along the north-western boundary. The types of buildings vary from lightweight timber frame structures to brick and tile ones.

A new subdivision has been developed near the north-western boundary. The types of buildings under construction were brick and tile over a slab on grade on likely a rib-raft foundation system. The new development included minor cut and fills for the building platforms.

There is also the possibility, since the land is being used as pasture and grazing land, the presence on site of buried silage pits, offal pits, buried animals, dips and rubbish pits even though none were found during the investigation.

5.0 GEOLOGY

In assessing the geology of the site we have referred to the following geological map:

- White, P.J.; Perrin, N.D. 2003. Geology of the Whangarei Urban Area. Scale 1:25000. IGNS Geological Map 26, Lower Hutt, New Zealand.

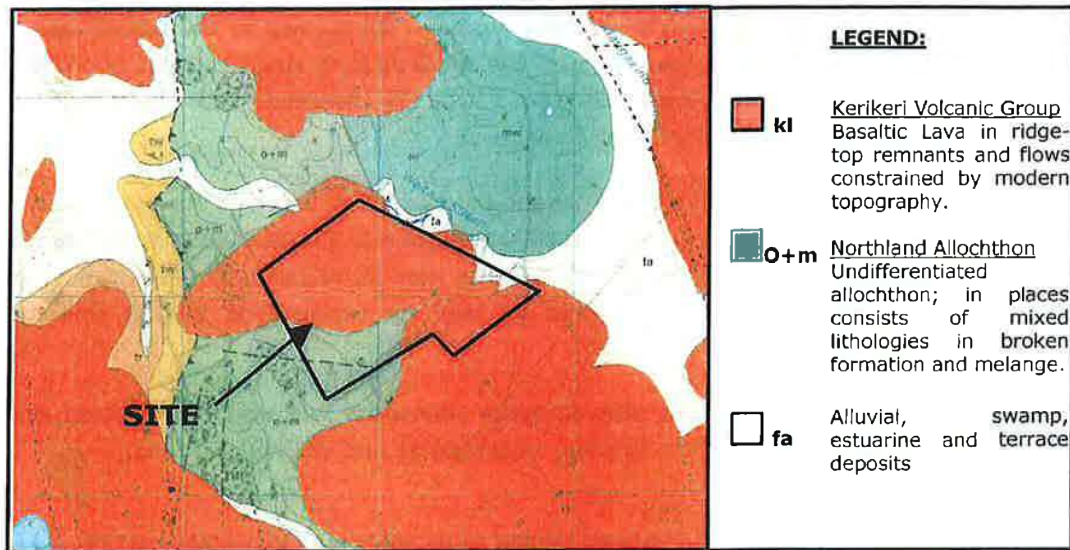


Figure 1: Geological Map of the Site from IGNS, Map 26, 1:25000, 2003.

The geological map, as shown in Figure 1, indicates that the area to the north of the watercourse and bordered by Waitaua Stream is underlain by basaltic lava of the Kerikeri Volcanic Group. On the southern side of the watercourse the site is inferred to be underlain by undifferentiated Northland Allochthon. The formation can include material of the Motatau Complex and the Mangakahia Complex. These materials consist of a mixture of sheared and shattered muddy limestone, calcareous sandstone and mudstone, as well as siliceous mudstone. Alluvial soils including swamp deposits are also shown to be present along the banks of the Waitaua Stream along the site's eastern boundary.

According to the geological map, the age of Kerikeri Volcanic Group has been estimated as Late Pliocene (5-1.8 million years ago) to Late Pleistocene (1.8 to 10,000 years ago). The Northland Allochthon is much older with the age estimated as Early Cretaceous (144 to 65 million years ago) to Early Oligocene (34-24 million years ago). The alluvial deposits are estimated as Pleistocene age.

Areas shown in the geological map to be historic landslides with unknown ages have been identified on the other side of Gillingham Road near the site northeast and southwest corners. The map also shows a short fault line to the southwest of the site, running mostly within the school and extending into the site's south-western corner. There is no available information at the time of writing to indicate whether the fault is active. The fault has not been listed in the GNS "Active Faults Database Web Map".

6.0 EVIDENCE OF INSTABILITY

No signs of large mass movement on the site were noted. However, numerous shallow-seated slumps and minor erosion channels were observed in the vicinity of the watercourse and Waitaua Stream. The following is a summary of the observations made and assessment made by WDC for each area on this site.

- Area 1: No obvious signs of land instability were observed.
- Area 2: No obvious signs of land instability were observed.
- Area 3: No obvious signs of land instability were observed.
- Area 4: No obvious signs of land instability were observed. However, the site is assessed to have a potential for land movement.
- Area 5: This area has been identified in the WDC GIS map to have minor potential for instability and to be within area designated as Mining Zone 3.
- Area 6: The ground within this area has been identified in the WDC GIS map to have moderate potential of instability and to be within an area designated as Mining Zone 3. Evidence of previous instability was observed in the form of steep slopes and erosional features near the edges of the watercourse.
- Area 7: Evidence of previous instability was observed in the form of steep slopes, and erosion features along the edges of the watercourse.
- Area 8: Evidence of previous instability was observed in the form of near vertical slopes, small amphitheatre shaped erosion features, translational slides and slip/slump debris.

7.0 FIELDWORK

7.1 METHODS

The fieldwork phase of the geotechnical investigation was carried out during the period of 10 to 20 December 2007. It comprised of a site walkover assessment, the excavating of 41 test pits and 5 machine drilled boreholes. Approximate test pit and machine borehole locations can be found on the attached Harrison Grierson Consultants Limited Drawing No. 125904-GE01.

The fieldwork was carried out under the direction of a Geotechnical Engineering Engineer and Technician, who nominated sampling and testing depths, and logged the recovered soil and rock cores. The descriptions of the soils and rocks were logged in accordance with the New Zealand Geotechnical Society (NZGS) Guidelines for Soil and Rock Descriptions.

7.2 MACHINE BOREHOLES

The machine drilled exploratory boreholes were advanced using rotary coring techniques, with in-situ testing by Standard Penetration Test (SPT).

SPT comprises the measurement of the penetration resistance of the soil or rock to a 60kg hammer falling 760mm driving a 50mm diameter split sampler tube or solid nose cone. The number of blows to drive an initial 150mm (for "seating" the apparatus into the testing stratum) is recorded, and similarly the number of blows required to drive the next two increments of 150mm is also recorded.

The number of blows required to drive 300mm following the seating is summed as the Raymond (or "N") number. In cases where the hammer is bouncing on the anvil, and where the resistance results in negligible penetration, or where the total number of blows following "seating" reaches 50, then "SPT refusal" is deemed to have occurred. This is not intended to imply that rock has been encountered, however.

7.3 MACHINE EXCAVATED TEST PITS

The test pits were to be excavated to a target depth of 5.0m below the existing ground level, with in-situ shear vane readings taken on undisturbed soil samples at nominal intervals of 0.5m. The shear vane values obtained from in-situ testing are shown on the attached borehole logs.

7.4 SOIL SHEAR STRENGTH

Shear Vane testing provides a measure of the in-situ shear strength of the soil. The peak and remoulded shear strengths were measured, and the dial readings were corrected in accordance with BS1377. The results are reported in terms of undrained shear strength (c_u , in kPa).

It is important to note, that shear vane testing is only appropriate in soils exhibiting cohesive properties (i.e. clays and silts), shear vane readings in granular soils are not applicable.

In instances where the vane could not be pushed the required 70mm into the intended soil stratum, a strength designation of UTP (Unable To Penetrate) is assigned. On the logs, this is recorded as approximately 229+UTP.

7.5 PIEZOMETERS

Standpipe piezometers (50mm PVC) were installed in two machine boreholes (MB02, and MB03) and were screened from 1.5m and 2.0m bgl respectively to 7.0m bgl. The standpipe piezometers were installed in order to monitor groundwater conditions that may be influential during construction and to assist in stormwater design.

8.0 LABORATORY TESTING

Laboratory testing in accordance with New Zealand Standards NZS 4402:1986 "Methods Of Testing Soils For Civil Engineering purposes" has been carried out by *geolab* (the trading name of the soil laboratory of Harrison Grierson Consultants Limited) on selected samples from the boreholes and test pits. The following tests were carried out:

- Four Particle Size Distribution (hydrometer method) tests
- Four sets of Atterberg Limits and Linear Shrinkage tests
- Three Clay Index tests
- Three Standard Compaction tests

Details of the sample depths and the test results are summarised in tables 4 and 5 in Appendix 1. The full test reports are attached as Appendix 3.

The basic objective of particle size analysis is to determine the composition and distribution of particle sizes within the soils sampled. The objective of the Atterberg Limits, Linear Shrinkage and Clay Index tests is to determine the engineering characteristics of the soils. Standard Compaction tests were undertaken in order to determine the optimum compaction parameters, such as the maximum dry density, optimum moisture content and the relevant percentage of air voids that will be required to set a compaction specification.

The laboratory test results are discussed in the following sections for assessing the characteristics of the subsurface soils, the geotechnical constraints and the engineering solutions.

9.0 GROUND CONDITIONS

9.1 GEOTECHNICAL PROFILE

The results of the machine borehole and test pit investigations were used to assess the ground conditions at this site. Based on the borehole and test pit data there appears to be some discrepancy between the actual ground conditions and the published geological map in some areas of this site. The actual ground conditions encountered are more complex than what is shown in the geological map. The typical soils recovered during the investigation are inferred to be predominantly ash and alluvial soils. The alluvial soils are inferred to be derived from the insitu ash and residual Northland Allochthon soils. Residual soils of the Northland Allochthon Group were encountered. Basalt of the Kerikeri Volcanic Group was encountered at some locations underlying alluvial and ash soils. Siltstone of the Northland Allochthon was also encountered at some locations. Alluvial soils were also encountered overlying

residual soils of the Northland Allochthon in some locations and basalt cobbles and boulders in some other locations. No obvious voids (cavities) were encountered in the investigative boreholes and test pits, in areas 5 and 6 in particular, where these areas are designated to be within a Mining Zone 3 area.

The depositional model of the site, post the deposition of the Northland Allochthon is inferred to include the following:

- The site was underlain by Northland Allochthon residual soils overlying Northland Allochthon rock. Two paleo-gullies were inferred along the existing watercourse and the Waitaua Stream. Residual Northland Allochthon soils were encountered in the borehole (MB02) drilled in the north-western portion of the site.
- Following a regional volcanic event, basalt lava infilled the paleo-gullies which covered the entire areas 3 and 8 as well as the eastern portions of areas 1, 2 and 7. The basalt lava extended to the middle portions of areas 1 and 2 as encountered in boreholes MB03 and MB04.
- Some basalt cobbles and boulders were deposited in the watercourse and Waitaua Stream (areas 7 and 8) and Area 3.
- Alluvial soils derived from Northland Allochthon soils were deposited over the basalt lava and covered the majority of the site.
- Ash soils were deposited on site following another volcanic event in the region. Thick ash deposits are present within area 4 and the western portion of Area 1.
- Alluvial soils derived from volcanic ash were deposited over the basalt lava and covered the majority of the site.

The ground conditions encountered in each area are summarised below:

- Area 1: The majority of the site is underlain by ash over alluvial (Northland Allochthon derived) deposits overlying residual Northland Allochthon at depth. Within the eastern portion, the ground conditions comprise thick alluvial deposits overlying basalt at depth.
- Area 2: The site within the western portion is underlain by ash over alluvial (Northland Allochthon derived) deposits overlying residual Northland Allochthon at depth. Within the eastern portion, the ground conditions comprise thick alluvial deposits overlying basalt at depth.
- Area 3: Thick alluvial deposits (Northland Allochthon and volcanic ash derived), gravely cobbles and boulders, and possibly basalt lava at some locations, at depth.

- Area 4: Ash over alluvial (Northland Allochthon derived) deposits overlying residual Northland Allochthon at depth.
- Area 5: Ash over alluvial (Northland Allochthon derived) deposits overlying residual Northland Allochthon at depth.
- Area 6: Ash over alluvial (Northland Allochthon derived) deposits overlying residual Northland Allochthon at depth.
- Area 7: Alluvial deposits (Northland Allochthon and volcanic ash derived) overly cobbles and boulders, and possibly basalt lava at some locations, at depth.
- Area 8: Alluvial deposits (Northland Allochthon and volcanic ash derived) as well as swamp deposits were encountered along the banks of the Waitaua Stream. Numerous basalt boulders were observed scattered throughout the banks of the stream. Basalt outcrops were also observed at some locations along the western bank of the stream.

The geotechnical profiles throughout the site are represented by cross sections A-A' through E-E', inclusive. The locations of these cross-sections are shown on the attached HGCL Drawing No. 125904-GE01. The cross sections are shown on the attached drawings 125904-GE02 to GE04 inclusive.

9.2 CHARACTERISTICS OF MATERIALS ENCOUNTERED

The following is a brief characterisation of the soils encountered in the boreholes and test pits.

Topsoil

Topsoil was encountered in the all investigative boreholes and test pits, with layer thicknesses ranging from 100mm at most of the tests locations to 500mm in TP22. The topsoil encountered was generally described as organic silt with trace to minor amounts and clay, dark brown in colour, low to moderately plastic and moist. The topsoil is typically a weak material that will require removal from the footprint of any development apart from landscaping.

Volcanic Ash

Thick deposits of the Kerikeri volcanic ash were encountered in the majority of the boreholes and test pits carried out to the north of the watercourse. The material is generally described as brown to orange silt with minor clays. The insitu shear strength measurements in the boreholes and the test pits in the ash were generally high indicating a stiff to very stiff consistency. The material was described to have a low to moderate plasticity and a moderate sensitivity.

Two ash silt samples were tested in the laboratory (TP12 at 1.0m bgl and TP40 at 1.0m bgl). The results indicate high Liquid Limits (76 and 82%) as well as high Plasticity Indices (37 and 35) for these samples respectively. The Linear Shrinkage for these samples was 19 and 17 respectively. The grading test results confirm the classification of the soils to be clayey sandy silt with clay content in the order of 35%. The Clay Index was 6.2 and 5.7 respectively. The clay content will significantly influence the engineering properties of the ash. The permeability of the silts is therefore assessed to be moderate.

Three standard compaction tests were carried out on samples of TP12 at 1.0m bgl, TP29 at 1.25m bgl and TP40 at 1.0m bgl. The results indicate optimum moisture content (OMC) ranging from 32.5 to 44%, and maximum dry density (MDD) ranging from 1.18 to 1.26t/m³. The laboratory test results indicate that the natural moisture content ranges from 43 to 51%.

Based on the borehole and test pit data, the compressibility of the ash soils at this site is assessed to be generally moderate.

Alluvial Soils

The majority of the alluvial soils encountered in the boreholes and test pits are derived from Northland Allochthon soils. Alluvial soils derived from volcanic ash were also encountered in the low-lying areas. The characteristics discussed here are for the Northland Allochthon derived alluvials.

These Northland Allochthon derived alluvial soils comprise of silts and clays, which were encountered in the majority of the boreholes and test pits underlying the topsoil and ash soils to variable depths throughout the site. The material can be described to be generally brown in some areas and creamy grey in colour in some other areas.

The silts had a variable content of sands and clays intermittently throughout the depth of the boreholes in the test pits. The silts were described to have generally low to moderate plasticity. The clays were described to be generally highly plastic. Two clay samples were tested in the laboratory (MB01 at 8.0m bgl and MB03 at 5.0m bgl). The results indicate very high Liquid Limits (103 and 130%), very high Plasticity Indices (75 and 99) for these samples respectively. The Linear Shrinkage for these samples was high, 20 and 22 respectively. The Clay Index of sample MB01 at 8.0m was 16.5.

The Northland Allochthon residual soils typically include montmorillonite rich clays (in the siliceous soils in particular). These soils are typically highly plastic and have a high susceptibility to shrinkage and swelling with change to the soil moisture content. The alluvials are assessed to retain the properties of the residual soils. The results of the laboratory testing on (MB01 at 8.0m bgl and MB03 at 5.0m bgl) confirm this assessment.

The Residual Northland Allochthon soils are known for their low shear strength and high tendency to creep at relatively moderate slope angles. However, the shear strength measurements in the boreholes and the test pits were generally high indicating a stiff to very stiff consistency with soil sensitivities generally being insensitive to moderately sensitive (<2 to 4). Area 5 and 6 had a sensitive (4 to 8) soil layer between 2.0 and 2.5m bgl as well as the lower regions of area 1 at a depth of 1.5 to 2.0m bgl. Area 3 exhibited an extra sensitive (8 to 16) layer at 2.0m bgl in places. Low shear strengths were recorded in some of the boreholes and test pits, as well as low SPT 'N' values, which indicate the presence of soft zones underlying the site.

The grading tests on the clays indicate a clay content of up to up to 70%. Due to the cohesive nature of the materials of the Northland Allochthon, they typically have low permeability.

Alluvials soils derived of the volcanic ash are also assessed to retain some of the properties of the insitu soils. These soils are much younger than the Northland Allochthon derived alluvials. They are assessed to be generally weaker and have higher susceptibility to erosion in comparison to the Northland Allochthon derived alluvials.

Alluvial soils within shallow depths below ground level are typically normally consolidated. Based on the borehole and test pit data, the compressibility of the alluvial soils at this site, except soils within areas 7 and 8, is assessed to be generally moderate. Within areas 7 and 8, the shallow depth alluvial soils are assessed to have high compressibility.

Cemented Silt

A hard whitish grey silt layer was encountered in some of the test pits that were located randomly scattered on both sides of the watercourse within the central and western portions of the site (TP13, TP15, TP18, TP20, TP22, TP23 and TP27). This layer was initially thought to be residual soils of the insitu Northland Allochthon material. However, as basalt rock of the Kerikeri Formation was encountered below this material in borehole MB03 and MB04, the material was inferred to be possibly cemented calcareous silts of Northland Allochthon derived alluvials.

Residual Northland Allochthon

Residual soils of the Northland Allochthon were not clearly identified in the boreholes and the test pits. However, it was encountered at approximately 9.0m bgl in borehole MB02. The material was characterised by its blocky fabric and the high SPT 'N' values, which ranged between 16 to 28 blows/300mm. These soils are assessed to be very stiff and have low compressibility.

Northland Allochthon rock was not encountered in any of the boreholes and test pits carried out at this site during this investigation.

Cobbles and Boulders

Basaltic rounded and sub-rounded cobbles and boulders were encountered in the test pits that were positioned in areas 3, 7 and 8, particularly in the flood potential zones. The test pits that cobbles and gravels were encountered are; TP01, TP03, TP06, TP08, TP11, TP26, TP28, TP30, TP31, TP32 and TP38.

Refusal was encountered at shallow depths during the excavation of some other test pits positioned in areas 3, 7 and 8. As no samples of the hard material were recovered, the hard material was inferred to be either basalt lava or a matrix of cobbles and boulders. These test pits are; TP02, TP04, TP05, TP07, TP10, TP12 and TP14. TP12 is positioned within the lower portion of Area 2.

These cobbles and boulders are believed to be present in matrix of alluvial soils underlain by the Kerikeri Group Basalt. The boulders in some test pits were able to be excavated however some of the tests pits were ended at shallow depths due to the presence of large numbers of cobbles and boulders that were encountered.

The material will present a problem for foundation excavations if encountered at shallow depth. Although a matrix of cobbles and boulders should generally provide a suitable platform for buildings and embankments, construction would be accompanied with some risk if soft alluvial deposits underlay the cobbles and boulders. This is assessed to be possible in areas 7 and 8.

Basalt

Basalt of the Kerikeri Volcanic Group was encountered at approximately 9.3 and 8.9m bgl in boreholes MB03 and MB04 respectively. Basalt was also inferred to be underlying the cobbles and boulders and/or at the refusal depth encountered in the test pits positioned in areas 2, 3, 7 and 8, as is discussed above.

The basalt lava flow is described as dark grey, strong and moderately to slightly weathered. The measured SPT 'N' values were significantly greater than 50 blows/300mm. Rock Quality Designation (RQD) of the basalt lava was measured to be generally high. Based on our experience, the unconfined compressive strength of basalt is typically high (greater than 3000kPa).

9.3 GROUNDWATER

The depths of the groundwater level as encountered in the test pits and machine boreholes during the fieldwork are recorded in Table 4 in Appendix 1. It should be noted that the investigation was carried out during a period of heavy rain. However, summer 2007 was relatively a very dry season.

Typically, groundwater levels measured in machine boreholes immediately after drilling may not be accurate due to the use of drilling water. Standpipe piezometers were installed in boreholes MB02 and MB03 following drilling. The groundwater level can be measured and monitored to measure the actual groundwater levels. The groundwater levels measured in the test pits are more accurate and were used in establishing inferred groundwater levels shown in the geotechnical cross sections A-A', B-B' and C-C'. It is important to note that groundwater levels and flows are transient, and are affected by such factors as soil and rock permeability, integrity of buried services and preceding climatic conditions.

Below is a general assessment of the likely depth of the groundwater level below the existing ground level in each area established based on the borehole and test pit data:

- Area 1: 4.0 to 5.0m bgl.
- Area 2: 4.0 to 5.0m bgl.
- Area 3: 4.0 to 5.0m bgl in the high areas and 1.0 to 2.0m bgl in the low-lying areas.
- Area 4: 4.0 to 5.0m bgl.
- Area 5: 3.0 to 4.0m bgl.
- Area 6: 4.5 to 5.0m bgl. The groundwater level is expected to be shallower closer to the watercourse.
- Area 7: 2.0 to 3.0m bgl. The groundwater level is expected to be shallower closer to the watercourse.
- Area 8: Generally between 3.0 and 5.0m bgl above the bank. The groundwater level is expected to be shallower closer to the stream.

As mentioned, the groundwater level is expected to be shallower in some locations (areas 6, 7 and 8). This is basically due to the test pits being excavated at some distance away from the water and also due to the presence of impervious mantle of alluvial and residual soils overlying the porous basalt and basalt cobbles and boulder matrix.

10.0 GEOTECHNICAL ASSESSMENT

10.1 GENERAL

The geotechnical assessment and recommendations contained below relate to the existing ground conditions with reference to the inferred concept of the

subdivision development. In this assessment, consideration was made to the requirements of WDC in terms of site stability and suitability for development.

10.2 STABILITY

A qualitative assessment was carried out for the stability of the existing ground profiles on site. A similar approach was used for assessing the stability of the envisaged earthwork profiles of the proposed development as limited earthworks are envisaged to be undertaken as part of the subdivision development and no major cutting and filling will be required.

As discussed in sections 2.2 and 6.0, there are numerous features indicating previous creep movement in the shallow soils towards the watercourse and Waitaua Stream (areas 7 and 8). As these areas are within a flood zone, no development is expected to take place, unless a detailed assessment was carried out. Any earthworks within these areas should be subject to careful assessment and design to avoid influencing the flood capacity of these zones.

Area 4 has been assessed to be relatively steep. Although no signs of instability were observed, earthworks in this area should be limited to minor reshaping to avoid any risk of instability to the adjacent properties that may result from cutting. There are also areas 5 and 6, which are highlighted by the WDC GIS map to have potential of instability and to be within an area designated as Mining Zone 3. Development in area 6 should be restricted. However, should any cutting be required, earth retention systems (retaining walls) or slope mitigation measures (such as counterfort drains, or palisade pile in-ground wall) will likely be required for both areas.

For areas 1, 2 and 3 the stability of the existing ground profiles appear to be stable at this stage. As limited earthworks are envisaged to take place, we don't envisage that there will be any instability issues for development in these areas.

Nevertheless, due to the site being predominately underlain by Northland Allochthon derived alluvial soils, it would be prudent to allow for creep in the design of earthworks near the boundaries of all the eight areas categorised in this report. It would also be prudent to design any above and belowground structure for the potential of creep within the alluvial soils.

10.3 POTENTIALLY COMPRESSIBLE GROUND

The natural soil strata encountered at the site was assessed to be generally moderately compressible. However, highly compressible soils are present in areas 7 and 8. As no development will take place within these areas (unless a detailed assessment is carried out), no assessment has been undertaken to estimate the potential consolidation settlement in soils within these areas.

Typically, further assessment will be undertaken of the ground settlement issue by a geotechnical engineer during construction. If soft alluvial soils and non-engineered fill is encountered during earthworks, depending on the thickness of the deposits, the materials should be:

- Excavated and either sorted or removed from site and replaced/compacted to the design level with additional soils sourced onsite, or
- The materials are improved by methods such as preloading or dynamic compaction.

10.4 BEARING CAPACITY

Except areas 7 and 8, the subsurface soils are assessed to have in general a geotechnical ultimate bearing capacity of 300kPa for shallow foundations founded at 0.6m below the existing ground level. The allowable and dependable bearing capacity is assessed to be 100kPa and 150kPa respectively.

As limited earthworks is envisaged to take place as part of the site development, this assessment will still apply for shallow foundations in areas 1 to 6, subject to further investigation and assessment for each building platform.

If pile foundations will be required, for bridges crossing the watercourse for instance or for buildings, piles can be designed to geotechnical ultimate end bearing capacity of 540kPa if embedded in soils. The allowable and dependable end bearing capacity is assessed to be 270kPa and 180kPa respectively. The geotechnical ultimate shaft resistance is estimated to be in the order of 40kPa. The allowable and dependable shaft resistance is assessed to be 20kPa and 13kPa respectively.

10.5 EXPANSIVE SOILS

Expansive soils are clays and silts that undergo significant volume change (swelling and shrinking) in response to changes in the soil moisture content.

The effect of such changes is to cause distortion of inflexible construction materials due to desiccation and shrinkage of the surface layers, with the consequent loss of support. Such effects can generally not be entirely eliminated, but with careful design and choice of appropriate building materials, they can be minimised.

With reference to NZS3604: 1999 "Light Timber-Framed Buildings", soils with Liquid Limit (LL) greater than 50% and Linear Shrinkage (LS) greater than 15% are classified as expansive.

As discussed in Section 9.2, both the ash and alluvial soils (whether ash or Northland Allochthon derived) are assessed to be expansive based on the Liquid

Limit and the Linear Shrinkage determined on samples of both materials tested. The ash silt samples are classified as moderately to highly reactive (M to H) soils, "which can experience moderate to high ground movement from moisture change". The Northland Allochthon clay samples are classified as highly reactive (H) soils, "which can experience high ground movement from moisture change".

The potential effects of expansive soils must therefore be taken into consideration in the foundation design of residential buildings on this site.

10.6 COMPLIANCE WITH THE DEFINITION OF "GOOD GROUND"

Residential buildings for the proposed subdivision development will typically be in accordance with NZS3604: 1999 "Light Timber-Framed Buildings". NZS 3604:1999 includes details for "standard" footings constructed on "good ground". The definition of "Good Ground" in NZS3604: 1999 is as follows:

"Any soil or rock capable of permanently withstanding an ultimate bearing capacity of 300kPa (i.e. an allowable bearing pressure 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 NZS 4402 Test 2.2, and a linear shrinkage of more than 15% when tested in accordance with NZS 4402 Test 2.5, and
- c) Any ground which could foreseeable experience movement of 25mm or greater for any reason including one or a combination of:
 - Land instability
 - Ground creep
 - Subsidence
 - Seasonal swelling and shrinking
 - Frost heave
 - Changing groundwater level, erosion
 - Dissolution of soil in water, and
 - Effects of tree roots

Based on the results of the field investigation and laboratory testing, it is considered that the soils at the site do not satisfy the definition of "Good Ground", with respect to items a), b) and c) above.

11.0 RECOMMENDATIONS

11.1 SUITABLE BUILDING AREAS

Based on the results of the geotechnical assessment the suitability of different areas of the site has been assessed and summarised below.

- Area 1: The area is generally suitable for residential development taking into account the potential effects of swell-shrinkage and differential settlement in the foundation design and subject to further investigation within the footprint of each building platform.
- Area 2: The area is generally suitable for residential development taking into account the potential effects of swell-shrinkage and differential settlement in the foundation design and subject to further investigation within the footprint of each building platform.
- Area 3: The area is generally suitable for residential development taking into account the potential effects of swell-shrinkage and differential settlement in the foundation design and subject to further investigation within the footprint of each building platform.
- Area 4: This area can be developed in a similar way to areas 1, 2 and 3 and subject to further investigation within the footprint of each building platform. However, the foundations should be specifically designed for a potential creep in the soils due to the moderate sloping of the existing ground. Earthworks should be minimised as much as possible to avoid cutting along the boundaries of the existing residential properties. Should significant cutting (greater than 0.5m in depth) be required, and then a retaining wall should be specifically designed to avoid exposing the cut for a length of time without support.
- Area 5: This area can be developed in a similar way to areas 1, 2 and 3 and subject to further investigation within the footprint of each building platform. However, the foundations should be specifically designed for potential creep in the soils due to the moderate sloping of the existing ground. Earthworks should be minimised as much as possible to avoid cutting along the boundaries with the existing residential properties and school. Should significant cutting (greater than 0.5m in depth) be required, then a retaining wall should be specifically designed to avoid exposing the cut for long term without support.

- Area 6: Buildings should be restricted in this area due to the potential instability and flooding issues unless a detailed assessment is carried out.
- Area 7: Buildings should be restricted in this area due to the potential instability and flooding issues unless a detailed assessment is carried out.
- Area 8: Buildings should be restricted in this area due to the potential instability and flooding issues unless a detailed assessment is carried out.

Development within areas suitable for building should be constructed in accordance with the New Zealand Building Code and relevant standards. These areas do not require remedial action against slope instability unless earthworks will involve significant cutting and filling. Buildings should not be constructed on slopes with a gradient steeper than 1V:3H without specific geotechnical investigation and structural design.

11.2 GEOTECHNICAL SOIL AND ROCK PARAMETERS

The following soil and rock parameters are estimated based on the borehole and test pit data and are presented here only for preliminary analysis and design purposes.

Table 1: Soil and Rock Parameters				
Material	Unit Weight γ (kN/m ³)	Effective Cohesion c' (kPa)	Effective Friction Angle ϕ' (°)	Undrained Shear Strength S_u (kPa)
Ash	18	5	30	80
Alluvium (Ash Derived)	17	3	28	60
Alluvium *(Northland Allochthon derived) <i>FOR SLOPE STABILITY ANALYSIS</i>	17	0	25	30
Alluvium (Northland Allochthon derived) <i>FOR BEARING CAPACITY</i>	17	3	28	60
Residual Northland Allochthon	18	5	30	80
Basalt	22	500	50	1500

* - The behaviour of the soil varies depending on the orientation of the applied stresses.

If the earthworks will involve substantial cutting and filling, then it is recommended that further geotechnical assessment and testing is carried out to provide refined parameters for the detailed design of earthworks.

Construction of temporary steep cut batters to allow construction of retaining walls is a common practice. We are unable to make any recommendations with regard to how long a cut face will remain stable, due to the large number of

variable parameters involved that cannot be readily assessed. Consideration should be given to temporary support of excavations where practicable.

The selection of safe temporary cut slopes is therefore at the discretion of the contractor based on the soils encountered in the excavated face, surcharges, prevalent weather conditions, season or time of year, and their previous experience with these types of soils.

Wet weather may cause an increase in soil pressure and potentially cause instability in the cut slope. It is with that in mind that we make the following recommendations:

Protection of the cut slopes against infiltration and overland flow should be incorporated while unretained during construction.

All excavations of the cut slopes are to be completed in stages. It is suggested that retaining walls are completed during these stages in order to protect the exposed slope from collapse.

11.3 FOUNDATIONS AND RETAINING WALLS

The preliminary design of foundations (for residential buildings and small bridges) and retaining walls can be carried out using the parameters summarised in Table 1 above.

The design for shallow and deep foundations should be carried out in accordance with the New Zealand Building code and the relevant standards (NZS3604: 1999). Capacity reduction factors must be applied in accordance with the building code. Preliminary design parameters are also provided in Section 10.4.

Where only minor cut and fill will be required, residential buildings can be designed using a rib-raft system or short piles if assessed suitable by the structural engineer.

The design of the retaining walls can be based on Rankin active and passive earth pressures where deflections of up to 10% of the wall height are tolerable. Where zero deflection is required, then the earth pressures will need to be assessed based on at-rest (K_0) conditions.

All surcharge, including loading due to sloping backfill and dead and live loads on the supported slope are to be assessed.

Due to the geotechnical issues at this site, a cantilever timber pole wall system constructed in staged excavation is assessed as the most suitable and practical.

Any other relevant criteria should also be assessed by the designer of the foundations and the retaining walls. The parameters in Table 1 can be modified by further specific investigation for each building platform.

11.4 SLOPE STABILITY

Following the preparation of a concept earthworks plan the stability of the site will require re-evaluation and if necessary (for significant cuts and fills) slope stability analysis to be carried out for any proposed cuts and fills. The analysis should be carried out using a computer program such as Slope/W or similar capable of undertaking Limiting Equilibrium Analysis for different groundwater scenarios. These scenarios will include normal and elevated groundwater levels. Surcharge loads will be applied as required. For slope stability analysis, the parameters provided in Table 1 can be used as a preliminary stage.

11.5 EARTHWORKS

All earthworks required to develop the site should be undertaken to the requirements of NZS 4431:1989 "Code of Practice for Earthfill for Residential Development" and must be carried out under the control of an Engineer experienced in earthworks construction and familiar with the contents of this report.

Particular attention should be paid to all earth moving operations undertaken adjacent to Restricted Building Areas (flood zone) in order to mitigate the potential for activating slope instability. (HGCL drawing No. 125904-GE05).

11.5.1 Site Preparation

The following suggested site preparation measures are provided for inclusion into the earthworks program where the natural ground surface is to be subject to earthworks.

- Strip all vegetation, topsoil and root-affected soil and stockpile for landscaping purposes or else remove from the site.
- Excavate to the design level in areas of cut (if any). Excavations deeper than 0.5m should be observed by an Engineering Geologist or Geotechnical Engineer during construction in order to advise of potential instability due to defects of unforeseeable orientation. Adequate temporary or permanent support is to be engineered for all natural slopes and excavations unless battered flatter than 1V:3H and protected against erosion.
- Proof-Roll the exposed surface in the presence of a Geotechnical Engineer or experienced soil technician in order to detect any soft/loose zones that should be either excavated and replaced with approved material or else subjected to engineered ground improvement techniques.

11.5.2 Excavation

Excavations may be required following preliminary earthworks. Excavations in engineered fills and firm to stiff natural soils should be supported by an engineer-designed retaining wall or else battered at 1V:3H, or flatter and protected against erosion. The maximum depth of excavations without specific geotechnical appraisal is to be 0.5m. Excavations should not be carried out at the toe of slopes without specific geotechnical assessment.

Due to the presence of cobbles and basalt at the site, cognisance should be taken of their possible implications upon earthworks and subsequent development. In particular, the need for specialised equipment required for their removal and complications associated with the installation of services and or drainage. It is also recommended that all boulders be removed prior to backfilling service trenches and replaced with compacted hardfill or suitable soils sourced onsite, where appropriate.

Other precautions that should be addressed include the avoidance of external load from construction vehicles and unearthed spoil being stockpiled too close to excavations. Upon construction, particular attention should be paid to the prevention of excessive surface water entering the excavations. This can largely be achieved through prudent placement of plastic sheeting along trench margins.

11.5.3 Filling

Filling, where required, should be placed in accordance with the guidelines stated in Section 11.5.

As a general rule, soils compacted to $\pm 3\%$ of it's optimum moisture content generally achieve a reasonable compaction level provided normal compactive effort is applied. For natural soils outside this range, drying or wetting is generally required.

Based on the laboratory test results and as discussed in Section 9.2, the natural moisture content of the insitu soils appears to be generally on the wet side of the optimum.

The following are the preliminary compaction parameters to be used as a guide during the fill operations:

Optimum Moisture Content = 40 to 47%

Maximum Dry Density = 1.18 to 1.27t/m³

% Of Air Voids at Optimum Moisture Content = 5 to 7%

Undrained Shear Strength at Optimum Moisture Content = 184 to 194kPa

Fill should be supported by an engineer-designed retaining wall or else battered at 1V:3H or flatter, and protected against erosion.

Details of filling earthworks in excess of 0.5m vertical are to be provided to a Geotechnical Engineer in order to assess the impact on the stability of the works.

11.6 PAVEMENTS AND ROADING

11.6.1 Pavements

Based on the information gathered across the site, it is suggested that the design of pavements should be based on a preliminary design subgrade California Bearing Ratio (CBR) of 5%. All pavements should be designed with adequate engineered drainage.

This value may be reviewed depending on the earthworks plan and compactive effort anticipated on engineered earthfill during bulk earthworks.

11.6.2 Roding

A minimum shoulder width of 2.0m is required either side of any proposed roadway in order to provide a suitable setback from the crest of the batter to the roadway against potential slope instability of surficial soils. This minimum shoulder width is also required to provide adequate space for trenching of potential services that may need to be placed.

It is anticipated that roading culverts are to be possibly constructed over the waterway that runs the length of one end of the site.

The drainage measures for the culverts should be designed and constructed in cognisance of the statements made in Section 11.5, a batter slope of 1V: 3H is considered appropriate for the fill material anticipated (i.e - sourced onsite).

11.7 STORMWATER DISCHARGE

On-site trench soakage of stormwater is considered inappropriate, due to the potential geotechnical issues. Stormwater should be collected from each building developed in the future and discharged to the local stormwater system, which may include the existing watercourse and Waitaua Stream.

Appropriate scour protection must be provided for all open drains, culvert outlets and overland flowpath routes. If inadequate attention is paid to scour protection, small drains can possibly become very rapidly, deep chasms.

12.0 CONCLUSIONS

Based on the results of the geotechnical investigation and assessment, the site is suitable for the proposed residential subdivision development providing that the recommendations made in this report are followed. The following is a summary of the main results and recommendations:

- The site has been divided into eight areas based on the ground conditions encountered and the geotechnical issues assessed.
- The typical soils encountered during the investigation, comprise generally Kerikeri volcanic ash overlying alluvial soils and basalt. The alluvial soils are derived from the insitu ash and residual Northland Allochthon soils. Residual soils of the Northland Allochthon were encountered at depth underlying the alluvial soils in the north western corner of the site. Basalt of the Kerikeri Volcanic Group was encountered at the eastern and south eastern areas of the site underlying alluvial and ash soils.
- Groundwater was encountered in most of the investigation boreholes and test pits. The water table is deep (3.0 to 5.0m bgl) within the majority of areas within the central and western portions (areas 1, 2, 4 and 5) as well as in the western portion of Area 3. The water table is shallower (2.0 to 3.0m bgl) within the lower portions of the site (ie areas 7 and 8 and the eastern portion of Area 3). These areas are in the vicinity of the watercourse and Waitaua Stream.
- No obvious voids (cavities) were encountered in the boreholes and test pits positioned in areas 5 and 6, where these areas are shown on the WDC GIS map to be within a Mining Zone 3.
- There are no current issues in regards to instability in areas 1,2 and 3 in general as well as in Area 4. However, due to moderate steepness and the presence of existing buildings on the uphill side of Area 4, instability could be a potential if earthworks were to be undertaken. The ground within areas 5 and 6 has been identified in the WDC GIS map to have minor and moderate potential of Instability according to the WDC GIS map. Instability is evident in areas 7 and 8, which are within a flood zone according to the WDC GIS map.
- Nor major cuts and fills are envisaged to be required for the proposed residential subdivision development at this site. The stability of the site based on the concept earthworks plan will require evaluation and detailed slope stability analysis for significant cuts and fills.
- A geotechnical ultimate bearing capacity of 300kPa has been estimated for shallow foundations founded at 0.6m below the existing ground level.

Recommended design parameters for shallow and deep foundations are provided.

- The natural alluvial soils encountered in areas 1 to 6 are assessed to have in general moderate compressibility. The natural alluvial soils encountered in areas 7 and 8 are assessed to have high compressibility.
- Laboratory tests carried out on samples of the ash silts and the Northland Allochthon derived alluvials indicate the materials to be moderately to highly reactive (M-H) highly reactive (H), respectively.
- The soils at the site do not satisfy the definition of "Good Ground" as defined in NZ 3604:1999. The proposed residential development on this site will therefore require a specific foundation design to AS 2870:1996 requirements.
- A rib-raft slab or short pile is likely to be required for residential buildings for reasonably level platforms where minor cut and fill has taken place, in accordance with recommendations made above regarding the suitability of areas 1 to 8 for development and subject to assessment by a structural engineer.
- Areas 1, 2 and 3 are generally suitable for residential development taking into account the potential effects of swell-shrinkage and differential settlement in the foundation design and subject to further investigation within the footprint of each building platform.
- Any development within areas 4 and 5 can be undertaken in a similar way to areas 1, 2 and 3 subject to further investigation within the footprint of each building platform. The foundations will require specific design for potential creep in the soils. Earthworks should be minimised as much as possible to avoid cutting along the boundaries with the existing residential properties and school. A retaining wall will be required for cuts greater than 0.5m in depth.
- Due to the potential instability and flooding issues, buildings should be restricted in areas 6, 7 and 8 unless a detailed assessment is carried out.
- For any earth retention works a cantilever timber pole walls constructed in staged excavations is assessed to be the most suitable and practicable wall system. Soil parameters are provided for the purpose of preliminary design. Any retaining wall design will require specific geotechnical investigation to confirm the design parameters.
- Laboratory test carried on soils samples collected from shallow depths are assessed suitable for standard earthworks operations, subject to adjustment of the moisture content. In some areas (in the vicinity of the

watercourse and Waitaua Stream in particular), the insitu soils will require significant drying prior to use in the fill operation.

- All earthworks should be undertaken to the requirements of NZS 4431:1989, and be carried out under the control of an Engineer experienced in earthworks construction and familiar with the contents of this report. Recommended specifications are provided together with preliminary compaction parameters.
- Earth filling should be monitored on the basis of % compaction as well as soil undrained shear strength testing or scala penetrometer testing, with additional monitoring of moisture contents.

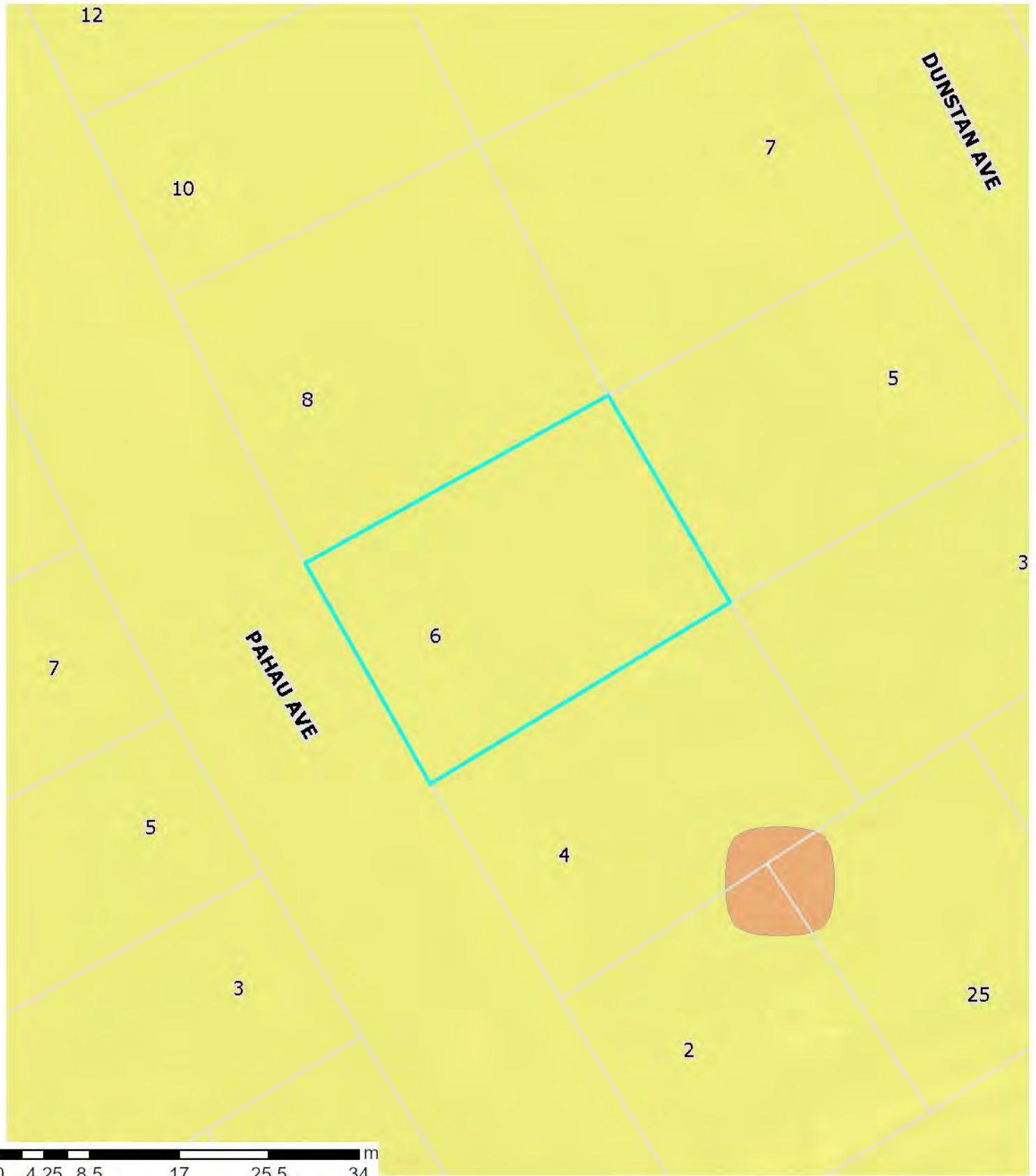
13.0 LIMITATIONS

This report has been prepared for the particular project described to us and its extent is limited to the scope of work agreed between the client and Harrison Grierson Consultants Limited. No responsibility is accepted by Harrison Grierson Consultants Limited or its directors, servants, agents, staff or employees for the accuracy of information provided by third parties and/or the use of any part of this report in any other context or for any other purposes.

The recommendations and opinions contained in this report are based on our visual reconnaissance of the site, information from geological maps, and the data from the field investigation. Inferences about the nature and continuity of sub surface conditions away from and beyond the borehole logs are made, but cannot be guaranteed. The descriptions detailed on the borehole logs are based on the NZ Geotechnical Society Guidelines for the Field Description of Soils and Rocks for Engineering Purposes.

During construction, an engineer competent to judge whether the conditions are compatible with the assumptions made in this report should examine the site. In all circumstances, if variations in the sub surface conditions occur which differ from those described or assumed to exist, then the matter should be referred back to Harrison Grierson Consultants Limited.

This report is for the use by Tasmaster Investment Limited only, and should not be used or relied upon by any other person or entity or for any other project, with the exception that the relevant Territorial Authority and Regional Council can rely on it for the purpose of processing those consent applications for which this report has been prepared.



Landslide Susceptibility Zone

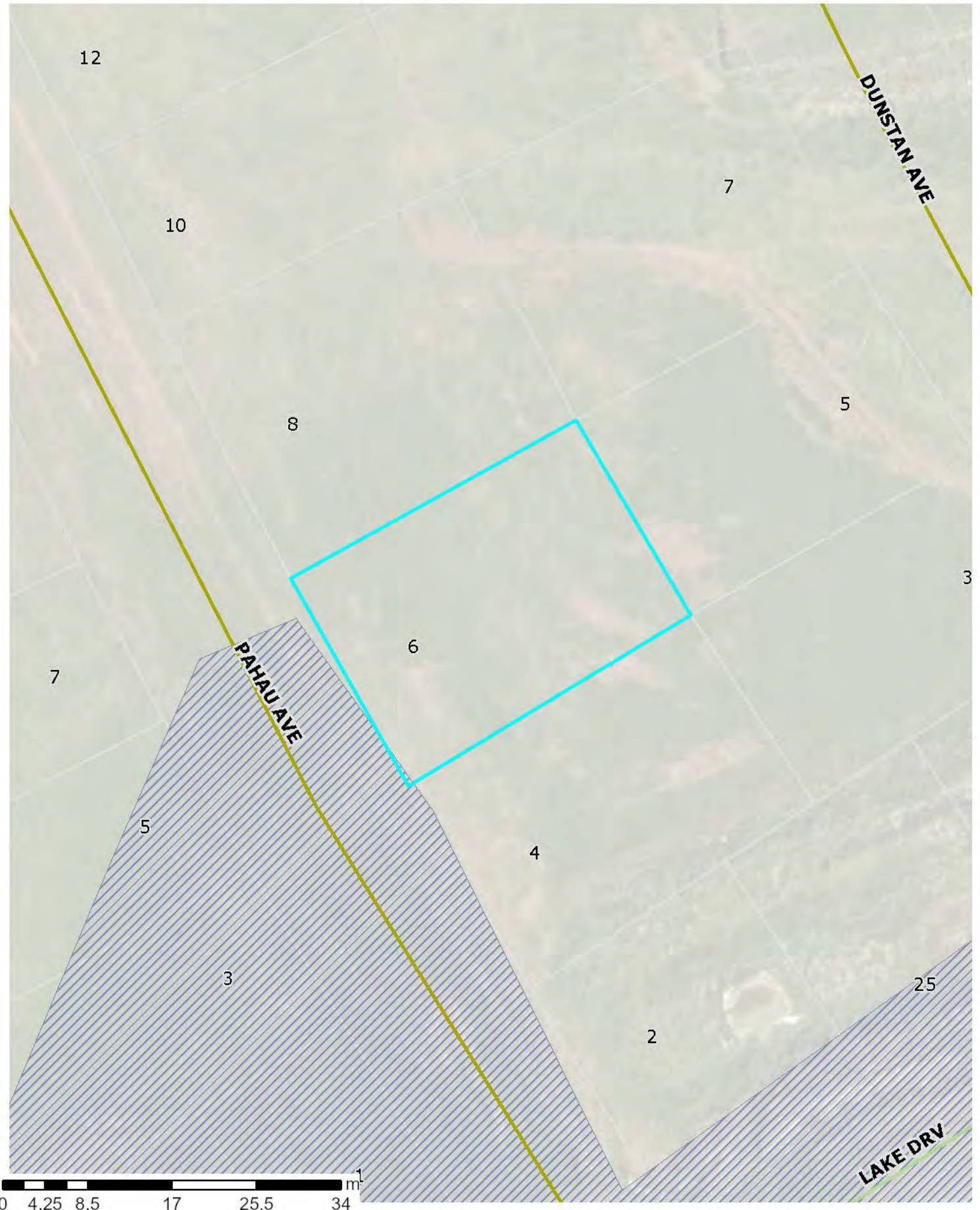
- High
- Moderate
- Low

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>

11 April 2024
Scale 1:500



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.

11 April 2024
Scale 1:500

Parcel Information is sourced from the Land Information New Zealand (LINZ) Data Service.
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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

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

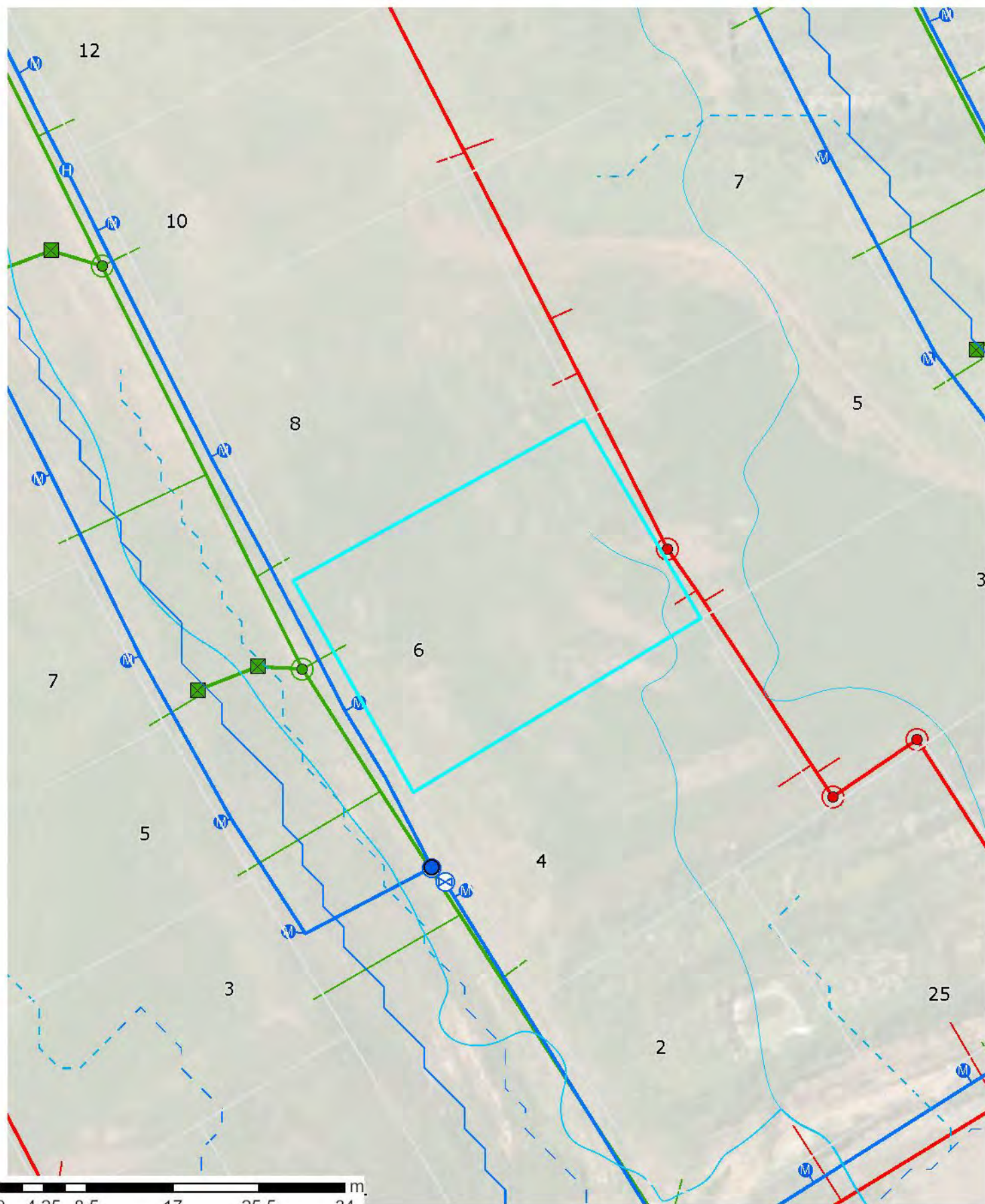
It has been compiled from Whangarei District Council records and is made available in good faith, but its accuracy or completeness is not guaranteed.

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

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

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Water, Wastewater and Stormwater



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.








































































































11 April 2024

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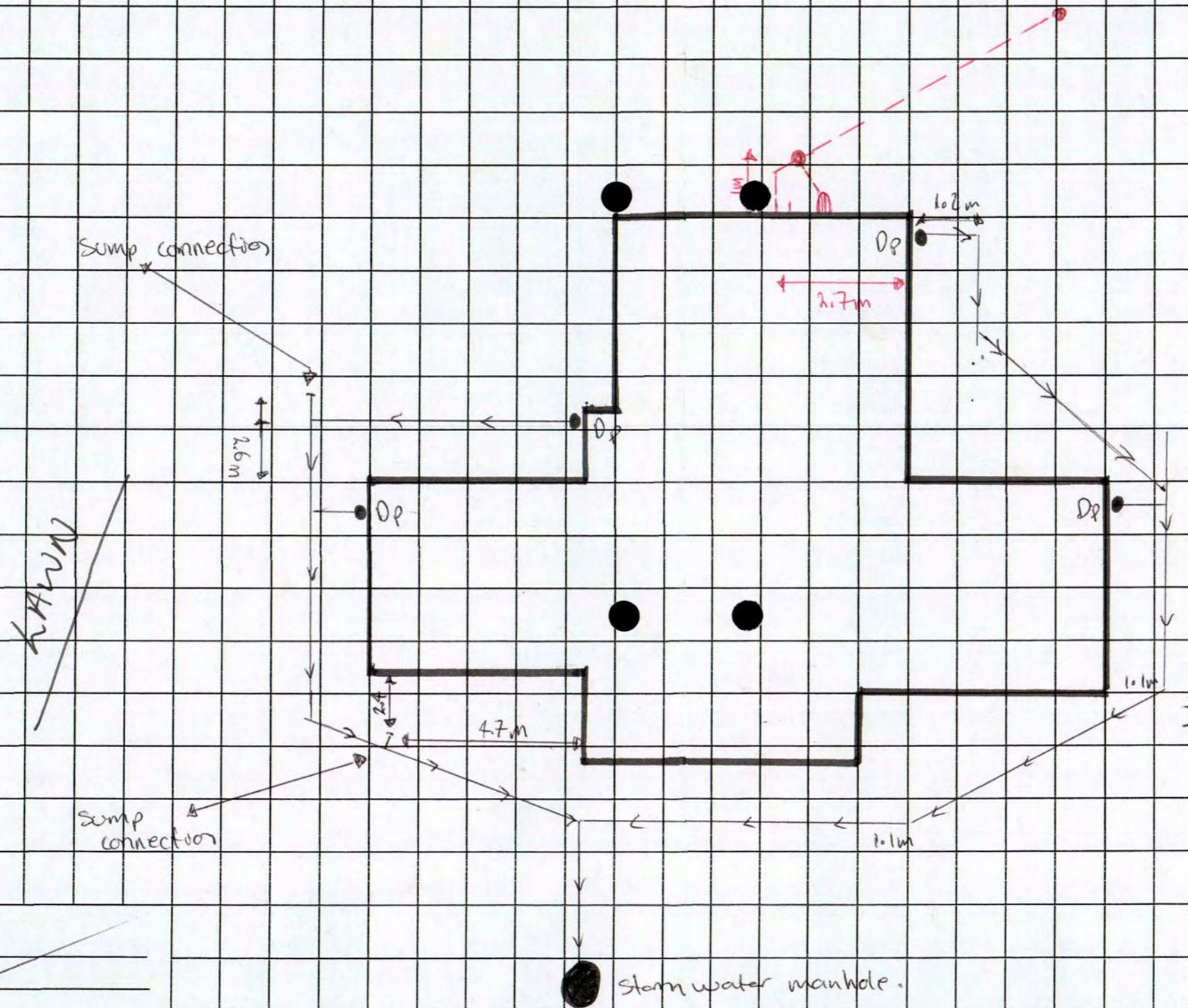
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Water, Wastewater and Stormwater – Map Legend

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

PART C As-built services plan

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



Scale _____ in _____

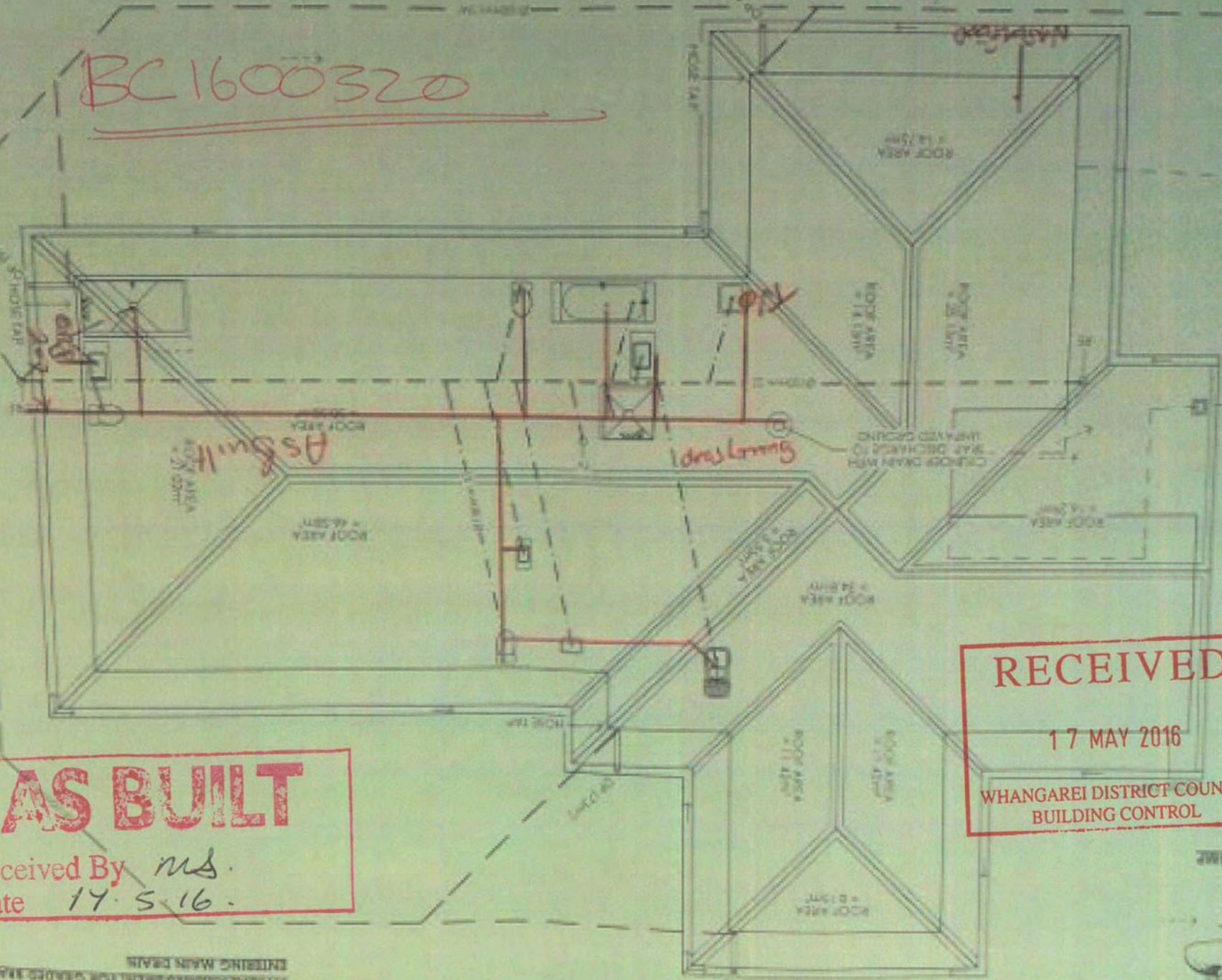
Site address _____

BC 1600320

AS BUILT

Received By *ms.*
Date *17.5.16.*

RECEIVED
17 MAY 2016
WHANGAREI DISTRICT COUNCIL
BUILDING CONTROL





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: Thursday, 11 April, 2024

Property Number 165537
Legal Description LOT 26 DP 492043
Assessment Number 0072205902
Address 6 Pahau Avenue Whangarei 0112
Record of Title(s) 714228
Land Value \$365,000
Capital Value \$950,000
Date of Valuation 01-July-2021
Effective Date (used for rating purposes) 01-July-2022
Meter Location 9.2m RHB 4m KB #6

Rates Breakdown (up to 30 June 2024)

Rates Charge	Charge Total
General Residential	\$851.40
Sewage Disposal - Residential	\$902.00
Uniform Annual General Charge	\$701.00
Regional Council Services	\$180.61
Regional Economic Development	\$7.81
Regional Emergency & Hazard Management	\$50.50
Regional Emergency Services Rate	\$11.44
Regional Flood Infrastructure	\$36.56
Regional Land and Fresh Water Management	\$102.27
Regional Pest Management	\$88.06
Regional River Management - General Catchment Area	\$41.42
Regional Sporting Facilities	\$16.37
Regional Transport Rate	\$43.17
Annual Charge Total	\$3,032.61

Opening Balance as at 01/07/2023 **\$0.00**

Rates Instalments	Total
20/07/2023 Instalment	\$758.61
20/10/2023 Instalment	\$758.00
20/01/2024 Instalment	\$758.00
20/04/2024 Instalment	\$758.00

Rates Total **\$3,032.61**

Balance to Clear **\$758.00**

Building Consent No: BC1600320

Section 51, Building Act 2004

Issued: 21 April 2016

COPY

The Building

Street address of building: 6 Pahau Avenue
Whangarei 0112

Legal description of land where building is located: LOT 26 DP 492043
LLP: 128381

Building name: N/A

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

Level/unit number: N/A

The Owner

Classic Builders Whangarei Limited
PO Box 3302
Onerahi
Whangarei 0142

Phone number: 4360299

Mobile number: 021436167

Facsimile number: N/A

Email address: scott.coutts@classicbuilders.co.nz

Website: www.classicbuilders.co.nz

Street address/registered office: 6 Pahau Avenue
Whangarei 0112

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

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 - Construction (PS3) is to be provided by the installer of the wet area membrane specified in the consented documents. The installer must have undertaken appropriate training by the product manufacturer. Evidence of training must be supplied in support of the PS3. ✓
 4. A Maintenance Schedule is required for the protective coating system applied to the cladding. ✓
 5. A Producer Statement - PS3 is required for the application of the plastering system to the external wall areas (NZBC Clause E2 External Moisture). ✓

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.



Enka Boylan
Support Assistant – Building Processing
On behalf of Whangarei District Council

21 April 2016

Date

THESE PLANS REMAIN THE PROPERTY OF CLASSIC BUILDERS® UNTIL A DESIGN CONTRACT HAS BEEN AGREED UPON. THESE PLANS MAY NOT BE USED TO CONSTRUCT A PROJECT WITHOUT THE WRITTEN APPROVAL OF CLASSIC BUILDERS®

CONSTRUCTION AND DEMOLITION HAZARDS TO COMPLY WITH NZBC F5/AS1

LOCATE ALL SITE BOUNDARY PEGS PRIOR TO COMMENCEMENT OF WORKS.

LOCATE ALL SERVICES CONNECTIONS, PIPES AND MANHOLES PRIOR TO COMMENCEMENT OF WORKS.

SITE DIMENSIONS ARE MEASURED FROM SLAB EDGE TO BOUNDARY.

COMPACTED HARDFILL OVER 600mm TO BE CERTIFIED BY A CPENG AND A CERTIFICATE TO BE PROVIDED TO COUNCIL AT FOUNDATION INSPECTION.

"ULTIMATE" BEARING CAPACITY DETERMINED BY SCALA PENETROMETER TESTING SHALL EXCEED 7 BLOWS PER 300mm OF DEPTH OR THE SITE COMPLIES WITH NZ3604:2011.

EARTHWORKS MANAGEMENT PLAN GUIDELINES:

TEMPORARY CONSTRUCTION AREA: SITE ACCESS TO ONE ENTRY / EXIT POINT. ENSURE ALL-WEATHER ACCESS IS PROVIDED IN A MANNER THAT PREVENTS THE ACCESS FROM BECOMING A SOURCE OF SEDIMENT.

EARLY STORMWATER DRAINAGE CONNECTION: TO AVOID LOCALISED EROSION, CONNECT TEMPORARY OR PERMANENT DOWNPIPES TO THE STORMWATER SYSTEM AS SOON AFTER LAYING THE ROOF AS POSSIBLE.

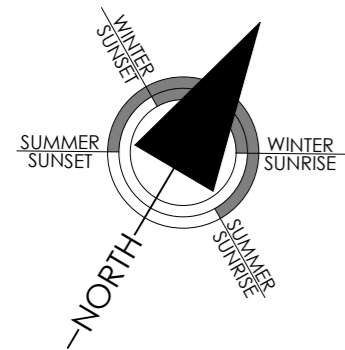
STOCKPILES: STOCKPILES SHOULD BE PLACED UPSLOPE OF PERMETER CONTROLS & COVERED WHEN NOT IN USE.

INSTALL PERIMETER CONTROLS: SILT FENCE OR OTHER BARRIER (STRAW BALE, BUND ETC) TO INTERCEPT SEDIMENT LADEN RUNOFF. THE CONTOURS OF THE SITE WILL DETERMINE THE NUMBER & SPACING OF SILT FENCES REQUIRED.

MINIMISE DISTURBED AREAS WHEN WORKING: PRESERVE AS MUCH GRASSED AREA AS POSSIBLE TO REDUCE SEDIMENT DISCHARGE & FILTER SEDIMENTS FROM OTHER AREAS. ONCE GRADING IS COMPLETE, STABILISE BARE SOIL AS SOON AS POSSIBLE.

CONCRETE WASTE & WASHING: WASTE CONCRETE & HOUSEHOLD PAINT SHOULD NOT BE ALLOWED TO WASH OFF-SITE.

DIVERT OVERLAND FLOW: DIVERTING OVERLAND FLOW AWAY FROM THE SITE WORKS WILL REDUCE RUNOFF FROM TRAVELLING ACROSS DISTURBED LAND.

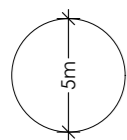


LOT 26
DP 492043
SITE AREA 770m²

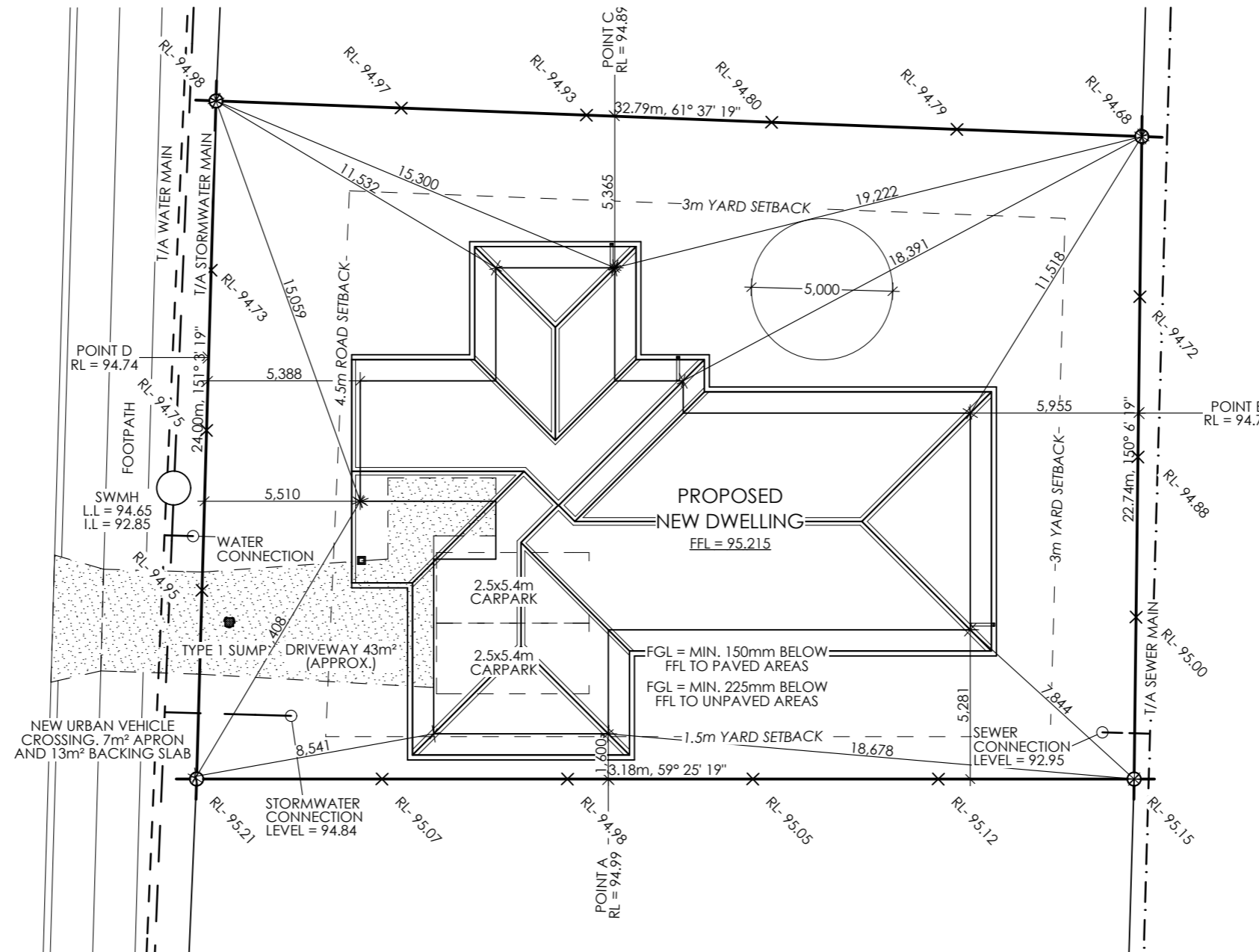
WIND ZONE	HIGH
EQ ZONE	1
EXPOSURE ZONE	C
CLIMATE ZONE	2
SUBSOIL CLASS	D
PLANNING ZONE	LIVING 1

SITE COVERAGE - 35% MAX.

DWELLING (O/CLADDING) = 207.5m²
SITE AREA = 770m²
= 26.0%



PAHAU AVENUE



BC1600320
APPROVED
20/04/16
Whangarei District Council BCA

CLIENT SIGNATURE / DATE :

classic builders
160 17th AVE
PO Box 864 TAURANGA
PH: (07) 571 6151
FAX: (07) 571 6152
www.classicbuilders.co.nz

CLIENT: CLASSIC BUILDERS
LEGAL DESCRIPTION: LOT 26 - DP 492043
SITE ADDRESS: PAHAU AVE, TIKIPUNGA
CITY: WHANGAREI
COUNCIL:

CLASSIC BUILDERS
PAHAU AVE, TIKIPUNGA, WHANGAREI

DRAWN:	jade design	PROJECT NUMBER:	WH10232
CHECKED:	N.GILLINGHAM	PROJECT STATUS:	Pre-Consent
CB CONSULTANT:	J.FIELDEN	REVISION:	REV. 02
DATE:		19/04/2016	
SCALE:		1:200 AT A3	
SHEET NUMBER:		1.1	

SITE PLAN

THESE PLANS REMAIN THE PROPERTY OF CLASSIC BUILDERS® UNTIL A DESIGN CONTRACT HAS BEEN AGREED UPON. THESE PLANS MAY NOT BE USED TO CONSTRUCT A PROJECT WITHOUT THE WRITTEN APPROVAL OF CLASSIC BUILDERS®

STUD SIZE AND SPACING:

STUDS IN LOADBEARING WALLS FOR 'SINGLE OR TOP STORY' FOR STUDS UP TO 2.4m 90x45 AT 600mm CRS.

STUDS IN NON LOADBEARING WALLS FOR STUDS UP TO 2.4m 90x45 AT 600mm CRS.

TIMBER TREATMENT:
H1.2 EXTERNAL FRAMING
H1.2 INTERNAL FRAMING

TIMBER GRADE:
ALL STRUCTURAL TIMBER - MIN SG8 UNLESS NOTED OTHERWISE.

INSULATION:
PINK BATTS WALL 2.2
PINK BATTS CEILING 3.2 (INC. GARAGE)

ALL GLAZING TO COMPLY WITH NZS 4223.

EZpanel PLASTER PANEL SYSTEM EXTERIOR CLADDING

MONIER 'HACIENDA' CONCRETE TILE ROOFING WITH SELF SUPPORTING BUILDING PAPER - 25° PITCH, 750mm O/HANG

STEEL & TUBE MULTILINE 150 FASCIA & CUSTOMLINE GUTTER.

ALL STRUCTURAL FIXINGS TO BE HOT-DIPPED GALVANIZED STEEL.

KITCHEN LAYOUT IS INDICATIVE ONLY.

KITCHEN & BATHROOM FLOOR & WALL LININGS TO COMPLY WITH, E3/AS1 SECTION 3.1.1 & 3.1.2

WET AREAS:
FLOOR FINISH - NON SLIP TILES
TILES TO HAVE MINIMUM SLIP RESISTANCE CO-EFFICIENT OF 0.4 TO COMPLY WITH NZBC D1/AS1.

DOMESTIC SMOKE ALARMS ARE REQUIRED WITHIN A 3.0m RADIUS OF EVERY SLEEPING ROOM AND IS TO BE HEARD FROM THE OTHER SIDE OF THE CLOSED DOOR.

WINDOW & DOOR SIZES SHOWN ARE TO TRIMMED OPENINGS.

INTERNAL DOOR TRIM HEIGHT = 2040

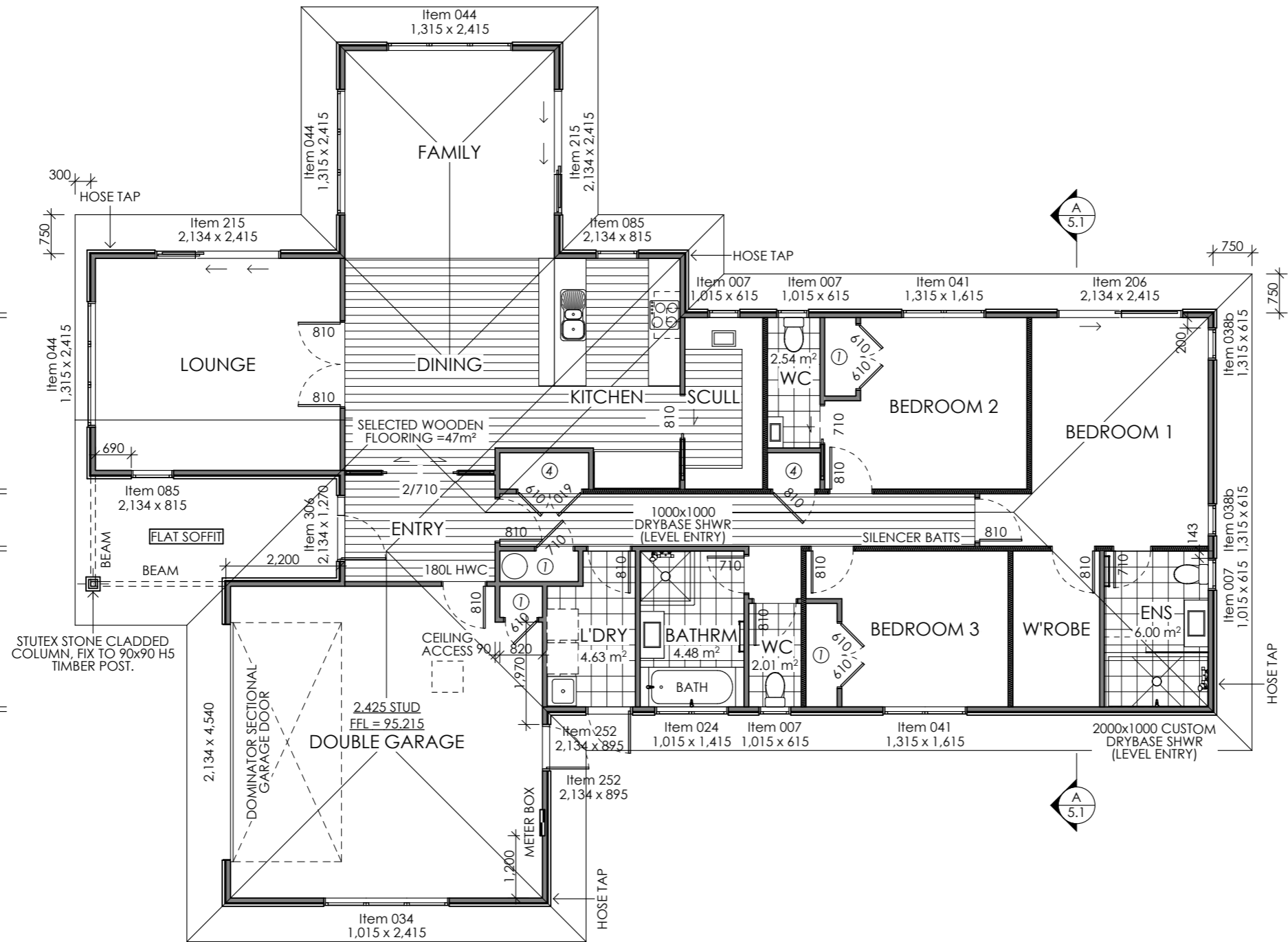
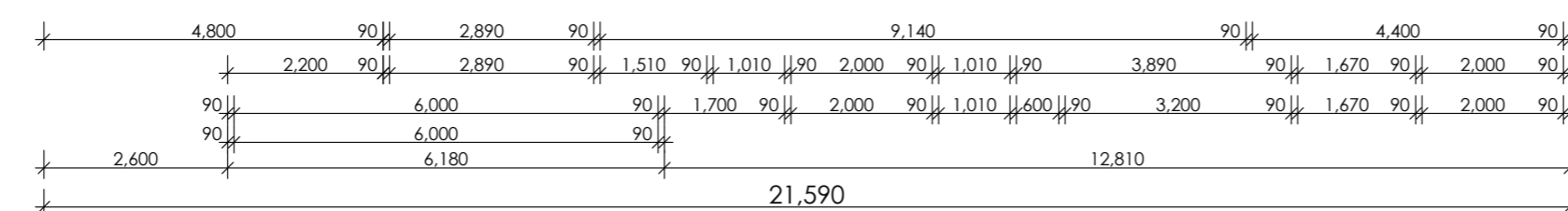
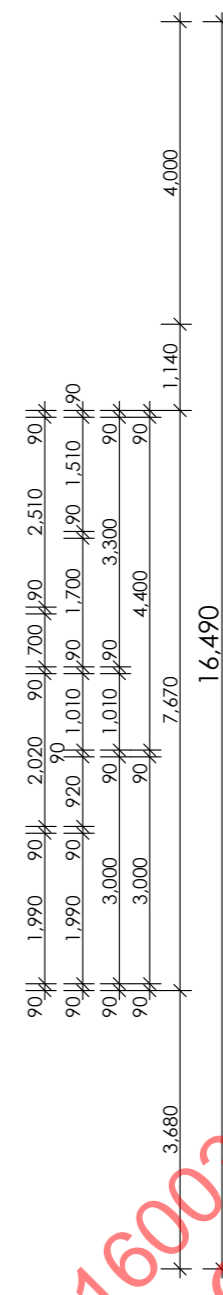
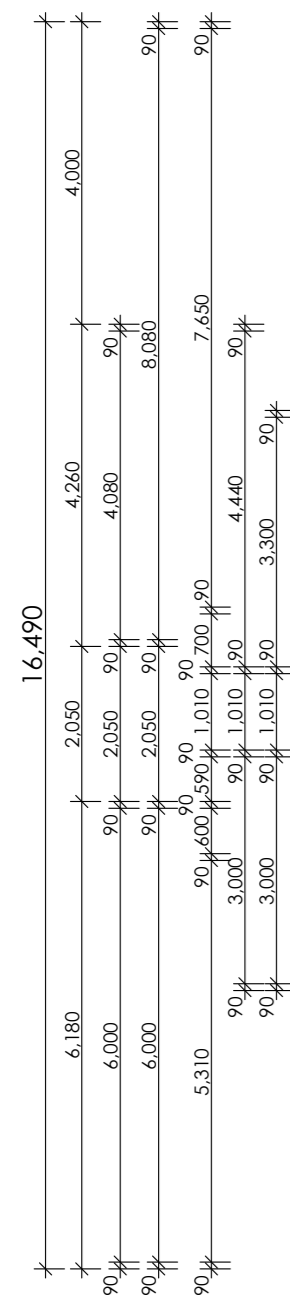
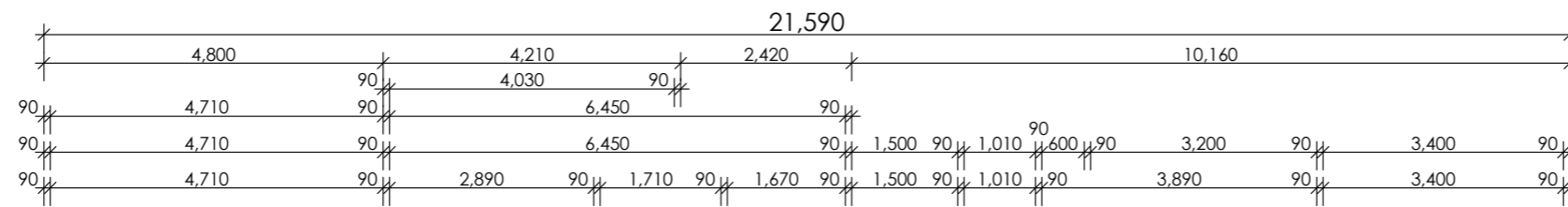
④ = No. OF SHELVES IN CUPBOARDS / WARDROBES

TOTAL AREAS

FLOOR AREA (OVER FRAME)	= 202.0m ²
FLOOR AREA (OVER CLADDING)	= 207.5m ²
ROOF PLAN AREA	= 267.8m ²

WIND ZONE	HIGH
EQ ZONE	1
EXPOSURE ZONE	C

CLIENT SIGNATURE / DATE :



classic builders
bringing dreams to life
www.classicbuilders.co.nz

160 17th AVE
PO Box 864 TAURANGA
PH: (07) 571 6151
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COUNCIL: -

CLASSIC BUILDERS
PAHAU AVE, TIKIPUNGA, WHANGAREI



DRAWN: jade design	PROJECT NUMBER: WH10232
CHECKED: N.GILLINGHAM	PROJECT STATUS: Pre-Consent
CB CONSULTANT: J.FIELDEN	REVISION: REV. 02
DATE: 19/04/2016	SCALE: 1:100 AT A3
SHEET NUMBER: 2.1	

BC1600320 APPROVED 20/04/16 Whangarei District Council BCA

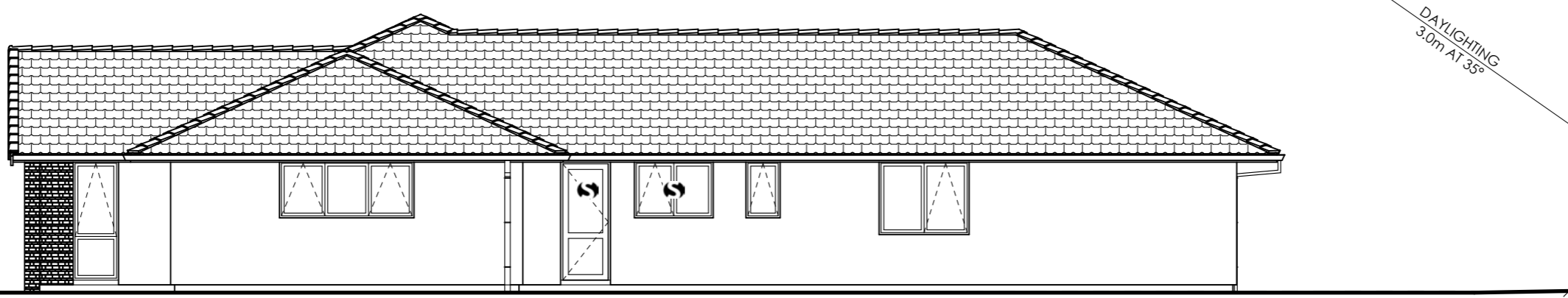
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COMPACTED HARDFILL OVER 600mm TO BE CERTIFIED BY A CPENG AND A CERTIFICATE TO BE PROVIDED TO COUNCIL AT FOUNDATION INSPECTION.

ALL GLAZING TO COMPLY WITH NZS 4223.

☞ = SAFETY GLAZING

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



ELEVATION 1
(SOUTHERN)

BUILDING ENVELOPE RISK MATRIX		
ELEVATION 2		
Risk Factor	Risk Severity	Risk Score
Wind zone (per NZS 3604)	High risk	1
Number of storeys	Low risk	0
Roof/wall intersection design	Low	0
Eaves width	High risk	2
Envelope complexity	Low risk	0
Deck design	Low	0
Total Risk Score:		3



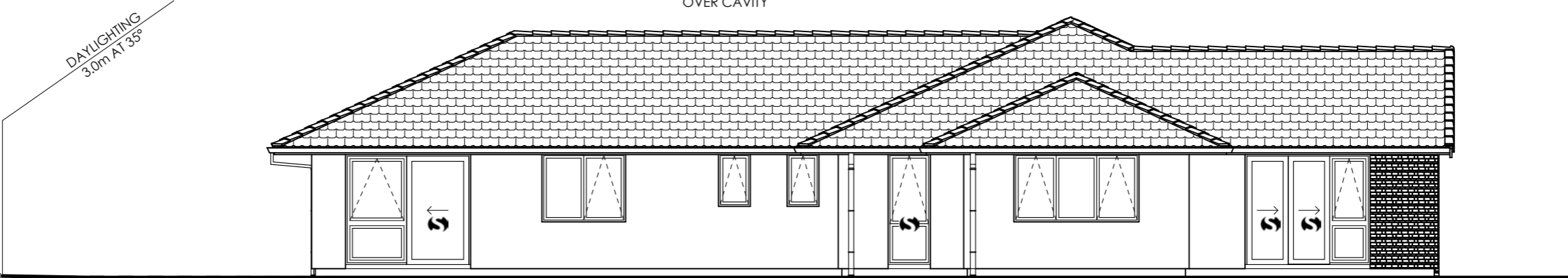
ELEVATION 2
(WESTERN)

DOUBLE GLAZED ALUMINIUM JOINERY (SINGLE GLAZED IN GARAGE)

STUTEX STONE SCHIST STONE SLIPS ON FIBRE CEMENT SHEET SYSTEM OVER CAVITY

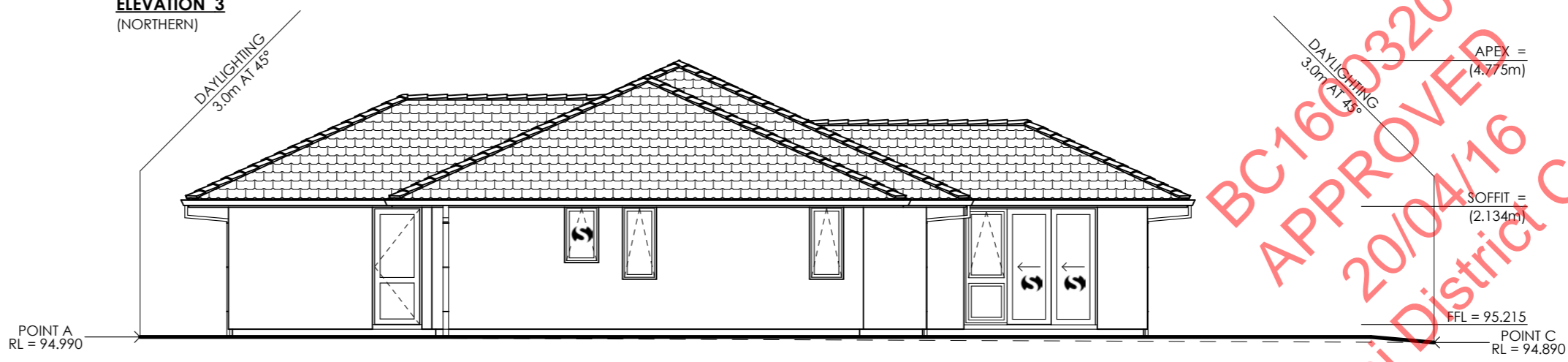
FIRTH RIB RAFT FLOOR SYSTEM.

BUILDING ENVELOPE RISK MATRIX		
ELEVATION 3		
Risk Factor	Risk Severity	Risk Score
Wind zone (per NZS 3604)	High risk	1
Number of storeys	Low risk	0
Roof/wall intersection design	Low	0
Eaves width	Low risk	0
Envelope complexity	Low risk	0
Deck design	Low	0
Total Risk Score:		1



ELEVATION 3
(NORTHERN)

BUILDING ENVELOPE RISK MATRIX		
ELEVATION 4		
Risk Factor	Risk Severity	Risk Score
Wind zone (per NZS 3604)	High risk	1
Number of storeys	Low risk	0
Roof/wall intersection design	Low	0
Eaves width	Low risk	0
Envelope complexity	Low risk	0
Deck design	Low	0
Total Risk Score:		1



ELEVATION 4
(EASTERN)

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COUNCIL: -

CLASSIC BUILDERS
PAHAU AVE, TIKIPUNGA, WHANGAREI

DRAWN: jade design
CHECKED: N.GILLINGHAM
CB CONSULTANT: J.FIELDEN

PROJECT NUMBER:	WH10232
PROJECT STATUS:	Pre-Consent
REVISION:	REV. 02
DATE:	19/04/2016
SCALE:	1:100 AT A3
SHEET NUMBER:	3.1

ELEVATIONS

CLIENT SIGNATURE / DATE :

File: 13872
23 February 2016

SUITABILITY REPORT

Pahau Ave, Tikipunga (Lot 26 Stage 2b)

1.0 Introduction

Our client, Classic Builders Whangarei, propose to construct a new dwelling on Lot 26 Stage 2b Totara Parklands. Richardson Stevens Consultants (1996) Ltd has been commissioned to make a suitability assessment of the property for the proposed dwelling.

The proposal includes the construction of a new single level dwelling founded on a RibRaft floor system.

2.0 Site Description

The property is located on the eastern side of Pahau Ave 165m south of its intersection with Wairau Drive. The property slopes gently towards the east and is currently in lawn.

3.0 Site Investigations

A Technician from this office visited this property on 10 February 2016 to undertake field investigations. This included a walkover inspection, hand augered borehole and Scala Penetrometer test.

The walkover inspection did not encounter any signs of concern at the building site.

The borehole was dug to a depth of 1.7m below ground level where it encountered stiff, low plasticity silt clays. Pilcon Shear Vane readings were taken at regular intervals within the borehole. The In-situ Undrained Shear Strengths ranged between 145kPa and >223kPa.

BC1600320
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20/02/16
Whangarei District Council BCA

The Scala Penetrometer test were performed across the building area. These tested confirmed that Ultimate Bearing Capacities greater than 300kPa from just below the surface.

These investigations are attached in Appendix A.

4.0 Desk Study

A desk study has been undertaken which included the review of local geological maps and the underlying subdivision report for this property.

4.1 Geology

The GNS 1:250,000 scale geological map for Whangarei shews that the property is located within an area underlain by Kerikeri Volcanics, which is described as follows: *“Basalt lava, volcanic plugs and minor tuff.”*

4.2 Previous Engineering Report

The underlying subdivision was reported on by Harrison Grierson Consultants Ltd in June 2008, the report is entitled *“Tasmaster Investment Ltd, Proposed Subdivision, 1a Gillingham Road, Kamo, Subdivision Baseline Geotechnical Investigation*. The report concludes that there are no signs of instability inside Area 1 of the subdivision. The report also states that the clayey SILTS on-site are classed as moderately to highly expansive in terms of AS2870, and that the land generally falls outside that required of “good ground” in NZS: 3604.

5.0 Geotechnical Assessment

This Whangarei District Council has designated this property to be in a zone of Low Instability Hazard. The following is a description of the Low Instability Hazard Zone: *“Erosion or landslide morphology is not apparent. Not considered to be at risk of instability. May however, be at risk as a result of natural events, or development. Steeper slopes may be subject to soil creep”*.

Given the investigations detailed within this report, our local experience and the following assessment we concur with the Low Instability Hazard Zoning.

5.1 Expansive Soils

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

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

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

5.2 Earthworks

To form a level building platform, minor earthworks are required. To suitably develop the property we make the following recommendations:

- Cuts or fills exceeding 1.5m or within 1.0m of the boundary should be retained by a wall specifically designed by a Chartered Professional Engineer.
- Cut and fill batter should not exceed a slope of 1V to 3H.

We also recommend that the following methodology be adopted: Topsoil should be stripped from all cut and fill areas, stripping operations extending well beyond cut and fill extents to avoid peripheral (outer boundary) fill contamination. Stockpiles of topsoil and unsuitable material should be sited well clear of the works on suitable areas of natural ground. All sloping ground should be benched prior to the placement of any fills or drainage works and be inspected by a suitably qualified engineer. Once filling is completed it should be tested for its compaction by a suitably qualified engineer generally in accordance with NZS4431:1981 (Earthfill for Residential Development).

5.3 Foundations

It is proposed to construct a single storey dwelling on a RibRaft floor slab. To suitably found the proposed RibRaft we recommend that it is designed to account for the moderately expansive soils. To account for this, we recommend that the RibRaft slab be placed on a

minimum of 100mm of compacted granular hardfill extending 1.0m beyond the building envelope. We also recommend increasing the floor mesh size to SE72, and adding an additional HD12 bar in the base of the perimeter footing.

6.0 Conclusions

It is the conclusion of Richardson Stevens Consultants (1996) Ltd that the property is suitable for residential construction generally in accordance with NZS3604 provided the recommendations of this report are followed which have been summarised below:

- The RibRaft slab is to be constructed to account for Site Class M soils by increasing the floor mesh size to SE72 and adding an additional HD12 bar in the base of the perimeter footing, and placing the slab on a minimum of 100mm of compacted granular hardfill extending 1.0m beyond the building envelope.
- Any cuts or fills exceeding 1.5m or within 1.0m of the boundary should be retained by a wall specifically designed by a Chartered Professional Engineer. Cuts and Fills should be battered to a slope no steeper than 1V:3H.

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

(a) the building work to which an application for a building consent relates will not accelerate, worsen, or result in subsidence or slippage on the land on which the building work is to be carried out or any other property; and

(b) the land is neither subject to nor likely to be subject to subsidence or slippage.

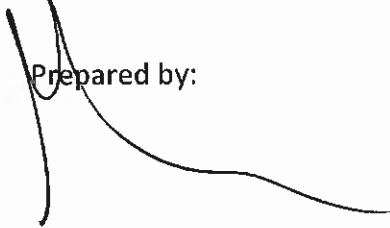
7.0 Limitations

This report has been prepared solely for the benefit of our client and the Whangarei District Council. The purpose is to determine the engineering suitability of the proposed residential building, in relation to the material covered by the report. The reliance by other parties on the information or opinions contained therein shall, without our prior review and agreement in writing, do so at their own risk. This report does not address matters relating to the National Environmental Standard for Contaminated Sites, and if applicable separate advice should be sought on this matter from a suitably qualified person.

Recommendations and opinions in this report are based on data obtained as previously detailed. The nature and continuity of subsoil conditions away from the test locations are inferred and it should be appreciated that actual conditions could vary from those assumed.

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

Prepared by:



Matthew Jacobson
Senior Engineering Technician

Approved by:



Steve Turner
Chartered Professional Engineer

Richardson Stevens Consultants (1996) Ltd



DEC

Private Bag 9023 | Whangarei 0148 | New Zealand
T: 09 430 4200 | 0800 WDC INFO | 0800 932 463 | F: 09 438 7632
W: www.wdc.govt.nz | E: mailroom@wdc.govt.nz



Code Compliance Certificate BC1600320

Section 95, Building Act 2004

Issued: 03 November 2016

The Building

Street address of building: 6 Pahau Avenue
Whangarei 0112

Legal description of land where building is located: LOT 26 DP 492043
LLP: 128381

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: 2016

The Owner

J W Mienis
V R Mienis
6 Pahau Avenue
Whangarei 0112

Phone number: 4365066

Mobile number: 02102293461

Facsimile number: N/A

Email address: linandkate@hotmail.com

Website: N/A

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

Contact Person

Classic Builders Whangarei Limited
PO Box 3302
Onerahi
Whangarei 0142

Phone number: 4360299

Mobile number: 021436167

Facsimile number: N/A

Email address: scott.coutts@classicbuilders.co.nz

Website: N/A

Street address/registered office: 6 Pahau Avenue
Whangarei 0112

Building Work

Building Consent Number:

Issued by:

New Dwelling

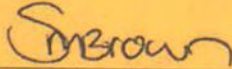
BC1600320

Whangarei District Council

Code Compliance

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

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



Stephanie Brown

Support Assistant – Building Processing
On behalf of Whangarei District Council

03 November 2016

Date



Forum North | Private Bag 9023 | Whangarei 0148 | New Zealand
T: 09 430 4200 | 0800 WDC INFO 0800 332 206 | F: 09 488 7632
W: www.wdc.govt.nz | E: mailroom@wdc.govt.nz



NT022920
**Fast Track
Public Utility Service Application
20mm Water Meter Only**

PU/61100

The applicant must be the owner of the land, or a person who has agreed either conditionally or unconditionally to purchase the land.
If a Backflow Preventer is required with the water meter (see application requirements), please complete a 'standard' public utility application.

To be completed in all cases, ✓ each box as appropriate.

Application Type

- 1 Public utility service – water meter only
- 2 Application linked to building consent – no: BC 1600320

Owner / Applicant

Name: Classic Builders Whangarei Ltd
 Postal address: PO Box 3302 Post code: 0142
 Phone: 436 0299 Mobile: 021 436 167
 Email: scott.caults@classicbuilders.co.nz

Agent

Name: _____
 Postal address: _____ Post code: _____
 Phone: _____ Mobile: _____
 Email: _____

Sites

Street/Road no: 6 Road name: Pahau Ave - Lot 26
 Town or area: Totara Parklands Post code: 0112

Legal Description

Office Use

Valuation roll no: Not to be allocated. Lot: 26 DP: 492043
 Property ID: 165531 Classified use: _____
 LLP number: 128381 Date: _____

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Water Connection

CONSTRUCTION AND DEMOLITION HAZARDS TO COMPLY WITH NZBC F5/A51

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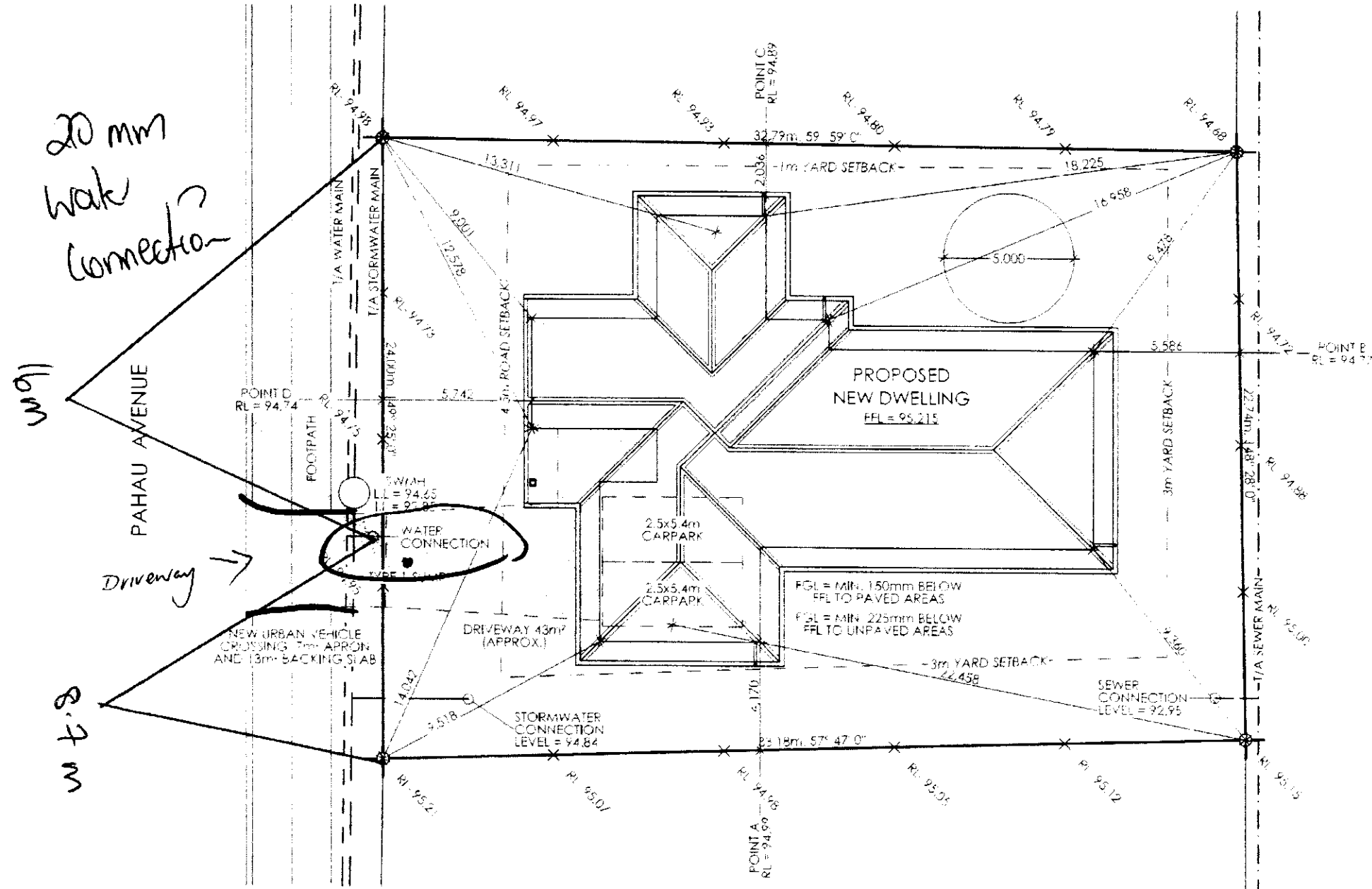
DIVERT OVERLAND FLOW: DIVERTING OVERLAND FLOW AWAY FROM THE SITE WORKS WILL REDUCE RUNOFF FROM TRAVELLING ACROSS DISTURBED LAND



LOT 26
DP 492043
SITE AREA 770m²

WIND ZONE	HIGH
EQ ZONE	1
EXPOSURE ZONE	C
CLIMATE ZONE	2
SUBSOIL CLASS	D
PLANNING ZONE	LIVING 1

SITE COVERAGE - 35% MAX.
DWELLING WITH CARPORT = 207.5m²
SITE AREA = 770m²
= 26.0%



Water Services
Meter installation
approved
Signed: [Signature] 30/3/16
Date: 30/3/16

C/I Box Req

classic builders
160 17th AVE
PO Box 864 TAURANGA
PH: (07) 571 6151
FAX: (07) 571 6152
www.classicbuilders.co.nz

CLIENT	CLASSIC BUILDERS
LEGAL DESCRIPTION	LOT 26 - DP 492043
SITE ADDRESS	PAHAU AVE, TIKIPUNGA
CITY	WHANGAREI
COUNCIL	

CLASSIC BUILDERS
PAHAU AVE, TIKIPUNGA, WHANGAREI

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CB CONSULTANT	J.FIELDEN	REVISION	REV. 02
DATE	23/03/2016		
SCALE	1:200 AT A3		
SHEET NUMBER	1.1		

CLIENT SIGNATURE / DATE:

SITE PLAN

Issue Document

VEHICLE CROSSING PERMIT APPLICATION NO: VC160047
Whangarei District Council Public Places ByLaw
Received: 29 March 2016
Issued: 21 April 2016

Applicant

Classic Builders Whangarei Limited
PO Box 3302
Onerahi
Whangarei 0142

Agent

Site Information

Property ID: 165537
Street Address: 6 Pahau Avenue
Whangarei 0112
Legal Description: LOT 26 DP 492043

Project Information

THIS IS A VEHICLE CROSSING PERMIT APPLICATION ONLY

Fees

COUNCIL'S TOTAL CHARGES FOR THIS VEHICLE CROSSING PERMIT
ARE:

PAYMENTS RECEIVED TO DATE:

RECEIPT NUMBER:

DATE: 21 April 2016

AMOUNT: \$378

THESE PLANS REMAIN THE PROPERTY OF CLASSIC BUILDERS® UNTIL A DESIGN CONTRACT HAS BEEN AGREED UPON. THESE PLANS MAY NOT BE USED TO CONSTRUCT A PROJECT WITHOUT THE WRITTEN APPROVAL OF CLASSIC BUILDERS®

CONSTRUCTION AND DEMOLITION HAZARDS TO COMPLY WITH NZBC F5/A51

LOCATE ALL SITE BOUNDARY PEGS PRIOR TO COMMENCEMENT OF WORKS.

LOCATE ALL SERVICES CONNECTIONS, PIPES AND MANHOLES PRIOR TO COMMENCEMENT OF WORKS.

SITE DIMENSIONS ARE MEASURED FROM SLAB EDGE TO BOUNDARY.

COMPACTED HARDFILL OVER 600mm TO BE CERTIFIED BY A CPENG AND A CERTIFICATE TO BE PROVIDED TO COUNCIL AT FOUNDATION INSPECTION.

USE STATE PLANNING ACTIVITY INFORMATION SYSTEM (SPRINT) TO VERIFY ALL SERVICE CONNECTIONS AND MANHOLES PRIOR TO COMMENCEMENT OF WORKS. THE SITE IS COVERED BY AW 104 (1)

EARTHWORKS MANAGEMENT PLAN GUIDELINES:

TEMPORARY CONSTRUCTION AREA:
SITE ACCESS TO ONE ENTRY / EXIT POINT. ENSURE ALL-WEATHER ACCESS IS PROVIDED IN A MANNER THAT PREVENTS THE ACCESS FROM BECOMING A SOURCE OF SEDIMENT.

EARLY STORMWATER DRAINAGE CONNECTION:
TO AVOID LOCALISED EROSION, CONNECT TEMPORARY OR PERMANENT DOWNPIPES TO THE STORMWATER SYSTEM AS SOON AFTER LAYING THE ROOF AS POSSIBLE.

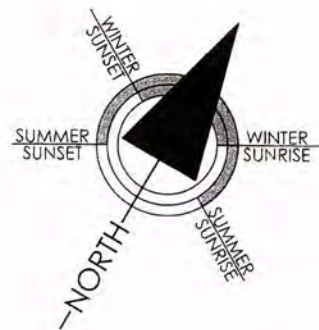
STOCKPILES:
STOCKPILES SHOULD BE PLACED UPSLOPE OF PERMETER CONTROLS & COVERED WHEN NOT IN USE.

INSTALL PERIMETER CONTROLS:
SILT FENCE OR OTHER BARRIER (STRAW BALE, BUND ETC) TO INTERCEPT SEDIMENT LADEN RUNOFF. THE CONTOURS OF THE SITE WILL DETERMINE THE NUMBER & SPACING OF SILT FENCES REQUIRED.

MINIMISE DISTURBED AREAS WHEN WORKING:
PRESERVE AS MUCH GRASSED AREA AS POSSIBLE TO REDUCE SEDIMENT DISCHARGE & FILTER SEDIMENTS FROM OTHER AREAS. ONCE GRADING IS COMPLETE, STABILISE BARE SOIL AS SOON AS POSSIBLE.

CONCRETE WASTE & WASHING:
WASTE CONCRETE & HOUSEHOLD PAINT SHOULD NOT BE ALLOWED TO WASH OFF-SITE.

DIVERT OVERLAND FLOW:
DIVERTING OVERLAND FLOW AWAY FROM THE SITE WORKS WILL REDUCE RUNOFF FROM TRAVELLING ACROSS DISTURBED LAND.

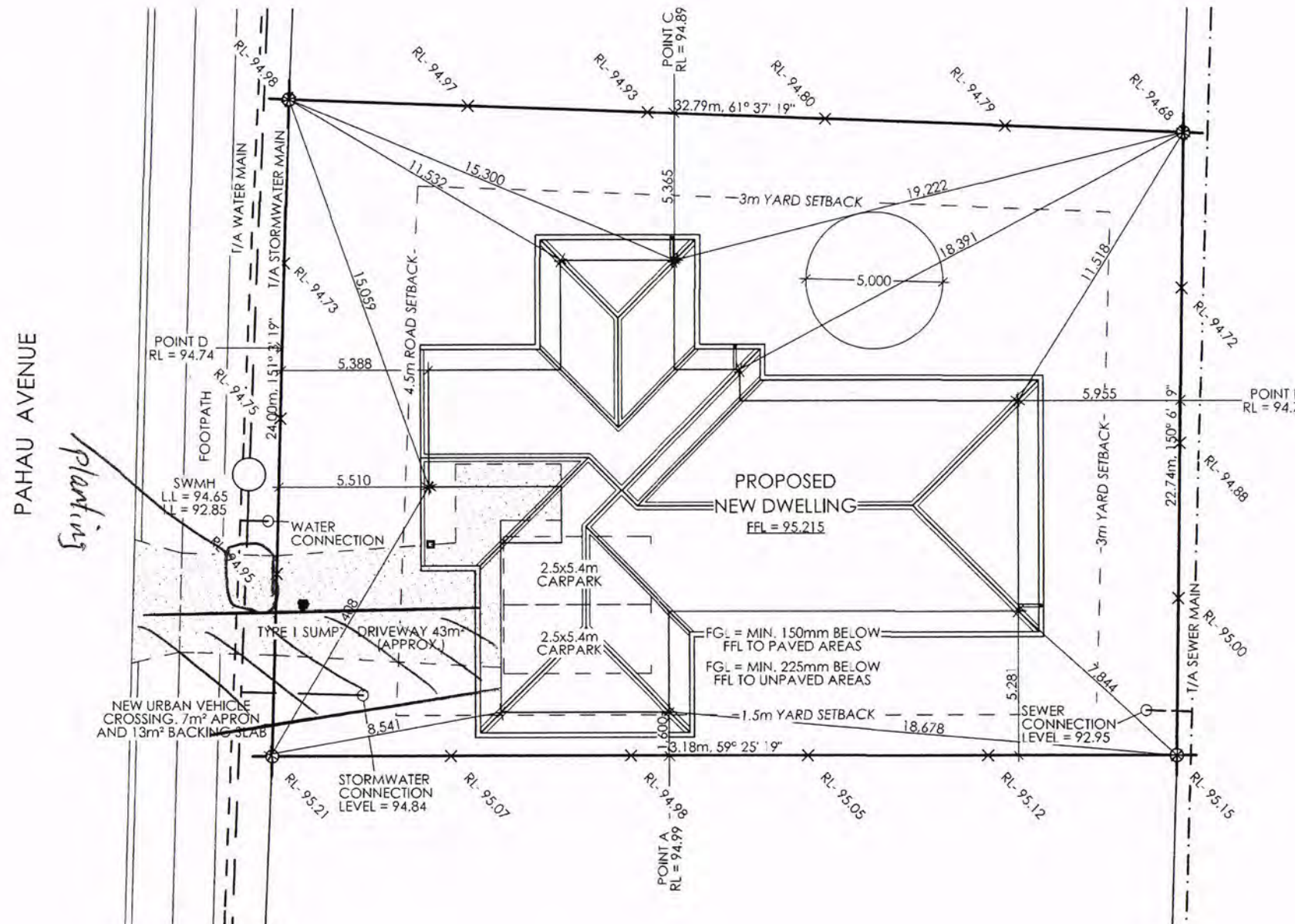


LOT 26
DP 492043
SITE AREA 770m²

WIND ZONE	HIGH 1
EQ ZONE	C 2
EXPOSURE ZONE	D
CLIMATE ZONE	LIVING 1
SUBSOIL CLASS	
PLANNING ZONE	

SITE COVERAGE - 35% MAX.

DWELLING (O/CLADDING) = 207.5m²
SITE AREA = 770m²
= 26.0%



APPROVED
Mead, 21/4/16

CLIENT SIGNATURE / DATE:

classic builders
160 17th AVE
PO Box 864 TAURANGA
PH: (07) 571 6151
FAX: (07) 571 6152
www.classicbuilders.co.nz

CLIENT: CLASSIC BUILDERS
LEGAL DESCRIPTION: LOT 26 - DP 492043
SITE ADDRESS: PAHAU AVE, TIKIPUNGA
CITY: WHANGAREI
COUNCIL:

CLASSIC BUILDERS
PAHAU AVE, TIKIPUNGA, WHANGAREI

DRAWN: jade design PROJECT NUMBER: WH10232
CHECKED: N.GILLINGHAM PROJECT STATUS: Pre-Consent
CB CONSULTANT: J.FIELDEN REVISION: REV. 02
DATE: 19/04/2016
SCALE: 1:200 AT A3
SHEET NUMBER: 1.1

SITE PLAN

Operative District Plan - Area Specific 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.

11 April 2024
Scale 1:500

Parcel Information is sourced from the Land Information New Zealand (LINZ) Data Service.
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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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The Whangarei District Council district plan GIS data was created at a specific point in time.

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

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