Tauranga City

LIM

Land Information Memorandum



Land Information Memorandum

This Land Information Memorandum has been prepared for:

Applicant	**Arizto Limited**
Client	**Stephen Brooks**
Business	**Arizto Limited**
Property Address	**62L Grace Road** **Tauranga**
Legal Description	**Lot 14 DP 444481 & 1/12 Share of Access Lot 100 DP 444481**
Application Date	**20 April 2026**

This Land Information Memorandum has been prepared for the purposes of Part 6 of the Local Government Official Information and Meetings Act 1987. It is based on a search of Council records only. Additional information relevant to the property may be held on Council's property file or within other Council systems; however, is not included in this Land Information Memorandum. There may be other information relating to the land which is unknown to Council. The Council has not undertaken any inspection of the land or any building on it for the purpose of preparing this Land Information Memorandum. The applicant is solely responsible for ensuring that the land is suitable for a particular purpose. This Land Information Memorandum has been prepared for the applicant only. The Council accepts no responsibility or liability for any use of this report by third parties or for any reliance placed on its contents by persons other than the applicant. This Land Information Memorandum is valid only if reproduced in full and applies only as at the date of issue.

It is recommended that the Certificate/Record of Title, which is not held by Council, be searched by the purchaser.

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Services Information

Land information which is likely to be relevant includes information on private and public stormwater, water and sewer details. Please refer to the appropriate authorities for further information about network utility services.

Service Record

Service Print Attached	**Yes**
Method of Sewer Disposal	**To Public Sewer**
Existing Method of Stormwater Disposal	**To Connection Via Detention Tank**
Drinking Water Supplied to the Land	**Yes**
Drinking Water Supplier Is:	
(I) Owner of the Land; or	**No Information Available**
(ii) Tauranga City Council [Water Supply Authority Unit (WSA)]; or	**Yes**
(iii) Another Networked Supplier	**No Information Available**
Any Information Notified under Section 206(1) Water Services Act 2021	**No Information Available**

Note:

1. Please note that the existence of a watermain along a property frontage does not necessarily mean that a connection is available. This may need to be provided at the applicant's expense.
2. If the land is supplied with drinking water by Tauranga City Council as a Water Supply Authority, any conditions (generally set out in Tauranga City Council's Supply of Water Bylaw 2019 applicable to that supply are included in this Land Information Memorandum.
3. If the land is supplied with drinking water by a networked supplier other than the WSA, any conditions that are applicable to that supply are included in this Land Information Memorandum.
4. If the land is supplied with drinking water by the owner of the land, any information Council has about the supply is included in this Land Information Memorandum.
5. Any information notified to the territorial authority by a drinking-water supplier under Section 206(1) Water Services Act 2021 is included in this Land Information Memorandum.
6. Water services legislation is transitioning from the Water Services Act 2021 to the local Government (Water Services) Act 2025 and associated amendments. Some information in this Land Information Memorandum may reflect the previous legislative framework and may be subject to change or reinterpretation under the new Act.

Rating and Valuation Details

Tauranga City Council rates are billed twice a year on the last business day of August and February. Unpaid rates for each instalment will incur a 10% penalty.

The valuation details below are based on a revision date of 1 May 2023. This has been used to assess the rates for Council's financial year beginning 1 July 2025.

Further information on property valuations can be found on Council's website at the following link: Property valuations - Tauranga City Council.

Valuation Details

Valuation Reference	**06604 476 20**
Capital Value	**$1,035,000**
Land Value	**$575,000**
Improvement Value	**$460,000**

Rating Details

Current Annual Rates	**$4,088.32**
Balance Owing	**$Nil**

Water Meter Details

Water Meter On Property	**Yes**
Meter Type	**Individual Meter**
Water Rates Owing	**$Nil**

A separate account is issued for water metered properties. Residential meters are read every three months. Commercial/Industrial meters vary depending on use.

Note:

Council's Water Supply Bylaw requires a final water meter reading to be undertaken when a property is sold.

Infrastructure Funding and Financing (IFF) Levy Details

The IFF levy (under the Infrastructure Funding and Financing (Western Bay of Plenty Transport System Plan Levy) Order 2022) is payable for a period of 30 years from 1 July 2024 to 30 June 2054. The method for assessing the liability for an IFF levy on the property is set out in the 2022 Order. The annual levy (as calculated under the 2022 Order) is allocated across the levy area with 50% of the overall levy coming from commercial and industrial properties and 50% coming from residential properties and with the IFF levy on the property being based on the capital value of the property. Further information on the levy is available at the following link: Infrastructure Levy - Tauranga City Council.

IFF Levy Details

Current Annual IFF Levy	**$94.28**
Balance Owing	**$Nil**

Building Information

This information is sourced from Council records and may not reflect the situation on site if work has been undertaken without consent or has been undertaken and was exempt from consent.

This Land Information Memorandum provides a summary of key building-related information and does not include all documents held by Council. It is recommended that the property file is viewed together with this Land Information Memorandum to satisfy any due diligence requirements. The property file may be ordered at the following link: Order a LIM or Property File.

Building Permits and Consents: Information related to Permits (issued prior to 1993) and Consents (issued after 1 January 1993) is listed below. Plans and other associated documents, where held by Council, are available on the property file. Where Council holds an as-built drainage plan, it will be attached to the building appendix of this Land Information Memorandum.

Solid Fuel Heaters: It is important that any solid fuel heater has been legally installed, either as part of the original dwelling or by way of a separate permit/consent.

Granny Flats: From 15 January 2026, a small standalone dwelling may be constructed without a building consent, if all exemption conditions are met under Schedule 1A of the Building Act 2004. Further information is available at the following link: Guidelines on Building a Granny Flat.

Permits and Consents

Building Consents

Date Issued	Description of Work	BC Number	CCC Issued
11/08/21	Two storey, three bedroom dwelling with attached single garage Amendments to floor plan layouts. Extend deck to west 1 m. with roof over. Construct new deck over bedroom 1 (same as the deck to the north) and change dining room window to sliding doors. Raise the ground floor level by 300 mm to prevent ROW stormwater from entering the site and allow a 150 mm floor to existing ground without modification. Change window to stair well (depth only). Delete site retaining wall and blend site contours to construction platform. Amendment 2: Reinstatement of a toilet, wash handbasin on the first floor that was removed from plans in Amendment One. The building is approximately 60% complete. There are no linings on any walls. There is no change to bracing or structure.	302707	Yes

Compliance Schedule	**N/A**
Requisitions	**None**

City Planning

The Operative Tauranga City Plan

The Tauranga City Plan provides the rules for how people can build or develop the land they own in our city. This can be land that is residential, commercial, industrial etc. The City Plan covers all subdivision, land use and development, how and where the city grows, how infrastructure is located and how natural and physical resources are managed. It is the blueprint by which any development in Tauranga is managed. It also includes rules on other things that are covered by the Resource Management Act - including hazards, signage, reserves, noise, heritage, etc.

There are specific rules within the City Plan that cover, amongst other matters, building height, earthworks, tree protection, bulk and scale of buildings, setbacks from coastal and harbour margins, and specific residential, commercial and industrial uses depending on location within the City.

Specific rules for each suburb and property can vary depending on the underlying zone of the area and the location of a specific property within that zone.

The majority of the City Plan became 'operative in part' on 9 August 2013. The remaining parts of the City Plan subsequently became operative on 5 July 2014.

A table showing a complete list of variations and plan changes to the operative City Plan can be found in the Table of Plan Change Dates.

It is advised that prospective purchasers of property review and consider all relevant planning rules for the specific property this Land Information Memorandum applies to prior to purchase.

To view the Operative Tauranga City Plan please click here.

If you have any specific queries on any rules or any existing or proposed use of a property, please contact the Tauranga City Council's Duty Planner (07 577 7000) for further information.

Development Contributions

Council operates a development contributions policy under the Local Government Act 2002, and also has financial contributions provisions in its City Plan. The broad purpose of these policies is to fund infrastructure costs that relate to the city's growth from those parties that undertake subdivision, building or development. These contributions are required on building consents, resource consents, service connection authorisations, certificates of acceptance and PIMs for small standalone dwellings. Contributions may remain payable on any property in circumstances where subdivision, building and development projects have not been completed, and in rare occasions where the Council has agreed to defer payment. In addition, further subdivision, building or development of a property may trigger the requirement to pay further development and/or financial contributions.

Council's development contributions team can advise further on these matters in relation to the application of development and financial contributions to the property in question.

Transportation Strategy & Planning and Reserve Management Plans

As part of Tauranga City Council's Transport strategy and planning activities and Reserves Management Plans, properties neighbouring Council-owned or administered land may be subject to transport network development such as walkways and cycleways or other development, activities or use of the land. The Tauranga Reserves Management Plan is available online at the following link: Reserve Management Plans.

Relevant Planning Information

All Planning information for this property is available online through the **City ePlan.**

Zone: Operative Tauranga City Plan	**Medium Density Residential**
Identified Plan Areas	**CEP Maximum Building Height Combined 11m**
Utilities/Designations	**None**
Protected Heritage/Notable or Groups of Trees, or Protected Buildings	**A number of notable and significant groups of trees are located in the access way of this site. Refer City Plan attached.**
Archaeological or Heritage Sites	**None Known**

Certificates, Notices, or Orders Affecting the Land

Yes

Description	Date Issued
Consent Notice	05/08/10 and 12/10/11

Resource Consents *(Resource Management Act 1991)*

Yes

Description	Date Granted	RC Number
Resource Consent	21/12/10	15321
Resource Consent	30/05/11	15321-01
Resource Consent	06/03/12	15847
Resource Consent	10/11/20	27945

Comments:

Viewshaft Rules apply.

Land Development

The following information relates to land development and landform characteristics. It is based on information held by council and may include reports, assessments, and other documentation relevant to site development. This information may not reflect the current on-site conditions, or any work undertaken that is not known to council.

The Tauranga City Council does not act as agent for network utility operators.

The landform and geology within Tauranga City have some features which demand particular attention. These features, which may or may not be relevant to the property in question, are outlined in “General Description of Landform within Tauranga District” as attached.

Yes

Comments:

Consent Notice

Refer Consent Notice dated 12 October 2011 together with Geotechnical Completion Report by S & L Consultants Ltd dated 5 September 2011. See also reports as follows:

1. CMW Geosciences – 17 December 2020
2. Kirk Roberts – 22 June 2023

Natural Hazards

This information relates to nation-wide, city-wide, or region-wide studies and may not reflect the on-site situation or natural hazard investigations and mitigation done on a site-specific property level. It is recommended that hazards identified in this section of the Land Information Memorandum be considered both individually and in combination, as their cumulative effects may influence the overall level of risk.

Flooding

Flood hazard information referenced here includes modelling produced at a nation-wide scale by Earth Sciences New Zealand (ESNZ). The national tool provides consistent flood hazard data across New Zealand and is zoomable to street level, but not to individual properties. For property-specific flood hazard information that may affect this property please refer to the following section of this Land Information Memorandum titled, “Natural Hazards Relevant to the Subject Property”. The modelling produced by ESNZ is available to view at the following link: Flood Hazard Modelling.

Microzoning for Earthquake Hazards

The Council has received reports and results that assessed Tauranga City's liquefaction vulnerability during earthquakes.

Different properties face varying probability levels of liquefaction damage. The maps assess natural ground conditions only and don't consider recent human activities like earthworks, ground improvements, or foundation design that may reduce liquefaction risk. Detailed, site-specific studies by qualified practitioners may take precedence over these city-wide assessments.

Liquefaction information may affect property use and development, including building consent requirements (Building Act 2004, NZ Standard AS/NZ 1170, TCC Infrastructure Development Code Chapter 10.10.6), subdivision consents (Resource Management Act), and infrastructure design.

Further information and reports are available at: Earthquakes and Liquefaction.

Landslide Susceptibility

Council has received an assessment of Tauranga City’s susceptibility to landslides. Two maps have been prepared, one showing areas susceptible to land sliding triggered by rainfall, and the other by earthquakes. A report detailing the assessment and maps are available by accessing the following link: Landslide Susceptibility.

Shallow Groundwater

Council has received an assessment of shallow groundwater conditions in Tauranga City. The assessment analysed groundwater monitoring data from 2015-2021 across 97 monitoring sites and developed predictive models for future conditions under sea level rise.

Shallow groundwater occurs close to the surface throughout Tauranga's low-lying areas. Groundwater levels fluctuate with tides, rainfall, and seasonal variations. In some areas, groundwater sits less than 1 meter below ground surface. The assessment forecasts that rising groundwater levels will occur as sea levels rise.

Development Implications: This information may affect property use and development, including building consent requirements (Building Act 2004), subdivision consents (Resource Management Act), and infrastructure design. Site-specific geotechnical investigations may be required to assess local groundwater conditions and mitigation measures.

The full technical report and spatial datasets are available at: Groundwater.

Bay of Plenty Regional Council

Further information regarding natural hazards held by the Bay of Plenty Regional Council that may be relevant to this property can be found at the below links. Further enquiries may also be made by contacting the Bay of Plenty Regional Council on 0800 884 880.

Bay of Plenty Regional Council – Natural Hazards
Bay Hazards
Bay Explorer

Natural Hazards Relevant to the Subject Property

The following information relates to natural hazards identified at a site-specific scale. It is based on information held by Council and may not reflect the current on-site conditions or any hazard investigations or mitigation measures that have occurred since, or that are not known to Council.

Further information about natural hazards held by Tauranga City Council can be found at the following link: Tauranga City Council – Natural Hazards and may also be identified on Council's mapping website, Mapi.

Council is not aware of any natural hazards identified at a site-specific scale for this property.

Additional Information

Licences Affecting the Land or Buildings

None

Signed for and on behalf of the Council:



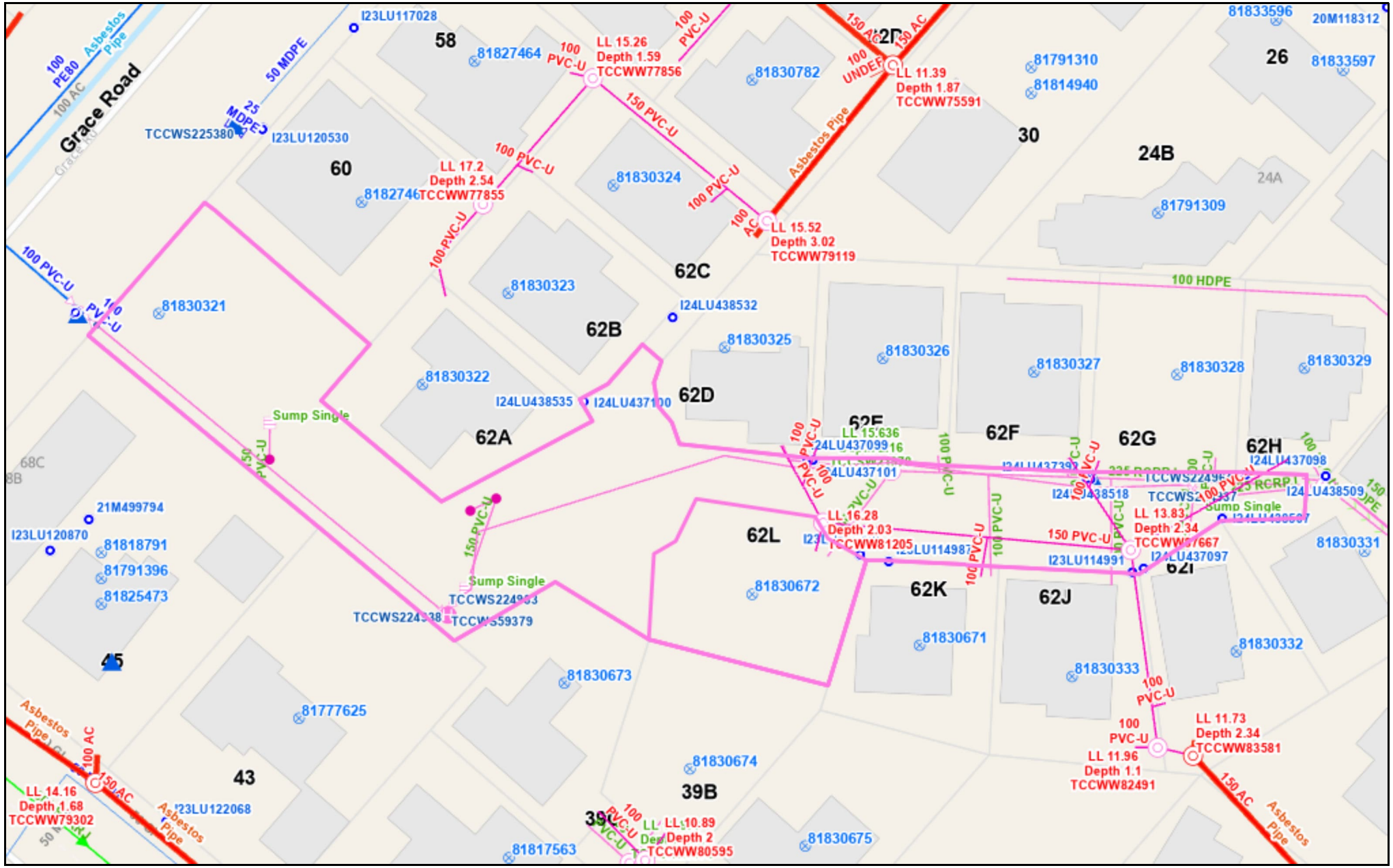
Position held: LIM and Property Files Officer

Date: 1 May 2026

Tauranga City

Services Plan

Tauranga City



Produced by - Tauranga City Council

Printed 01/05/2026

Cadastral Information sourced from LINZ. Crown Copyright Reserved

Services Plan

0 5 10 m

Meters

Scale 1: 600 **@A4**

N

Information shown on this plan is indicative only. The Council accepts no liability for its accuracy and it is your responsibility to ensure that the data contained herein is appropriate and applicable to the end use intended.

Tauranga City

Services Key

Water

- Water Service Line
- Water Meter
- Rider Main
- Reticulation Main
- Trunk Water Main
- Asbestos Pipe (Abandoned)
- Asbestos Pipe (Operational)
- Hydrant
- Valve
- Water Reservoir
- Backflow - Double Check
- RPZ
- Valve
- Private Water Bore

Stormwater

- Service Line
- Rising Main
- Gravity Main
- Stormwater Drain
- Subsoil Drain
- Stormwater Overland Flow Path
- Culvert
- Inlet
- Outlet
- Stormwater Manhole
- Stormwater Sump
- Stormwater Rodding Eye
- Large Sump
- Storage Pond

Wastewater

- Service Line
- Rising Main
- Gravity Main
- Asbestos Pipe (Abandoned)
- Asbestos Pipe (Operational)
- Node
- Rodding Eye (Inspection Point)
- Manhole
- Valve
- Chamber
- Pump Station

Other

- Abandoned assets and lines
- Private assets and lines
- Geotech Utility Buffer

More symbols may appear on the Services Plan than are shown here. For a full key please contact the Tauranga City Council LIM Office.

Tauranga City

Building Information

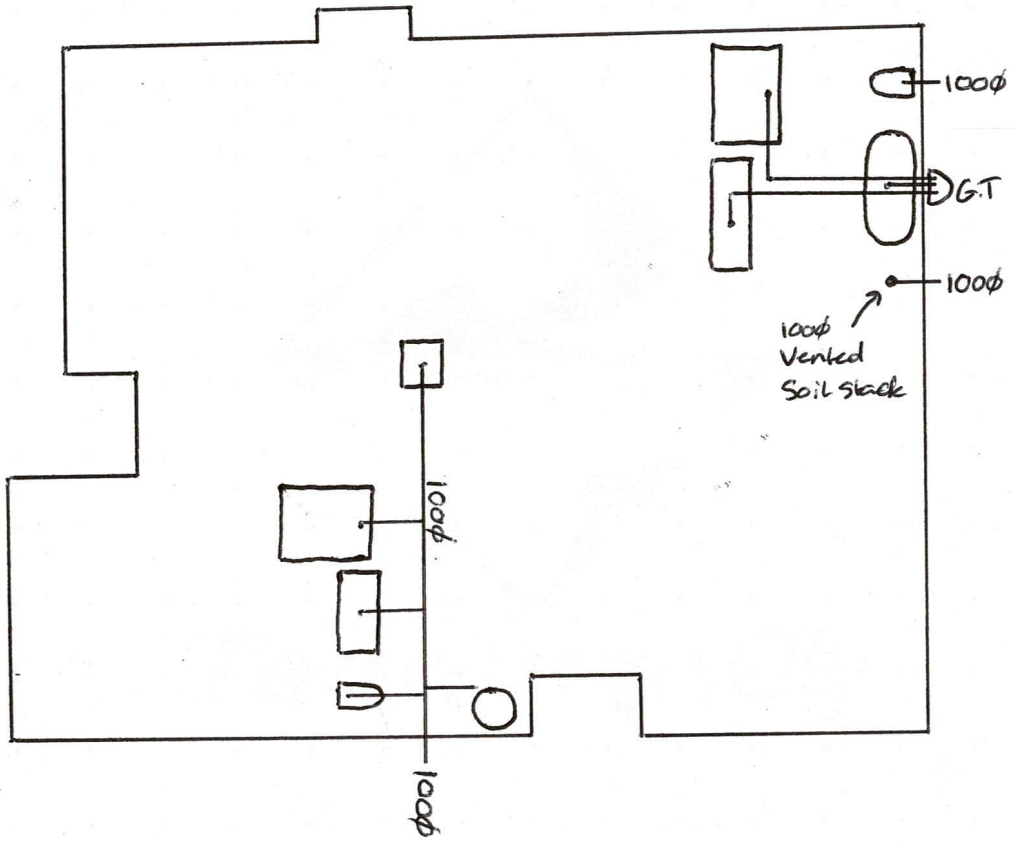
Tauranga City

As built drainage

Lot: 14 DP: 444481 Plumber: Carl Scott - 18662

Address: 62L Grace Road, Tauranga Ph: 0274901277 Email: Office@exceedplumbing.nz

Consent No:BC 302707 Installed To: SS - ~~G10 AS/2~~ AS/3 (ASNZS3500.2) Date: 20/09/2023



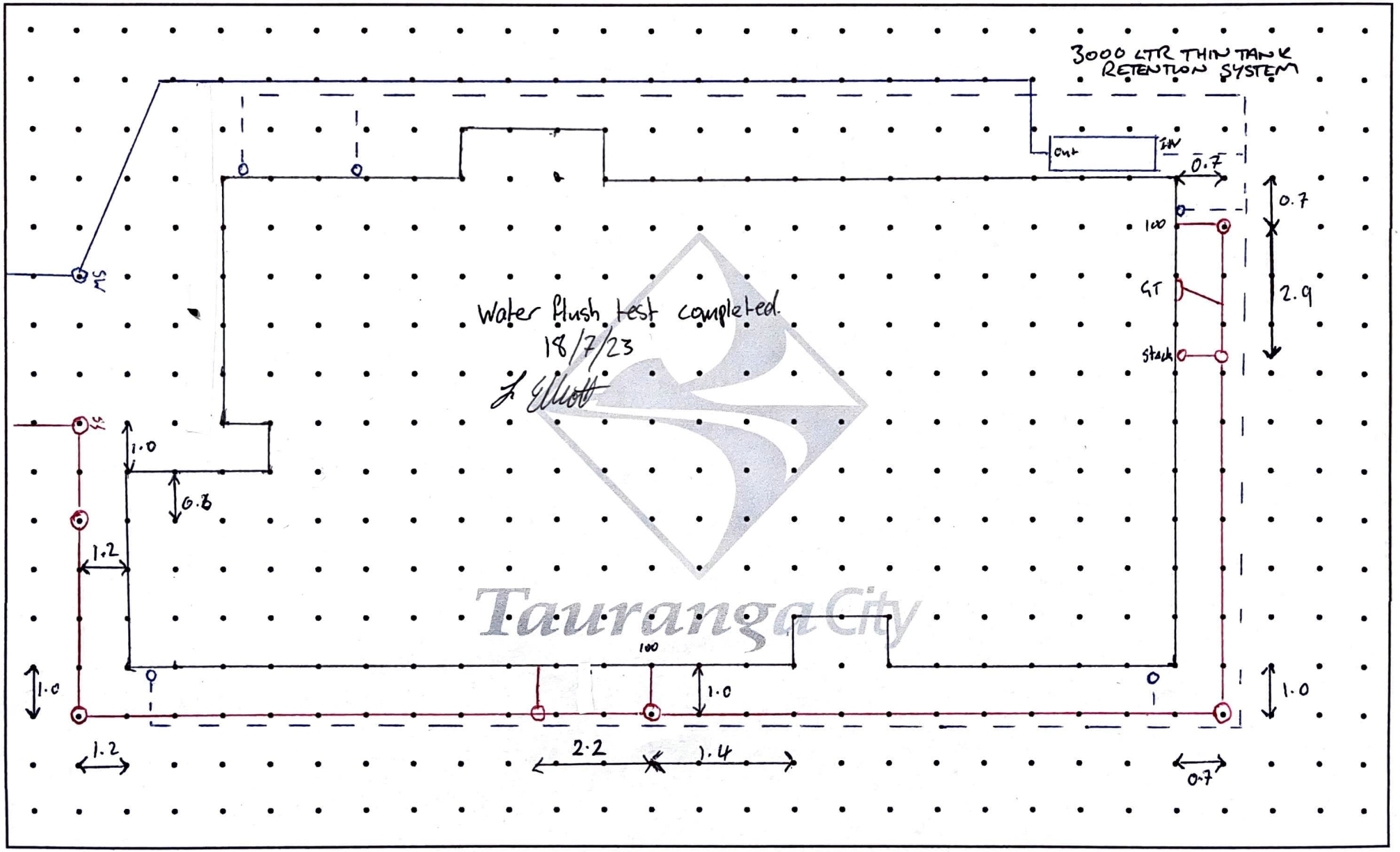
As built drainage

Lot: 14 DP: 444481 Drainlayer: DYLAN DUYVESTYN 25348

Address: 62L Grace Rd. Ph: Email:

Consent No:BC 302707 Installed To: SS - G13 AS/2 ~~AS/3 (AS/NZS3500.2)~~ * SW - E1 AS1 ~~AS2~~ Date: 20-7-23 No:

Tauranga City



Planning Information

Tauranga City

TAURANGA CITY COUNCIL

CONSENT NOTICE PURSUANT TO SECTION 221 RESOURCE MANAGEMENT ACT 1991

TCC Reference: RC15099
Surveyor's Reference: 19596

IN THE MATTER OF Plan DP 433557

AND

IN THE MATTER OF Subdivision Consent pursuant to Sections 104, 108, 220 & 221 of the Resource Management Act 1991

I, **REBECCA THERESE PERRETT**, Principal Planner of Environmental Planning of the Tauranga City Council, hereby certify that, by way of resolution passed under delegated authority on 26 July 2010, the following condition was imposed on the subdivision consent for Lots 10, 11, 30, 31 & 32 DP16447.

That a consent notice be registered on the Certificate of Title for Lots 3, 4 and 5 requiring that:

"The disposal of stormwater from new buildings or hardstand areas shall be specifically designed by a Chartered Professional Engineer. The design shall be approved by Council prior to construction"

DATED at Tauranga this 5 day of August 2010

.....
Rebecca Perrett
Principal Planner: Environmental Planning

TCC Ref: 3260811

Title Plan - DP 433557

Survey Number	DP 433557
Surveyor Reference	19596 - Consent Management LP
Surveyor	Cameron Alastair Martin
Survey Firm	S & L Consultants Ltd
Surveyor Declaration	I Cameron Alastair Martin, being a licensed cadastral surveyor, certify that: (a) this dataset provided by me and its related survey are accurate, correct and in accordance with the Cadastral Survey Act 2002 and the Rules for Cadastral Survey 2010, and (b)the survey was undertaken by me or under my personal direction. Declared on 23 Aug 2010 08:19 AM

Survey Details

Dataset Description	Lots 3-5 Being Subdivision of Lots 10, 11, 31 and 32 DP 16447		
Status	Deposited		
Land District	South Auckland	**Survey Class**	Class A Cadastral Survey
Submitted Date	23/08/2010	**Survey Approval Date**	03/09/2010
		Deposit Date	23/08/2010

Territorial Authorities

Tauranga City

Comprised In

CT SA370/292
CT SA422/171
CT SA661/289
CT SA1209/152
CT SA33B/141

Created Parcels

Parcels	Parcel Intent	Area	CT Reference
Lot 3 Deposited Plan 433557	Fee Simple Title	0.0842 Ha	527713
Lot 4 Deposited Plan 433557	Fee Simple Title	0.0581 Ha	527714
Lot 5 Deposited Plan 433557	Fee Simple Title	0.9310 Ha	527715
Area A Deposited Plan 433557	Easement		
Total Area		1.0733 Ha	

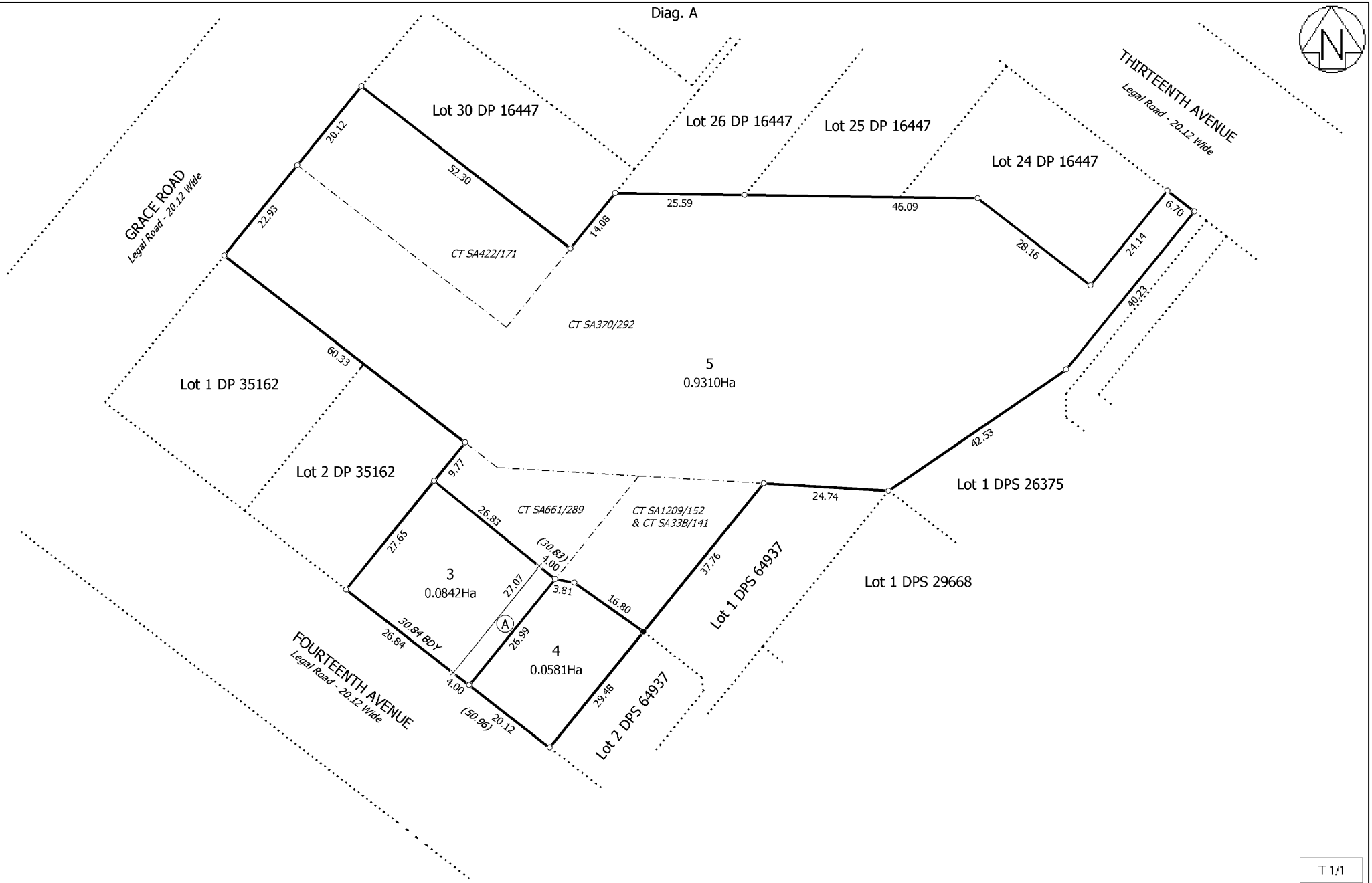
S & L CONSULTANTS LTD
SURVEYORS - ENGINEERS - PLANNERS

S&L File: 19596

Land Registration District	Plan Number
South Auckland	DP 433557

Proposed Easements			
Purpose	**Shown**	**Servient Tenement**	**Dominant Tenement**
Right to drain water and sewage, Right to convey water, electricity, telecommunications and computer media	A	Lot 3 hereon	Lot 5 hereon

Diag. A



T 1/1

Land District: South Auckland Digitally Generated Plan Generated on: 03/09/2010 11:49am Page 3 of 3	Lots 3-5 Being Subdivision of Lots 10, 11, 31 and 32 DP 16447	Surveyor: Cameron Alastair Martin Firm: S & L Consultants Ltd	Title Plan DP 433557 Deposited on: 23/08/2010

TAURANGA CITY COUNCIL

CONSENT NOTICE PURSUANT TO SECTION 221 RESOURCE MANAGEMENT ACT 1991

TCC Reference: RC15321
Surveyor's Reference: 19596

IN THE MATTER OF Plan DP 444481

AND

IN THE MATTER OF Subdivision Consent pursuant to Sections 104, 108, 220 & 221 of the Resource Management Act 1991

I, **NATALIE RUTLAND,** Team Leader of Environmental Planning at the Tauranga City Council, hereby certify that, by way of resolution passed under delegated authority on 22 December 2010 the following condition was imposed on the subdivision consent of Lot 5 DP 434582 and Lot 3 DP 433557.

That a consent notice be registered on the Certificate of Title for the following allotments requiring that:

Lots 1-17 (inclusive):

1. *The design and construction of any structures requiring a building consent in accordance with the Building Act 2004 shall comply fully with the recommendations contained in the Summary Geotechnical Report complied by S & L Consultants Ltd for the Norfolk Grace Residential Subdivision, 62 Grace Road, Tauranga, dated 5 September 2011, reference 19596. Any development of the property shall also be undertaken in accordance with the above report.*

For Lots 1-3 (inclusive):

2. *Stormwater shall be disposed of to ground soakage via drilled soakholes. Each soakhole shall be a minimum of 600mm diameter drilled to intercept the Hamilton Ash layer and at least 3.2m deep to serve 60m² of roof and/or hardstand area. Soakholes shall be fitted with accessible lids to allow for inspection and maintenance.*

For lots 4-14 (inclusive):

3. *Stormwater shall be piped to the connection provided via an attenuation tank fitted with a slow release orifice which restricts outflow generated from a 10% AEP storm of 10 minutes duration to a maximum of 1.5 litres per second. The design detail for the tank and orifice plate shall be submitted for approval at the time of application being made for building consent.*

For lots 9 & 10:

4. *These lots contain a stormwater overland flow path which conveys excess surface water from accessway Lot 100 through areas identified as J, G and D on DP*

444481. Future development of these lots is to be undertaken in such a way that the overland flow is able to be contained within the identified areas and that it drains to Thirteenth Avenue. The flow path is to be maintained free of obstructions.

DATED at Tauranga this 12th day of October 2011

.....

Natalie Rutland
Team Leader: Environmental Planning

Tauranga City

Grace Road Trust
C/- Boffa Miskell Limited
P O Box 13 373
Tauranga 3141

Attention: Tim Lester

RESOURCE MANAGEMENT ACT 1991
SUBDIVISION RESOURCE CONSENT DECISION – RC15321

Tauranga City Council resolves:

That pursuant to Sections 104 and 104C of the Resource Management Act 1991, the limited discretionary subdivision application by Grace Road Trust to carry out a 17-lot residential subdivision where frontage to Grace Road, Thirteenth and Fourteenth Avenues will be provided via Access Lot and right of way easement, including an easement over Lot 3 DP 433557; and where land use non-compliances will occur in respect to access way works and servicing being located beneath the drip line of protected trees on the site and including pruning works to protected English Oaks, Pohutukawa and Norfolk Island Pine at 62 Grace Road and 41 Fourteenth Avenue, Tauranga legally described as Lot 5 DP 434582 and Lot 3 DP 433557 is granted consent.

That pursuant to Section 113 of the RMA – the reasons for the decision are as per the recommendation:

The proposed activity will not be contrary to the purposes and principles of the RMA.

The actual and potential adverse effects of the proposal on the environment are considered to be acceptable and not more than minor.

The proposal will be consistent with the relevant objectives and policies of the Tauranga District Plan and Regional Policy Statement and that consideration has been given to the relevant objectives and policies of the proposed City Plan.

There were no principal issues in contention.

That pursuant to Sections 108 & 220 of the RMA, this consent is subject to the following conditions:

Tauranga City Council
91 Willow Street, Private Bag 12022, Tauranga 3143, New Zealand
Phone 07 577 7000 **Fax** 07 577 7193 **Email** info@tauranga.govt.nz **www.tauranga.govt.nz**

1. *The proposal shall proceed in accordance with the application submitted including:*

   - *Application and Assessment of Effects prepared by Boffa Miskell Limited, referenced T10114, dated October 2010 including;*
     - *Site Geotechnical Assessment prepared by S & L Consultants Ltd, referenced 19596, dated 11 October 2010;*
     - *Services and Infrastructure Assessment prepared by S & L Consultants Ltd, referenced 19596, dated 12 October 2010 and Reference Plan 19596-04;*
   - *Additional Information submitted by Boffa Miskell Limited, dated 5 and 22 November 2010 including emails dated 2 and 7 December 2010 including:*
     - *Building Methodology for Building Works with Drip Line of Protected Trees on Site, prepared by Arbor Care Ltd;*
     - *Additional Arboricultural Assessment prepared by Arbor Care Ltd dated 6 December 2010;*
     - *Directional Drilling Plan prepared by S & L Consultants Ltd referenced 19596-DR1 Rev 1, dated November 2010;*
     - *Vehicle Tracking Diagrams prepared by S & L Consultants Ltd, referenced 195696 – C02, dated December 2010*
   - *Arboriculture Assessments prepared by Philip Sale – Arbor Care Ltd entitled "Roading Alterations, Upgrade and Services Installation associated with a 17 Section Subdivision at 62 Grace Road, Tauranga", dated 28 October 2010;*
   - *Pre-Development Site Plan referenced 18452-01, dated September 2007 and Site Plan referenced 19596-SP1 dated November 2010;*
   - *Application Plans prepared by Boffa Miskell Limited including:*
     - *Scheme Plan ref T10114_01 Rev G, dated 23 November 2010;*
     - *Plan of Development ref T10114_02 Rev G, dated 23 November 2010;*
     - *Tree Location Plan referenced T10114_04 Rev E, dated 23 November 2010,*

2. *Any staging of this subdivision consent by way of s223 / 224 certificates issued on separate survey for this subdivision is appropriate subject to that staging complying with all relevant conditions as listed for that stage within this subdivision consent.*

3. *All matters and works relating to the servicing and accessing of the subdivision, shall be designed, supervised, constructed and certified in accordance with requirements of the Council's' Code of Practice for Development.*

4. *Prior to any works commencing on the site (exclusive of site clearance or bulk earthworks associated with any Environment Bay of Plenty earthworks consent) the consent holder shall submit, to the Council, plans of the proposed activity to and obtain plan approval. Including the following:*
   - *The information and plans required by the Code of Practice for Development;*
   - *All flood risk areas;*
   - *Details of the stormwater detention system;*
   - *All potential run out areas;*
   - *Details of the construction of the access lot and right of ways and the proposed traffic management measures;*
   - *Details of the sewer extension that is required to service the upstream catchment;*
   - *Details of Fire Fighting reticulation and coverage;*
   - *Details of any overland flow paths;*

- *Details of the works to establish a suitable building platform on each proposed allotment (including any retaining wall structures).*

5. *All residential lots shall be provided with a separate underground connection to the sanitary sewer, water and electricity reticulation system. Separate connection to the stormwater reticulation system shall be provided for proposed lots 5 to 17 (inclusive) as per the Services and Infrastructure Assessment report referenced in condition 1 above. These connections shall be In accordance with the Council's Code of Practice for Development.*

6. *The consent holder shall supply to the Council a set of 'as built' plans of all engineering works in accordance with the Council's Code of Practice for Development.*

   The location of any subsoil drains and overland flow paths shall be shown on the as-built drawings submitted to the Council and within the geotechnical completion report required by Condition 7.

7. *All earthworks design, testing and construction shall be undertaken in accordance with Section 2 of the Code of Practice for Development and the specific requirements of the consent holders appointed 'Soils Engineer'.*

   Where earthworks and/or pre-load operations occur over the Council's mains the consent holder shall undertake a CCTV survey of the mains prior to and upon completion of the earthworks and/or pre-load operations. Monitoring shall continue at regular intervals during the earthworks and pre-load phases of the project as an ongoing check of the condition of the mains and to ensure their serviceability. If damage occurs to the mains during the earthworks and/or pre-load operations the Council will repair the mains at the consent holder's expense, with any payment for repairs or losses arising as a result of the damage shall be paid prior to certification pursuant to Section 224.

8. *The Consent Holder shall provide to the Council a "Geotechnical Completion Report" complied by a Category 1 Chartered Professional Engineer. The report shall:*
   - *Comply with the Council's Code of Practice for Development;*
   - *Display the position of all designated building platforms (including finished earthwork areas and finished contours) and building restriction lines where applicable;*
   - *Provide recommendations for the on site disposal of stormwater where applicable;*
   - *Provide recommendations for the on going development of the lots (i.e. maximum cut/fill heights, management of steep slopes, etc.);*
   - *Confirm earthworks and/or building platforms have been constructed to comply with the New Zealand Building Code requirements;*
   - *Certify that any residual settlement or differential settlement that may still occur shall not exceed the manufacturer's recommendations with respect to the installed underground pipe networks or exceed accepted design techniques with respect to road settlement or long term deflection, or exceed the settlement limitations as detailed in the New Zealand Building Code;*
   - *Comment on the removal or amendment of existing land feature/s displayed on Council's GIS.*

   Upon receipt of the above, all matters set out within the report will be reviewed and if necessary a consent notice, pursuant to Section 221 of the Resource Management Act 1991, may be registered on each of the Certificate of Titles advising the owners and subsequent owners thereof, of the following requirement to be complied with on a continuing basis:

"The design and construction of any building or structures requiring a Building Consent in accordance with the Building Act 2004 shall comply with the recommendations contained in the Geotechnical Completion Report".

9. *All building line restrictions and/or designated building platforms shall be clearly identified and dimensioned on the survey plan prior to certification pursuant to Section 223 of the Resource Management Act 1991.*

10. *The consent holder shall register an easement in gross in favour of the Council over any stormwater overland flowpath located on private property, including those resulting from overload of the roading primary stormwater system under extreme rainfall conditions.*

    The overland flowpath easement shall be shown on the survey plan prior to certification pursuant to Section 223 of the Resource Management Act 1991 and shall be shown as the "Right to Drain Stormwater" and shall be registered on the survey plan under a "Memorandum of Easements in Gross".

11. *All easements required for underground services and rights of way serving lots within the subdivision shall be duly granted or reserved.*

12. *The consent holder shall construct the shared access ways shown as Areas (A), (B), (C), (D) and (E) on the scheme plan in accordance with the Code of Practice for Development.*

13. *The following amalgamation condition shall be recorded on the survey plan prior to certification pursuant to Section 223 of the Resource Management Act 1991 (LINZ Request 955961):*

    "That Lot 100 hereon (legal access) be held as to twelve undivided one-twelfth shares by the owners of Lots 1, 2, 3, 4, 5, 6, 7, 10, 11, 12, 13 & 14 hereon as tenants in common in the said shares and that individual Computer Registers be issued in accordance therewith.

14. *All access and service connection provision (inclusive of pruning works) shall be carried out in accordance with the information and recommendations provided by Arbor Care Ltd as detailed within condition 1 above, and shall be completed under the supervision of a registered Arborist.*

15. *All works associated with the installation of services beneath the drip-line of any protected trees on site shall be carried out using directional drilling at a depth of at least 1.2m and with a drill no greater than 150mm. All works associated with this drilling shall be submitted at the time of seeking plan approval as required by Condition 4 above.*

16. *The consent holder shall notify Council's Arborist three (3) working days prior to the commencement of any access or service connection works being undertaken beneath the drip-line of any protected trees on this site, inclusive of any pruning work associated with these works.*

17. *The consent holder shall, immediately prior to the issue of a certificate under section 224(c) of the Resource Management Act 1991, pay to the Council a local infrastructure contributions (subdivision impact fees) for reserves and community infrastructure in accordance with the relevant rules (and formulas) of Plan Change 51 to the District Plan. These fees are for the provision of additional reserves and the development of reserves required as the result of this development.*

18. ***All costs associated with the conditions of this consent, including those required under the Code of Practice for Development, shall be met by the consent holder.***

Recommended and Assessed by:

Brad Bellamy
Senior Environmental Planner

Delegated Authorisation by:

Natalie Rutland
Team Leader: Environmental Planning

Date: 21 December 2010

Advice Notes:

1. *Under RMA s357, you can object to this consent by serving written notice on the Council within 15 working days of receiving this decision, detailing the reasons for the objection.*

2. *Should the actual processing cost exceed the deposit fee paid at lodgement, if not already accompanying this decision, an invoice may be sent at a later date.*

3. *Where any building or drainage works are required to satisfy conditions of this consent, all consents required under the Building Act 2004 must be obtained prior to the works being carried out.*

4. *Construction noise from starting up and operation of construction equipment and all other construction activities on the site of the subdivision are required to meet the limits recommended in Table 1 in NZS6803:1999, and shall be measured and assessed in accordance with, NZS6803P:1984 - "The measurement and assessment of noise from construction, maintenance and demolition work". Adjustments provided in Clause 6.1 of NZS6803P:1984 shall apply for the full duration of the project, and references in the tables to NZS6802 shall read as references to Clause 4.2.2 of NZS6802:1991.*

5. *Dust management and silt runoff is to be controlled in accordance with the District Plan and Section 2 of the Code of Practice for Development. The Consent Holder is advised that they are required by Environment Bay of Plenty's Land Management Plan to take the appropriate measures to prevent or minimise sediment generation and yield (sediment discharge).*

6. *Where consents required under the Building Act 2004 have not been obtained for residential development on these proposed allotments prior to the notification of decisions on submissions for the Proposed City Plan, then the rules of the City Plan as they relate to this site will be applicable.*

7. *All consents required by rules of the District Plan (Operative or Proposed as notified by decisions on submissions) as they relate to the construction of future dwelling units on any proposed allotments within the drip line of any protected tree shown on the attached applications plans shall be obtained prior to these works commencing.*

8. ***Development contributions under LGA 2002** –*

   Requirement for development contribution: Pursuant to section 198(1)(a) of the Local Government Act 2002, Council requires that a development contribution (being a Local Infrastructure Development Contribution) provided for and in accordance with Council's Development Contributions Policy, be made (paid) by the consent holder to Council.

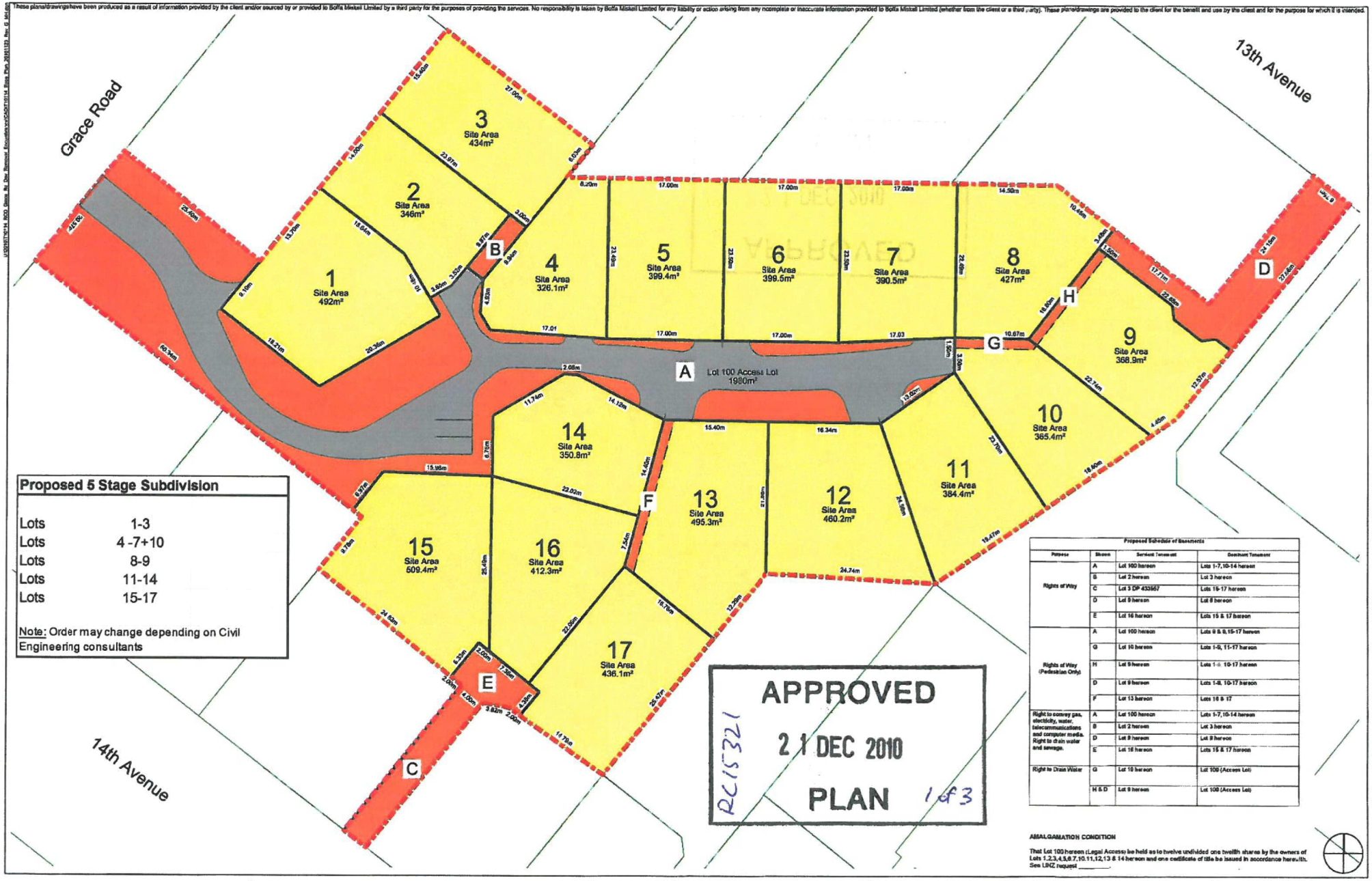
   Subject to any applicable changes in Council's Development Contributions Policy:

The development contribution will be calculated (in part in the case of a staged subdivision) in accordance with Council's Development Contributions Policy in force on the date a certificate under section 224(c) of the Resource Management Act 1991 is granted (approved) in relation to the conditions of this subdivision consent.

The development contribution (in part if a staged subdivision) is payable immediately prior to the issue (release) of a certificate under section 224(c) of the Resource Management Act 1991 in relation to the conditions of this subdivision consent. A section 224(c) certificate will not be released until the development contribution (in part if a staged subdivision) is paid or made in full to Council.

Postponement or remission: There will be no postponement or remission of development contributions except in exceptional circumstances at the discretion of Council's Chief Executive or in the special circumstances outlined in Council's Development Contributions Policy.

These plans/drawings have been produced as a result of information provided by the client and/or sourced by or provided to Boffa Miskell Limited by a third party for the purposes of providing the services. No responsibility is taken by Boffa Miskell Limited for any liability or action arising from any incomplete or inaccurate information provided to Boffa Miskell Limited (whether from the client or a third party). These plans/drawings are provided to the client for the benefit and use by the client and for the purpose for which it is intended.



Proposed 5 Stage Subdivision

Lots	1-3
Lots	4 -7+10
Lots	8-9
Lots	11-14
Lots	15-17

Note: Order may change depending on Civil Engineering consultants

APPROVED
21 DEC 2010
PLAN 1 of 3
RC 153321

Proposed Schedule of Easements

Purpose	Shown	Servient Tenement	Dominant Tenement
Rights of Way	A	Lot 100 hereon	Lots 1-7,10-14 hereon
	B	Lot 2 hereon	Lot 3 hereon
	C	Lot 3 DP 453557	Lots 15-17 hereon
	D	Lot 9 hereon	Lot 8 hereon
	E	Lot 16 hereon	Lots 15 & 17 hereon
Rights of Way (Pedestrian Only)	A	Lot 100 hereon	Lots 8 & 9,15-17 hereon
	G	Lot 10 hereon	Lots 1-9, 11-17 hereon
	H	Lot 9 hereon	Lots 1-8, 10-17 hereon
	D	Lot 9 hereon	Lots 1-8, 10-17 hereon
	F	Lot 13 hereon	Lots 16 & 17
Right to convey gas, electricity, water, telecommunications and computer media. Right to drain water and sewage.	A	Lot 100 hereon	Lots 1-7,10-14 hereon
	B	Lot 2 hereon	Lot 3 hereon
	D	Lot 9 hereon	Lot 8 hereon
	E	Lot 16 hereon	Lots 15 & 17 hereon
Right to Drain Water	G	Lot 10 hereon	Lot 100 (Access Lot)
	H & D	Lot 9 hereon	Lot 100 (Access Lot)

AMALGAMATION CONDITION

That Lot 100 hereon (Legal Access) be held as to twelve undivided one twelfth shares by the owners of Lots 1,2,3,4,5,6,7,10,11,12,13 & 14 hereon and one certificate of title be issued in accordance herewith. See LINZ request _____.

NOTES

CONTRACTORS TO VERIFY ALL DIMENSIONS ON SITE PRIOR TO COMMENCING WORK.

CONTRACTORS ARE RESPONSIBLE FOR CONFIRMING THE LOCATION OF ALL UNDERGROUND SERVICES ON SITE PRIOR TO COMMENCING WORK.

FIGURED DIMENSIONS TO BE TAKEN IN PREFERENCE TO SCALED DIMENSIONS.

KEY

REV	DATE	DESCRIPTION
A	-	-
B	-	-
C	-	-
D	03.11.2010	Access Lot area reduced. Sections 4,5,6 &7 increased.
E	04.11.2010	Insert proposed 5 stage subdivision programme.
F	22.11.2010	Widen roadway
G	23.11.2010	Include private access

CLIENT
Consent Management LP

CONSULTANTS
Boffa Miskell Limited
B&L Consultants

FOR INFORMATION

Grace Road Development

SCHEME PLAN

Design	MHu	Scale	Date
Drawn	MHu	1:250 @ A1	23.11.2010
Check	TLa	1:500 @ A3	
Appvd	RCo		

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DRAWING NO. T10114_01

REVISION G

T10114_Base_Plan_20101123_Rev_G_MH.dgn

Boffa Miskell

Boffa Miskell Limited
Level 2, 119 On Cameron,
PO Box 13 373, Tauranga 3141
Tel: 64-07-571-5511 Fax: 64-07-571-3333
www.boffamiskell.co.nz

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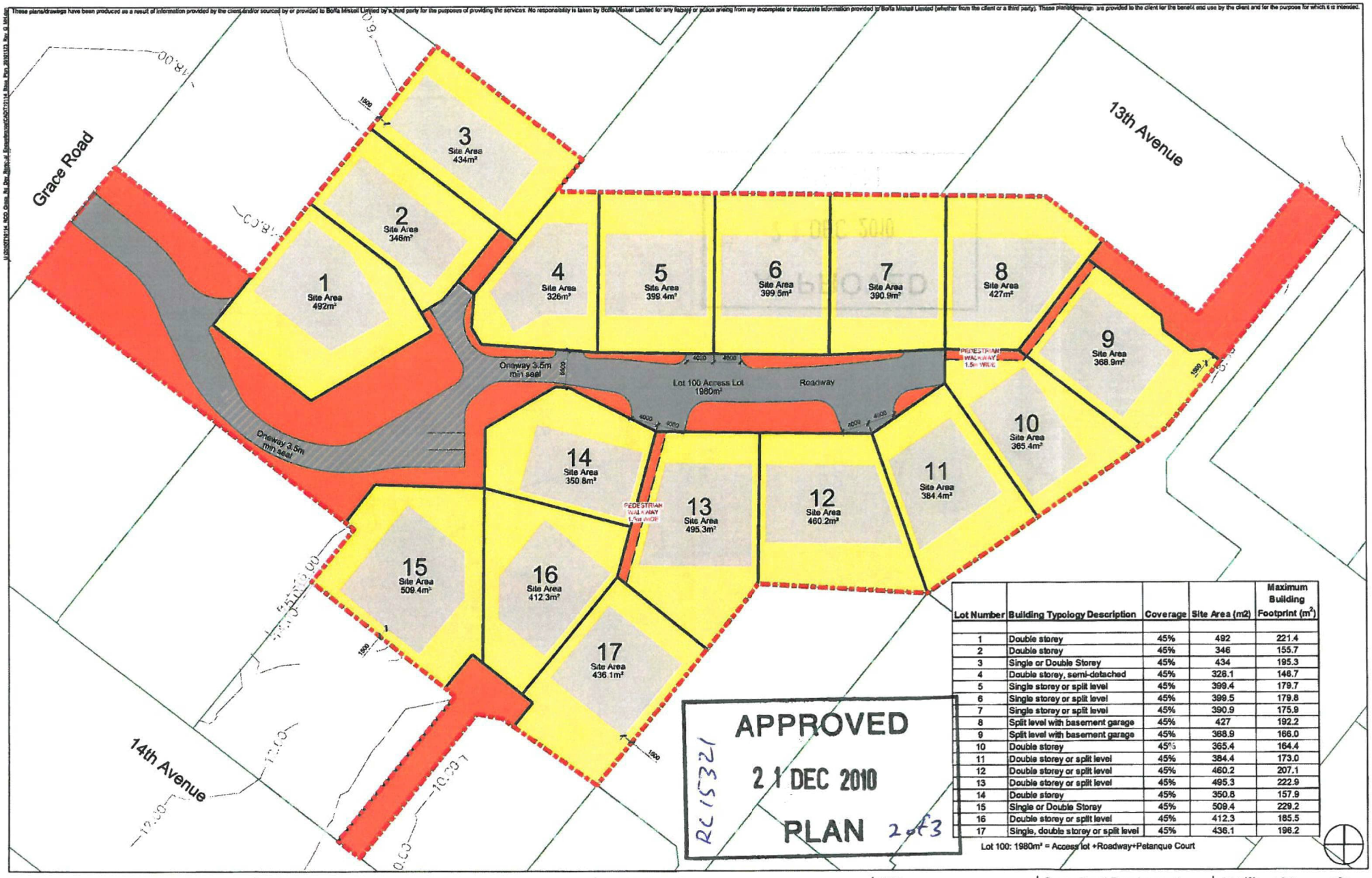

Lot Number	Building Typology Description	Coverage	Site Area (m2)	Maximum Building Footprint (m^2)
1	Double storey	45%	492	221.4
2	Double storey	45%	346	155.7
3	Single or Double Storey	45%	434	195.3
4	Double storey, semi-detached	45%	326.1	146.7
5	Single storey or split level	45%	399.4	179.7
6	Single storey or split level	45%	399.5	179.8
7	Single storey or split level	45%	390.9	175.9
8	Split level with basement garage	45%	427	192.2
9	Split level with basement garage	45%	368.9	166.0
10	Double storey	45%	365.4	164.4
11	Double storey or split level	45%	384.4	173.0
12	Double storey or split level	45%	460.2	207.1
13	Double storey or split level	45%	495.3	222.9
14	Double storey	45%	350.8	157.9
15	Single or Double Storey	45%	509.4	229.2
16	Double storey or split level	45%	412.3	185.5
17	Single, double storey or split level	45%	436.1	196.2

Lot 100: 1980m² = Access lot +Roadway+Petanque Court

APPROVED
21 DEC 2010
PLAN 2 of 3
RC 153321

Boffa Miskell Limited
Level 2, 116 On Cameron,
PO Box 13 373, Tauranga 3141
Tel: 64-07-571-5511 Fax: 64-07-571-3333
www.boffamiskell.co.nz

NOTES

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CONTRACTORS ARE RESPONSIBLE FOR CONFIRMING THE LOCATION OF ALL UNDERGROUND SERVICES ON SITE PRIOR TO COMMENCING WORK;

FIGURED DIMENSIONS TO BE TAKEN IN PREFERENCE TO SCALED DIMENSIONS.

KEY

REV	DATE	DESCRIPTION
A	-	-
B	-	-
C	-	-
D	03.11.2010	Access Lot area reduced. Sections 4,5,6 &7 increased.
E	04.11.2010	Offset proposed building footprints 1.5m from cadastral boundary and increase petanque court.
F	22.11.2010	Widen Road-ay
G	23.11.2010	Include private access

CLIENT
Consent Management LP

CONSULTANTS
Boffa Miskell Limited
SKL Consultants

FOR INFORMATION

Grace Road Development

PLAN OF DEVELOPMENT

Design	MHu	Scale	Date
Drawn	MHu	1:250 @ A1	23.11.2010
Check	TLo	1:500 @ A3	
Apprvd	RCo	Copyright © Boffa Miskell Limited 2010	

DRAWING NO. T10114_02

REVISION G

T10114_Base_Plan_20101123_Rev_G_MH.dgn

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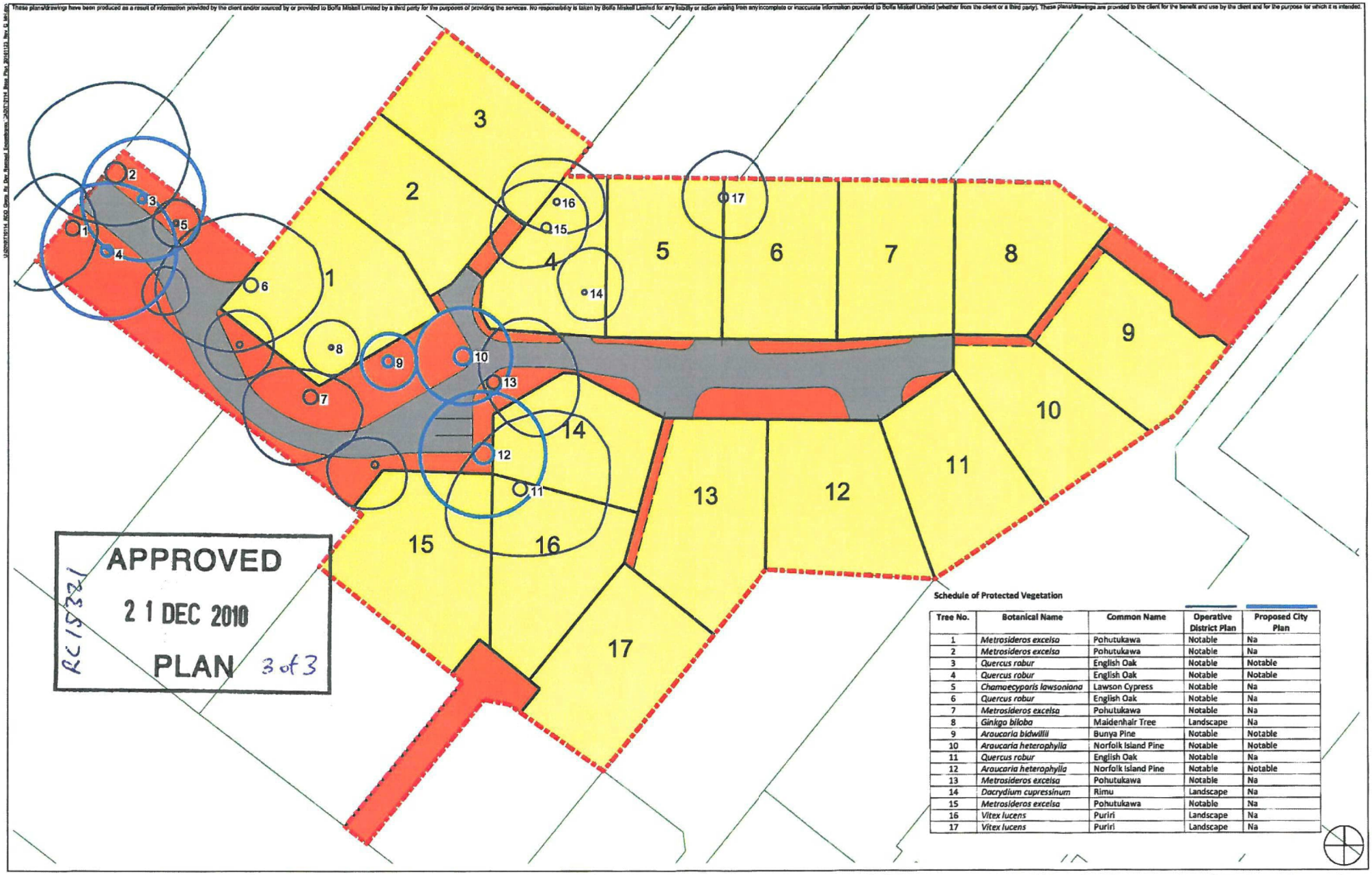

APPROVED
21 DEC 2010
PLAN 3 of 3
RC 19331

Schedule of Protected Vegetation

Tree No.	Botanical Name	Common Name	Operative District Plan	Proposed City Plan
1	*Metrosideros excelsa*	Pohutukawa	Notable	Na
2	*Metrosideros excelsa*	Pohutukawa	Notable	Na
3	*Quercus robur*	English Oak	Notable	Notable
4	*Quercus robur*	English Oak	Notable	Notable
5	*Chamaecyparis lawsoniana*	Lawson Cypress	Notable	Na
6	*Quercus robur*	English Oak	Notable	Na
7	*Metrosideros excelsa*	Pohutukawa	Notable	Na
8	*Ginkgo biloba*	Maidenhair Tree	Landscape	Na
9	*Araucaria bidwillii*	Bunya Pine	Notable	Notable
10	*Araucaria heterophylla*	Norfolk Island Pine	Notable	Notable
11	*Quercus robur*	English Oak	Notable	Na
12	*Araucaria heterophylla*	Norfolk Island Pine	Notable	Notable
13	*Metrosideros excelsa*	Pohutukawa	Notable	Na
14	*Dacrydium cupressinum*	Rimu	Landscape	Na
15	*Metrosideros excelsa*	Pohutukawa	Notable	Na
16	*Vitex lucens*	Puriri	Landscape	Na
17	*Vitex lucens*	Puriri	Landscape	Na

Boffa Miskell
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NOTES

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CONTRACTORS ARE RESPONSIBLE FOR CONFIRMING THE LOCATION OF ALL UNDERGROUND SERVICES ON SITE PRIOR TO COMMENCING WORK;

FIGURED DIMENSIONS TO BE TAKEN IN PREFERENCE TO SCALED DIMENSIONS.

KEY

REV	DATE	DESCRIPTION
A	26.10.2010	TREE NUMBERING ADJUSTED
B	28.10.2010	ROAD ALIGNMENT
C	03.11.2010	INSERT CADASTRAL INFORMATION
D	22.11.2010	WIDEN ROADWAY
E	23.11.2010	Inch-le private access

CLIENT
Consent Management LP

CONSULTANTS
Boffa Miskell Limited
SAL Consultants

FOR INFORMATION

Grace Road Development

TREE LOCATION PLAN

Design	MHu	Scale	Date
Drawn	MHu	1:250 @ A1	23.11.2010
Check	TLe	1:500 @ A3	
Appv'd	RDo		

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DRAWING NO. T10114_04
REVISION E

T10114_Base_Plan_20101123_Rev_G_MH.dgn

Tauranga City

Grace Road Trust
C/- S & L Consultants Ltd
P O Box 231
Tauranga 3140

RESOURCE MANAGEMENT ACT 1991
SECTION 127 CHANGE CONSENT CONDITION DECISION – RC15321 - 01

Tauranga City Council resolves:

That pursuant to Sections 104, 104B, 127 and 108 of the Resource Management Act 1991, the discretionary variation application by Grace Road Trust to change conditions 1 and 13 of Subdivision Consent RC15321 in respect of land at 62 Grace Road, Tauranga, legally described as Lot 5 DP 434582 and Lot 3 DP 433557 is granted.

That pursuant to Section 113 of the RMA – the reasons for the decision are as per the recommendation:

The proposed changes to the consent will not be contrary to the purpose and principles of the RMA.

The actual and potential adverse effects of the changes to the consent on the environment are considered to be acceptable and not materially different to those of the original activity.

The changes to the consent will be reasonably consistent with the relevant objectives and policies of the Tauranga District Plan, Proposed City Plan along with the Operative and Proposed Regional Policy Statement.

There were no principal issues in contention.

Condition 1 now reads:

1. *The proposal shall proceed in accordance with the application submitted, except where amended through s127 application information as set out below, including:*
   - *Application and Assessment of Effects prepared by Boffa Miskell Limited, referenced T10114, dated October 2010 including;*
     - *Site Geotechnical Assessment prepared by S & L Consultants Ltd, referenced 19596, dated 11 October 2010;*
     - *Services and Infrastructure Assessment prepared by S & L Consultants Ltd, referenced 19596, dated 12 October 2010 and Reference Plan 19596-04;*

- *Additional Information submitted by Boffa Miskell Limited, dated 5 and 22 November 2010 including emails dated 2 and 7 December 2010 including:*
  - *Building Methodology for Building Works with Drip Line of Protected Trees on Site, prepared by Arbor Care Ltd;*
  - *Additional Arboricultural Assessment prepared by Arbor Care Ltd dated 6 December 2010;*
  - *Directional Drilling Plan prepared by S & L Consultants Ltd referenced 19596-DR1 Rev 1, dated November 2010;*
  - *Vehicle Tracking Diagrams prepared by S & L Consultants Ltd, referenced 195696 – C02, dated December 2010*
- *Arboriculture Assessments prepared by Philip Sale – Arbor Care Ltd entitled "Roading Alterations, Upgrade and Services Installation associated with a 17 Section Subdivision at 62 Grace Road, Tauranga", dated 28 October 2010;*
- *Pre-Development Site Plan referenced 18452-01, dated September 2007 and Site Plan referenced 19596-SP1 dated November 2010;*
- *Application Plans prepared by Boffa Miskell Limited including:*
  - *Plan of Development ref T10114_02 Rev G, dated 23 November 2010;*
  - *Tree Location Plan referenced T10114_04 Rev E, dated 23 November 2010,*
- *Section 127 Application prepared by S & L Consultants Ltd referenced 19596, dated April 2011, including:*
  - *Revised Scheme Plan referenced T10114_01, Revision H, dated 19 May 2011.*

And shall comply with the following conditions and any amended conditions of consent varied as a result of variation RC15321-01 being granted.

Condition 13 now reads:

13. *The following amalgamation condition shall be recorded on the survey plan prior to certification pursuant to Section 223 of the Resource Management Act 1991 (LINZ Request 995131):*

    "That Lot 100 hereon (legal access) be held as to twelve undivided one-twelfth shares by the owners of Lots 1, 2, 3, 4, 5, 6, 7, 8, 11, 12, 13 & 14 hereon as tenants in common in the said shares and that individual Computer Registers be issued in accordance therewith."

Recommended and Assessed by:

Brad Bellamy
Senior Environmental Planner

Delegated Authorisation by:

Natalie Rutland
Senior Environmental Planner
Team Leader: Environmental Planning
Date: 30 May 2011

Advice Notes:

1. *Within 15 workings days of receiving this decision, you can object under RMA s357 by writing to Council detailing your reasons. Any objection must be resolved before the resource consent is considered to be valid.*

2. *Should the actual processing cost exceed the deposit fee paid at lodgement, if not already accompanying this decision, an invoice may be sent at a later date.*

3. *You are advised that decisions on submissions relating to rules in the Proposed City Plan have been notified and that these rules now have legal effect pursuant to Section 86B of the RMA. Where consents required under the Building Act 2004 have not been obtained for residential development on these proposed allotments, then the rules of the City Plan as they relate to this site will be applicable.*

4. *Development contributions under LGA 2002 –*

   Requirement for development contribution: Pursuant to section 198(1)(a) of the Local Government Act 2002, Council requires that a development contribution (being a Local Infrastructure Development Contribution) provided for and in accordance with Council's Development Contributions Policy, be made (paid) by the consent holder to Council.

   Subject to any applicable changes in Council's Development Contributions Policy:

   The development contribution will be calculated (in part in the case of a staged subdivision) in accordance with Council's Development Contributions Policy in force on the date a certificate under section 224(c) of the Resource Management Act 1991 is granted (approved) in relation to the conditions of this subdivision consent.

   The development contribution (in part if a staged subdivision) is payable immediately prior to the issue (release) of a certificate under section 224(c) of the Resource Management Act 1991 in relation to the conditions of this subdivision consent. A section 224(c) certificate will not be released until the development contribution (in part if a staged subdivision) is paid or made in full to Council.

   Postponement or remission: There will be no postponement or remission of development contributions except in exceptional circumstances at the discretion of Council's Chief Executive or in the special circumstances outlined in Council's Development Contributions Policy.

Ultrafast Fibre Ltd
C/- Transfield Services Ltd
P O Box 9118
Tauranga 3142

Attention: Craig Bell

RESOURCE MANAGEMENT ACT 1991
LAND USE RESOURCE CONSENT DECISION – RC15847

Tauranga City Council resolves:

That pursuant to Sections 104 and 104C of the Resource Management Act 1991, the application for limited discretionary land use consent by Ultrafast Fibre Ltd to undertake directional drilling and excavation works associated with the installation of fibre multi-ducts within the Road Reserve and beneath the drip-line of Notable and Landscape Trees comprising 2 x Pohutukawa (*Metrosideros excelsa*) located on adjoining land at 62 Grace Road legally described as Lots 1-8, 11-14 and 100 DP 444481 is granted consent

That pursuant to Section 113 of the RMA – the reasons for the decision are as per the recommendation:

The proposed activity will not be contrary to the purposes and principles of the RMA.

The actual and potential adverse effects on the environment of allowing the activity are considered to be acceptable and not more than minor.

Regard has been given the relevant objectives and policies of the District Plan and Proposed Tauranga City Plan and Regional Policy Statements with it being concluded that the proposal will be consistent with these documents.

There were no principal issues in contention.

That pursuant to Sections 108 of the RMA, this consent is subject to the following conditions:

1. ***The proposal shall proceed in general accordance with the application submitted, comprising:***

Tauranga City Council
91 Willow Street, Private Bag 12022, Tauranga 3143, New Zealand
Phone 07 577 7000 **Fax** 07 577 7193 **Email** info@tauranga.govt.nz **www.tauranga.govt.nz**

- ***Applications for Resource Consent prepared by Transfield Services Ltd, entitled:***
  - ***"Working in the drip-line of Notable trees ID 2, in the road corridor outside 62/68 Grace Road, Tauranga";***
- ***Plans prepared by Transfield Services Ltd, entitled:***
  - ***"Proposed layline of 1 x 44mm Fibre ducts outside 62/68 Grace Road" reference A3 sheet 1, dated 8 February 2012;***
- ***Arboricultural report prepared by Arbor Care Ltd, entitled "Directional drilling within the drip-line of several protected trees and the excavation of small pits to locate services and make connections to the fibre optic network", dated 2 February 2012.***

Subject to any changes required through compliance with the following conditions.

2. ***The consent holder shall ensure that all hand dug excavation work required for joint holes and exploratory holes shall be conducted in the presence of a qualified Arborist in accordance with the recommendations contained within the above referenced Arboricultural Report prepared by Arbor Care Ltd.***

3. ***No roots with a diameter greater than 100mm associated with any of the trees subject to this consent shall be cut.***

4. ***A Council arborist is to be notified at least three (3) working days prior to the commencement of any works set out under condition 1 above.***

Recommended and Assessed by:

Brad Bellamy
Senior Environmental Planner

Delegated Authorisation by:

CM McKeever
Claire McKeever
Acting Team Leader: Environmental Planning.

Date: 6th March 2012

Advice Notes:

1. *Under RMA s357, you can object to this consent by serving written notice on the Council within 15 working days of receiving this decision, detailing the reasons for and what would satisfy the objection.*

2. *Permission from Council is required prior to undertaking any work within the road corridor. The road corridor includes the road, the berm or verge and footpaths. A Corridor Access Request will be required to be completed and lodged with Council prior to this work being undertaken.*

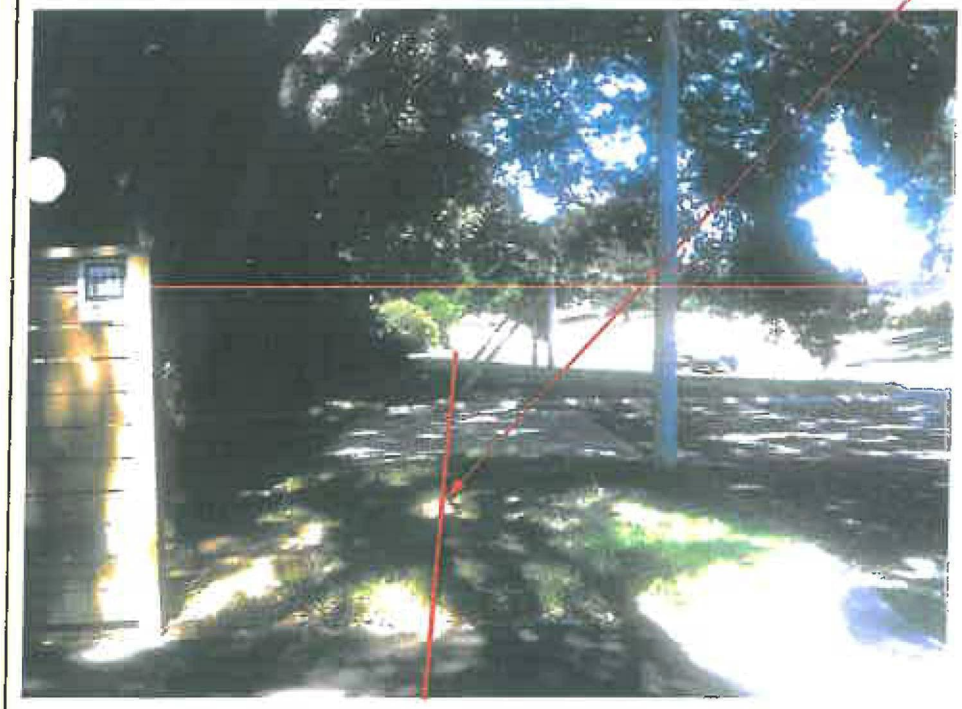
E9 E9	2	*Araucaria bidwillii* *Araucaria heterophyla* *Chamaecypans lawsoniana* *Dacrydium cupressinum* *Ginkgo biloba* *Metrosideros excelsa* *Quercus robur* *Ulmus procera* *Vitex lucens*	Bunya Pine Norfolk Island Pine (2) Lawson Cypress Rimu Maidenhair Tree Pohutukawa (5) English Oak (6) English Elm Puriri (2)	62	Grace Road Norfolk Hospital Lot 32 DP 16447	Notable Trees: Bunya Pine, Norfolk Pines, Pohutukawa, Lawson Cypress, English Oak, English Elm, Historical, Botanical and Visual Amenity Value Landscape Trees: Rimu, Maidenhair Tree, Puriri Botanical and Visual Amenity Value	Heritage Rules apply Residential A Zone

Tree Description from Tauranga Council Database



Location 62/68 Grace Road. Tauranga

Methodology to minimise damage to notable trees root systems
Directional drill 1 x 44mm duct along Grace Road Depth approx. 1.2m and 1m off boundary



Refer to Arborist Report for proposed joint hole location

Proposed layline of 1 x 44mm Fibre ducts
Outside 62/68 Grace Road.
Alignment from boundary 1000mm
Depth of Ducts: - Under Berm 1.2m

Proposed UFL multiduct installation plan
Passive optical cabinet TW_80038
Grace Road.
Tauranga City

Date	8/02/2012	A3	Unit 6/2 Hynds Rd. Tauranga
		Sheet 1	
Drawn	Craig Bell		

Tauranga City	**RESOURCE MANAGEMENT ACT 1991** **SECTION 88 RESOURCE CONSENT APPLICATION**
	DECISION ON RESOURCE CONSENT APPLICATION NUMBER RC27945 PURSUANT TO SECTION 113

Pursuant to sections 104 and 104C of the Resource Management Act 1991, Tauranga City Council determines:

That the application for land use resource consent made by Wei Onn Leong to undertake earthworks and the construction of a building under the drip line of a significant group of trees (Group 6) including two notable trees (Tree No.173 & 169) and pruning of a notable tree No.173 on land located at 62L Grace Road, legally described as Lot 14 DP 444481 and 1/12 Shared Access Lot 100 DP 444481 is granted subject to the conditions attached as Appendix A to this decision.

Description of the Activity

The proposal is described within section A of the application prepared by Wei Onn (Andrew) Leong entitled 'Resource Consent Application for Building and Landscaping works at 62L Grace Road, Tauranga.' In summary the applicant proposes to undergo earthworks and the construction of a dwelling under the drip line of a significant group of trees including two notable trees.

Resource Consent

Resource consent is granted for the purposes of section 9(3)(a) of the Resource Management Act 1991 to authorise a restricted discretionary land use activity under the Tauranga City Plan in accordance with Rule 6B.2.

Notification

A determination to process the application on a non-notified basis was made under delegated authority on 10 November 2020 within the Council Planner's Report on Land Use Consent RC27945, dated November 2020.

Reasons for Decision

The documents submitted as part of the application, including the application prepared by Wei Onn (Andrew) Leong entitled 'Resource Consent Application for Building and Landscaping works at 62L Grace Road, Tauranga'; the Council Planner's Report on Land Use Consent RC27945, dated November 2020; and supporting documents and reports including the email received by Council on 16 October 2020, have been received and taken into account in making this decision.

There is sufficient information to consider the matters required by the Resource Management Act 1991 in making this decision.

- The reasons for this decision are adopted from, and fully set out in, the Council Planner's Report on Land Use Consent RC27945, dated November 2020. The key conclusions include (but are not limited to) the following matters:
- In accordance with s104(1)(a), having given regard to Part 2 of the Resource Management Act 1991 to the extent that is appropriate and necessary. it has been concluded that, subject to compliance with the conditions imposed on this consent pursuant to section 108 and attached as Appendix A to this decision, the activity will not result in unacceptable effects on the environment.
- In particular, the proposal will not result in any unacceptable effects on the environment given the health, amenity and value of the trees will remain given the extent of the proposed pruning and works under the drip line is minimal and the recommendations within the arborist report will ensure long term value and health of the affected trees will not be compromised.
- In accordance with s104(1)(b), having considered the application with regard to Part 2 of the Resource Management Act 1991 to the extent that is appropriate and necessary, it has been determined that granting of the resource consent sought is consistent with the direction provided by the relevant provisions contained within the City Plan .

This determination is made under delegated authority by:

Recommended and Assessed by:



Alexandra Gardner

Environmental Planner

Delegated Authorisation by:



Katrina Sharpe

Senior Environmental Planner

Date: 10 November 2020

Tauranga City	**RESOURCE CONSENT NUMBER RC27945**
	APPENDIX A – CONDITIONS OF RESOURCE CONSENT

Resource Consent RC27945 is subject to the following conditions:

General

1. The proposal shall proceed under the direction of the Consulting Arborist, Phillip Sale and in accordance with the application submitted, including;

   (a) The application prepared by Wei Onn (Andrew) Leong entitled 'Resource Consent Application for Building and Landscaping works at 62L Grace Road, Tauranga.'
   (b) The arborist report prepared by Arbor Care Limited entitled ' Tree Assessment and Protection Plan For Construction Works Within The Dripline Of A Protected English Oak and Norfolk Island Pine At 62L Grace Road' Dated September 2020.
   (c) The site plan prepared by Design Network Ltd entitled 'Proposed New Residence,' dated 21 September 2020.

2. All costs associated with the conditions of this consent shall be met by the consent holder.

3. The proposal shall proceed in accordance with the recommendations made within the arborist report identified in Condition 1(b).

4. The consent holder shall provide written notification to Council [Attention: City Arborist] three (3) working days prior to any works approved under this consent occurring to the tree.

5. All pruning will comply with the British Standard for pruning BS3998:2010.

6. All air spade works shall be supervised by a diploma level 6 arborist.

7. All pruning works authorised under this consent shall be supervised by a suitably qualified Arborist who holds as a minimum Level 6 Arborist Diploma.

8. All earthworks shall be supervised by a diploma level 6 arborist.

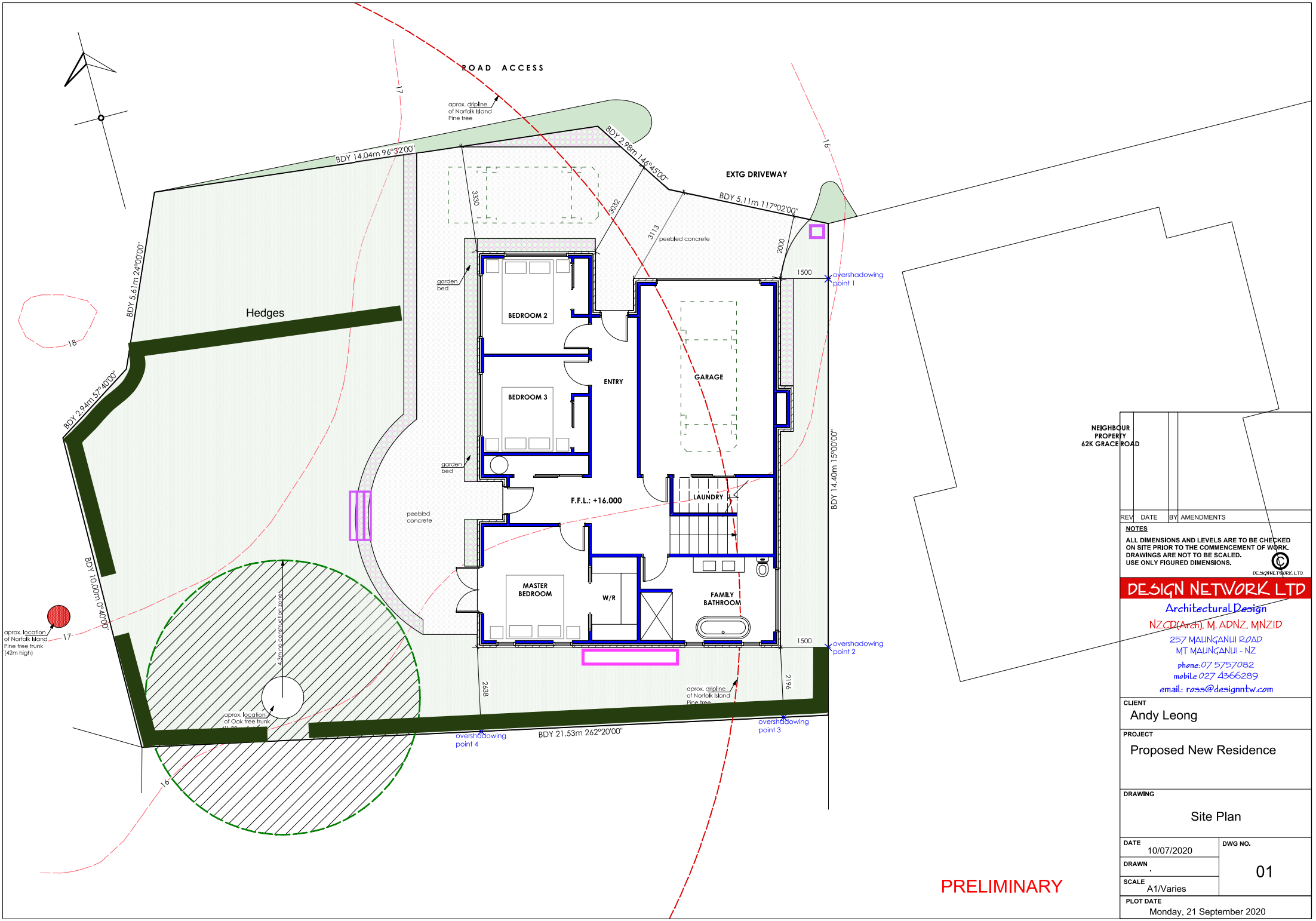
9. If any root structures deemed significant are discovered by the arborist overseeing the excavation works then all works will cease and consultation with the city arborist shall be sought.

Advice Notes:

(a) *Under sections 357A and 357B of the Resource Management Act 1991, you have a right of objection to the consent authority in respect of the above decision or any additional fees and charges required in respect of this decision. In accordance with section 357C notice of any such objection must be in writing to the Council within 15 working days of receiving this decision and/or the date on which the invoice is received. The objection should describe the reasons for the objection.*

(b) *Any information or notification to be submitted to Council's Team Leader: Environmental Monitoring and Compliance as required by conditions of this consent (including that information required 'prior' to the commencement of the activity) should be sent to the following email: Environmentalmonitoringandcompliance@tauranga.govt.nz*

(c) *The consent holder shall obtain all other necessary consents and permits, including those under the Building Act 2004, and the Heritage New Zealand Pouhere Taonga Act 2014. This consent does not remove the need to comply with all other applicable Acts (including the Property Law Act 2007 and the Health and Safety at Work Act 2015), regulations, relevant Bylaws, and rules of law.*



PRELIMINARY

REV	DATE	BY	AMENDMENTS

NOTES

ALL DIMENSIONS AND LEVELS ARE TO BE CHECKED ON SITE PRIOR TO THE COMMENCEMENT OF WORK.
DRAWINGS ARE NOT TO BE SCALED.
USE ONLY FIGURED DIMENSIONS.

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257 MAUNGANUI ROAD
MT MAUNGANUI - NZ
phone: 07 5757082
mobile 027 4366289
email: ross@designntw.com

CLIENT
Andy Leong

PROJECT
Proposed New Residence

DRAWING
Site Plan

DATE 10/07/2020
DWG NO. 01
DRAWN .
SCALE A1/Varies
PLOT DATE Monday, 21 September 2020

PRELIMINARY



PROPOSED NORTH ELEVATION

SCALE: 1:50

REV	DATE	BY	AMENDMENTS

NOTES

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CLIENT
Andy Leong

PROJECT
Proposed New Residence

DRAWING
Elevations

DATE 10/07/2020

DWG NO. 04

DRAWN .

SCALE A1/Varies

PLOT DATE Monday, 21 September 2020

PRELIMINARY



PROPOSED WEST ELEVATION

SCALE: 1:50

REV	DATE	BY	AMENDMENTS

NOTES

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CLIENT
Andy Leong

PROJECT
Proposed New Residence

DRAWING
Elevations

DATE
10/07/2020

DWG NO.
05

DRAWN
.

SCALE
A1/Varies

PLOT DATE
Monday, 21 September 2020

PRELIMINARY



PROPOSED SOUTH ELEVATION

SCALE: 1:50

REV	DATE	BY	AMENDMENTS

NOTES

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CLIENT
Andy Leong

PROJECT
Proposed New Residence

DRAWING
Elevations

DATE 10/07/2020

DWG NO. 06

DRAWN .

SCALE A1/Varies

PLOT DATE Monday, 21 September 2020

PRELIMINARY



PROPOSED EAST ELEVATION

SCALE: 1:50

REV	DATE	BY	AMENDMENTS

NOTES

ALL DIMENSIONS AND LEVELS ARE TO BE CHECKED ON SITE PRIOR TO THE COMMENCEMENT OF WORK.
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CLIENT
Andy Leong

PROJECT
Proposed New Residence

DRAWING
Elevations

DATE
10/07/2020

DWG NO.
07

DRAWN
.

SCALE
A1/Varies

PLOT DATE
Monday, 21 September 2020

Land Development

Tauranga City

General Description of Landform within Tauranga District

The landform and geology within Tauranga District have some features which demand particular attention.

(a) Minimum Building Platform Levels

Significant areas of Tauranga District are at risk of flooding through sea level rise, tidal surges within the harbour, storm-wave runup on the ocean coastline and the flooding of streams, sewer drains, ponding areas and overland flow paths in extreme climatic conditions. Council has some "broadbrush" information on many possibly flood prone areas. More detailed investigations by appropriately qualified people may be required to be submitted in support of Resource and Building consents. Building Platforms should be constructed with adequate freeboard above flood levels. Council has adopted a minimum floor level policy. This level is available from Council on request from Council's Development Engineer. However due to the dynamic nature of the environment and the ongoing investigative work these levels may be reviewed at any time. For the purposes of this clause, a "building platform" is defined as the area of ground within a line 1.0m outside the perimeter of the building proper.

(b) Low-lying Land

There are many areas of low-lying land (often adjacent to the harbour) which comprise soft or very soft foundation conditions. These conditions are characterised by normally consolidated fine grained alluvial sediments (silts and clays) which have been deposited in marine or estuarine environments. In many areas they have been subject to random and non-engineered fillings. The materials are prone to settlement caused by consolidation under even minor loadings. These areas require particular care and appropriate geotechnical investigation and advice prior to development concepts being prepared. Whilst most of the Mount Maunganui/Papamoa area has an underlying sand formation, pockets of peat and "black sand" occur which exhibit poor foundation support qualities. These should be removed from building platforms and roading subgrades.

(c) Sloping Ground

The foundation conditions of the low-lying areas in the District have been described in (b) above. The near surface geology of the higher ground within the District comprises a series of weathered fine grained rhyothic ashes known locally as the Older Ashes. The Older Ashes consist of the Pahoia Tuffs overlain by the Hamilton Ash (the top of which is known locally as the "chocolate" layer).

Overlying the Older Ashes is a series of coarse friable silts, sands and pumice lapilli which tends to mantle the topography formed within the Older Ashes and are known locally as the Younger Ashes.

On some sloping ground, particularly the present and relic slips adjacent to the harbour, the ashes often have marginal stability and there are numerous examples of past and recent instability. Deep seated failures are generally confined to the steep banks which are or have in their history been subjected to active toe erosion. Development must be set back from the top of such steep banks, with the setback distance being determined by appropriate geotechnical investigations carried out by a Person who has pre-qualified with Council as a Specialist Geotechnical Advisor.

The majority of other failures on modest to steeply sloping ground are shallow failures (involving the top 1m to 3m of soil), but are nonetheless of serious consequence to any building development. Such failures are usually initiated by extreme climatic conditions. Any sloping ground greater than 15-degree gradient should be subject to appropriate geotechnical investigations to determine whether the ground is adequately stable for development.

Norfolk Grace Residential Subdivision

62 Grace Road
Tauranga

Summary Geotechnical Report

Reference: 19596
5 September 2011

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Appendices

APPENDIX 1 — Drawings

Subdivision Plan T 10114-02 Boffa Miskell
Geotechnical Plan 19596-03
Post Construction Borehole Locations 19596-G01
Building Restriction Lines and Areas
Requiring Ground Improvement 19596-G02
DP 44481

APPENDIX 2 — Statement of Professional Opinion
Lot Summary Report

APPENDIX 3 — Test Information

Investigation Borehole logs 2007
Post Construction Borehole Logs 2011
Ground Improvement Test Positions Lot 5
Scala Penetrometer Test Results Lot 5
Ground Improvement Test Positions Lots 6 to 8
Scala Penetrometer Test Results Lots 6 to 8

APPENDIX 4 — Conditions of Subdivision Approval 12/2010

1.0 Introduction

This report describes the earthworks undertaken in the development of the Norfolk Grace residential subdivision at 62 Grace Road, Tauranga. Based on the monitoring of these earthworks by S & L Consultants Ltd (SL), recommendations are given in this report for the locations of future buildings on the lots and the requirements for additional earthworks to improve the ground so that some of the building areas can be extended.

The subdivision comprises seventeen residential lots with access from Grace Road or Thirteenth or Fourteenth Avenues. The lot sizes are shown on DP 444481 in Appendix 1. During this report reference is made to drawings 19596-G01 and G02 which are also in Appendix 1. These drawings show the relevant road and lot locations, test positions and recommended building areas.

Prior to the construction of the subdivision, the property at 62 Grace Road had been occupied by the Norfolk Private Hospital up until 2007. Prior to the hospital activities, the site had earlier been occupied by a colonial residence and before that, by local iwi. The rear areas of the properties at 37 and 41 Fourteenth Avenue were subdivided from the properties occupied by the existing houses and these rear areas are also incorporated in the Norfolk Grace development.

In 2007 it was proposed to develop the properties at 62 Grace Road and 37 and 41 Fourteenth Avenue with three multi storey apartment buildings. That development did not proceed and the hospital buildings were only removed from the site in preparation for the current residential subdivision late in 2010.

A resource consent application for the subdivision was made to the Tauranga City Council in October 2010 and approval was granted in Council's letter dated 21 December 2010. Conditions 7, 8 and 9 of that consent relate to geotechnical matters. A copy of that consent is in Appendix 4 of this report.

2.0 Site Description

The previous Norfolk Hospital buildings within the subdivision area occupied a near flat ridge that ran from west to east and is shown on attached reference plan 19596-03 in Appendix 1. The ground descended from the ridge in northerly, southerly and easterly directions beyond the hospital footprint and car parking areas between the buildings and Grace Road to the west.

The sloping ground also extended into the rear yards of 37 and 41 Fourteenth Avenue which now incorporate lots 15, 16 and 17 of the current subdivision.

Several large trees are present, mainly at the western end of the subdivision. These trees have been retained and are mostly in the access lot from Grace Road.

Lots 1, 2 and 3 are located on near flat ground that slopes in a north easterly direction. The former sealed car park areas for the hospital were located on parts of lots 1, 2 and 3. Beyond lot 3 the properties at 56 Grace Road and 28 and 32 Thirteenth Avenue fall towards Thirteenth

Avenue. No stability issues were identified that would arise from buildings on the subdivision being close to the adjacent properties to the north.

Lots 4 and 5 comprise sloping ground in a northerly direction down to the boundary with 28 Thirteenth Avenue. These slopes are minor and used to rise up to the main entrance area to the old hospital. Through 28 Thirteenth Avenue the slopes are minor as they extend down to the road. A single storey house is present on 28 Thirteenth Avenue close to the common boundary with the subdivision.

On lots 5 to 13, original ground levels under the hospital building and in the grassed areas to the east of the hospital were reduced by earthworks. A retaining wall was constructed close to the northern boundaries of lots 5 to 8 inclusive with associated filling behind the walls to extend the leveled areas formed in cut on these lots out to the retaining walls. The retaining wall was constructed with building consent 34635 issued by the City Council.

Some minor filling was also placed around the southern margins of lots 10 to 13 to extend the level areas formed in cut that are adjacent to the access lot.

On lots 14 to 17 the original ground contours remain.

The original sloping ground within parts of lots 13, 15 and 16 and below and to the north of lots 4 to 8 was identified as relic slips for the Tauranga City Council by Bell, Richards and Thompson in their report "Relic Slip Verification Study – Tauranga District Council Environs" dated March 2001, as being "interpreted headscarps with clearly defined morphology". These areas of past instability were not dated, but predated 1943 which was the time of the earliest aerial photography viewed in the study.

Bell and Co. concluded that:

> *Most of the escarpments and embayments that have been identified as headscarps do not have obvious associated landslide debris. Most of these features are not considered to be active but to have developed in times when the coast was well off the present shore, the terrain was not as incised as it is today and the groundwater levels were very high. The slides were therefore formed under different physical, climatic and slope stability conditions to the present ones and are thus true relic features.*

Current residential development has taken place within the identified relic landslip features and their presences are now obscured by that development.

The Tauranga harbour is present below and approximately 120m to the south east of the eastern boundary of the subdivision. The coastal terrace around the harbour makes up part of the distance between the harbour and the development site. The ridge feature within the site is generally elevated 15m above sea level and is part of the old cliff margin around the harbour.

There is no current visual evidence of any instability having occurred on or adjacent to the development site. No property damage was reported during or as a result of the extreme

rainstorm event in Tauranga on 18 May 2005. In some areas of Tauranga instability as a result of this rainstorm event occurred at old relic slip scarps.

The only recorded flooding during this rainfall event was on the property at 13 Burrows Street. The flooding could not have been attributable to runoff generated from the subdivision site.

3.0 Geology

The geology underlying the site is described in the publication "Geology of the Tauranga Area" occasional report number 22 of the Department of Earth Sciences, University of Waikato by RM Briggs and Co. The city peninsula on which the site is located is one of three promontories extending into the Tauranga Harbour, a drowned Pleistocene river basin. The basin is partially in-filled by soft weakly consolidated fluviatile and estuarine sediments of the Tauranga formation overlain by weathered and unweathered airfall volcanic ash (tephras).

Near the property the basement soils at and below the high water level around the harbour perimeter are the Matua subgroup of the Tauranga formation. These comprise lithologies of fluvial pumiceous and rhyolitic silts, sands and gravels intercalated with airfall tephras.

On the higher ground on the development site, overlaying the Matua group soils are strongly weathered clay textured tephra beds (older ashes) of which the upper palaesol known locally as the "chocolate layer" is the most distinctive. Above these older ashes are the brown, yellow or orange more recent or "younger" volcanic zone tephras of which the most conspicuous is Rotoehu ash being light grey pumiceous sand directly overlaying the older ashes.

4.0 Scope of Investigations

Extensive subsoil investigations were undertaken in 2007 in preparation for the design of the apartment complex project at that time. As the hospital buildings were still in place investigation sites were confined to areas around the building perimeter. The test positions are shown on attached plan 195696-03 and the tests comprised

- The machine drilling of eight boreholes by a rotary rig operated by Perry Drilling Limited.
- The hand drilling of two boreholes numbered 9 and 10
- Eight static cone penetrometer (CPT) probes using apparatus operated by Perry Drilling. The Probe positions are also shown on 19596-03.

The drilling work was supervised by SL

Summary logs of the soils encountered in the 2007 investigation boreholes are contained in Appendix 3.

After the buildings were demolished an archaeological survey was undertaken by Don Prince of Time Depth Enterprise Heritage Consultants in December 2010. This survey involved the excavation of several large and small pits and trenches on lots 1 and 2 and in the upper ridge on

lots 6 to 13 inclusive. These pits exposed numerous in filled Maori excavations made during their historical occupation of the property. These pits were not backfilled by the archaeologist. After the excavation of the pits their extent was logged by surveys by SL. The soils exposed in the bases of these pits were also recorded. Excavations had been made and terminated in the natural ash derivative subsoils identified in the 2007 investigation boreholes. It is possible, however, that other old excavations may be present with these features not considered to be significant by the archaeologist or not found later during the subdivision earthworks.

5.0 Subsoil Conditions

Boreholes 1, 2 and 4 to 8 inclusive of the 2007 investigation are the most relevant to the 17 lot subdivision.

Boreholes 2 to 8 within proposed lots 2, 4, 10, 13, 15 and the access lot near lots 7 and 12 on the elevated areas of the site, all showed the presence of similar soil types bedded near parallel to the surface topography. The full depths of the various stratigraphy can be seen in the borehole logs for these boreholes.

These soils comprise:

(a) Surface Filling

- found to be present at minor depths on

  lot 17 (borehole 1) to 0.4m
  lot 15 (borehole 2) as deep topsoil to 0.5m
  lot 13 (borehole 5) to 0.9m
  lot 4 (borehole 6) as fill over topsoil to 2.4m
  lot 10 (borehole 8) as deep topsoil to 1.3m

- the filling found in borehole 5 on lot 13 was of high strength and the topsoil cover to the underlying natural ground was absent. The filling found in borehole 6 on lot 4 was also stiff but overlays 1.4m of topsoil

(b) Post Rotoehu and Rotoehu Ashes (Younger ashes)

- extending from 2.6m (borehole 6) to 4.3m (borehole 2) below the existing ground level.
- comprising stiff to very stiff brown or light brown clayey silts overlaying lighter coloured pumiceous silts and silty sands. The base stratum of this sequence is a thin band of light grey sand (Rotoehu ash).
- undrained shear strengths were in the range of 32kPa to more than 200kPa with the lower values being in the pumiceous soils deeper in the ash sequence.
- CPT resistances varied but were generally low at below 2MPa.

These ash sequences were less clearly defined in borehole 1 on lot 17. At this borehole position it is possible that some or all of the younger ash strata has been eroded away on the steeper slopes at some time in the past, possibly at the time

of the slope failure that left the relic slip headscarp identified in the study by Bell and Co (March 2001).

(b) Older Ashes
- present below the Rotoehu ash and of variable thickness ranging from 1.1m (boreholes 5 and 8) to 3.0m (borehole 7).
- comprising dark "chocolate" brown clayey silts being an old surface organic cover (palaesol) overlaying stiff brown-orange cohesive clayey silts with depth.
- of initial high undrained shear strength of more than 200kPa but reducing with depth to less than 100kPa.
- equivalent SPT 'N' values derived from the CPT data show values in excess of 10 initially then reducing with depth.
- CPT resistances reducing with depth from being relatively high at more than 4MPa at the younger-older ash group where soil sensitivity was noted.

(c) Matua Subgroup
- extends to the base of all boreholes with a distinctive soil type change from cohesive properties in the older ashes to pumice or sand derivative soils in the Matua subgroup soils of the Tauranga series.
- comprises predominantly pumiceous soils being stiff light brown silts, lenses of sandy silts and lighter cream or white coloured clayey and sandy silts.
- within deeper boreholes 5, 7 and 8 denser sands were encountered at base of the boreholes. The CPT probes also identified the soils present at the base of boreholes as showing higher insitu depth.
- uncorrected SPT N values were low and variable being in the range of 0 where the soils were logged as sensitive (at about 9m deep) to 20 in the deeper sandy soils.
- CPT resistances were also initially low and variable but increased with depth to refusal at the depths shown on the appended plots.

6.0 Subdivision Earthworks

During the subdivision, earthworks activities took place on lots 3, 5 to 14 and 17. The scope of this work comprised:

On Lots 1 and 2
Old houses on these lots were removed. No subdivision earthworks took place apart from some archaeological investigations.

On Lot 3
The removal of the tarsealed surface and most of the basecourse to the old hospital carpark and natural ground was seen to exist below the basecourse. Additional filling was placed to form a level building platform on lot 3.

On Lots 5 to 8
The finished levels adjacent to the access lot to the south of these lots were determined by the invert level of a trench that was dug by the archaeologist and extended through to lots 6 and 7. A similar pit, mostly in lot 9 but also extending into lot 8, determined the finished ground levels on lot 8.

On Lots 9 and 10
Both of these lots are to be accessed from the right of way up from Thirteenth Avenue. In the subdivision consent application it was indicated that basement garages would be part of the housing development on these lots. The upper levels on those lots were trimmed so that the interfloor rise from the garage level to the upper floor level would take into account a stud height of 2.4m in the garage.

On Lots 11 to 14
The original ground was reduced in cut to be close to the levels on the access lot to the north. To extend the platform further to the south, additional filling was placed over the minor slopes that existed under and around the old hospital.

On Lots 15 to 17
No alterations apart from the removal of an old concrete block retaining wall were made to the original ground levels on the upper northern sections of this lot where a future house would be located. Minor filling has been placed on lot 17 up from the south western boundary to elevate ground levels up to the concrete driveway slab to the west.

During the latter part of the earthworks and on completion, SL undertook subsoil investigations to form the bases for recommendations for building on each lot. The locations of the post construction boreholes are shown on appended drawing 19596-G01. The borelogs are in Appendix 3.

7.0 Recommended Building Sites

7.1 Lot 1
Boreholes 1A and 1B shown on 19596-G01 confirm pre subdivision tests and construction observations that no earthworks were undertaken on Lot 1. The boreholes show that the surface topsoil depths are 800mm at borehole 1A and 700mm at borehole 1B. Very stiff orange-brown ash derivative clayey silts underlay the topsoil.

In the development of this lot by building the topsoil under buildings and paved surfaces such as driveways, handstand areas, footpaths and patios should be removed and be replaced with imported inorganic filling. Under buildings this replacement filling should extend 1m beyond the building footprint. As the replacement filling is likely to be more than 600mm deep, it cannot be considered as good ground in terms of NZS3604 unless it is placed in accordance with NZS4431 which requires professional engineering management.

Where foundations are taken down through the topsoil the underlining soils can be considered as good ground.

7.2 Lot 2

Borehole 2 on lot 2 showed the surface topsoil depth to be 500mm and the topsoil to be underlain by very stiff orange-brown ash derivative clayey silts. The same development recommendations apply to this lot as for lot 1 in that the topsoil should be removed and be replaced with imported inorganic filling that would be compacted to NZS4431 under professional engineering management. The underlying natural ground and the correctly compacted replacement filling can be considered as good ground in terms of NZS3604.

7.3 Lot 3

Filling is present on the lot and overlays gravels that were part of the base to the hospital car park. Boreholes 3A to 3F show that this filling is only 0.3 to 0.5m deep and comprises slightly sandy orange-brown silts that were derived from areas of cut in natural ground elsewhere on the subdivision. The recorded undrained shear strengths achieved by compaction of this filling vary from 88 to 177 kPa and generally below a conventionally accepted value of 150 kPa.

For building on this lot the existing filling will have to be removed from an area that takes in the building footprint and any hardstand or patio areas. This filling may be conditioned and be recompacted back into place under professional engineering management or be replaced with imported inorganic soils. The managing engineer would advise the suitability of the replacement filling and take appropriate tests to advise that the filled ground would be good ground or advise foundation design parameters as appropriate.

A sewer easement defines the limit for building in a northerly direction.

7.4 Lot 4

Boreholes 4A and 4B were put down on this lot.

Borehole 4A showed the presence of 500mm of topsoil over 0.3m of well compacted inorganic ash derivative filling that pre existed the subdivision development. Hard natural ash soils are present below the filling. In this area conventional building development will require the removal and replacement of the surface topsoil and underlying filling down to the natural ash soils.

Borehole 4B was located to the north east of borehole 4A and was between two large trees. This borehole was put down to 3.0m and showed that the area around the borehole had been filled on at least three occasions Four discrete topsoil layers were encountered. Recorded shear strengths in the ash derivative filling between the topsoil layers varied from being in excess of 200 kPa to as low as 50 kPa. The filling deepens from the location of borehole 4A and building development from borehole position 4A to borehole position 4B will require the removal of this unsuitable filling that is present. Replacement filling would take place under professional engineering management.

Alternatively a house may be supported on piles that would be set below the surface filling. The designer of such a system should undertake additional tests to determine

whether the founding soil depths and strengths vary from the data obtained from the boreholes.

Currently there are three trees located on lot 4 which are in the Operative District Plan Notable Tree and Landscape Tree Register. Future works under the driplines of these trees may require a landuse consent to be obtained.

7.5 Lot 5

Earthworks were undertaken on this lot to extend the near flat platform on original ground adjacent to the access lot, in a northerly direction. An excavation was cut in an east-west direction across the top of the sloping ground to the north which was up to 2.6m deep. All past pre-subdivision filling was removed in the excavation down to brown clayey silts being the natural ground. The excavation was then filled with pumiceous sand.

Compaction was monitored with a Scala penetrometer with 4 or more blows per 100mm of penetration being achieved. The excavation position defines the limit to which good ground extends in a northerly direction on lot 5.

Test results in the sand filling in the trench are tabulated in appendix 3.

A building restriction line is imposed on lot 5 which corresponds to a position 1.5m inside the southern side of the excavation so that any foundations constructed up to the restriction line would be confined laterally by the tested filling within the trench.

This building restriction line is shown on appended drawing 19596-G02 and also on DP 444481.

It is possible to build beyond the building restriction line but this would involve the removal and replacement of the unsuitable filling that is present beyond the trench line. The depths of sub excavation could be of the order 3m. Such improvement work would be undertaken under professional engineering management.

Borehole 5A shows the type of poor quality filling present beyond the building restriction line and in the natural ground on the recommended building platform respectively.

7.6 Lots 6 and 7

Earthworks were undertaken on these lots to extend the near flat platform on original ground adjacent to the access lot, in a northerly direction. The retaining walls near the northern boundaries on these lots had been backfilled with site materials gained from excavations to remove the old hospital foundations. This filling was not suitable for the direct support of future building foundations on lots 6 and 7. A trench was cut as a demarcation line between the area of good ground to the south and the retaining wall fill to the north. The trench was 2m wide and up to 2.0m deep and was cut down to brown clayey silts being the natural ground.

The trench was then filled with pumiceous sand. Compaction was monitored with a Scala penetrometer with 4 or more blows per 100mm of penetration being achieved. Some minor areas of unsuitable soils were not removed where they are present in the southern wall of the trench and extended towards the access lot. They will need to be removed if building is to take place in this area.

The trench position defines the limit to which good ground extends in a northerly direction on lots 6 and 7. A building restriction line is imposed on these lots which correspond to the southern side of the trench so that any foundations constructed up to the restriction line would be confined laterally by the tested filling within the trench. This building restruction line is shown on appended drawing 19596-G02 and also DP 444481.

It is possible to build beyond the building restruction line but this would involve the removal and replacement of the unsuitable filling that is present beyond the trench line. The depths of subexcavation could be of the order of 3m. Such improvement work would be undertaken under professional engineering management.

Boreholes 6C, 6E, 6F and 6G on lot 6 and boreholes 7D and 7E on lot 7 identify the subsoils present on the recommended sites on lots 6 and 7 as being of sufficient strength to be considered as be "good ground" subject to the improvement of small areas of past unsuitable fill material along the southern side of the sand filled trench.

Boreholes 6A and 7A indicate the poor quality filling that is present beyond the sand filled trench and out to the retaining wall.

7.7 Lot 8

The sand filled trench described to pass through lots 5,6 and 7 in sections 7.5 and 7.6 above, extended into lot 8 by 10m from the western boundary of lot 8. As for lots 5,6 and 7, this trench defines the limit for building on good ground north of the access lot and back from the retaining wall filling near the northern boundary.

Elevated areas on lot 8 east of the end of the sand filled trench contain past presubdivision filling that is identified in boreholes 8C and 8D. The poor quality filling that has been placed behind the retaining wall is described in borehole 8A.

A building restruction line is imposed on lot 8 that follows the sand filled trench and extends eastwards to the eastern boundary. Within the area recommended for building south of this line ground improvement work will be required if future buildings are to be located on the previously filled ground indentified in boreholes 8C and 8D. Ground improvement work would involve the removal of this filling to a depth below the former surface topsoil layer as shown on the borehole logs and the conditioning and recompaction back into place of the fill material under professional engineering management. The engineer would first undertake additional site tests to determine the extend of the ground improvement work as it only needs to be undertaken to a distance of 1m beyond any building footprint in the area of boreholes 8C and 8D.

Boreholes 8E and 8F on lot 8 identify the subsoils on the remainder of the building site to be of sufficient strength to be considered as "good ground".

7.8 Lots 9 and 10

As identified in boreholes 9A, 9B, 9C and 9D on lot 9 and 10A, 10C and 10D on lot 10 presubdivision filling exists on both lots and overlays the original surface topsoil. The filling present is generally of low shear strength and is unsuitable for the direct support of building foundations.

Borehole 10B shows that subdivision filling is 0.5m deep over natural ground and has been well compacted.

Lots 9 and 10 have been developed so that two storey houses would be constructed with the lower storey being a garage area at the level of the access right of way from Thirteenth Avenue. To construct such structures would largely remove the presubdivision filling that exists on these lots and especially the batters that descend from the upper levels to the west down to the access way.

Specific design of the basement structures will be required and the earthworks associated with excavations for the basements should also take in areas of the building at the upper levels where the presubdivision filling is present. The preconstruction site investigations and the management of replacement filling should be undertaken by a geotechnical consultant prequalified with the Tauranga City Council as category 2 in terms of the Infrastructure Code. The engineer would also provide parameters for or undertake the design of the building foundations on lots 9 and 10.

7.9 Lots 11, 12 and 13

Earthworks were undertaken on these lots to extend a near flat platform southwards from the access lot until the crests of the original south facing slopes were encountered. Nominally compacted filling was then placed over these slopes to extend the original slopes down to the southern boundaries of each lot.

Boreholes 11B, 11C, 11D, 11E and 11F were put down on lot 11, 12A, 12B and 12C on lot 12 and 13A, 13B, 13C and 13D on lot 13.

On lot 11, boreholes 11C and 11D identified filling that is 0.9m deep at 11C and more than 1.0m deep at 11D. A building restruction line is shown on 19596-G02 and DP 444481 which defines the limit to which buildings may extend from the access lot with a minimum of ground improvement being required. It is possible to build beyond the building restriction line provided that ground improvement work is undertaken that would involve the removal and replacement of the unsuitable filling that is present. Borehole 11F indicated that the depth of unsuitable soils to be improved would be 1.2m with the underlying natural ground being very stiff orange-brown clayey silts. Such improvement work would be undertaken under professional engineering management.

Alternatively a house may be supported on piles that would be set below the surface filling. The designer of such a system should undertake additional tests to determine

whether the founding soil depths and strengths vary from the data obtained from borehole 11F.

On lots 12 and 13, the boreholes define the limit for building from the access lot. Good ground is present at borehole positions 12C and 13A and 13C but unsuitable filling is present at borehole positions 12A, 13B and 13D. A building restruction line is shown on 19596-G02 and DP 444481 which defines the limit to which buildings may extend from the access lot. Ground improvement work would be required south of the building restriction line in the manner described for Lot 11 and under professional engineering management.

7.10 Lot 14

Boreholes 14A and 14B show that natural ground, undisturbed by the subdivision construction, exists on lot 14. Good ground is present at both borehole positions and topsoil depths are not greater than 200mm.

No building restrictions or the need to ground improvement work are required to lot 14.

7.11 Lots 15 and 16

This lot comprises an elevated section to the north that was in the hospital grounds and a descending southern section that was part of the rear yard of the property at 41 Fourteenth Avenue.

Boreholes 15B and 16B were located at the base of a batter that was retained by an old masonry retaining wall which has been broken up and taken from the site. The boreholes show the presence of 200 to 400mm of topsoil overlaying 300 to 400mm of disturbed ash derivative soils possibly from garden cultivations. Stiff natural ground exists below 0.8m.

Borehole 15A was located down slope and showed the presence of 660mm of topsoil overlaying natural ground, while at borehole 16A, topsoil and disturbed ground was 500mm deep.

Building on these lots is likely to involve additional earthworks to form level building platforms. During these earthworks additional investigations should be undertaken to determine the extent of any surface disturbed ground and whether any ground improvement work is required. The borehole data indicates that good ground is present in the natural soils under the surface topsoil and disturbed ground.

7.12 Lot 17

This lot comprises an elevated section that was in the hospital grounds and sloping ground to the south that was in the rear yard of 37 Fourteenth Avenue.

Borehole 17B was located at the base of the old retaining wall that was removed because it had become structurally unsound. Disturbed ground underlays the surface topsoil to a depth of 0.6m. Borehole 17A in the centre of the lot showed similar disturbed ground under the topsoil.

As for lots 16 and 17, building is likely on lot 17 to be on a prepared level platform. During the earthworks to form this platform additional investigations should be undertaken to determine the extent of any unsuitable disturbed or previously filled ground. The borehole data indicates that good ground is present in the natural soils under the surface topsoil and previously disturbed ground.

Borehole 17C shows the extent of loose filling that was placed during the subdivision Earthworks to elevate ground levels to control surface water runoff. This filling should be replaced if future building is to be undertaken in the vicinity of borehole 17C.

8.0 Stormwater Disposal

The disposal of stormwater runoff from the former hospital complex took place to soakholes and several of these soakholes were encountered during the site earthworks for the subdivision.

For the subdivision, stormwater disposal will be

a) On lots 1 to 3 and the southern access lot

By drilled soakholes down to the Hamilton (older) ashes. Presubdivision boreholes 4 and 6 on on lots 2 and 4 showed the depth to the Hamilton ash to be up to 3.7m and the permeable pumiceous sands that usually overlay the Hamilton ash to be present and be 1.1m thick in borehole 4. To show that the soils are permeable down to the Hamilton ashes a 400mm diameter drilled hole was put down to 3.7m adjacent to the catchpit in the access lot and close to borehole 4. A falling head soakage test was undertaken using a watercart to initially fill the borehole to the ground surface. When the hole had fully drained the tests of falling head against time were done twice, each over a period of 25 minutes. In this time the holes emptied to depth of 3.2m in 10 minutes and then the water level remained static until the hole was refilled. It is likely that the impermeable Hamilton ashes were present at about 3.2m. This test soakhole indicated that very good soakage is available in the ash soils that are present on lots 1 to 3.

For these lots 600mm diameter drilled soakholes would service 60m2 of roof or hardstand area. The drilled holes would be lined with precast concrete porous soak rings and be fitted with a removable lid. The soakholes will be located so that they are accessible for maintenance and would not be located under sealed or concreted surfaces. The drainlayer would check to see that the holes are drilled down to the Hamilton ash (hard clay) layer.

Overland flow paths from these lots will be present to Grace Road.

b) On lots 4 to 14

Because of the proximity of steeper ground to the north or south of these lots the disposal of stormwater by ground soakage is not recommended. For a development on these lots that would create 200m2 of roof or hardstand area, discharge would take place to a storage tank on each lot. A slow release orifice would be designed to discharge at a maximum rate of not more than 1.5 litres per second for the 10% AEP 10 minute duration storm. From these lots

reticulation has been installed to the Council system in Thirteenth Avenue. Any overland flows from these lots will follow the ground contours towards Thirteenth Avenue.

The design of the storage tank and orifice plate would be approved by the Council at building consent stage.

Lots 9 and 10 contain an overland flow path that takes excess surface water from the accessway that serves 4 to 8 and 11 to 14. This overland flowpath is identified as areas J, G and D on DP 444481. The future development of lots 9 and 10 is to be undertaken in such a way that the overland flow path is to be maintained free of obstructions and that it drains in the direction of Thirteenth Avenue.

A consent notice is recommended for each of lots 4 to 14 inclusive to state the recommendations listed above.

c) On Lots 15 to 17

Roof and hardstand areas are to discharge to the reticulation in Fourteenth Avenue for the 10% AEP 10 minute duration storm. Overland flows are to be directed via the concrete driveway to Fourteenth Avenue. It is inevitable that some runoff will continue to adjoining properties but these runoff rates will be less than that which occurred previously when these lots were part of the rear yards of the properties at 37 and 41 Fourteenth Avenue.

9.0 Opinions

A statement of Professional Opinion in the format of Form G2 of the Code of Practice for Development is provided in Appendix 2. A "lot summary report" in the format of Form G2A is also in Appendix 2.

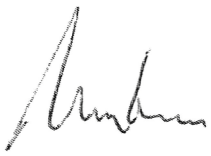
10.0 Applicability

Recommendations contained in this report are based on data from boreholes and observations of soil exposures and test results. Inferences about the nature and continuity of subsoils away from these locations are made but cannot be guaranteed.

In all circumstances, if variations in the subsoils occur which differ from those described or are assumed to exist, the site should be inspected by an engineer or geologist who has prequalified at least category 2 with the Tauranga City Council. An informed judgement will be required which may determine that ground improvement measures are required.

This report has been prepared specifically for the Norfolk Grace residential development at 62 Grace Road, Tauranga as shown on DP 444481 and no responsibility is accepted by S & L Consultants Ltd for the use of this report for other development sites without their written approval.

S & L Consultants Ltd
Engineers, Surveyors, Planners



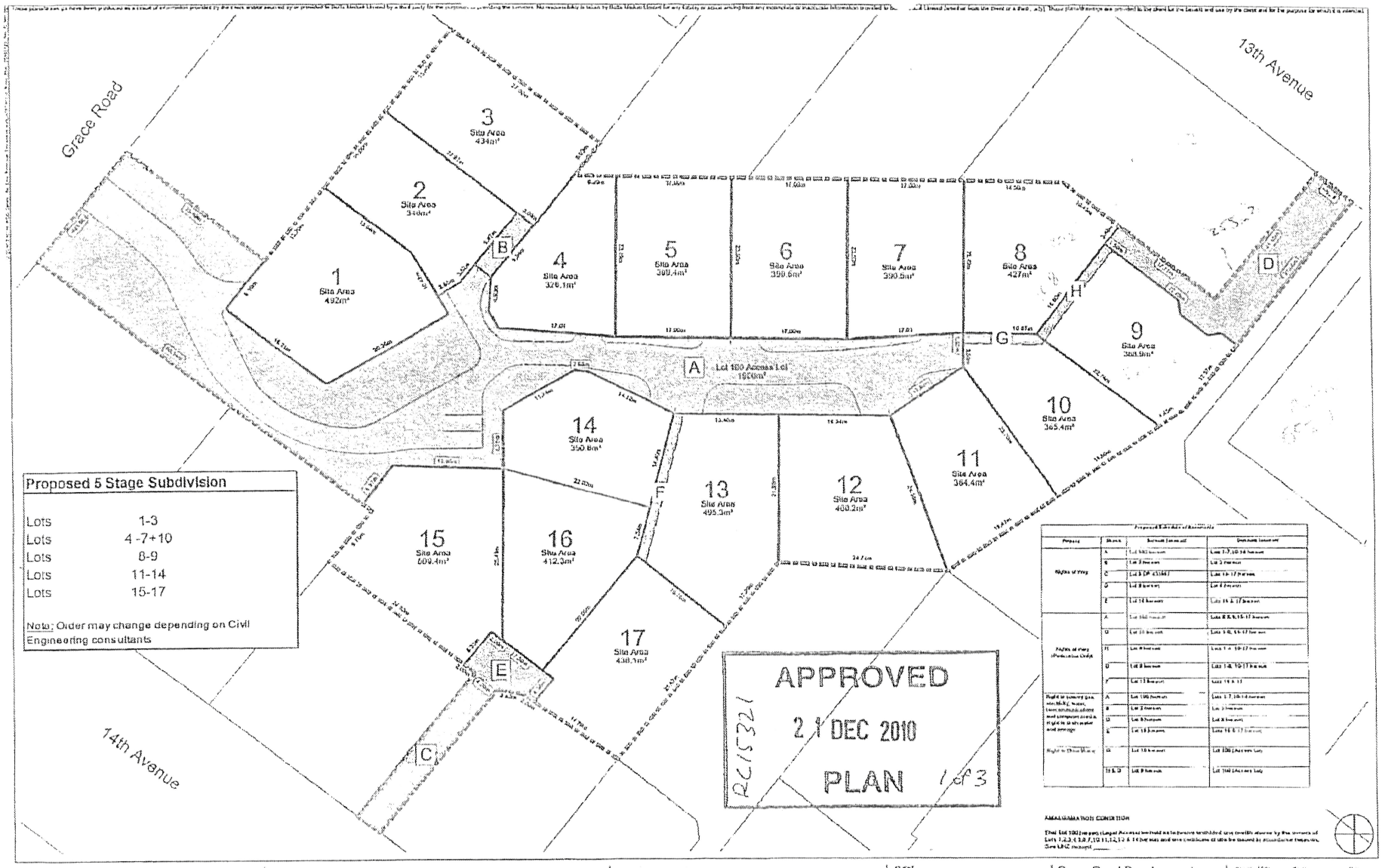
Prepared by M W Hughes CPEng MIPENZ **5 September 2011**

Prequalified Category 1 Geotechnical Professional
with Tauranga City Council

APPENDIX 1

Drawings

Subdivision Plan T 10114-02 by Boffa Miskell	
Geotechnical Plan	19596-03
Post Construction Borehole Locations	19596-G01
Building Restriction Lines and Areas Requiring Ground Improvement	19596-G02
DP 444481	



Purpose	Shown	Servient tenement (lot)	Benefited tenement
Rights of way	A	Lot 100 hereon	Lots 1-7, 10-14 hereon
	B	Lot 2 hereon	Lot 2 hereon
	C	Lot 3 DP 453647	Lots 15-17 hereon
	D	Lot 8 hereon	Lot 4 hereon
	E	Lot 13 hereon	Lots 15 & 17 hereon
Rights of way (Pedestrian Only)	A	Lot 100 hereon	Lots 8, 9, 15-17 hereon
	G	Lot 10 hereon	Lots 1-6, 15-17 hereon
	H	Lot 9 hereon	Lots 1-4, 10-17 hereon
	D	Lot 8 hereon	Lots 1-6, 10-17 hereon
	E	Lot 13 hereon	Lots 15 & 17
Right to convey gas, electricity, water, telecommunications and transpower cables & right to drain water and sewage	A	Lot 100 hereon	Lots 1-7, 10-14 hereon
	B	Lot 2 hereon	Lot 2 hereon
	D	Lot 8 hereon	Lot 8 hereon
	E	Lot 13 hereon	Lots 15 & 17 hereon
Right to Drain Water	G	Lot 10 hereon	Lot 100 (Access Lot)
	15 & 17	Lot 9 hereon	Lot 100 (Access Lot)

AMALGAMATION CONDITION

That Lot 100 (Access) Legal Access be held as to passive tenth (share) one (tenth) share by the owners of Lots 1,2,3,4,5,6,7,10,11,12,13 & 14 (or their successors as title is issued by Accolade Properties Limited) as tenants in common in the proportions of 1/10th each and that a certificate of title be issued by Accolade Properties Limited pursuant to Section 241(2)(a) of the Act (Section 226 of the Act 1952) for an estate in fee simple.

Boffa Miskell

Boffa Miskell Limited
Level 2, 116 On Cameron
PO Box 13 373, Tauranga 3141
Tel 64-07-571-5511 Fax 64-07-571-5333
www.boffamiskell.co.nz

NOTES

CONTRACTORS TO VERIFY ALL DIMENSIONS ON SITE PRIOR TO COMMENCING WORK.

CONTRACTORS ARE RESPONSIBLE FOR CONFIRMING THE LOCATION OF ALL UNDERGROUND SERVICES ON SITE PRIOR TO COMMENCING WORK.

FIGURED DIMENSIONS TO BE TAKEN IN PREFERENCE TO SCALED DIMENSIONS.

KEY

REV	DATE	DESCRIPTION
A	-	-
B	-	-
C	-	-
D	03.11.2010	Access Lot area increased, Easements E & F removed
E	04.11.2010	Street proposed & shown subdivision progression
F	23.11.2010	Water and Utility
G	23.11.2010	Include private laterals

Consent Management LP

FOR INFORMATION

Grace Road Development

SCHEME PLAN

Drawn	MHo	Scale	Date
Check	TEA	1:250 @ A1	23.11.2010
Apvd	PMCH	1:500 @ A3	

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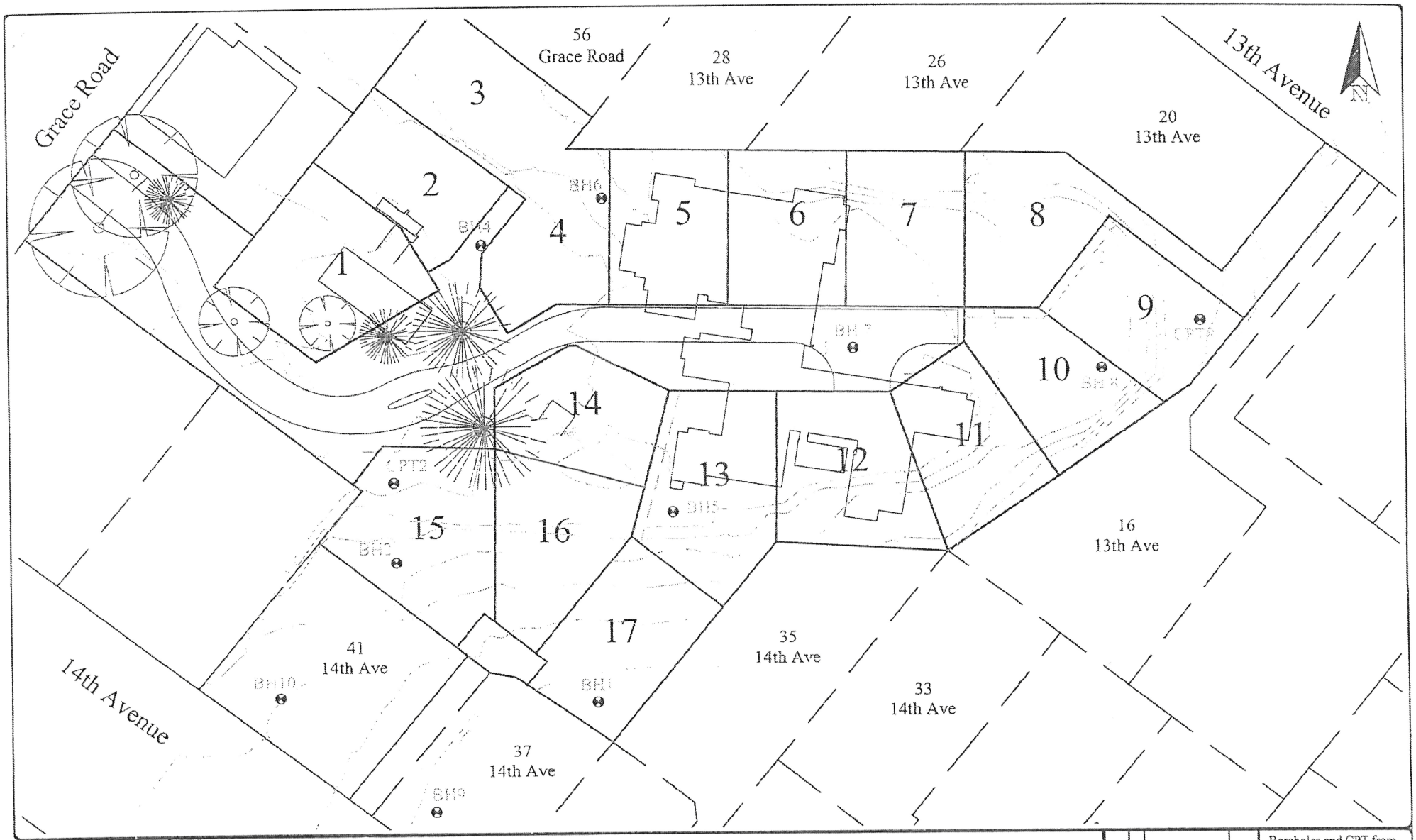
Drawing No. T10114_01

Revision G



S & L CONSULTANTS LTD
SURVEYORS - ENGINEERS
PLANNERS
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New Zealand
P.O. Box 231 Ph.(07)577-6069
Fax(07)577-6065
Email: slconsultants@slnz.co.nz

TITLE

Proposed Residential Subdivision
62 Grace Road, Tauranga
Geotechnical Plan

REV NO	REV	DESCRIPTION	DATE
	0	Issued with Report	10/10

	NAME	DATE	SIGNED
Surveyed			
Designed			
Drawn	NP	10/10	
Checked			
Approved	MWH	10/10	

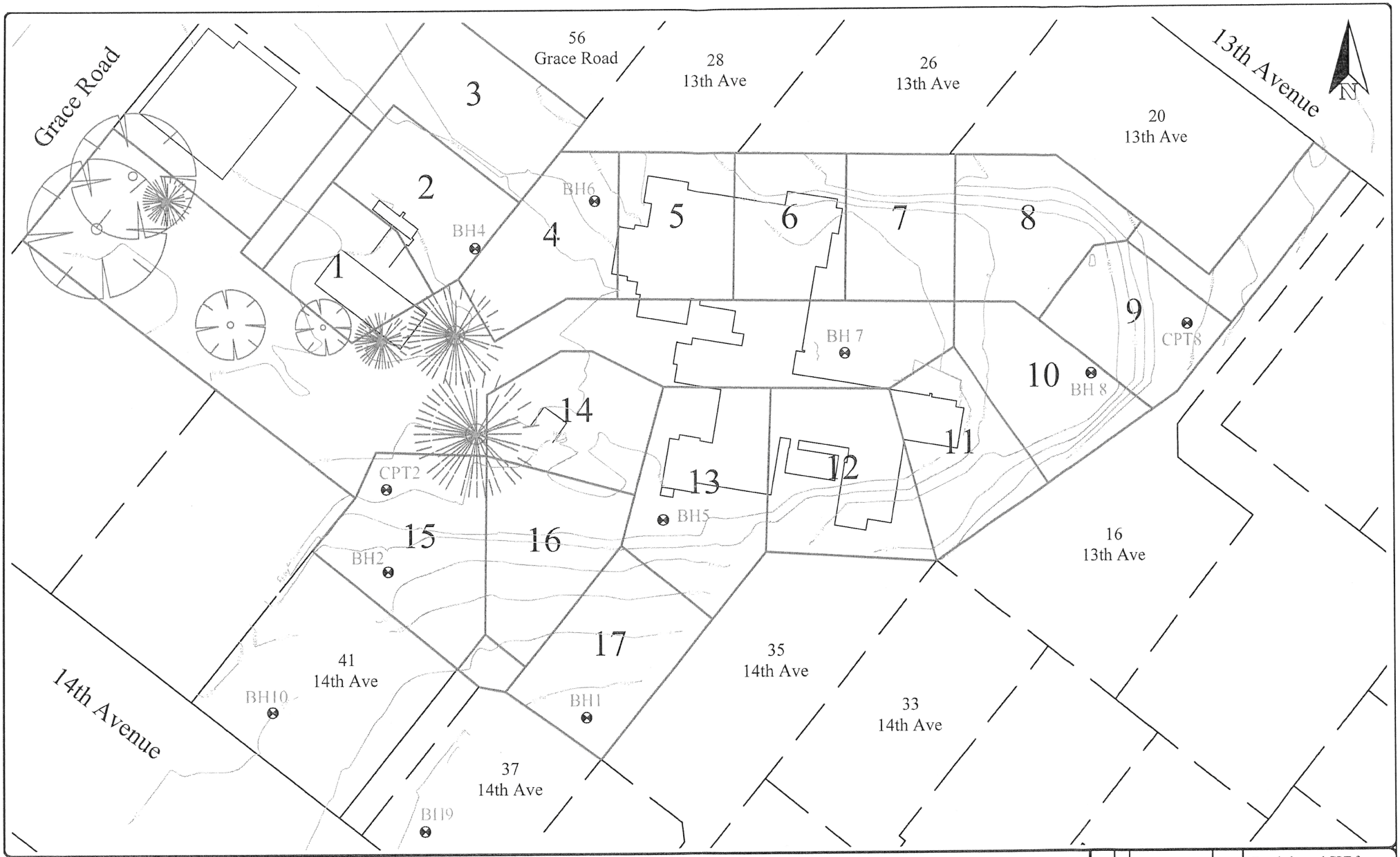
Boreholes and CPT from 2007 investigation

ORIGINAL SCALE: 1:500 @ A3

DATE: 10/10

DRAWING No: 19596 - 03

REV NO: 0



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TITLE

Proposed Residential Subdivision
62 Grace Road, Tauranga
Geotechnical Plan

CKD BY	REV No	DESCRIPTION	DATE
	0	Issued with Report	10/10

	NAME	DATE	SIGNED
Surveyed			
Designed			
Drawn	NP	10/10	
Checked			
Approved	MWH	10/10	

REFERENCES

Boreholes and CPT from 2007 investigation

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ORIGINAL SCALES: 1:500 @ A3

DATE: 10/10

DRAWING No: 19596 - 03

REVISION: 0

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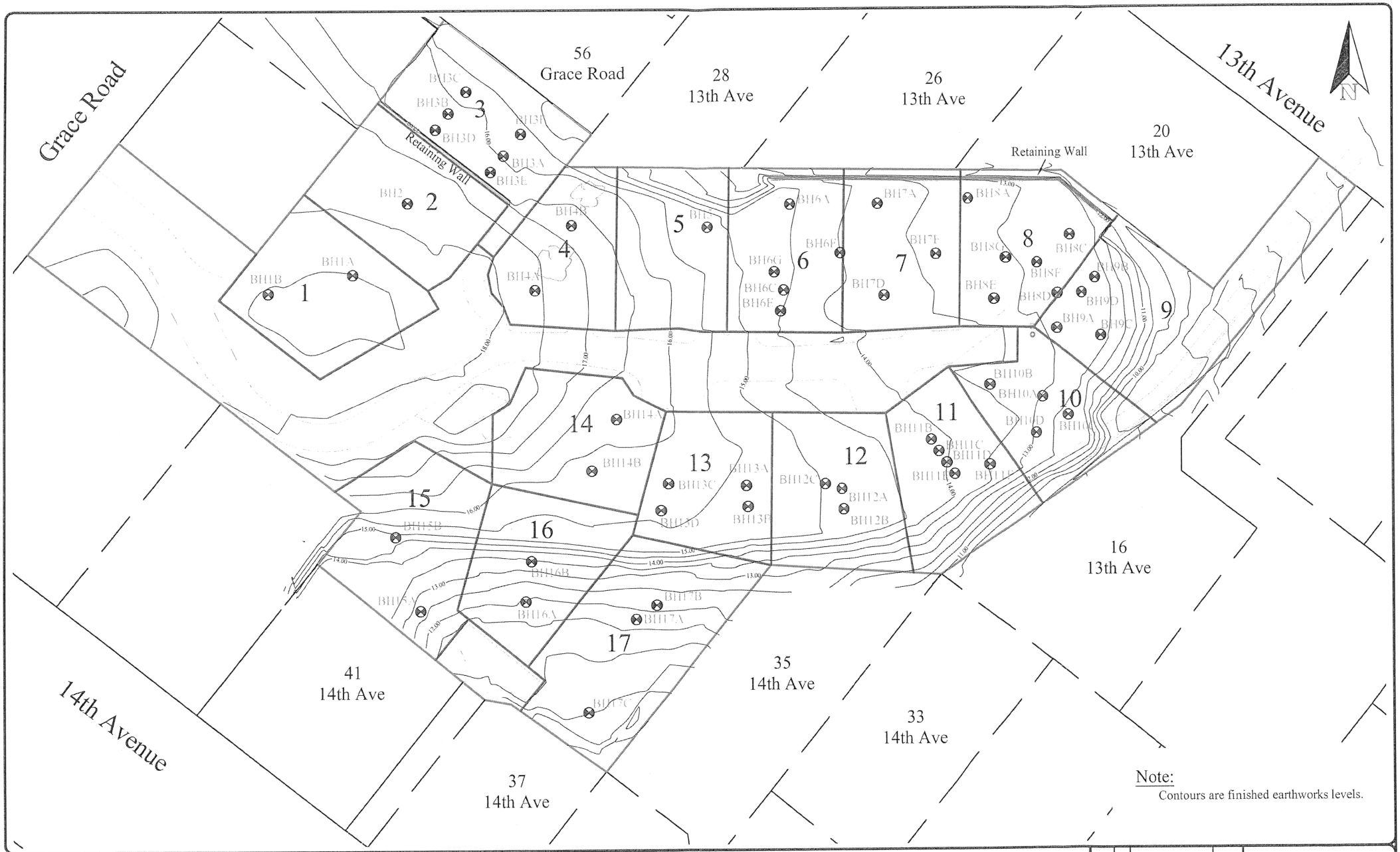

Note:
Contours are finished earthworks levels.

Borehole

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TITLE

Norfolk Grace Subdivision
62 Grace Road, Tauranga
Post Construction Borehole Locations

CKD BY	REV No	DESCRIPTION	DATE
	0	Issued with Report	07/11

	NAME	DATE	SIGNED
Surveyed			
Designed			
Drawn	TM	06/11	
Checked			
Approved			

REFERENCES

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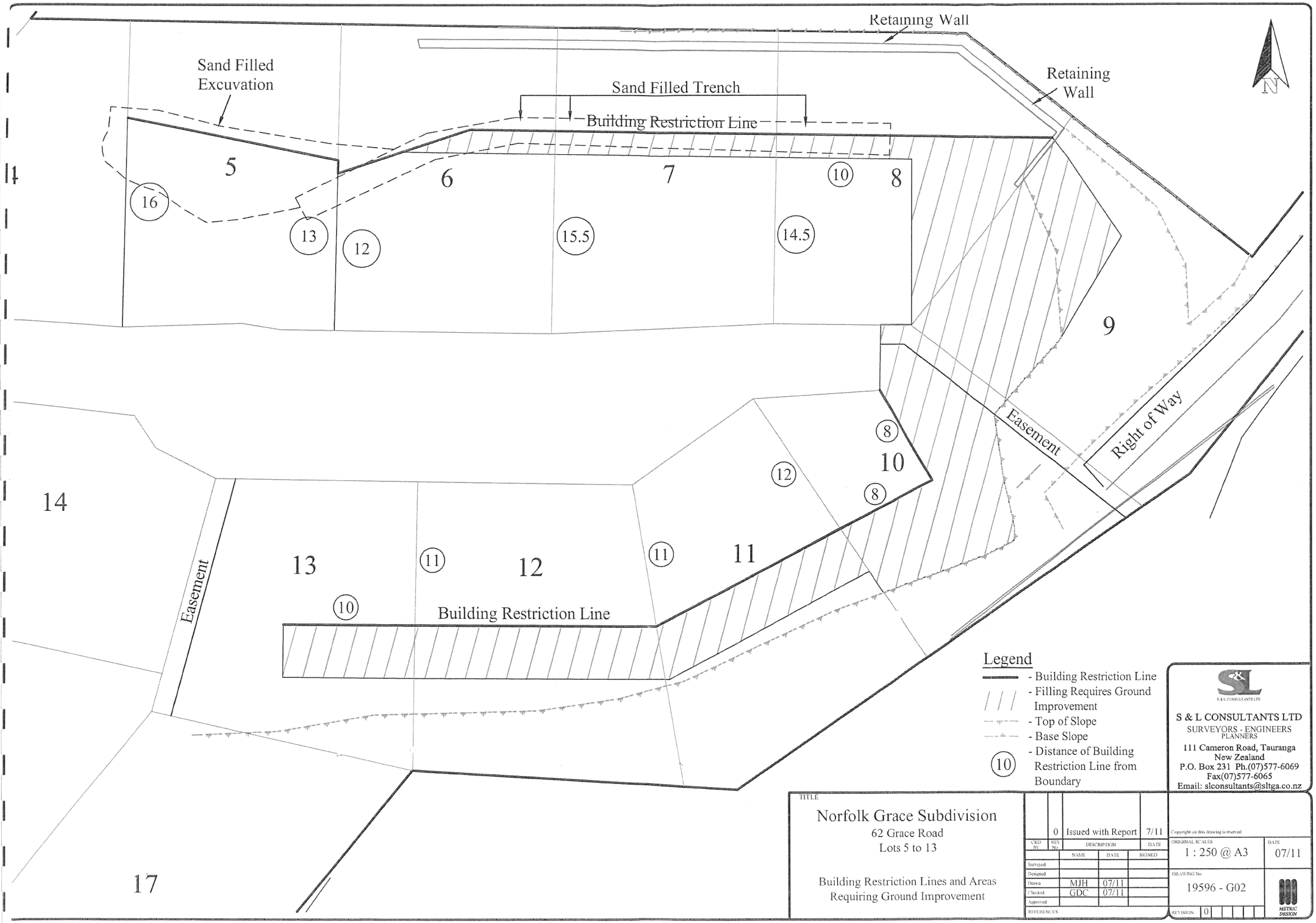
DATE: 06/11
DRAWING No: 19596 - G01
REVISION: 0
METRIC DESIGN



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TITLE

Norfolk Grace Subdivision

62 Grace Road
Lots 5 to 13

Building Restriction Lines and Areas Requiring Ground Improvement

CKD BY	REV No.	DESCRIPTION	DATE
	0	Issued with Report	7/11

	NAME	DATE	SIGNED
Surveyed			
Designed			
Drawn	MJH	07/11	
Checked	GDC	07/11	
Approved			

REFERENCES

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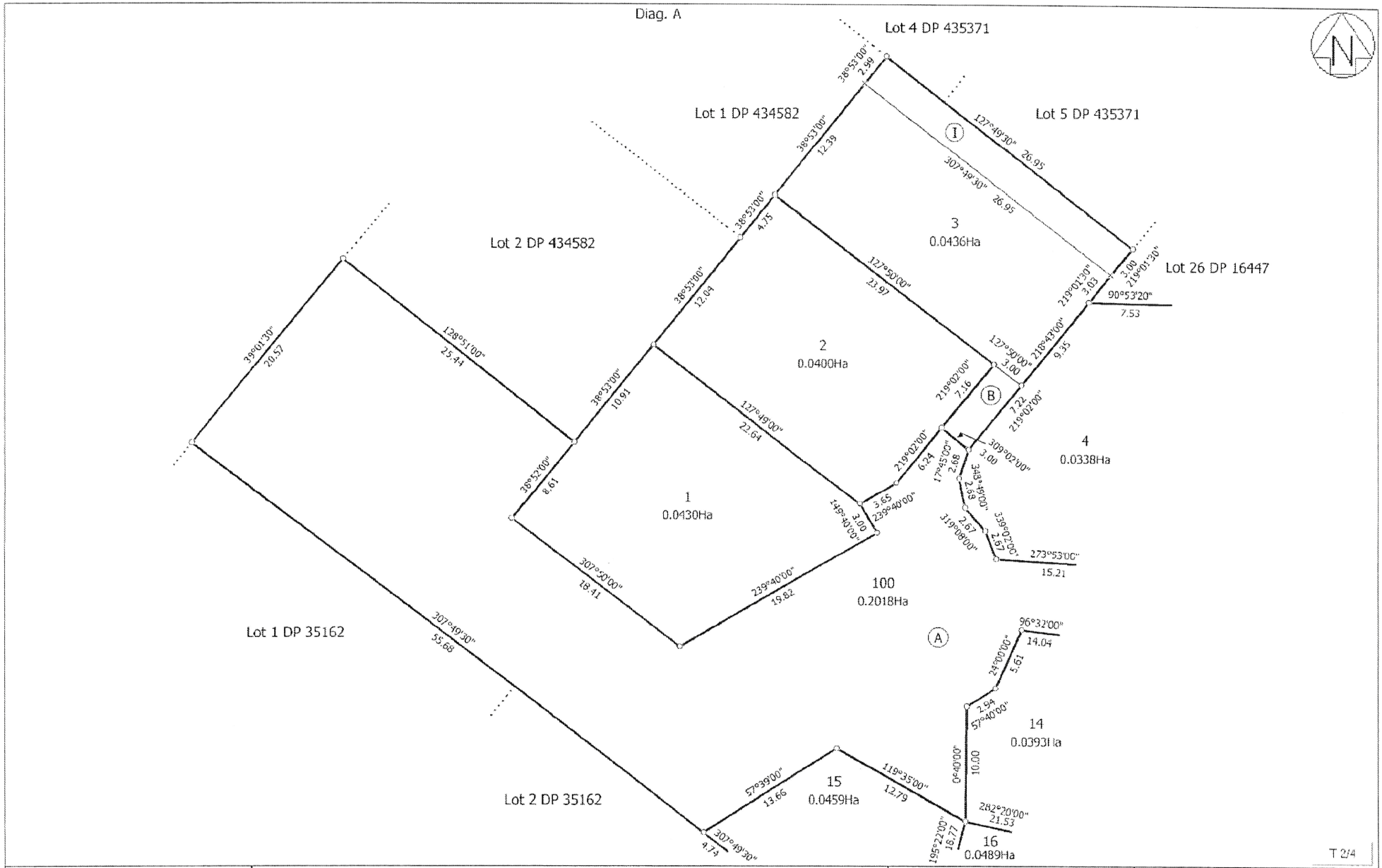
ORIGINAL SCALES: 1 : 250 @ A3
DATE: 07/11
DRAWING No: 19596 - G02
REVISION: 0
METRIC DESIGN

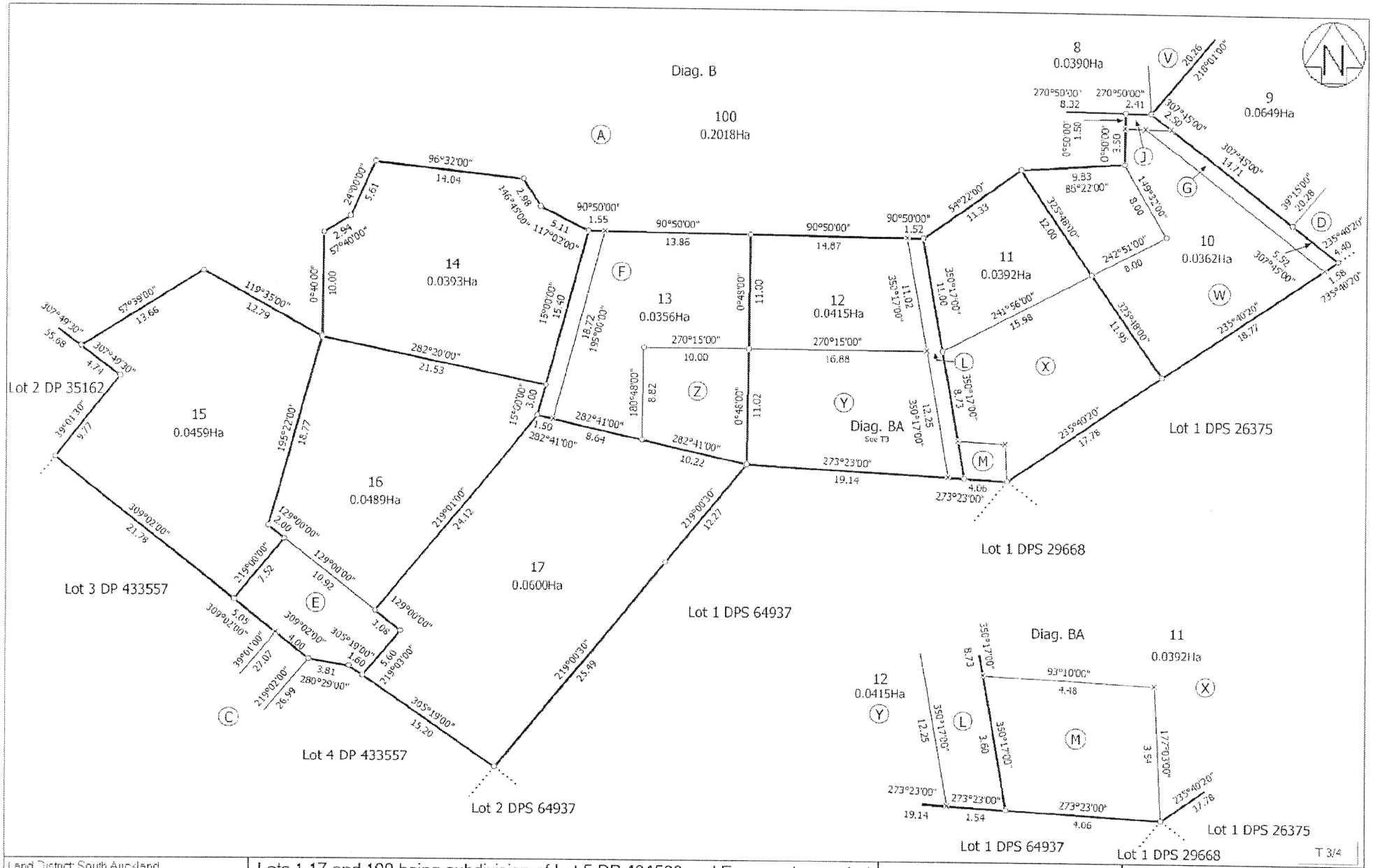


T 1/4

Land District: South Auckland Digitally Generated Plan Generated on: 27/07/2011 10:31 am Page 5 of 8	Lots 1-17 and 100 being subdivision of Lot 5 DP 434582 and Easements over Lot 1 DP 434582 and Lot 3 DP 433557	Surveyor: Cameron Alastair Martin Firm: S & L Consultants Ltd	Title Plan LT 444481 DRAFT

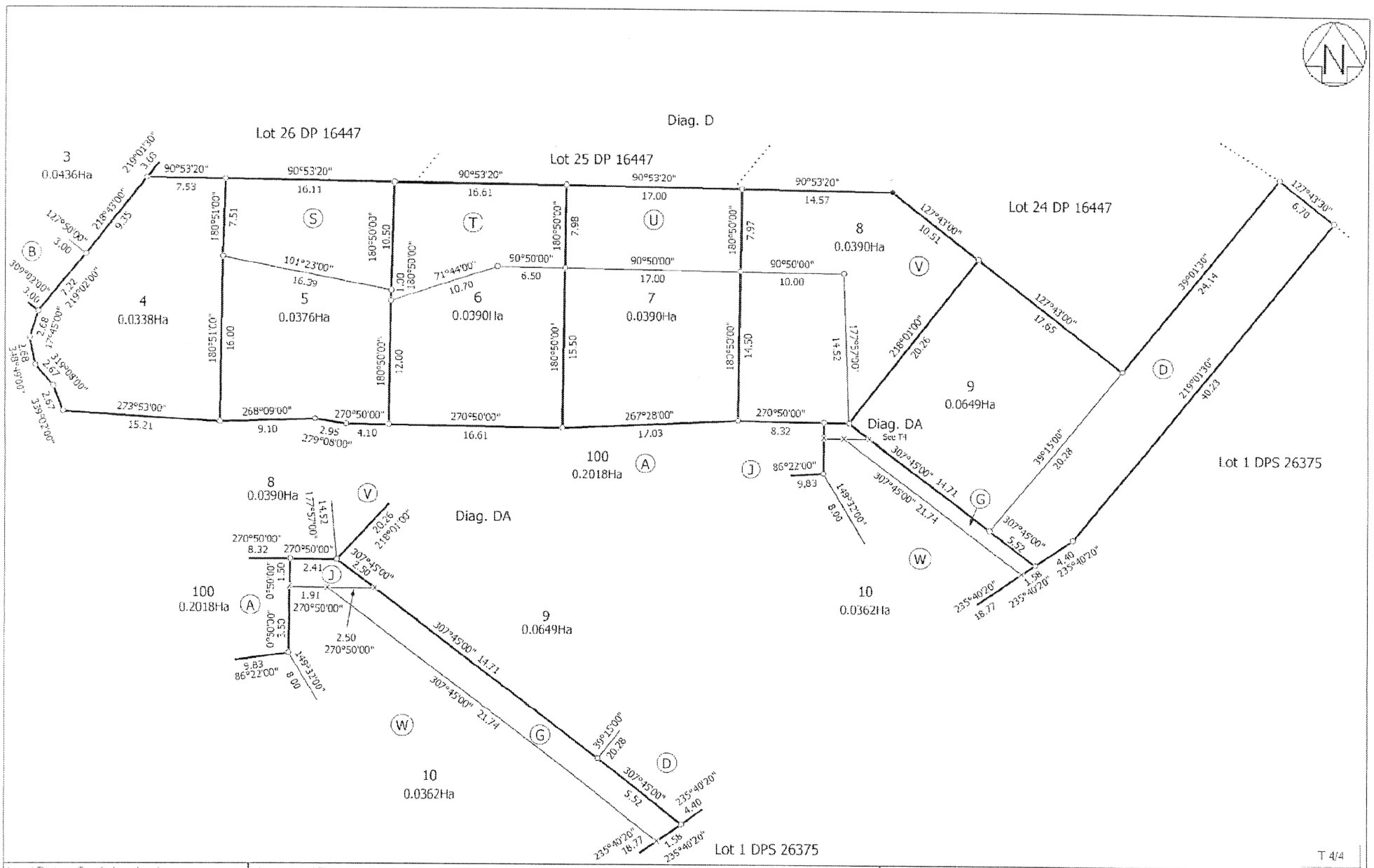


Land District: South Auckland Digitally Generated Plan Generated on: 27/07/2011 10:31 am Page 6 of 8	Lots 1-17 and 100 being subdivision of Lot 5 DP 434582 and Easements over Lot 1 DP 434582 and Lot 3 DP 433557	Surveyor: Cameron Alastair Martin Firm: S & L Consultants Ltd	Title Plan LT 444481 DRAFT



Land District: South Auckland Digitally Generated Plan Generated on: 27/07/2011 10:31am Page 7 of 8	Lots 1-17 and 100 being subdivision of Lot 5 DP 434582 and Easements over Lot 1 DP 434582 and Lot 3 DP 433557	Surveyor: Cameron Alastair Martin Firm: S & L Consultants Ltd	Title Plan LT 444481 DRAFT

T 3/4



Land District: South Auckland Digitally Generated Plan Generated on: 27/07/2011 10:21am Page 8 of 8	Lots 1-17 and 100 being subdivision of Lot 5 DP 434582 and Easements over Lot 1 DP 434582 and Lot 3 DP 433557	Surveyor: Cameron Alastair Martin Firm: S & L Consultants Ltd	Title Plan LT 444481 DRAFT

T 4/4

APPENDIX 2

Statement of Professional Opinion (G2)

Lot Summary Report (G2A)

SECTION 3

To: The Manager: City Development

STATEMENT OF PROFESSIONAL OPINION AS TO THE GEOTECHNICAL SUITABILITY OF LAND FOR BUILDING

DEVELOPMENT: Norfolk Grace Residential Subdivision

OWNER: Grace Road Trust

LOCATION: 62 Grace Road, Tauranga

I Michael William Hughes (Full Name) of S & L Consultants Ltd

PO Box 231, Tauranga (Name and Address of Firm)

Hereby confirm that;

1) I am a professional person appropriately qualified with experience in geotechnical engineering to ascertain the suitability of the land for building development and was retained as the Soils Engineer to the above development.

2) An appropriate level of site investigation and construction supervision has been carried out under my direction and is described in my development evaluation dated 5 September 2011

3) In my professional opinion, not to be construed as a guarantee, I consider that;

(a) The areas referred to in my report dated 5 September 2011 of each new allotment are suitable for the erection thereon of the building types appropriate to the zoning of the land, provided that;

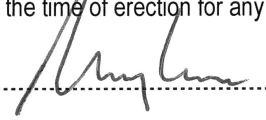
Building restrictions are observed on some lots unless ground improvement work is undertaken under professional engineering management.

Ground improvement work is undertaken on some lots in areas described in the report where pre subdivision disturbed ground or filling is present. Such improvement work is to be undertaken under professional engineering management.

(b) The earth fills referred to in the report that were placed during the subdivision construction on some of the lots have been placed in accordance with the Code of Practice for Development of the Tauranga City Council. These fills have been identified as being suitable for the support of the proposed residential building in terms of NZS 3604.

(c) The completed works will give due regard to all land slope and foundation stability considerations provided that ground improvement work is undertaken where excessive topsoil depths may be present or where presubdivision disturbed ground is encountered.

4) This professional opinion is furnished to the Council and the owner for their purposes alone, on the express condition that it will not be relied upon by any other person and does not remove the necessity for the normal inspection of foundation conditions at the time of erection for any dwelling.

Signed  Date 5 September 2011

Tauranga City

SUITABILITY OF LAND FOR BUILDING DEVELOPMENT

TAURANGA CITY COUNCIL

Jan 07

G 2 Δ

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Lot Summary Report
Norfolk Grace Residential Subdivision at 62 Grace Road, Tauranga

The comments and notations included on this summary sheet are outlined in the support documents.
These shall be read in conjunction with this summary.

TCC ref RC15321

File Ref: 19596

Lot#	Area(m^2)	Subsurface Data					Foundations		Building line restriction?	Recommendations/restrictions
		Subdivision Filling		Natural topography unworked	Natural topography earthworked in cut		Conventional shallow Foundations to NZS 3604:1999	Specific Design		
		Y/N	Depth (m)	Y/N	Y/N	Depth(m)	Y/N/NA	Y/N/NA	Y/N	
1	430	N	N	Y	Y	ME	Y	N	N	Check topsoil depths
2	400	N	N	Y	Y	ME	Y	N	N	Check topsoil depths
3	436	Y	up to 0.5m	N	N	ME	Y	N	N	Ground improvement work required
4	338	N	N	Y	N			Y	N	Ground improvement work required
5	376	Y	up to2.6m	N	Y	1.0	Y	N	Y	Ground improvement work required
6	390	Y	up to2.0m.	N	Y	1.0	Y	N	Y	Ground improvement work required
7	390	Y	up to 2.0m	N	Y	1.0	Y	N	Y	Ground improvement work required
8	390	Y	up to 2.0m	N	Y	1.0	Y	N	Y	Ground improvement work required
9	649	N*		N	N		N	Y	N	Unsuitable predevelopment filling present
10	362	N*		N	N		N	Y	N	Unsuitable predevelopment filling present
11	392	Y*	up to 1.2m	N	Y	1.0	Y	N	Y	
12	415	Y*	up to 2.0m	N	Y	1.0	Y	N	Y	
13	356	Y*	up to 2.0m	N	Y	1.0	Y	N	Y	
14	393	N		Y	N		Y	N	N	
15	459	N		Y	N		Y	N	N	Ground improvement work required
16	489	N		Y	N		Y	N	N	Ground improvemrnt work required
17	600	Y*	up to 1.0m	Y	N		Y	N	N	Ground improvement work required

Comments

refer to S & L Consultants Ltd report reference 19596 and dated 5 September 2011 * - Non structural filling present

Lots shown on DP 444481. ME - Minor earthworks

APPENDIX 3

Test Information

Investigation Borehole Logs 2007
Post Construction Borehole Logs 2011
Ground Improvement Test Positions Lot 5
Scala Penetrometer Test Results Lot 5
Ground Improvement Test Positions Lots 6 to 8
Scala Penetrometer Test Results Lots 6 to 8

SHRIMPTON & ESPINSKI

Borehole 1

Sheet: 1 Of: 2

Site: Eastcliffe Retirement Group; 62 Grace Road, Tauranga

Job No. 18452 | Date Excavated: 21/08/2007 | RL 9.60 m Moturiki Datum | Logged By: N.I.

Description of Soil		Soil Symbol	Depth (m)	SPT	Groundwater	Undrained Shear Strength (kPa)	Undrained Shear Strength (kPa) 50 100 150
TOPSOIL	FILL						
SILT; clayey; moist; very stiff; moderately plastic; brown dark brown mottles end of dark brown mottles			0.5			146	
rare light brown mottles stiff			1.0				
SAND; silty; moist; fine to medium grained; moderately dense; light brown wet	Rotoehu and Post Rotoehu Ashes		1.5				
SILT; clayey; moist; very stiff; moderately plastic; brown							
SILT; clayey; moist; firm; moderately plastic; orangey brown; pumiceous saturated; low plasticity orange			2.0			38	
slightly sandy sandy			2.5			41	
SILT; clayey; moist; firm; low plasticity; brown sandy			3.0		Groundwater Level 3.10m	26	
SAND; silty; saturated; fine to medium grained; very loose; light brown			3.5	1			
SILT; clayey; slightly sandy; moist; firm; low plasticity; light brown end of slightly sandy wet	Matua Subgroup		4.0				
sandy; contains gravels to 15mm diameter			4.5			32	
			4.7				

EXCAVATION METHOD: Tractor Rig; 90mm diameter open flyght auger.

SHRIMPTON & LIPINSKI

Borehole 1

Site: Eastcliffe Retirement Group; 62 Grace Road, Tauranga

Sheet: 2 Of: 2

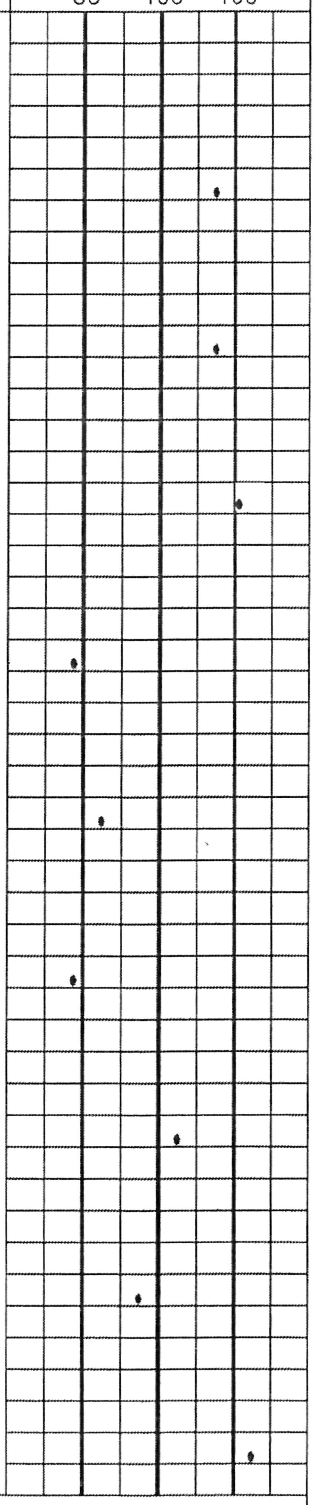
Job No. 18452 | Date Excavated: 21/08/2007 | RL 9.60m Moturiki Datum | Logged By: N.I.

Description of Soil	Soil Symbol	Depth (m)	SPT	Groundwater	Undrained Shear Strength (kPa)	Undrained Shear Strength (kPa) 50 100 150
end of sandy moist; clayey; very stiff; moderately plastic orangey brown mottles	Matua Subgroup	4.8				
		5.0			200+	>
slightly sandy		5.5				
rare gravels to 20mm diameter		6.0	4			
SAND; silty; saturated; fine to medium grained; moderately dense; light brown; rare gravels to 20mm dia.		6.5				
End of borehole 6.45m		7.0				
		7.5				
		8.0				
		8.5				
		9.0				
		9.4				

EXCAVATION METHOD: Tractor Rig; 90mm diameter open flyght auger.

S&L SHRIMPTON & LIPINSKI			Borehole 2
Site: Eastcliffe Retirement Group; 62 Grace Road, Tauranga			Sheet: 1 Of: 2
Job No. 18452	Date Excavated: 21/08/2007	RL 13.55m Moturiki Datum	Logged By: N.I.

Description of Soil	Soil Symbol	Depth (m)	SPT	Groundwater	Undrained Shear Strength (kPa)
TOPSOIL	Rotoehu and Post Rotoehu Ashes	0.5			
SILT; clayey; moist; very stiff; moderately plastic; brown		1.0			142
		1.5			142
					152
SILT; clayey; moist; firm; low plasticity; orangey brown pumiceous		2.0			
saturated; slightly sandy; sensitive; orange		2.5			47
sandy; stiff					66
SILT; clayey; moist; stiff; low plasticity; light brown		3.0			
slightly sandy		3.5			47
very stiff					117
sandy		4.0			
slightly sandy; stiff					87
SAND; silty; moist; fine to medium grained; very loose; light brownish grey (Rotoehu Ash)					
SILT; clayey; moist; very stiff; high plasticity; dark brown (chocolate)	Ash	4.5			161
		4.7			



EXCAVATION METHOD: Tractor Rig; 90mm diameter open flyght auger.

Borehole 2

Sheet: 2 Of: 2

Site: Eastcliffe Retirement Group; 62 Grace Road, Tauranga

Job No. 18452	Date Excavated: 21/08/2007	RL 13.55m Moturiki Datum	Logged By: N.I.

Description of Soil		Soil Symbol	Depth (m)	SPT	Groundwater	Undrained Shear Strength (kPa)	Undrained Shear Strength (kPa) 50 100 150
moderate plasticity	Older		4.8				
			5.0			117	
SILT; clayey; sandy; saturated; firm; low plasticity; light brown	Matua Subgroup		5.5		Groundwater 5.70m		
end of sandy; light pale creamy brown stiff			6.0	3			
			6.5				
			7.0				
sensitive; dilatent			7.5	0			
			8.0				
			8.5				
sandy			9.0	2			
end of sandy							
End of borehole 9.45m			9.4				

EXCAVATION METHOD: Tractor Rig; 90mm diameter open flyght auger.

Borehole 3

Sheet: 1 Of: 2

Site: Eastcliffe Retirement Group; 62 Grace Road, Tauranga

Job No. 18452	Date Excavated: 23/08/2007	RL 18.01m Moturiki Datum	Logged By: N.I.

Description of Soil	Soil Symbol	Depth (m)	SPT	Groundwater	Undrained Shear Strength (kPa)	Undrained Shear Strength (kPa) 50 100 150
TOPSOIL						
SILT; clayey; moist; stiff; friable; brown moderately plastic very stiff	Rotoehu and Post Rotoehu Ashes	0.5 1.0 1.5			54 193 200+	
SILT; clayey; moist; stiff; low plasticity; orangey brown slightly sandy		2.0			117	
SILT; clayey; moist; stiff; moderately plastic; brown wet; sandy		2.5			85	
SAND; silty; wet; fine to medium grained; loose; light brown moist		3.0 3.5	7			
SILT; sandy; wet; stiff; low plasticity; light brown						
SAND; silty; moist; fine to medium grained; very loose; light brownish grey (Rotoehu Ash)		4.0	0			
SILT; clayey; moist; hard; high plasticity; dark brown (chocolate)		4.5 4.7			200+	

EXCAVATION METHOD: Tractor Rig; 90mm diameter open flyght auger.

SHRIMPTON & LIPINSKI

Borehole 3

Sheet: 2 Of: 2

Site: Eastcliffe Retirement Group; 62 Grace Road, Tauranga

Job No. 18452 | Date Excavated: 23/08/2007 | RL 18.01m Moturiki Datum | Logged By: N.I.

Description of Soil	Soil Symbol	Depth (m)	SPT	Groundwater	Undrained Shear Strength (kPa)
brown moderately plastic	Older Ash	4.8 5.0			UTP
SILT; clayey; moist; stiff; low plasticity; orange; pumiceous		5.5			
orangey brown		6.0	3		
SILT; clayey; moist; very stiff; moderately plastic; brown	Matua Subgroup	6.5			
saturated low plasticity					
sandy		7.0			
SAND; silty; wet; medium to coarse grained; very loose; brown; contains gravels to 30mm dia.; gravels rounded and sub-angular		7.5	4		
SILT; clayey; moist; stiff; low plasticity; orangey brown					
wet; light brown		8.0		Groundwater 8.70mm	
light pale brown		8.5			
		9.0	1		
End of borehole 9.45m		9.4			

Undrained Shear Strength (kPa): 50 100 150

EXCAVATION METHOD: Tractor Rig; 90mm diameter open flyght auger.

SHRIMPTON & LIPINSKI

Borehole 4

Site: Eastcliffe Retirement Group; 62 Grace Road, Tauranga

Sheet: 1 Of: 2

Job No. 18452	Date Excavated: 21/08/2007	RL 17.70m Moturiki Datum	Logged By: N.I.

Description of Soil	Soil Symbol	Depth (m)	SPT	Groundwater	Undrained Shear Strength (kPa)	Undrained Shear Strength (kPa) 50 100 150
GRAVEL	a					
SILT; clayey; dry; hard; friable; brown	Rotoehu and Post Rotoehu Ashes	0.5			200+	>
moist		1.0			200+	>
moderately plastic		1.5			168	
SILT; clayey; moist; stiff; moderately plastic; orangey brown; pumiceous		2.0			44	
firm						
brown		2.5		not found	95	
stiff						
SILT; sandy; dry; stiff; friable; light brown		3.0			95	
moist						
slightly sandy		3.5			104	
sandy						
SAND; silty; dry; fine to medium; loose; light brown						
SILT; clayey; moist; very stiff; high plasticity; dark brown (chocolate)	Older Ash	4.0			139	
moderately plastic; brown						
hard		4.5			200+	>
		4.7				

EXCAVATION METHOD: Tractor Rig; 90mm diameter open flyght auger.

SHRIMPTON & LIPINSKI

Borehole 4

Sheet: 2 Of: 2

Site: Eastcliffe Retirement Group; 62 Grace Road, Tauranga

Job No. 18452 | Date Excavated: 21/08/2007 | RL 17.70m Moturiki Datum | Logged By: N.I.

Description of Soil		Soil Symbol	Depth (m)	SPT	Groundwater	Undrained Shear Strength (kPa)
	Older Ash		4.8			
			5.0			200+
			5.5			
SILT; clayey; moist; stiff; low plasticity; orangey brown pumiceous						
orange			6.0	3		
SILT; clayey; moist; stiff; moderately plastic; brown	Matua Subgroup		6.5		not found	
SAND; silty; moist; fine to medium grained; very loose; brown			7.0			
			7.5	3		
SILT; clayey; slightly sandy; moist; stiff; low plasticity; orangey brown; pumiceous			8.0			
light orangey brown						
sandy; saturated			8.5			
slightly sandy						
end of slightly sandy						
SILT; clayey; moist; soft; low plasticity; light pale brown			9.0	0		
End of borehole 9.45m			9.4			

Undrained Shear Strength (kPa): 50 100 150

EXCAVATION METHOD: Tractor Rig; 90mm diameter open flyght auger.

Borehole 5

Sheet: 1 Of: 4

Site: Eastcliffe Retirement Group; 62 Grace Road, Tauranga

Job No. 18452	Date Excavated: 22/08/2007	RL 15.53 m Moturiki Datum	Logged By: N.I.

Description of Soil	Soil Symbol	Depth (m)	SPT	Groundwater	Undrained Shear Strength (kPa)
TOPSOIL	FILL				
SILT; clayey; moist; very stiff; moderately plastic; brown dark brown mottles FILL	FILL	0.5			177
SILT; clayey; moist; stiff; low plasticity; orangey brown	Rotoehu and Post Rotoehu Ashes	1.0			82
moderately plastic; brown	Rotoehu and Post Rotoehu Ashes	1.5			32
very stiff	Rotoehu and Post Rotoehu Ashes	2.0			104
	Rotoehu and Post Rotoehu Ashes	2.5			155
SILT; clayey; moist; very stiff; moderately plastic; orangey brown	Rotoehu and Post Rotoehu Ashes	3.0			127
slightly sandy	Rotoehu and Post Rotoehu Ashes	3.5			117
sandy	Rotoehu and Post Rotoehu Ashes				
slightly sandy	Rotoehu and Post Rotoehu Ashes	4.0			
SAND; silty; moist; fine to medium grained; very loose; light brownish grey (Rotoehu Ash)	Rotoehu and Post Rotoehu Ashes				
SILT; clayey; moist; hard; high plasticity; dark brown (chocolate)	Ash	4.5			200+
	Ash	4.7			

Undrained Shear Strength (kPa)

50 100 150

EXCAVATION METHOD: Tractor Rig; 90mm diameter open flyght auger.

SKRIMPTON & LOPINSKI

Borehole 5

Site: Eastcliffe Retirement Group; 62 Grace Road, Tauranga

Sheet: 2 Of: 4

Job No. 18452 | Date Excavated: 22/08/2007 | RL 15.53m Moturiki Datum | Logged By: N.I.

Description of Soil		Soil Symbol	Depth (m)	SPT	Groundwater	Undrained Shear Strength (kPa)	Undrained Shear Strength (kPa) 50 100 150
moderately plastic; brown	Older		4.8				
			5.0			101	
wet sandy; gravelly; rare gravels to 30mm diameter gravels rounded and sub-angular			5.5				
end of sandy; end of gravels orangey brown; low plasticity			6.0	3			
light brown			6.5				
brown light brown slightly sandy sandy			7.0				
SAND; silty; moist; fine to medium grained; loose light brownish grey	Matua Subgroup		7.5	0	Groundwater Level 7.90m		
SILT; sandy; wet; soft; friable; light brown							
SAND; silty; saturated; fine to medium grained; very loose; light brown; pumiceous			8.0				
			8.5				
SILT; saturated; slightly sandy; soft; light brown							
SPT sank under weight of hammer for first 150mm			9.0	1			
end of slightly sandy sensitive; dilatent; light creamy pale brownish grey			9.4				

EXCAVATION METHOD: Tractor Rig; 90mm diameter open flyght auger.

SHRIMPTON & LEPINSKI

Borehole 5

Site: Eastcliffe Retirement Group; 62 Grace Road, Tauranga

Sheet: 3 Of: 4

Job No. 18452	Date Excavated: 22/08/2007	RL 15.53m Moturiki Datum	Logged By: N.I.

Description of Soil	Soil Symbol	Depth (m)	SPT	Groundwater	Undrained Shear Strength (kPa)	Undrained Shear Strength (kPa) 50 100 150
warm - must be geothermal		9.5				
		10.0				
slightly sandy		10.5	1			
end of slightly sandy		11.0				
slightly sandy		11.5				
SAND; silty; saturated; fine grained; loose; light brownish grey; pumiceous		12.0	7			
interbedded with lenses of silt 50mm thick		12.5				
SILT; sandy; saturated; soft; light creamy brownish grey						
SAND; silty; saturated; fine grained; moderately dense; light brownish grey; pumiceous		13.0				
fine to medium grained; moderately dense		13.5	14			
fine grained		14.0				
very little retained on auger		14.1				

EXCAVATION METHOD: Tractor Rig; 90mm diameter open flyght auger.

SHRIMPTON & LIPINSKI

Borehole 5

Sheet: 4 Of: 4

Site: Eastcliffe Retirement Group; 62 Grace Road, Tauranga

Job No. 18452	Date Excavated:	RL 15.53m Moturiki Datum	Logged By: N.I.

Description of Soil	Soil Symbol	Depth (m)	SPT	Groundwater	Undrained Shear Strength (kPa)	Undrained Shear Strength (kPa) 50 100 150
		14.2				
		14.5				
SAND; saturated; fine to medium grained; moderately dense; grey; pumiceous		15.0	20			
		15.5				
		16.0				
unable to do SPT at 16.5m due to hole collapsing back up to 15.0m		16.5				
End of borehole 16.5m						
		17.0				
		17.5				
		18.0				

EXCAVATION METHOD: Tractor Rig; 90mm diameter open flyght auger.

SHRIMPTON & LIPINSKI

Borehole 6

Site: Eastcliffe Retirement Group; 62 Grace Road, Tauranga

Sheet: 1 Of: 2

Job No. 18452	Date Excavated: 22/08/2007	RL 15.45m Moturiki Datum	Logged By: N.I.

Description of Soil		Soil Symbol	Depth (m)	SPT	Groundwater	Undrained Shear Strength (kPa)	Undrained Shear Strength (kPa) 50 100 150
TOPSOIL	FILL		0.0				
SILT; clayey; moist; stiff; moderately plastic; brown dark brown mottles FILL			0.5				
TOPSOIL must be an old stormwater soakhole			1.0				
			1.5				
			2.0				
SAND; silty; moist; fine to medium grained; loose; grey Rotoehu Ash			2.5				
SILT; clayey; moist; hard; high plasticity; dark brown (chocolate)	Older Ash		3.0			200+	>
brown			3.5			200+	>
moderately plastic			4.0			200+	>
very stiff			4.5			171	
			4.7				

EXCAVATION METHOD: Tractor Rig; 90mm diameter open flyght auger.

SHRIMPTON & LIPINSKI			Borehole 6
Site: Eastcliffe Retirement Group; 62 Grace Road, Tauranga			Sheet: 2 Of: 2
Job No. 18452	Date Excavated:	RL 15.45 m Moturiki Datum	Logged By: N.I.

Description of Soil	Soil Symbol	Depth (m)	SPT	Groundwater	Undrained Shear Strength (kPa)	Undrained Shear Strength (kPa) 50 100 150
sandy; contains rare gravels	Matua Subgroup	4.8				
		5.0				
SILT; clayey; moist; stiff; low plasticity; yellowish brown						
		5.5				
light orangey brown				Groundwater Level 7.10m		
		6.0	5			
light brown						
wet		6.5				
saturated						
slightly sandy		7.0				
end of slightly sandy						
light creamy pale brown; dilatent						
moist		7.5	2			
slightly sandy						
end of slightly sandy						
		8.0				
		8.5				
saturated; sensitive; dilatent		9.0	0			
End of borehole 9.45m		9.4				

EXCAVATION METHOD: Tractor Rig; 90mm diameter open flyght auger.

SHRIMPTON & LIPINSKI

Borehole 7

Sheet: 1 Of: 3

Site: Eastcliffe Retirement Group; 62 Grace Road, Tauranga

Job No. 18452 | Date Excavated: 23/08/2007 | RL 15.82 m Moturiki Datum | Logged By: N.I.

Description of Soil	Soil Symbol	Depth (m)	SPT	Groundwater	Undrained Shear Strength (kPa)
TOPSOIL					
SILT; clayey; moist; very stiff; moderately plastic; brown	Rotoehu and Post Rotoehu Ashes	0.5			158
SILT; clayey; moist; stiff; low plasticity; orangey brown pumiceous sandy		1.0			95
SILT; clayey; moist; stiff; low plasticity; brown		1.5			79
SAND; silty; wet; fine to medium grained; very loose; light brown		2.0	2		
SILT; moist; stiff; low plasticity; pale brownish grey					
SAND; silty; moist; fine to medium grained; very loose; light brownish grey; Rotoehu Ash		2.5			
SILT; moist; stiff; low plasticity; light grey					
SAND; silty; moist; fine to medium grained; very loose; light brownish grey; Rotoehu Ash					
SILT; clayey; moist; very stiff; high plasticity; dark brown (chocolate)	Older Ash	3.0			165
hard brown		3.5			utp >
		4.0			utp >
moderately plastic stiff wet		4.5			95
		4.7			

Undrained Shear Strength (kPa): 50 100 150

EXCAVATION METHOD: Tractor Rig; 90mm diameter open flyght auger.

SHRIMPTON & CIPINSKI

Borehole 7

Sheet: 2 Of: 3

Site: Eastcliffe Retirement Group; 62 Grace Road, Tauranga

Job No. 18452	Date Excavated: 23/08/2007	RL 15.82 m Moturiki Datum	Logged By: N.I.

Description of Soil	Soil Symbol	Depth (m)	SPT	Groundwater	Undrained Shear Strength (kPa)
sandy; gravelly; gravels to 30mm diameter	Older Ash	4.8 5.0 5.5			70
SILT; moist; stiff; low plasticity; orangey brown; pumiceous	Matua Subgroup	6.0	3		
moist; clayey; stiff; low plasticity; light brown		6.5 7.0			
end of clayey soft; sensitive; dilatent; light creamy pale brown		7.5	1	Groundwater Level 8.60m	
saturated		8.0			
slightly sandy		8.5			
sandy					
end of sandy		9.0	1		
		9.4			

Undrained Shear Strength (kPa)

50 100 150

EXCAVATION METHOD: Tractor Rig; 90mm diameter open flyght auger.

SHRIMPTON & LIPINSKI

Borehole 7

Site: Eastcliffe Retirement Group; 62 Grace Road, Tauranga

Sheet: 3 Of: 3

Job No. 18452 | Date Excavated: 23/08/2007 | RL 15.82m Moturiki Datum | Logged By: N.I.

Description of Soil	Soil Symbol	Depth (m)	SPT	Groundwater	Undrained Shear Strength (kPa)
		9.5			
		10.0			
sandy					
end of sandy		10.5	3		
SAND; silty; saturated; fine to medium grained; very loose; light brownish grey		11.0			
SILT; saturated; stiff; low plasticity; light pale creamy brown		11.5			
SAND; silty; saturated; fine to medium grained; loose; light brown		12.0	6		
		12.5			
End of borehole 12.45m		13.0			
		13.5			
		14.0			

Undrained Shear Strength (kPa)

50 100 150

EXCAVATION METHOD: Tractor Rig; 90mm diameter open flyght auger.

SHRIMPTON & LIPINSKI

Borehole 8

Site: Eastcliffe Retirement Group; 62 Grace Road, Tauranga

Sheet: 1 Of: 3

Job No. 18452 | Date Excavated: 23/08/2007 | RL 13.03m Moturiki Datum | Logged By: N.I.

Description of Soil		Soil Symbol	Depth (m)	SPT	Groundwater	Undrained Shear Strength (kPa)	Undrained Shear Strength (kPa) 50 100 150
TOPSOIL	FILL		0.5				
contains shell fragments			1.0				
SILT; clayey; moist; very stiff; moderately plastic; darkish brown	Rotoehu and Post Rotoehu Ashes		1.5			136	
brown			2.0			171	
slightly sandy; low plasticity			2.5			142	
sandy; stiff; light brown			3.0			82	
SAND; silty; wet; fine to medium grained; very loose; light brown; Rotoehu Ash			3.5	3			
SILT; clayey; moist; hard; high plasticity; dark brown (chocolate)	Older Ash		4.0			200+	>
moist; very stiff; moderately plastic; very stiff; brown			4.5				
SILT; clayey; moist; very stiff; low plasticity; orangey brown			4.7			139	

EXCAVATION METHOD: Tractor Rig; 90mm diameter open flyght auger.

SKRIMPTON & LIPINSKI

Borehole 8

Site: Eastcliffe Retirement Group; 62 Grace Road, Tauranga

Sheet: 2 Of: 3

Job No. 18452 | Date Excavated: 23/08/2007 | RL 13.03m Moturiki Datum | Logged By: N.I.

Description of Soil	Soil Symbol	Depth (m)	SPT	Groundwater	Undrained Shear Strength (kPa)
sandy; gravelly very stiff	Matua Subgroup	4.8			
		5.0			190
end of gravels end of sandy					
end of clayey		5.5			
sensitive; dilatent; pale creamy brown		6.0	3		
		6.5			
		7.0			
				Groundwater Level 7.40m	
sandy; saturated; soft; light pale creamy brown		7.5	0		
		8.0			
		8.5			
end of sandy					
saturated; soft; sensitive; dilatente		9.0	1		
		9.4			

Undrained Shear Strength (kPa)

50 100 150

EXCAVATION METHOD: Tractor Rig, 90mm diameter open flyght auger.

Borehole 8

Sheet: 3 Of: 3

Site: Eastcliffe Retirement Group; 62 Grace Road, Tauranga

Job No. 18452	Date Excavated: 23/08/2007	RL 13.03m Moturiki Datum	Logged By: N.I.

Description of Soil	Soil Symbol	Depth (m)	SPT	Groundwater	Undrained Shear Strength (kPa)	Undrained Shear Strength (kPa) 50 100 150
		9.5				
		10.0				
slightly sandy						
end of slightly sandy		10.5	0			
		11.0				
		11.5				
pink		12.0	5			
		12.5				
warm - must be geothermal		13.0				
stiff		13.5	9			
		14.0				
End of borehole 13.95m						

EXCAVATION METHOD: Tractor Rig; 90mm diameter open flyght auger.

Borehole 9

Sheet:1 Of: 2

Site: Eastcliffe Retirement Group; 62 Grace Road, Tauranga

Job No. 18452 | Date Excavated: 3/09/2007 | RL 9.84 m Moturiki Datum | Logged By: N.I.

Description of Soil		Soil Symbol	Depth (m)	SPT	Groundwater	Undrained Shear Strength (kPa)	Undrained Shear Strength (kPa) 50 100 150
TOPSOIL	FILL					41	
SILT; clayey; moist; stiff; friable; darkish brown dark brown mottles FILL			0.5			92	
			1.0			79	
SILT; clayey; moist; very stiff; moderately plastic; brown	Older Ash					200+	>
						193	
contains rare gravels to 15mm diameter			1.5			117	
						145	
			2.0				
slightly sandy						105	
			2.5			190	
						161	
			3.0				
					Groundwater 3.5m	60	
SILT; clayey; saurated; slightly sandy; firm; low plasticity; orangey brown; pumiceous			3.5			47	
brown						57	
orangey brown; warm - must be geothermal			4.0			57	
SILT; clayey; wet; very stiff; low plasticty; brown						111	
slightly sandy; light brown			4.5				
			4.7			142	

EXCAVATION METHOD: 50mm Diameter Hand auger

SHRIMPTON & LEPINSKI

Borehole 9

Sheet: 2 Of: 2

Site: Eastcliffe Retirement Group; 62 Grace Road, Tauranga

Job No. 18452 | Date Excavated: 3/09/2007 | RL 9.84m Moturiki Datum | Logged By: N.I.

Description of Soil	Soil Symbol	Depth (m)	SPT	Groundwater	Undrained Shear Strength (kPa)	Undrained Shear Strength (kPa) 50 100 150
		4.8				
		5.0			158	
End of borehole 5.1m		5.5				
		6.0				
		6.5				
		7.0				
		7.5				
		8.0				
		8.5				
		9.0				
		9.4				

EXCAVATION METHOD: 50mm Diameter Hand auger

SHRIMPTON & LIPINSKI

Borehole 10

Sheet: 1 Of: 2

Site: Eastcliffe Retirement Group; 62 Grace Road, Tauranga

Job No. 18452 | Date Excavated: 4/09/2007 | RL 12.10m Moturiki Datum | Logged By: N.I.

Description of Soil		Soil Symbol	Depth (m)	SPT	Groundwater	Undrained Shear Strength (kPa)
TOPSOIL	FILL					
SILT; clayey; moist; firm; friable; darkish brown dark brown mottles FILL			0.5			32
SILT; clayey; moist; stiff; friable; brown	Post Rotoehu Ash					79
very stiff; moderately plastic			1.0			108
						158
			1.5			155
stiff						92
			2.0			152
sandy; stiff; friable; orangey brown						63
end of sandy						76
low plasticity; light brown			2.5			
moderately plastic; very stiff; brown						149
			3.0			
SILT; clayey; slightly sandy; wet; stiff; low plasticity; brown						70
						158
SILT; clayey; moist; very stiff; high plasticity; brown	Older Ash		3.5		Grounwater Level 4.1m	155
wet; stiff; moderately plastic; orangey brown						98
brown			4.0			
SILT; saturated; stiff; light creamy brown; sensitive; dilatent						63
			4.5			92
			4.7			

Undrained Shear Strength (kPa)

50 100 150

EXCAVATION METHOD: 50mm Diameter Hand auger

SHRIMPTON & LIPINSKI

Borehole 10

Site: Eastcliffe Retirement Group; 62 Grace Road, Tauranga

Sheet: 2 Of: 2

Job No. 18452 | Date Excavated: 4/09/2007 | RL 12.10m Moturiki Datum | Logged By: N.I.

Description of Soil	Soil Symbol	Depth (m)	SPT	Groundwater	Undrained Shear Strength (kPa)
		4.8			98
very stiff		5.0			152
End of borehole 5.1m		5.5			
		6.0			
		6.5			
		7.0			
		7.5			
		8.0			
		8.5			
		9.0			
		9.4			

Undrained Shear Strength (kPa)

50 100 150

EXCAVATION METHOD: 50mm Diameter Hand auger

SHRIMPTON & LIPINSKI

BH 1A,1B&2

Site: Consent Management; Grace Road Development; Grace Road, Tauranga

Sheet: 1 Of: 1

Job No. 19596 | Date Excavated: 15/7/11 | RL m Moturiki Datum | Logged By: N.I

Description of Soil		Soil Symbol	Depth (m)	Scala blows/100 mm	Groundwater	Undrained Shear Strength (kPa)	Undrained Shear Strength (kPa) 50 100 150
BH 1 A							
TOPSOIL 800 mm	Fill		0.5		not found		
SILT; clayeyl very stiff; moist; moderately plastic; orange brown			1.0			189	•
End of borehole 1.0 m							
BH 1B							
TOPSOIL 700 mm	Fill		0.5				
SILT; clayeyl very stiff; moist; moderately plastic; orange brown			1.0			163 200+	• >
End of borehole 1.0 m							
BH 2							
TOPSOIL 500 mm			0.5				
SILT; clayey; hard; moist; moderately plastic; orange brown very stiff			1.0			200+ 189 176	> • •
End of borehole 1.0 m							

EXCAVATION METHOD: 50mm Diameter Hand Auger

SHRIMPTON & LIPINSKI

BH 3A,3B&3C

Site: Consent Management; Grace Road Development; Grace Road, Tauranga

Sheet: 1 Of: 1

Job No. 19596 | Date Excavated: 15/7/11 | RL m Moturiki Datum | Logged By: N.I

Description of Soil	Soil Symbol	Depth (m)	Scala blows/100 mm	Groundwater	Undrained Shear Strength (kPa)	Undrained Shear Strength (kPa) 50 100 150
BH 3A						
SILT; clayey; slightly sandy; very stiff; moist; sl. cohesive; orange brown; dark brown mottles FILL	Fill			not found	161	
					177	
End of borehole 0.4 m; hit gravels		0.5				
		1.0				
BH 3B		0.0				
SAND (f-m) silty; loose; saturated; grey FILL	Fill			not found		
SILT; clayey; slightly sandy; stiff; moist; sl. cohesive; orange brown; dark brown mottles FILL					88	
End of borehole 0.3 m; hit gravels		0.5				
		1.0				
BH 3C		0.0				
SILT; clayey; slightly sandy; very stiff; moist; sl. cohesive; orange brown; dark brown mottles FILL	Fill			not found	158	
stiff		0.5			92	
End of borehole 0.5 m; hit gravels		1.0				

EXCAVATION METHOD: 50mm Diameter Hand Auger

SHRIMPTON & LIPINSKI

BH 3D,3E&3F

Site: Consent Management; Grace Road Development; Grace Road, Tauranga

Sheet: 1 Of: 1

Job No. 19596 | Date Excavated: 15/7/11 | RL m Moturiki Datum | Logged By: N.I

Description of Soil		Soil Symbol	Depth (m)	Scala blows/100 mm	Groundwater	Undrained Shear Strength (kPa)	Undrained Shear Strength (kPa) 50 100 150
3D							
SILT; clayey; slightly sandy; hard; moist; sl. cohesive; orange brown; dark brown mottles FILL	Fill				not found	200+	>
						utp	>
SILT; clayey; hard; moist; moderately plastic; orange brown			0.5			200+	>
End of borehole 0.6 m			1.0				
BH 3E			0.0				
SILT; clayey; slightly sandy; hard; moist; sl. cohesive; orange brown; dark brown mottles FILL	Fill				not found	utp	>
SILT; very stiff; moist; slightly cohesive; orange			0.5			192	•
						148	•
End of borehole 0.6 m			1.0				
BH 3F			0.0				
SILT; clayey; slightly sandy; v. stiff; moist; sl. cohesive; orange brown; dark brown mottles FILL	Fill				not found	141	•
becomes stiff			0.5			91	•
						utp	>
End of borehole 0.6 m; hit gravels			1.0				

EXCAVATION METHOD: 50mm Diameter Hand Auger

SKRIMPTON & LIPINSKI

BH 4A&5

Site: Consent Management; Grace Road Development; Grace Road, Tauranga

Sheet: 1 Of: 1

Job No. 19596 | Date Excavated: 17/6/11&4/7/11 | RL m Moturiki Datum | Logged By: N.I

Description of Soil		Soil Symbol	Depth (m)	Scala blows/100 mm	Groundwater	Undrained Shear Strength (kPa)	Undrained Shear Strength (kPa) 50 100 150
BH 4 A 17/6/11							
TOPSOIL	Fill				not found	82	
SILT; clayey; very stiff; moist; mod. plastic; orange brown dark brown mottles FILL			0.5			148	
SILT; clayey; very stiff; moist; mod. plastic; orange brown						154	
hard			1.0			utp	>
End of borehole 1.0 m			1.5				
			2.0				
BH 5 4/7/11							
SILT; clayey; slightly sandy; firm; very moist; sl. cohesive; orange brown; dark brown mottles FILL					not found	41	
						35	
			0.5				
becomes stiff						88	
						66	
			1.0			85	
						47	
soft			1.5			19	
TOPSOIL						9	
						6	
			2.0			31	
End of borehole 2.0 m							

EXCAVATION METHOD: 50mm Diameter Hand Auger

SHRIMPTON & LIPINSKI

BH 4B

Site: Consent Management; Grace Road Development; Grace Road, Tauranga

Sheet: 1 Of: 1

Job No. 19596 | Date Excavated: 15/7/11 | RL m Moturiki Datum | Logged By: N.I

Description of Soil		Soil Symbol	Depth (m)	Scala blows/100 mm	Groundwater	Undrained Shear Strength (kPa)	Undrained Shear Strength (kPa) 50 100 150
BH 4B							
TOPSOIL 400 mm	Fill				not found	25	
SILT; clayey; soft; wet; low plasticity; orange brown dark brown mottles FILL			0.5			57	
becomes very stiff						154	
TOPSOIL			1.0			ulp	>
SILT; slightly clayey; slightly sandy; hard; dry; friable; brown; orange brown and dark brown mottles FILL						ulp	>
becomes stiff						69	
becomes firm			1.5			35	
TOPSOIL							
contains a piece of plastic			2.0			50	
SILT; slightly sandy; firm; moist; friable; brown orange brown and dark brown mottles FILL							
TOPSOIL			2.5				
SILT; slightly sandy; stiff; moist; friable; brown orange brown and dark brown mottles FILL			3.0			97	
			3.5				

EXCAVATION METHOD: 50mm Diameter Hand Auger

SHRIMPTON & LEPINSKI

BH 6A,6E&6F

Site: Consent Management; Grace Road Development; Grace Road, Tauranga

Sheet: 1 Of: 1

Job No. 19596 | Date Excavated:19/5/11&5/7/11 | RL m Moturiki Datum | Logged By: N.I

Description of Soil	Soil Symbol	Depth (m)	Scala blows/100 mm	Groundwater	Undrained Shear Strength (kPa)	Undrained Shear Strength (kPa) 50 100 150
BH 6A 19/5/11						
SILT; clayey; slightly sandy; very stiff moist; slightly cohesive; orange brown; dark brown mottles FILL	Fill				101	
					79	
TOPSOIL FILL		0.5				
		1.0				
End of borehole 1.2 m Hit broken concrete						
BH 6E 5/7/11						
TOPSOIL						
SILT; clayey; slightly sandy; very stiff; moist; low plasticity; orange brown		0.5			198	
					104	
End of borehole 0.6 m						
BH 6F 5/7/11		0.0				
TOPSOIL 400 mm				not found		
SILT; clayey; hard; moist; moderately plastic; orange brown		0.5			200+	>
becomes very stiff					195	
End of borehole 0.8 m		1.0				
		1.5				
		2.0				

EXCAVATION METHOD: 50mm Diameter Hand Auger

SHRIMPTON & LIPINSKI

BH 6C&6G

Site: Consent Management; Grace Road Development; Grace Road, Tauranga

Sheet: 1 Of: 1

Job No. 19596 | Date Excavated: 15/6/11 | RL m Moturiki Datum | Logged By: N.I

Description of Soil	Soil Symbol	Depth (m)	Scala blows/100 mm	Groundwater	Undrained Shear Strength (kPa)	Undrained Shear Strength (kPa) 50 100 150
BH 6C						
TOPSOIL	Fill		1	not found		
SILT; clayey; hard; moist; friable; orange brown FILL			8			
SAND (f-m) silty; medium dense; dry; light grey orange brown mottles FILL			8			
			4			
		0.5	4			
loose			3			
			2			
very loose			1			
		1.0				
End of borehole 1.0 m						
BH 6G		0.0				
TOPSOIL						
SILT; hard; moist; moderately plastic; orange brown					ulp	>
					200+	>
		0.5				
very stiff					157	•
End of borehole 0.6 m						
		1.0				

EXCAVATION METHOD: 50mm Diameter Hand Auger

SHRIMPTON & LIPINSKI

BH 7A

Site: Consent Management; Grace Road Development; Grace Road, Tauranga

Sheet: 1 Of: 1

Job No. 19596 | Date Excavated: 19/5/11 | RL m Moturiki Datum | Logged By: N.I

Description of Soil		Soil Symbol	Depth (m)	Scala blows/100 mm	Groundwater	Undrained Shear Strength (kPa)	Undrained Shear Strength (kPa) 50 100 150
BH 7A 19/5/11							
SILT; clayey; sandy; very soft; saturated; orange brown dark brown and light grey mottles FILL	Fill				not found	9	
stiff			0.5			79	
firm						41	
						47	
TOPSOIL; saturated			1.0			19	
FILL							
hit concrete; unable to further borehole							
End of borehole 1.3 m			1.5				
			2.0				

EXCAVATION METHOD: 50mm Diameter Hand Auger

SHRIMPTON & LEPINSKI

BH 7D&7E

Site: Consent Management; Grace Road Development; Grace Road, Tauranga

Sheet: 1 Of: 1

Job No. 19596 | Date Excavated: 15/6/11&4/7/11 | RL m Moturiki Datum | Logged By: N.I

Description of Soil		Soil Symbol	Depth (m)	Scala blows/100 mm	Groundwater	Undrained Shear Strength (kPa)	Undrained Shear Strength (kPa) 50 100 150
BH 7D 15/6/11							
TOPSOIL	Fill				not found		
SILT; clayey; hard; very moist; low plasticity; orange brown dark brown and light grey mottles FILL			0.5			utp	>
SILT; slightly sandy; very stiff; moist; low plasticity; orange						163	•
						132	•
SILT; clayey; very slightly sandy; stiff; moist; low plasticity; orange brown			1.0			94	•
End of borehole 1.0 m			1.5				
			2.0				
BH 7E 4/7/11							
TOPSOIL					not found		
SILT; clayey; hard; moist; moderately plastic; orange brown dark brown mottles FILL			0.5			200+	>
SILT; clayey; hard; moist; moderately plastic; orange brown						173	•
						200+	>
End of borehole 0.8 m			1.0				
			1.5				
			2.0				

EXCAVATION METHOD: 50mm Diameter Hand Auger

SHRIMPTON & LIPINSKI

BH 8A&8C

Site: Consent Management; Grace Road Development; Grace Road, Tauranga

Sheet: 1 Of: 1

Job No. 19596 | Date Excavated: 9/6/11 | RL m Moturiki Datum | Logged By: N.I

Description of Soil		Soil Symbol	Depth (m)	Scala blows/100 mm	Groundwater	Undrained Shear Strength (kPa)	Undrained Shear Strength (kPa) 50 100 150
BH 8A							
TOPSOIL; contains wood, broken concrete; broken bricks FILL	Fill		0.5		not found		
			1.0				
hit concrete; unable to further borehole			1.5				
End of borehole 1.5 m			2.0				
BH 8C							
SILT; clayey; slightly sandy; very stiff; moist; sl. cohesive; orange brown; dark brown mottles FILL	Fill		0.5		not found	135 63 91 94	
TOPSOIL			1.0				
End of borehole 1.0 m			1.5				
			2.0				

EXCAVATION METHOD: 50mm Diameter Hand Auger

SHRIMPTON & LIPINSKI

BH 8D&8E

Site: Consent Management; Grace Road Development; Grace Road, Tauranga

Sheet: 1 Of: 1

Job No. 19596 | Date Excavated: 9/6/11&15/6/11 | RL m Moturiki Datum | Logged By: N.I

Description of Soil	Soil Symbol	Depth (m)	Scala blows/100 mm	Groundwater	Undrained Shear Strength (kPa)	Undrained Shear Strength (kPa) 50 100 150
BH 8D 9/6/11						
SILT; clayey; slightly sandy; very stiff; moist; sl. cohesive; brown; dark brown mottles FILL	Fill			not found	152	
60 to 70 % topsoil						
hard					200+	>
fill becomes clean; 5 % topsoil; orange brown; dark brown mottles		0.5			113	
stiff					97	
SILT; clayey; v. stiff; moist; mod. plastic; orange brown		1.0			179	
End of borehole 1.0 m		1.5				
		2.0				
BH 8E 5/7/2011						
TOPSOIL				not found		
SILT; clayey; hard; moist; mod. plastic; orange brown		0.5			200+	>
becomes very stiff					151	
End of borehole 0.6 m		1.0				
		1.5				
		2.0				

EXCAVATION METHOD: 50mm Diameter Hand Auger

SHRIMPTON & LIPINSKI

BH 8F

Site: Consent Management; Grace Road Development; Grace Road, Tauranga

Sheet: 1 Of: 1

Job No. 19596 | Date Excavated: 5/7/2011 | RL m Moturiki Datum | Logged By: N.I

Description of Soil	Soil Symbol	Depth (m)	Scala blows/100 mm	Groundwater	Undrained Shear Strength (kPa)	Undrained Shear Strength (kPa) 50 100 150
BH 8F						
TOPSOIL 150 mm	Fill			not found		
SILT; clayey; slightly sandy; hard; moist; sl. cohesive; orange brown; dark brown mottles FILL					200+	>
		0.5				
very stiff					135	•
					200+	>
SILT; clayey; hard; moist; mod. plastic; orange brown becomes very stiff		1.0			189	•
End of borehole 1.0 m						
		1.5				
		2.0				

EXCAVATION METHOD: 50mm Diameter Hand Auger

SHRIMPTON & LIPINSKI

BH 9A&9B

Site: Consent Management; Grace Road Development; Grace Road, Tauranga

Sheet: 1 Of: 1

Job No. 19596 | Date Excavated: 9/6/11 | RL m Moturiki Datum | Logged By: N.I

Description of Soil	Soil Symbol	Depth (m)	Scala blows/100 mm	Groundwater	Undrained Shear Strength (kPa)	Undrained Shear Strength (kPa) 50 100 150
BH 9A						
SILT; clayey; slightly sandy; firm; moist; sl. cohesive; orange brown; dark brown mottles FILL	Fill			not found	44	
very stiff		0.5			110	
stiff					91	
becomes light grey brown; dark brown mottles					72	
firm		1.0			34	
End of borehole 1.0 m		1.5				
		2.0				
BH 9B						
TOPSOIL; FILL	Fill			not found		
		0.5				
		1.0				
End of borehole 1.0 m		1.5				
		2.0				

EXCAVATION METHOD: 50mm Diameter Hand Auger

SHRIMPTON & LIPINSKI

BH 9C&9D

Site: Consent Management; Grace Road Development; Grace Road, Tauranga

Sheet: 1 Of: 1

Job No. 19596 | Date Excavated: 5/7/11&15/6/11 | RL m Moturiki Datum | Logged By: N.I

Description of Soil	Soil Symbol	Depth (m)	Scala blows/100 mm	Groundwater	Undrained Shear Strength (kPa)	Undrained Shear Strength (kPa) 50 100 150
BH 9C 5/7/11						
TOPSOIL; FILL	Fill	0.5		not found	47	
		1.0			88	
		1.5			107	
		2.0			79	
SILT; clayey; stiff; very moist; low plasticity; orange brown dark brown and light grey mottles FILL		2.5			35	
SILT; clayey; stiff; wet; low plasticity; orange brown		3.0			94	
End of borehole 2.6 m					63	
BH 9D 15/6/11						
TOPSOIL	Fill	0.5			104	
SILT; clayey; v. stiff; very moist; low plasticity; orange brown dark brown and light grey mottles FILL					94	
50 TO 70 % topsoil; stiff		1.0			126	
very stiff					66	
fill becomes clean; 5% topsoil					50	
stiff						
firm						
End of borehole 1.0 m						

EXCAVATION METHOD: 50mm Diameter Hand Auger

SHRIMPTON & LIPINSKI

BH 10A&10B

Site: Consent Management; Grace Road Development; Grace Road, Tauranga

Sheet: 1 Of: 1

Job No. 19596 | Date Excavated: 5/7/2011 | RL m Moturiki Datum | Logged By: N.I

Description of Soil	Soil Symbol	Depth (m)	Scala blows/100 mm	Groundwater	Undrained Shear Strength (kPa)	Undrained Shear Strength (kPa) 50 100 150
BH 10A						
TOPSOIL	Fill			not found		
SILT; clayey; stiff; very moist; low plasticity; orange brown dark brown and light grey mottles FILL					79	
		0.5				
stiff; wet; low plasticity					101	
					91	
		1.0			163	
SILT; clayey; hard; moist; moderately plastic; orange brown					utp	>
End of borehole 1.0 m		1.5				
		2.0				
BH 10B						
TOPSOIL				not found		
SILT; clayey; v. stiff; very moist; low plasticity; orange brown dark brown and light grey mottles FILL					141	
		0.5				
SILT; clayey; very stiff; moist; moderately plastic; orange brown					141	
					91	
End of borehole 0.8 m		1.0				
		1.5				
		2.0				

EXCAVATION METHOD: 50mm Diameter Hand Auger

SHRIMPTON & LIPINSKI

BH 10C&10D

Site: Consent Management; Grace Road Development; Grace Road, Tauranga

Sheet: 1 Of: 1

Job No. 19596 | Date Excavated: 5/7/11&15/7/11 | RL m Moturiki Datum | Logged By: N.I

Description of Soil	Soil Symbol	Depth (m)	Scala blows/100 mm	Groundwater	Undrained Shear Strength (kPa)
BH 10 C 5/7/11					
TOPSOIL	Fill	0.5		not found	
SILT; clayey; slightly sandy; stiff; moist; sl. cohesive; orange brown; dark brown mottles FILL					63
very stiff					126
stiff		1.0			97
SILT; clayey; very stiff; moist; moderately plastic; orange brown					151
					179
End of borehole 1.4 m		1.5			
		2.0			
BH 10 D 15/7/11					
TOPSOIL 300mm	Fill			not found	
SILT; clayey; slightly sandy; stiff; moist; slightly cohesive; orange brown; dark brown and light grey mottles FILL		0.5			85
					63
TOPSOIL		1.0			35
					35
					79
SILT; clayey; hard; moist; moderately plastic; orange brown		1.5			utp
					200+
End of borehole 1.6 m		2.0			

Undrained Shear Strength (kPa): 50 100 150

EXCAVATION METHOD: 50mm Diameter Hand Auger

SHRIMPTON & LIPINSKI

BH 11B

Site: Consent Management; Grace Road Development; Grace Road, Tauranga

Sheet: 1 Of: 1

Job No. 19596 | Date Excavated: 21/6/11 | RL m Moturiki Datum | Logged By: N.I

Description of Soil		Soil Symbol	Depth (m)	Scala blows/100 mm	Groundwater	Undrained Shear Strength (kPa)	Undrained Shear Strength (kPa) 50 100 150
BH 11B							
TOPSOIL	Fill				not found		
SILT; clayey; slightly sandy; very stiff; moist; sl. cohesive; orange brown; dark brown mottles FILL			0.5			200+	>
SILT; clayey; very stiff; moist; moderately plastic; orange brown			1.0			157 163 163	
End of borehole 1.0 m			1.5 2.0 1.5 2.0				

EXCAVATION METHOD: 50mm Diameter Hand Auger

SHRIMPTON & LIPINSKI

BH 11C&11D

Site: Consent Management; Grace Road Development; Grace Road, Tauranga

Sheet: 1 Of: 1

Job No. 19596 | Date Excavated: 21/6/11 | RL m Moturiki Datum | Logged By: N.I

Description of Soil	Soil Symbol	Depth (m)	Scala blows/100 mm	Groundwater	Undrained Shear Strength (kPa)	Undrained Shear Strength (kPa) 50 100 150
BH 11C						
TOPSOIL	Fill			not found		
SILT; clayey; slightly sandy; hard; moist; sl. cohesive; orange brown; dark brown mottles FILL	Fill	0.5		not found	200+	>
becomes sandy; very stiff	Fill			not found	173	
becomes stiff	Fill			not found	82	
SILT; clayey; hard; mod. plastic; orange brown	Fill	1.0		not found	utp	>
End of borehole 1.0 m	Fill	1.5		not found		
		2.0		not found		
BH 11D						
TOPSOIL	Fill			not found		
SILT; clayey; slightly sandy; v. stiff; moist; sl. cohesive; orange brown; dark brown mottles FILL	Fill	0.5		not found	189	
firm darkish brown; orange and dark brown mottles 30 to 40 % topsoil	Fill	1.0		not found	101 50 31	
End of borehole 1.0 m	Fill	1.5		not found		
		2.0		not found		

EXCAVATION METHOD: 50mm Diameter Hand Auger

SHRIMPTON & LIPINSKI

BH 11E&12C

Site: Consent Management; Grace Road Development; Grace Road, Tauranga

Sheet: 1 Of: 1

Job No. 19596 | Date Excavated: 21/6/11 | RL m Moturiki Datum | Logged By: N.I

Description of Soil	Soil Symbol	Depth (m)	Scala blows/100 mm	Groundwater	Undrained Shear Strength (kPa)	Undrained Shear Strength (kPa) 50 100 150
BH 11E						
TOPSOIL; orange brown mottles FILL contains shell fragments	Fill	0.5		not found		
SILT; clayey; stiff; moist; slightly cohesive; orange brown dark brown mottles FILL		1.0			57 50	
End of borehole 1.0 m		1.5				
		2.0				
BH 12C						
SILT; clayey; stiff; moist; slightly cohesive; orange brown dark brown mottles FILL	Fill	0.5		not found		
SILT; clayey; very stiff; moist; moderately plastic; orange brown		1.0				
End of borehole 0.6 m		1.5				
		2.0				

EXCAVATION METHOD: 50mm Diameter Hand Auger

SIRTIMPTON & LIPINSKI

BH 11F

Sheet: 1 Of: 1

Site: Consent Management; Grace Road Development; Grace Road, Tauranga

Job No. 19596 | Date Excavated: 15/7/11 | RL m Moturiki Datum | Logged By: N.I

Description of Soil		Soil Symbol	Depth (m)	Scala blows/100 mm	Groundwater	Undrained Shear Strength (kPa)	Undrained Shear Strength (kPa) 50 100 150
BH 11F							
TOPSOIL 600 mm	Fill		0.5		not found		
SILT; clayey; slightly sandy; stiff; moist; slightly cohesive; orange brown; dark brown and light grey mottles FILL			1.0			53	
						50	
TOPSOIL						200+	
SILT; clayey; very stiff; moist; moderately plastic; orange brown			1.5			157	
						173	
			2.0			160	
						163	
End of borehole 2.0 m							

EXCAVATION METHOD: 50mm Diameter Hand Auger

SHRIMPTON & LIPINSKI

BH 12A&12B

Sheet: 1 Of: 1

Site: Consent Management; Grace Road Development; Grace Road, Tauranga

Job No. 19596 | Date Excavated: 19/5/11 | RL m Moturiki Datum | Logged By: N.I

Description of Soil	Soil Symbol	Depth (m)	Scala blows/100 mm	Groundwater	Undrained Shear Strength (kPa)
BH 12A					
TOPSOIL	Fill			not found	200+
SILT; clayey; very stiff; moist; slightly cohesive; brown dark brown and light grey mottles FILL	Fill	0.5		not found	141
	Fill	1.0		not found	97
				not found	72
				not found	173
SILT; clayey; very stiff; moist; moderately plastic; orange brown				not found	173
End of borehole 1.2 m		1.5		not found	
		2.0		not found	
BH 12B					
TOPSOIL	Fill	0.5		not found	
SILT; clayey; stiff; moist; moderately plastic; orange brown dark brown mottles FILL	Fill	1.0		not found	141
				not found	72
		1.5		not found	85
				not found	63
firm				not found	41
		2.0		not found	28
End of borehole 2.0 m					

Undrained Shear Strength (kPa): 50 100 150

EXCAVATION METHOD: 50mm Diameter Hand Auger

SHRIMPTON & LIPINSKI

BH 13A&13B

Site: Consent Management; Grace Road Development; Grace Road, Tauranga

Sheet: 1 Of: 1

Job No. 19596 | Date Excavated: 20/5/11 | RL m Moturiki Datum | Logged By: N.I

Description of Soil		Soil Symbol	Depth (m)	Scala blows/100 mm	Groundwater	Undrained Shear Strength (kPa)	Undrained Shear Strength (kPa) 50 100 150
BH 13A							
TOPSOIL	Fill				not found		
SILT; clayey; hard; moist; moderately plastic; orange brown; dark brown mottles FILL			0.5			200+	>
SILT; clayey; very stiff; moist; moderately plastic; orange brown						141	
						198	
End of borehole 0.8 m			1.0				
			1.5				
			2.0				
BH 13B							
TOPSOIL	Fill		0.5		not found		
SILT; clayey; slightly sandy; v. stiff; moist; sl. cohesive; orange brown; dark brown mottles FILL						160	
stiff						91	
very stiff			1.0			104	
						110	
stiff			1.5			69	
						141	
TOPSOIL						94	
SILT; clayey; slightly sandy; v. stiff; moist; sl. cohesive; orange brown; dark brown mottles FILL			2.0			104	
End of borehole 2.0 m							

EXCAVATION METHOD: 50mm Diameter Hand Auger

SHRIMPTON & LIPINSKI

BH 13C&13D

Site: Consent Management; Grace Road Development; Grace Road, Tauranga

Sheet: 1 Of: 1

Job No. 19596 | Date Excavated: 15/7/11 | RL m Moturiki Datum | Logged By: N.I

Description of Soil		Soil Symbol	Depth (m)	Scala blows/100 mm	Groundwater	Undrained Shear Strength (kPa)	Undrained Shear Strength (kPa) 50 100 150
BH 13C							
TOPSOIL 200 mm					not found	utp	>
SILT; clayey; hard; moist; moderately plastic; orange brown			0.5			utp	>
SILT; very slightly sandy; very stiff; moist; slightly cohesive; orange						145	
becomes stiff			1.0			88	
End of borehole 1.0 m							
BH 13D							
TOPSOIL 200 mm	Fill				not found		
SILT; clayey; hard; moist; friable; darkish brown orange brown mottles; 50 to 60 % topsoil FILL			0.5			utp	>
SILT; clayey; very stiff; moist; moderately plastic; orange brown						150	
becomes hard			1.0			200+	>
End of borehole 1.0 m						200+	>

EXCAVATION METHOD: 50mm Diameter Hand Auger

SHRIMPTON & LIPINSKI

BH 14A&14B

Site: Consent Management; Grace Road Development; Grace Road, Tauranga

Sheet: 1 Of: 1

Job No. 19596 | Date Excavated: 15/6/11 | RL m Moturiki Datum | Logged By: N.I

Description of Soil	Soil Symbol	Depth (m)	Scala blows/100 mm	Groundwater	Undrained Shear Strength (kPa)	Undrained Shear Strength (kPa) 50 100 150
BH 14A						
TOPSOIL				not found		
SILT; clayey; very stiff; moist; moderately plastic; orange brown		0.5			192	•
SILT; slightly sandy; very stiff; moist; slightly cohesive; orange					110	•
becomes clayey		1.0			132	•
					110	•
End of borehole 1.0 m		1.5				
		2.0				
BH 14B						
TOPSOIL				not found		
SILT; clayey; hard; moist; moderately plastic; orange brown		0.5			200+	>
					200+	>
		1.0			189	•
					200+	>
End of borehole 1.0 m		1.5				
		2.0				

EXCAVATION METHOD: 50mm Diameter Hand Auger

SHRIMPTON & LIPINSKI

BH 15A&15B

Site: Consent Management; Grace Road Development; Grace Road, Tauranga

Sheet: 1 Of: 1

Job No. 19596 | Date Excavated: 15/6/11 | RL m Moturiki Datum | Logged By: N.I

Description of Soil		Soil Symbol	Depth (m)	Scala blows/100 mm	Groundwater	Undrained Shear Strength (kPa)	Undrained Shear Strength (kPa) 50 100 150
BH 15A							
TOPSOIL 550 mm			0.5		not found	126	
SILT; clayey; very stiff; moist; moderately plastic; orange brown			1.0			126	
						154	
End of borehole 1.0 m			1.5				
			2.0				
BH 15B							
TOPSOIL 400 mm	Fill		0.5		not found	25	
SILT; clayey; stiff; moist; moderately plastic; orange brown; rare fine dark brown mottles FILL						66	
						53	
SILT; clayey; very stiff; moist; moderately plastic; orange brown			1.0			135	
End of borehole 1.0 m			1.5				
			2.0				

EXCAVATION METHOD: 50mm Diameter Hand Auger

SHRIMPTON & LIPINSKI

BH 16A&16B

Site: Consent Management; Grace Road Development; Grace Road, Tauranga

Sheet: 1 Of: 1

Job No. 19596 | Date Excavated: 17/6/11&15/7/11 | RL m Moturiki Datum | Logged By: N.I

Description of Soil		Soil Symbol	Depth (m)	Scala blows/100 mm	Groundwater	Undrained Shear Strength (kPa)	Undrained Shear Strength (kPa) 50 100 150
BH 16 A 17/6/11							
TOPSOIL	Fill				not found		
SILT; clayey; very stiff; moist; slightly cohesive; orange brown; dark brown mottles FILL			0.5			132	
SILT; clayey; very stiff; moist; slightly cohesive; orange brown			1.0			119 148 113	
End of borehole 1.0 m			1.5 2.0				
BH 16B 15/7/11							
TOPSOIL	Fill						
SILT; slightly clayey; slightly sandy; firm; moist; friable; brown; dark brown mottles FILL			0.5			38	
SILT; clayey; very stiff; moist; slightly cohesive; orange brown becomes moderately plastic			1.0			129 132 189	
End of borehole 1.0 m			1.5 2.0				

EXCAVATION METHOD: 50mm Diameter Hand Auger

SHRIMPTON & LIPINSKI

BH 17A&17B

Sheet: 1 Of: 1

Site: Consent Management; Grace Road Development; Grace Road, Tauranga

Job No. 19596 | Date Excavated: 17/6/11&15/7/11 | RL m Moturiki Datum | Logged By: N.I

Description of Soil	Soil Symbol	Depth (m)	Scala blows/100 mm	Groundwater	Undrained Shear Strength (kPa)	Undrained Shear Strength (kPa) 50 100 150
BH 17A 17/6/11						
TOPSOIL; contains shell fragments	Fill	0.5		not found		
SILT; slightly clayey; stiff; moist; friable; brown dark brown mottles FILL					63	
becomes orange brown; rare dark brown mottles hard		1.0			200+	
End of borehole 1.0 m		1.5				
		2.0				
BH 17B 15/7/11						
TOPSOIL 300 mm	Fill			not found		
SILT; clayey; firm; wet; slightly cohesive; orange brown dark brown mottles FILL		0.5			35	
					69	
SILT; clayey; very stiff; moist; moderately plastic; orange brown		1.0			163	
					126	
End of borehole 1.0 m		1.5				
		2.0				

EXCAVATION METHOD: 50mm Diameter Hand Auger

SHRIMPTON & LIPINSKI

BH 17C

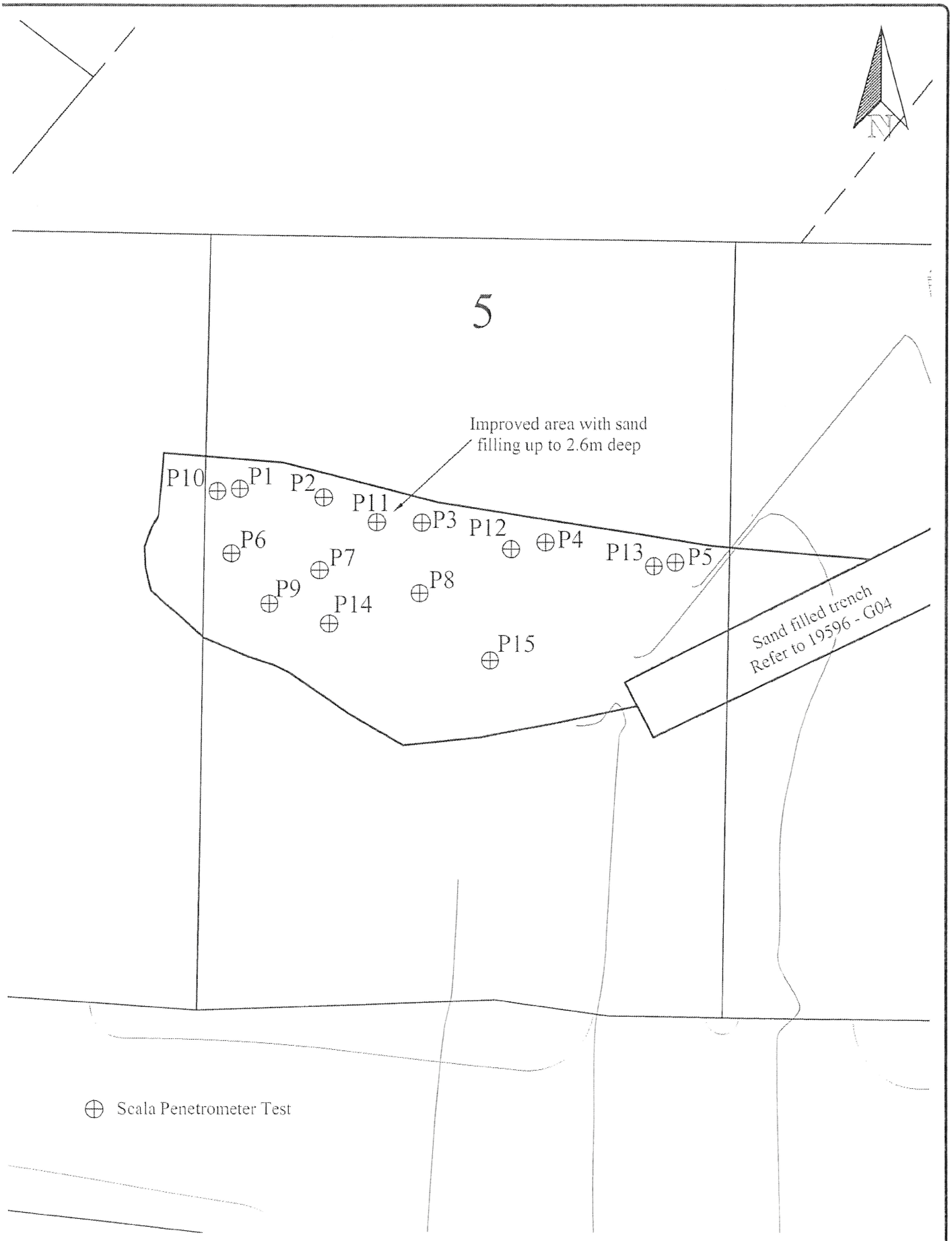
Sheet: 1 Of: 1

Site: Consent Management; Grace Road Development; Grace Road, Tauranga

Job No. 19596	Date Excavated: 15/7/11	RL m Moturiki Datum	Logged By: N.I

Description of Soil	Soil Symbol	Depth (m)	Scala blows/100 mm	Groundwater	Undrained Shear Strength (kPa)	Undrained Shear Strength (kPa) 50 100 150
BH 17C						
SILT; clayey; soft; wet; low plasticity; orange brown dark brown mottles FILL	Fill	0.5		not found	25 25 38 97	
SILT; clayey; very stiff; moist; moderately plastic; orange brown		1.0			173	
End of borehole 1.0 m		1.5 2.0				

EXCAVATION METHOD: 50mm Diameter Hand Auger



S & L CONSULTANTS
SURVEYORS - ENGINEERS
PLANNERS
111 Cameron Road, Tauranga
New Zealand
P.O. Box 231 Ph (07) 577-6069
Fax (07) 577-6065
Email: slconsultants@slgl.co.nz

Norfolk Grace Subdivision
62 Grace Road, Tauranga
Lot 5 Ground Improvement Test Positions

REV	DESCRIPTION	DATE
0	Issued with Report	07.11

	NAME	DATE	SIGNED
Approved			
Designed			
Drawn			
Checked			
Surveyed			

REFERENCES

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ORIGINAL SCALES: 1:150 @ A4
DATE: 07/11
DRAWING No: 19596 - G03
REVISION: 0

METRIC DESIGN

SCALA PENETROMETER TEST RESULTS

(No. of Blows / Sucessive 0.1m Penetration)

SHRIMPTON & LIPINSKI

Job Number: 19596

Client: Consent Management _____ indicates base of fill

Location: Lot 5, Grace Road Development, Tauranga

Tested by: N.I R = Refusal (>15 blows per 100 mm)

Date: 7/07/2011 Test in fill 0.3 m to 0.6 m below existing GL | 15/7/11 Test from finished fill level

Test Position	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Depth (m)	Number Of Blows													
0.0 - 0.1	1	1	2	2	1	1	2	1	1	4	1	1	1	1
0.1 - 0.2	3	4	2	2	2	4	3	2	3	6	3	4	1	3
0.2 - 0.3	3	5	4	5	4	5	5	4	4	8	5	10	2	3
0.3 - 0.4	4	7	5	5	8	6	8	7	4	11	9	11	6	3
0.4 - 0.5	5	8	8	11	8	7	9	9	6	10	R	R	9	4
0.5 - 0.6	5	9	10	11	13	5	13	11	5				R	9
0.6 - 0.7	6	8	11	12	13	8	12	11	6					13
0.7 - 0.8	6	7	11	14	13	8	7	10	5					R
0.8 - 0.9	5	12	9	13										
0.9 - 1.0	4	8	10	12										
1.0 - 1.1	7	11	13	6										
1.1 - 1.2	6	10	12	6										
1.2 - 1.3	10	R	11	10										
1.3 - 1.4	11		6	9										
1.4 - 1.5	5		8	9										
1.5 - 1.6	5		8											

Job Number: 19596

Client: Consent Management

Location: Lot 5, Grace Road Development, Tauranga

Tested by: N.I

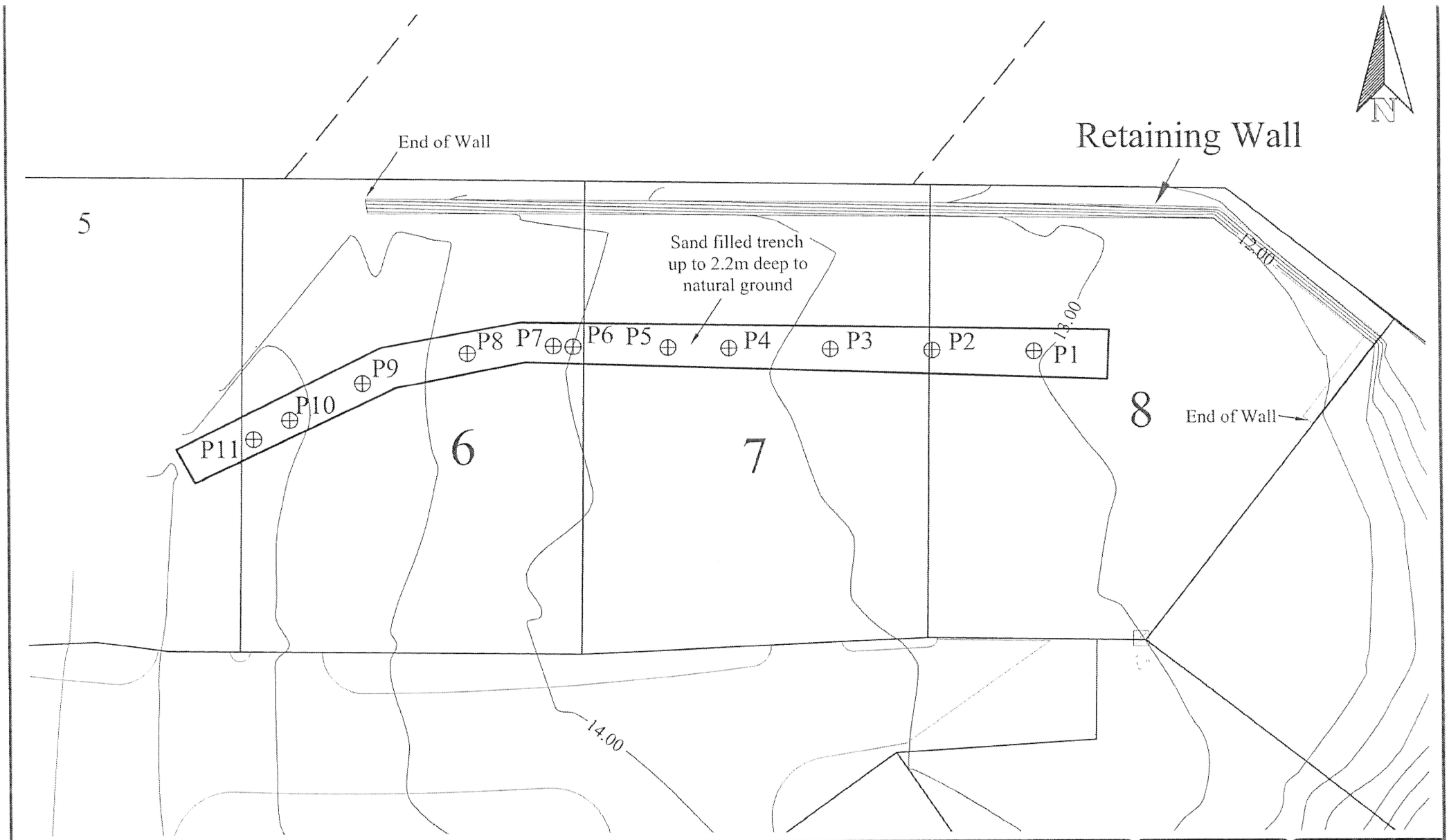
Date: 15/07/2011

_____ indicates base of fill

R = Refusal (>15 blows per 100 mm)

Finish level

Test Position	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Depth (m)	Number Of Blows													
0.0 - 0.1	2													
0.1 - 0.2	4													
0.2 - 0.3	4													
0.3 - 0.4	3													
0.4 - 0.5	2													
0.5 - 0.6	2													
0.6 - 0.7	2													
0.7 - 0.8	2													
0.8 - 0.9														
0.9 - 1.0														
1.0 - 1.1														
1.1 - 1.2														
1.2 - 1.3														
1.3 - 1.4														
1.4 - 1.5														
1.5 - 1.6														



⊕ Scala Penetrometer Test

Norfolk Grace Subdivision
62 Grace Road, Tauranga
Lots 5 - 8 Ground Improvement Test Positions

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ORIGINAL SCALES	1:250 @ A4
DATE	07/11
DRAWING No	19596 - G04
CHECKED	
REVISION	0
METRIC DESIGN	

SCALA PENETROMETER TEST RESULTS

(No. of Blows / Sucessive 0.1m Penetration)

SHRIMPTON & LIPINSKI

Job Number: 19596

Client: Consent Management _____ indicates base of fill

Location: Sand Fill ; Lots 6, 7 and 8, Norfolk Grace Subdivision

Tested by: N.I R = Refusal (>15 blows per 100 mm)

Date: 8/06/2011 | 7/07/2011

Test Position	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Depth (m)	Number Of Blows													
0.0 - 0.1	4	2	1	1	2	2	1	2	2	1	2			
0.1 - 0.2	4	4	4	4	5	4	1	5	5	2	3			
0.2 - 0.3	5	5	5	5	5	4	4	4	6	4	4			
0.3 - 0.4	6	5	4	6	3	4	4	6	6	8	6			
0.4 - 0.5	8	6	4	4	2	3	4	7	6	5	8			
0.5 - 0.6	9	9	5	3	2	2	6	8	7	6	10			
0.6 - 0.7	8	6	7	4	6	4	7	9	7	7	10			
0.7 - 0.8	4						7	6	9	11	5			
0.8 - 0.9	5						7	3	7	5	4			
0.9 - 1.0	7						5	7	8	9	2			
1.0 - 1.1	5		4		3		4	5	9	7	2			
1.1 - 1.2	4		6		5		7	7	4	3	1			
1.2 - 1.3			7		5		4	9	8	2				
1.3 - 1.4			8		7		4	12	7	1				
1.4 - 1.5			7		3		4	7	5					
1.5 - 1.6			8		3		7	6	3					

APPENDIX 4

Conditions of Subdivision Approval 12/2010

Tauranga City

Grace Road Trust
C/- Boffa Miskell Limited
P O Box 13 373
Tauranga 3141

Attention: Tim Lester

RESOURCE MANAGEMENT ACT 1991
SUBDIVISION RESOURCE CONSENT DECISION – RC15321

Tauranga City Council resolves:

That pursuant to Sections 104 and 104C of the Resource Management Act 1991, the limited discretionary subdivision application by Grace Road Trust to carry out a 17-lot residential subdivision where frontage to Grace Road, Thirteenth and Fourteenth Avenues will be provided via Access Lot and right of way easement, including an easement over Lot 3 DP 433557; and where land use non-compliances will occur in respect to access way works and servicing being located beneath the drip line of protected trees on the site and including pruning works to protected English Oaks, Pohutukawa and Norfolk Island Pine at 62 Grace Road and 41 Fourteenth Avenue, Tauranga legally described as Lot 5 DP 434582 and Lot 3 DP 433557 is granted consent.

That pursuant to Section 113 of the RMA – the reasons for the decision are as per the recommendation:

The proposed activity will not be contrary to the purposes and principles of the RMA.

The actual and potential adverse effects of the proposal on the environment are considered to be acceptable and not more than minor.

The proposal will be consistent with the relevant objectives and policies of the Tauranga District Plan and Regional Policy Statement and that consideration has been given to the relevant objectives and policies of the proposed City Plan.

There were no principal issues in contention.

That pursuant to Sections 108 & 220 of the RMA, this consent is subject to the following conditions:

TCC Ref 3578501

1. *The proposal shall proceed in accordance with the application submitted including:*

   - *Application and Assessment of Effects prepared by Boffa Miskell Limited, referenced T10114, dated October 2010 including;*
     - *Site Geotechnical Assessment prepared by S & L Consultants Ltd, referenced 19596, dated 11 October 2010;*
     - *Services and Infrastructure Assessment prepared by S & L Consultants Ltd, referenced 19596, dated 12 October 2010 and Reference Plan 19596-04;*
   - *Additional Information submitted by Boffa Miskell Limited, dated 5 and 22 November 2010 including emails dated 2 and 7 December 2010 including:*
     - *Building Methodology for Building Works with Drip Line of Protected Trees on Site, prepared by Arbor Care Ltd;*
     - *Additional Arboricultural Assessment prepared by Arbor Care Ltd dated 6 December 2010;*
     - *Directional Drilling Plan prepared by S & L Consultants Ltd referenced 19596-DR1 Rev 1, dated November 2010;*
     - *Vehicle Tracking Diagrams prepared by S & L Consultants Ltd, referenced 195696 – C02, dated December 2010*
   - *Arboriculture Assessments prepared by Phillip Sale – Arbor Care Ltd entitled "Roading Alterations, Upgrade and Services Installation associated with a 17 Section Subdivision at 62 Grace Road, Tauranga", dated 28 October 2010;*
   - *Pre-Development Site Plan referenced 18452-01, dated September 2007 and Site Plan referenced 19596-SP1 dated November 2010;*
   - *Application Plans prepared by Boffa Miskell Limited including:*
     - *Scheme Plan ref T10114_01 Rev G, dated 23 November 2010;*
     - *Plan of Development ref T10114_02 Rev G, dated 23 November 2010;*
     - *Tree Location Plan referenced T10114_04 Rev E, dated 23 November 2010,*

2. *Any staging of this subdivision consent by way of s223 / 224 certificates issued on separate survey for this subdivision is appropriate subject to that staging complying with all relevant conditions as listed for that stage within this subdivision consent.*

3. *All matters and works relating to the servicing and accessing of the subdivision, shall be designed, supervised, constructed and certified in accordance with requirements of the Council's' Code of Practice for Development.*

4. *Prior to any works commencing on the site (exclusive of site clearance or bulk earthworks associated with any Environment Bay of Plenty earthworks consent) the consent holder shall submit, to the Council, plans of the proposed activity to and obtain plan approval. Including the following:*
   - *The information and plans required by the Code of Practice for Development;*
   - *All flood risk areas;*
   - *Details of the stormwater detention system;*
   - *All potential run out areas;*
   - *Details of the construction of the access lot and right of ways and the proposed traffic management measures;*
   - *Details of the sewer extension that is required to service the upstream catchment;*
   - *Details of Fire Fighting reticulation and coverage;*
   - *Details of any overland flow paths;*

- *Details of the works to establish a suitable building platform on each proposed allotment (including any retaining wall structures).*

5. *All residential lots shall be provided with a separate underground connection to the sanitary sewer, water and electricity reticulation system. Separate connection to the stormwater reticulation system shall be provided for proposed lots 5 to 17 (inclusive) as per the Services and Infrastructure Assessment report referenced in condition 1 above. These connections shall be In accordance with the Council's Code of Practice for Development.*

6. *The consent holder shall supply to the Council a set of 'as built' plans of all engineering works in accordance with the Council's Code of Practice for Development.*

   The location of any subsoil drains and overland flow paths shall be shown on the as-built drawings submitted to the Council and within the geotechnical completion report required by Condition 7.

7. *All earthworks design, testing and construction shall be undertaken in accordance with Section 2 of the Code of Practice for Development and the specific requirements of the consent holders appointed 'Soils Engineer'.*

   Where earthworks and/or pre-load operations occur over the Council's mains the consent holder shall undertake a CCTV survey of the mains prior to and upon completion of the earthworks and/or pre-load operations. Monitoring shall continue at regular intervals during the earthworks and pre-load phases of the project as an ongoing check of the condition of the mains and to ensure their serviceability. If damage occurs to the mains during the earthworks and/or pre-load operations the Council will repair the mains at the consent holder's expense, with any payment for repairs or losses arising as a result of the damage shall be paid prior to certification pursuant to Section 224.

8. *The Consent Holder shall provide to the Council a "Geotechnical Completion Report" complied by a Category 1 Chartered Professional Engineer. The report shall:*
   - *Comply with the Council's Code of Practice for Development;*
   - *Display the position of all designated building platforms (including finished earthwork areas and finished contours) and building restriction lines where applicable;*
   - *Provide recommendations for the on site disposal of stormwater where applicable;*
   - *Provide recommendations for the on going development of the lots (i.e. maximum cut/fill heights, management of steep slopes, etc.);*
   - *Confirm earthworks and/or building platforms have been constructed to comply with the New Zealand Building Code requirements;*
   - *Certify that any residual settlement or differential settlement that may still occur shall not exceed the manufacturer's recommendations with respect to the installed underground pipe networks or exceed accepted design techniques with respect to road settlement or long term deflection, or exceed the settlement limitations as detailed in the New Zealand Building Code;*
   - *Comment on the removal or amendment of existing land feature/s displayed on Council's GIS.*

   Upon receipt of the above, all matters set out within the report will be reviewed and if necessary a consent notice, pursuant to Section 221 of the Resource Management Act 1991, may be registered on each of the Certificate of Titles advising the owners and subsequent owners thereof, of the following requirement to be complied with on a continuing basis:

"The design and construction of any building or structures requiring a Building Consent in accordance with the Building Act 2004 shall comply with the recommendations contained in the Geotechnical Completion Report".

9. *All building line restrictions and/or designated building platforms shall be clearly identified and dimensioned on the survey plan prior to certification pursuant to Section 223 of the Resource Management Act 1991.*

10. *The consent holder shall register an easement in gross in favour of the Council over any stormwater overland flowpath located on private property, including those resulting from overload of the roading primary stormwater system under extreme rainfall conditions.*

    The overland flowpath easement shall be shown on the survey plan prior to certification pursuant to Section 223 of the Resource Management Act 1991 and shall be shown as the "Right to Drain Stormwater" and shall be registered on the survey plan under a "Memorandum of Easements in Gross".

11. *All easements required for underground services and rights of way serving lots within the subdivision shall be duly granted or reserved.*

12. *The consent holder shall construct the shared access ways shown as Areas (A), (B), (C), (D) and (E) on the scheme plan in accordance with the Code of Practice for Development.*

13. *The following amalgamation condition shall be recorded on the survey plan prior to certification pursuant to Section 223 of the Resource Management Act 1991 (LINZ Request 955961):*

    "That Lot 100 hereon (legal access) be held as to twelve undivided one-twelfth shares by the owners of Lots 1, 2, 3, 4, 5, 6, 7, 10, 11, 12, 13 & 14 hereon as tenants in common in the said shares and that individual Computer Registers be issued in accordance therewith.

Varied 30 May 2011

14. *All access and service connection provision (inclusive of pruning works) shall be carried out in accordance with the information and recommendations provided by Arbor Care Ltd as detailed within condition 1 above, and shall be completed under the supervision of a registered Arborist.*

15. *All works associated with the installation of services beneath the drip-line of any protected trees on site shall be carried out using directional drilling at a depth of at least 1.2m and with a drill no greater than 150mm. All works associated with this drilling shall be submitted at the time of seeking plan approval as required by Condition 4 above.*

16. *The consent holder shall notify Council's Arborist three (3) working days prior to the commencement of any access or service connection works being undertaken beneath the drip-line of any protected trees on this site, inclusive of any pruning work associated with these works.*

17. *The consent holder shall, immediately prior to the issue of a certificate under section 224(c) of the Resource Management Act 1991, pay to the Council a local infrastructure contributions (subdivision impact fees) for reserves and community infrastructure in accordance with the relevant rules (and formulas) of Plan Change 51 to the District Plan. These fees are for the provision of additional reserves and the development of reserves required as the result of this development.*

18. *All costs associated with the conditions of this consent, including those required under the Code of Practice for Development, shall be met by the consent holder.*

Recommended and Assessed by:

Brad Bellamy
Senior Environmental Planner

Delegated Authorisation by:

Natalie Rutland
Team Leader Environmental Planning

Date: 21 December 2010

Advice Notes:

1. *Under RMA s357, you can object to this consent by serving written notice on the Council within 15 working days of receiving this decision, detailing the reasons for the objection.*

2. *Should the actual processing cost exceed the deposit fee paid at lodgement, if not already accompanying this decision, an invoice may be sent at a later date.*

3. *Where any building or drainage works are required to satisfy conditions of this consent, all consents required under the Building Act 2004 must be obtained prior to the works being carried out.*

4. *Construction noise from starting up and operation of construction equipment and all other construction activities on the site of the subdivision are required to meet the limits recommended in Table 1 in NZS6803:1999, and shall be measured and assessed in accordance with, NZS6803P:1984 - "The measurement and assessment of noise from construction, maintenance and demolition work". Adjustments provided in Clause 6.1 of NZS6803P:1984 shall apply for the full duration of the project, and references in the tables to NZS6802 shall read as references to Clause 4.2.2 of NZS6802:1991.*

5. *Dust management and silt runoff is to be controlled in accordance with the District Plan and Section 2 of the Code of Practice for Development. The Consent Holder is advised that they are required by Environment Bay of Plenty's Land Management Plan to take the appropriate measures to prevent or minimise sediment generation and yield (sediment discharge).*

6. *Where consents required under the Building Act 2004 have not been obtained for residential development on these proposed allotments prior to the notification of decisions on submissions for the Proposed City Plan, then the rules of the City Plan as they relate to this site will be applicable.*

7. *All consents required by rules of the District Plan (Operative or Proposed as notified by decisions on submissions) as they relate to the construction of future dwelling units on any proposed allotments within the drip line of any protected tree shown on the attached applications plans shall be obtained prior to these works commencing.*

8. *Development contributions under LGA 2002 –*

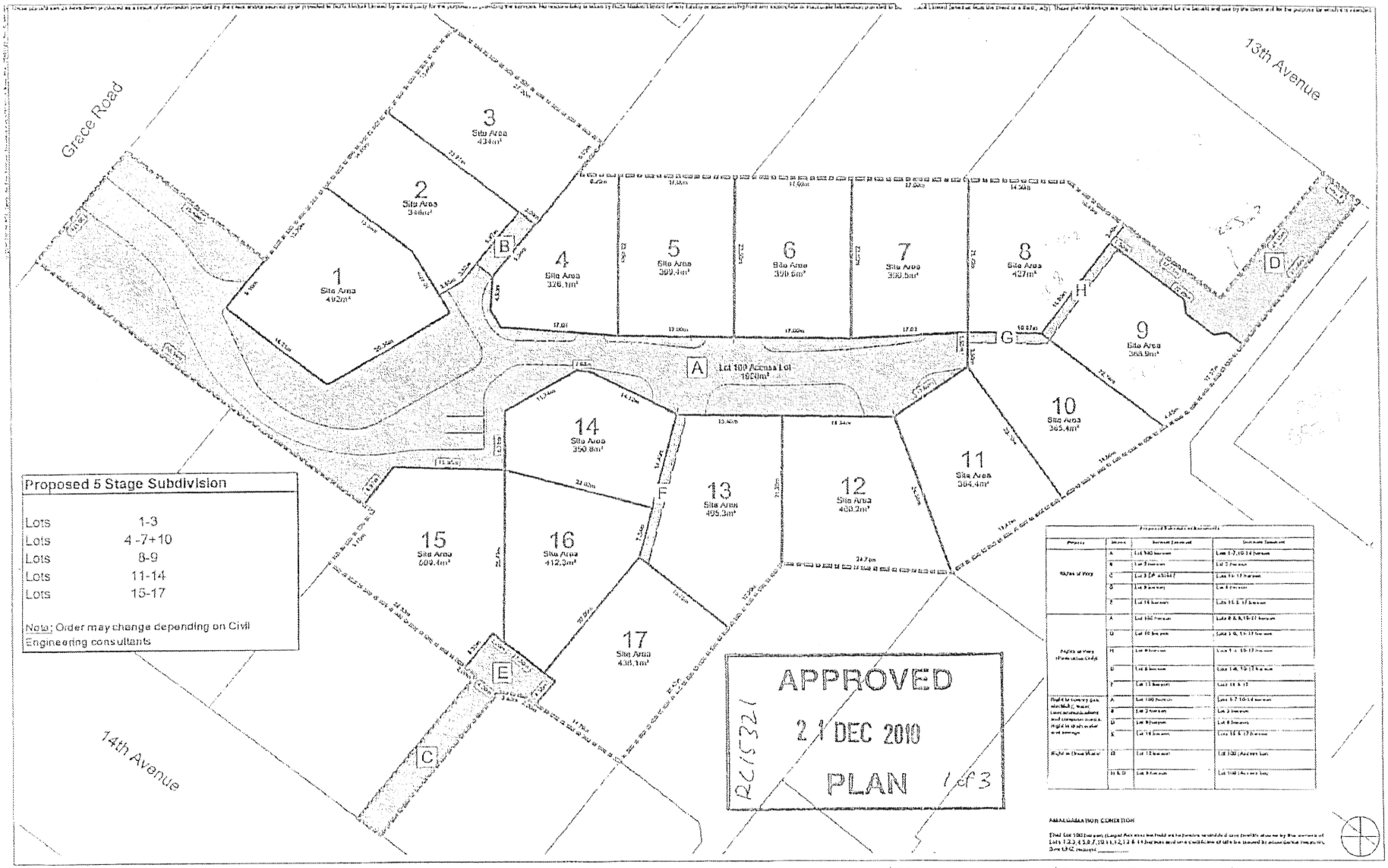
   Requirement for development contribution: Pursuant to section 198(1)(a) of the Local Government Act 2002, Council requires that a development contribution (being a Local Infrastructure Development Contribution) provided for and in accordance with Council's Development Contributions Policy, be made (paid) by the consent holder to Council.

   Subject to any applicable changes in Council's Development Contributions Policy:

The development contribution will be calculated (in part in the case of a staged subdivision) in accordance with Council's Development Contributions Policy in force on the date a certificate under section 224(c) of the Resource Management Act 1991 is granted (approved) in relation to the conditions of this subdivision consent.

The development contribution (in part if a staged subdivision) is payable immediately prior to the issue (release) of a certificate under section 224(c) of the Resource Management Act 1991 in relation to the conditions of this subdivision consent. A section 224(c) certificate will not be released until the development contribution (in part if a staged subdivision) is paid or made in full to Council.

Postponement or remission: There will be no postponement or remission of development contributions except in exceptional circumstances at the discretion of Council's Chief Executive or in the special circumstances outlined in Council's Development Contributions Policy.



Boffa Miskell

NOTES

CONTRACTORS TO VERIFY ALL DIMENSIONS ON SITE PRIOR TO COMMENCING WORK.

CONTRACTORS ARE RESPONSIBLE FOR CONFIRMING THE LOCATION OF ALL UNDERGROUND SERVICES ON SITE PRIOR TO COMMENCING WORK.

FIGURED DIMENSIONS TO BE TAKEN IN PREFERENCE TO SCALED DIMENSIONS.

KEY

KEY	DATE	DESCRIPTION
A	-	-
B	-	-
C	-	-
D	03.11.2010	Access Lot and Amalgamation Condition, Sections 1,2,3,4,7 Incorporated
E	03.11.2010	Street proposed 5 stage subdivision proposed
F	03.11.2010	Water reserve
G	03.11.2010	Access Lot and Amalgamation

CLIENT
Consent Management LP

CONSULTANTS
Boffa Miskell Limited
Bell Consultants

FOR INFORMATION

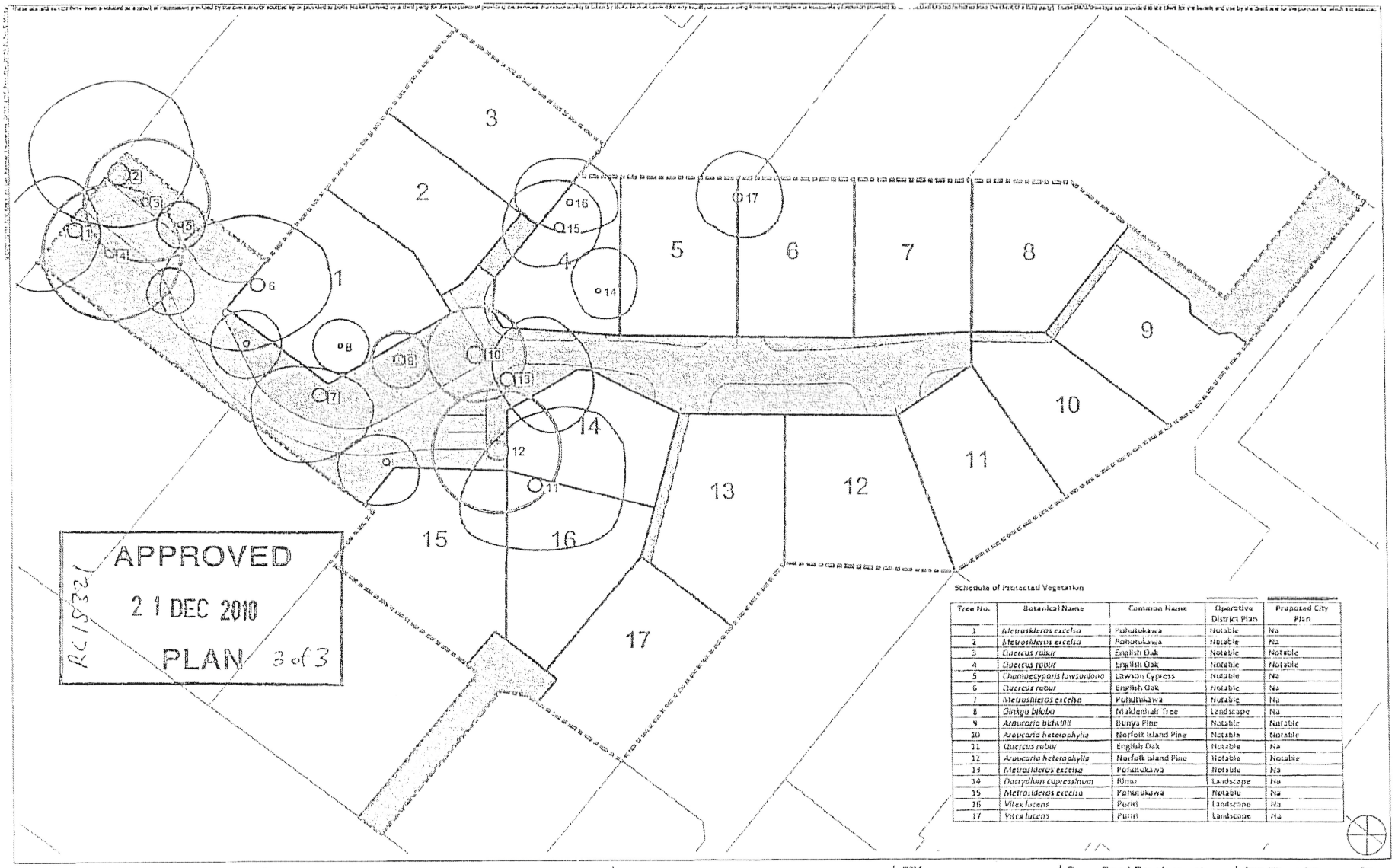
Grace Road Development

SCHEME PLAN

Design	MHG	Scale 1:750 @ A1	Date 23.11.2010
Drawn	MHG	1:500 @ A3	
Check	TEA	Copyright © Boffa Miskell Limited 2010	
Approved	RCA		

DRAWING NO. T10114_01 REVISION G

T10114_Base_Plan_20101123_Rev_G_MHG.dgn



Schedule of Protected Vegetation

Tree No.	Botanical Name	Common Name	Operative District Plan	Proposed City Plan
1	*Metrosideros excelsa*	Pohutukawa	Notable	Na
2	*Metrosideros excelsa*	Pohutukawa	Notable	Na
3	*Quercus robur*	English Oak	Notable	Notable
4	*Quercus robur*	English Oak	Notable	Notable
5	*Chamaecyparis lawsoniana*	Lawson Cypress	Notable	Na
6	*Quercus robur*	English Oak	Notable	Na
7	*Metrosideros excelsa*	Pohutukawa	Notable	Na
8	*Ginkgo biloba*	Maidenhair Tree	Landscape	Na
9	*Araucaria bidwillii*	Bunya Pine	Notable	Notable
10	*Araucaria heterophylla*	Norfolk Island Pine	Notable	Notable
11	*Quercus robur*	English Oak	Notable	Na
12	*Araucaria heterophylla*	Norfolk Island Pine	Notable	Notable
13	*Metrosideros excelsa*	Pohutukawa	Notable	Na
14	*Dacrydium cupressinum*	Rimu	Landscape	Na
15	*Metrosideros excelsa*	Pohutukawa	Notable	Na
16	*Vitex lucens*	Puriri	Landscape	Na
17	*Vitex lucens*	Puriri	Landscape	Na

Boffa Miskell

Boffa Miskell Limited
Level 2, 118 Dr Corbett,
PO Box 13 373, Tauranga 3141
Tel: 64-07-271-3311 Fax: 64-07-271-3333
www.boffamiskell.co.nz

NOTES

CONTRACTORS TO VERIFY ALL DIMENSIONS ON SITE PRIOR TO COMMENCING WORK.

CONTRACTORS ARE RESPONSIBLE FOR CONFIRMING THE LOCATION OF ALL UNDERGROUND SERVICES ON SITE PRIOR TO COMMENCING WORK.

FIGURED DIMENSIONS TO BE TAKEN IN PREFERENCE TO SCALED DIMENSIONS.

KEY

REV	DATE	DESCRIPTION
A	28.10.2010	TREE NUMBERING ADJUSTED
B	28.10.2010	FIELD ALIGNMENT
C	03.11.2010	INSERT CADASTRAL INFORMATION
D	23.11.2010	INSERT ROADWAY
E	23.11.2010	Back to project name

CLIENT
Consent Management LP

COMMUNITIES
Boffa Miskell Limited
Site Consultants

FOR INFORMATION

Grace Road Development

TREE LOCATION PLAN

Design MRG
Drawn MRG
Check TLe
Approved RLG

Scale 1:250 @ A1
1:500 @ A1

Date 23.11.2010

Copyright © Boffa Miskell Limited 2010

DRAWING NO. T10114_04

REVISION E

T10114_Base_Plan_20101123_Rev_G_Mrt.dgn

Tauranga City

Grace Road Trust
C/- S & L Consultants Ltd
P O Box 231
Tauranga 3140

RESOURCE MANAGEMENT ACT 1991
SECTION 127 CHANGE CONSENT CONDITION DECISION – RC15321 - 01

Tauranga City Council resolves:

That pursuant to Sections 104, 104B, 127 and 108 of the Resource Management Act 1991, the discretionary variation application by Grace Road Trust to change conditions 1 and 13 of Subdivision Consent RC15321 in respect of land at 62 Grace Road, Tauranga, legally described as Lot 5 DP 434582 and Lot 3 DP 433557 is granted.

That pursuant to Section 113 of the RMA – the reasons for the decision are as per the recommendation:

The proposed changes to the consent will not be contrary to the purpose and principles of the RMA.

The actual and potential adverse effects of the changes to the consent on the environment are considered to be acceptable and not materially different to those of the original activity.

The changes to the consent will be reasonably consistent with the relevant objectives and policies of the Tauranga District Plan, Proposed City Plan along with the Operative and Proposed Regional Policy Statement.

There were no principal issues in contention.

Condition 1 now reads:

1. *The proposal shall proceed in accordance with the application submitted, except where amended through s127 application information as set out below, including:*
   - *Application and Assessment of Effects prepared by Boffa Miskell Limited, referenced T10114, dated October 2010 including;*
     - *Site Geotechnical Assessment prepared by S & L Consultants Ltd, referenced 19596, dated 11 October 2010;*
     - *Services and Infrastructure Assessment prepared by S & L Consultants Ltd, referenced 19596, dated 12 October 2010 and Reference Plan 19596-04;*

- *Additional Information submitted by Boffa Miskell Limited, dated 5 and 22 November 2010 including emails dated 2 and 7 December 2010 including:*
  - *Building Methodology for Building Works with Drip Line of Protected Trees on Site, prepared by Arbor Care Ltd;*
  - *Additional Arboricultural Assessment prepared by Arbor Care Ltd dated 6 December 2010;*
  - *Directional Drilling Plan prepared by S & L Consultants Ltd referenced 19596-DR1 Rev 1, dated November 2010;*
  - *Vehicle Tracking Diagrams prepared by S & L Consultants Ltd, referenced 195696 – C02, dated December 2010*
- *Arboriculture Assessments prepared by Philip Sale – Arbor Care Ltd entitled "Roading Alterations, Upgrade and Services Installation associated with a 17 Section Subdivision at 62 Grace Road, Tauranga", dated 28 October 2010;*
- *Pre-Development Site Plan referenced 18452-01, dated September 2007 and Site Plan referenced 19596-SP1 dated November 2010;*
- *Application Plans prepared by Boffa Miskell Limited including:*
  - *Plan of Development ref T10114_02 Rev G, dated 23 November 2010;*
  - *Tree Location Plan referenced T10114_04 Rev E, dated 23 November 2010,*
- *Section 127 Application prepared by S & L Consultants Ltd referenced 19596, dated April 2011, including:*
  - *Revised Scheme Plan referenced T10114_01, Revision H, dated 19 May 2011.*

And shall comply with the following conditions and any amended conditions of consent varied as a result of variation RC15321-01 being granted.

Condition 13 now reads:

13. *The following amalgamation condition shall be recorded on the survey plan prior to certification pursuant to Section 223 of the Resource Management Act 1991 (LINZ Request 995131):*

    "That Lot 100 hereon (legal access) be held as to twelve undivided one-twelfth shares by the owners of Lots 1, 2, 3, 4, 5, 6, 7, 8, 11, 12, 13 & 14 hereon as tenants in common in the said shares and that individual Computer Registers be issued in accordance therewith."

Recommended and Assessed by:

Brad Bellamy
Senior Environmental Planner

Delegated Authorisation by:

Natalie Rolland
Senior Environmental Planner
Team Leader Environmental Planning
Date: 30 May 2011

Advice Notes:

1. *Within 15 workings days of receiving this decision, you can object under RMA s357 by writing to Council detailing your reasons. Any objection must be resolved before the resource consent is considered to be valid.*

2. *Should the actual processing cost exceed the deposit fee paid at lodgement, if not already accompanying this decision, an invoice may be sent at a later date.*

3. *You are advised that decisions on submissions relating to rules in the Proposed City Plan have been notified and that these rules now have legal effect pursuant to Section 86B of the RMA. Where consents required under the Building Act 2004 have not been obtained for residential development on these proposed allotments, then the rules of the City Plan as they relate to this site will be applicable.*

4. *Development contributions under LGA 2002 –*

   Requirement for development contribution: Pursuant to section 198(1)(a) of the Local Government Act 2002, Council requires that a development contribution (being a Local Infrastructure Development Contribution) provided for and in accordance with Council's Development Contributions Policy, be made (paid) by the consent holder to Council.

   Subject to any applicable changes in Council's Development Contributions Policy:

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   The development contribution (in part if a staged subdivision) is payable immediately prior to the issue (release) of a certificate under section 224(c) of the Resource Management Act 1991 in relation to the conditions of this subdivision consent. A section 224(c) certificate will not be released until the development contribution (in part if a staged subdivision) is paid or made in full to Council.

   Postponement or remission: There will be no postponement or remission of development contributions except in exceptional circumstances at the discretion of Council's Chief Executive or in the special circumstances outlined in Council's Development Contributions Policy.

17 December 2020 Document Ref: TGA2020-0305AB Rev 0

Andrew Leong
36 Keilor Road
Tauranga

Attention: Andrew Leong

Dear Andrew

RE: GEOTECHNICAL PLAN REVIEW FOR PROPOSED RESIDENTIAL DWELLING
62L GRACE ROAD, TAURANGA

1 INTRODUCTION

As requested, we have carried out a review of the geotechnical aspects of a proposed two-storey residential dwelling to be constructed at the above site (legal description Lot 14 DP 444481).

A geotechnical investigation had been previously carried out by S&L Consultants Ltd (S&L) for the Norfolk Grace Residential Subdivision at 62 Grace Road, Tauranga, with the results of their investigation presented in their Summary Geotechnical Report (SGR) dated 5 September 2011, for which this site forms Lot 14 in that report.

As the S&L SGR is more than 9 years old, this geotechnical plan review has been undertaken to assess whether the recommendations provided in that report are still appropriate for current building code requirements and the requirements of the Tauranga City Council (TCC) Infrastructure Development Code (IDC).

The following documents were reviewed during the preparation of this letter:

- S&L Consultants Ltd (S&L) Summary Geotechnical Report (GIR) for Norfolk Grace Residential Subdivision at 62 Grace Road, Tauranga, dated 5 September 2011 (ref: 19596).
- Design Network Ltd Architectural Plans (Drawing No's 01 to 12, dated 4 December 2020).

It is intended that this letter will support a Building Consent application to TCC for the above-referenced proposed residential development.

2 DEVELOPMENT PROPOSAL

Based on the above referenced drawings, the development involves the construction of a two-storey residential dwelling within the eastern portion of the site. The 112m^2 timber-framed building will have a ground FFL of RL 16.0m (Moturiki Datum), comprise brick veneer and weatherboard cladding and supported on a 305mm thick Firth Ribraft floor system.

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Downpipes are to be connected to a 3000L above-ground stormwater rain tank located on the southern side of the proposed building.

Based on TCC lidar data, the site within the location of the proposed building sits at approximately RL 15.5m to RL 16.0m, therefore earthworks to construct a level building platform are anticipated to be relatively minor.

3 REVIEW OF S&L SUBDIVISION REPORT

Specific comments and recommendations in the S&L SGR pertaining to Lot 14 are summarised as follows:

- Boreholes 5, 14A and 14B undertaken within and adjacent to Lot 14 show that natural ground, undisturbed by the subdivision construction, exists across the site. The natural ground typically comprises 200mm of topsoil overlying the volcanic ash sequence comprising stiff silts and sands of the Hamilton ash, Rotoehu and post-Rotoehu (Younger) ash with a combined thickness of approximately 5.0m. The volcanic ash overlies silts and sands of the Matua Subgroup. Groundwater was encountered at a depth of 7.9m below the site (approx. RL 8.1m).
- The boreholes and subsequent shear vane testing indicate the natural ash soils encountered below the topsoil layer meet the requirements of 'Good Ground' in accordance with NZS3604. As such, no building restrictions or the need for ground improvement work are considered necessary for Lot 14.
- For stormwater disposal, because of the close proximity of a steep escarpment to the site, the disposal of stormwater by ground soakage is not recommended. For a development on Lot 14, stormwater flows should be collected in a storage tank with a slow release orifice to discharge to a suitable outfall an no greater than 1.5 litres per second for the 10% AEP 10 minute design storm event. An overland flow path for greater storm events from Lot 14 will follow the natural ground contour towards Thirteenth Avenue.

4 PLAN REVIEW

A TCC Category 1 Geo-Professional geotechnical review of the above-referenced reports and architectural drawings has now been carried out with specific comments provided below.

- The hand auger boreholes identified stiff to very stiff silts of Younger ash within Lot 14 with undrained shear strengths greater than 100kPa indicating a Geotechnical Ultimate Bearing Capacity of 300kPa should be available for residential dwelling foundations designed to NZS3604:2011. Therefore, the recommendations drawn from the S&L geotechnical report appear to be in line with current Building Code requirements and the TCC IDC.
- Although we do not expect ground conditions to vary across the site based on the generally consistent soil conditions encountered in the subdivision boreholes, the number of investigations undertaken within the proposed building footprint (no. 2) is less than industry accepted standards. We therefore recommend the site is inspected by a Geotechnical Engineer at the time of foundation preparation and topsoil strip to undertake at least 2 further hand auger boreholes with shear vane tests within the building footprint to a minimum depth of 2m to confirm the presence of 'Good Ground' in accordance with NZS3604:2011.
- The proposed Firth Ribraft foundation is considered appropriate for the site and consistent with the recommendations provided in the S&L SGR.
- The dwelling extends to within 7m of the crest of a 2.5m high steep slope located within 39A Fourteenth Avenue to the south. The building is located at a 1(V):2.8(H) projection line extending from the toe of this slope and therefore the risk of associated deep seated instability affecting the dwelling is low and need not be specifically assessed.

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- The S&L SGR does not provide any assessment on liquefaction hazard for the site. However, the suppressed groundwater table encountered during the investigation indicates a non-liquefiable raft of at least 7m mantles the site which is considered sufficient to suppress surface manifestation as a result of liquefaction. Furthermore, the age of the Matua Subgroup soils encountered below the groundwater table are older than those identified as being prone to the effects of liquefaction. Therefore, the risk of liquefaction for this site is considered low and further liquefaction analyses is not considered necessary.
- Other than the collection of stormwater flows from roof areas within the 3000L rain tank, as shown on the Architectural Plans (Ref. Drawing 01), CMW have not been provided with any stormwater calculations or details on the low flow outlet, as recommended in the S&L report We understand the stormwater system is currently being designed by others (Kirk Robers) and therefore will need to be reviewed by TCC as part of the building consent application process.

5 SUMMARY

Based on our plan review, the geotechnical aspects for the proposed building development and S&L SGR are in general accordance with current NZ Building Code requirements and the TCC IDC, and therefore considered appropriate for development, subject to the comments provided above.

6 LIMITATIONS

This report has been prepared solely for the use of our client, Andrew Leong, their professional advisors and the Tauranga City Council in relation to the specific project described herein. No liability is accepted in respect of its use for any other purpose or by any other person or entity. All future owners of the property should seek professional geotechnical advice to satisfy themselves as to its ongoing suitability for their intended use.

For and on behalf of CMW Geosciences

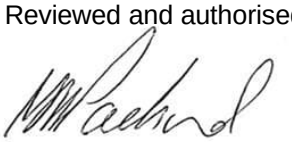
Prepared by:



Robert Taylor

Associate Geotechnical Engineer

Reviewed and authorised by:



Matt Packard

Associate Geotechnical Engineer
TCC Category 1 Geo-Professional
CMEngNZ, CPEng (Geotechnical)

Distribution: 1 electronic copy to Andrew Leong via email
1 electronic copy to Design Network via email
Original held at CMW Geosciences

TCC - Approved Building Consent Document - BC302707 - Pg 255 of 368 - 2/08/2021 - cojmcm

KIRK ROBERTS CONSULTING

22 June 2023

Steve Hughes
Page Earthworks
Tauranga (by email)

JOB NO: 2020639

Dear Steve,

Ground and Fill Inspection Report for a proposed dwelling at 62L Grace Road, Tauranga South, Tauranga. Issue: 001

As requested, Kirk Roberts have undertaken geotechnical testing at the subject site to confirm if the ground conditions encountered were consistent with those identified in the geotechnical report referenced below in Table 1 and to assess if fill material has been placed with adequate compaction.

Table 1: Site details.

Site address:	62L Grace Road, Tauranga.		Legal description:	Lot 14 DP444481	
Building Consent No.	BC302707	Earthworks contractor:	Page Earthworks		
Relevant geotechnical reporting associated with the site	S&L Consultants Ltd – Summary Geotechnical Report[1]		Recommended geotechnical ultimate bearing capacity (kPa)		300

Our geotechnical inspections are summarised in Table 2 below, photographs have been kept on file and relevant borehole logs and a site investigation plan (SK-1) are attached to this report.

Table 2: Inspection summary.

Inspection No.	Inspection Date	Comment
1	15/06/2023	An inspection was undertaken after earthworks had been completed to remove topsoil beneath the building platform with additional excavations undertaken to remove uncontrolled fill material within an approximate 2.0 m x 3.0 m area to a depth of approximately 0.7 m below ground level inside the western side of the proposed building footprint. This inspection revealed site preparations extended a suitable distance past the proposed foundations. Three hand auger boreholes were undertaken to a maximum depth of 2.3 m below prepared ground level (bpgl)(refer HA-01 to HA-03) with shear vane and Scala penetrometer testing to a maximum depth of 2.3 m bpgl. Results indicated the underlying soils generally achieve a geotechnical ultimate bearing capacity of 300 kPa.
2	20/06/2023	A second inspection was undertaken after fine granular fill material has been placed within the excavated area to achieve the required level. Two Scala penetrometer tests were undertaken within the fine granular fill material (refer SP-04 and SP-05). Results indicate that the fill material has been placed with sufficient compaction for the proposed development. No organic material was identified

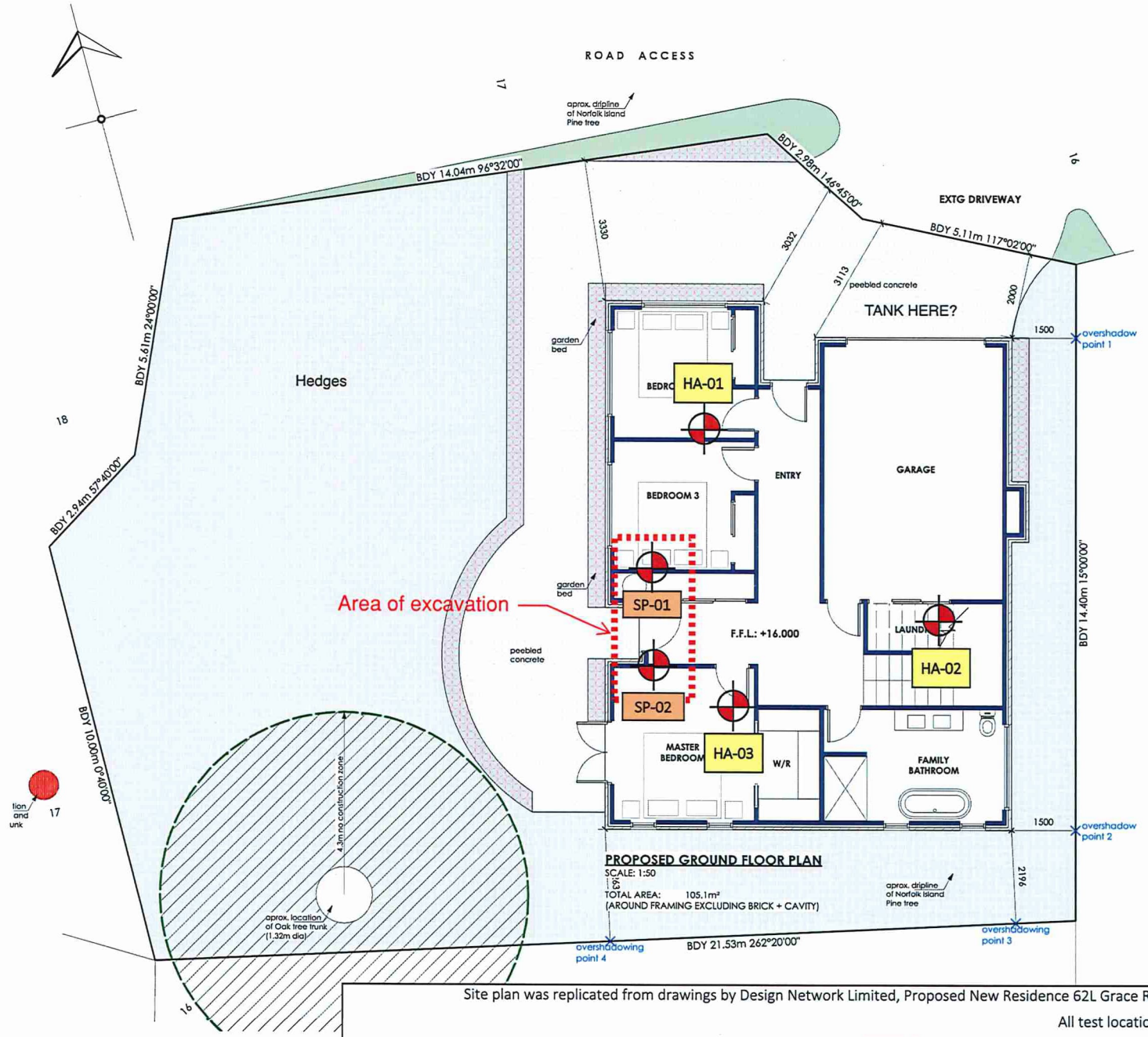
In our professional opinion, not to be inferred as a guarantee, we believe that the ground conditions encountered are suitable for foundations designed in accordance with the geotechnical report referenced in Table 1 above, and that the fill material has been placed with adequate compaction for the proposed development.

Report prepared by:	Reviewed by:	Approved by:
Gordon Blair	Nick Wells	Craig Manssen
Geotechnical Technician	BSc (Geology, PMEG)	Senior Structural Engineer
BSc (Earth Science)	Engineering Geologist	BE (Hons), CMEngNZ, CPEng (ID:161576)

Disclaimer

This report is based on information gained from limited subsurface test boring and sampling, supplemented by knowledge of local conditions from published sources. The report is therefore interpretative rather than factual and is limited to some extent by the scope of information on which it is based. The advice tendered in this report is based on information obtained from the limited subsurface test boring and sample locations and is not warranted in respect to the conditions that may be encountered across the site at other than these locations. It must be appreciated that the actual characteristics of the subsurface materials may vary significantly between adjacent test locations and sample intervals other than where observations, explorations and investigations have been made. It should be noted that because of the inherent uncertainties in subsurface evaluations, changed or unanticipated subsurface conditions may occur that could affect total project cost and/or execution. Kirk Roberts Ltd does not accept responsibility for the consequences of significant variances in the conditions and the requirements for execution of the works.

[1] Summary Geotechnical Report produced by S&L Consultants Ltd for Norfork Grace Residential Subdivision of 62 Grace Road, Tauranga, Ref: 19596, Dated: 5 September 2011.



PROPOSED GROUND FLOOR PLAN
SCALE: 1:50
TOTAL AREA: 105.1m²
(AROUND FRAMING EXCLUDING BRICK + CAVITY)

Legend:

= Test Location

HA = Hand Auger

Test Date - 15/06/2023

Test Date - 20/06/2023

Site plan was replicated from drawings by Design Network Limited, Proposed New Residence 62L Grace Road, Dated: 10/07/2020.

All test locations are approximate only.

PROJECT: 2020639 CREATED BY: GB DATE: 21/06/2023 Drawing: SK-1| Revision. 001	62L Grace Road, Tauranga	GEOTECHNICAL INVESTIGATION LOCATION PLAN

KIRK ROBERTS CONSULTING

SCALA PENETROMETER, SHEAR VANE & HAND AUGER RESULTS

KIRK ROBERTS CONSULTING

Client:	Page Earthworks	Scala Penetrometer:	SP-01
Site Address:	62L Grace Road	Hand Auger No.	HA-01
Town/City:	Tauranga	Job No.:	2020639
Logged By:	SS	Checked By:	NW
Logged Date:	19/06/23	Checked Date:	22/06/23
Date:	15/06/23		
Weather:	Fine		
Operator:	SS		

Geological Formation	Depth (m)	Sample Description	Graphic	USCS	Dr	Water Table	Undrained Shear Strength Su (kPa)	Blows per 100 mm of Penetration
Younger Ash	0.0	SILT (M); brownish. Very stiff to hard, dry to moist, non-plastic.		M		Groundwater Not Encountered	UTP	
		0.3m: Silt with traces sand and becomes yellowish brown					155/42	
	0.5	0.5m: Silt with minor sand and moist						
		Sandy SILT (MS); yellowish brown . Very stiff, moist, non-plastic.		MS			127/34	
	1.0	Silty SAND (SM); light brown . Stiff, moist, non-plastic.		SM			71/28	
		SAND (S); greyish. Very loose to loose, moist, sand, fine to medium.		S	VL			2
								1
	1.5							2
					L			2
								3
					VL			3
								2
					L			3
	2.0							
Rotoehu Ash		SILT (M); dark brownish . Very stiff, moist, low plasticity.		M				
		EOH: 2.30m					UTP	

Remarks:

Scala Penetrometer and Test Bore log tests give an indication of the ground condition at the location of the tests only. While they are representative of typical conditions across the site, they do not identify variations in the ground away from the test locations.

Generated with CORE-GS

SCALA PENETROMETER, SHEAR VANE & HAND AUGER RESULTS

KIRK ROBERTS CONSULTING

Client:	Page Earthworks	Scala Penetrometer:	SP-02
Site Address:	62L Grace Road	Hand Auger No.	HA-02
Town/City:	Tauranga	Job No.:	2020639
Logged By:	SS	Checked By:	NW
Logged Date:	19/06/23	Checked Date:	22/06/23
		Date:	15/06/23
		Weather:	Fine
		Operator:	SS

Geological Formation	Depth (m)	Sample Description	Graphic	USCS	D_r	Water Table	Undrained Shear Strength Su (kPa)	Blows per 100 mm of Penetration
Younger Ash	0.0	SILT (M); brownish. Hard, dry to moist, non-plastic.		M		Groundwater Not Encountered	UTP	
		0.3m: Silt with minor sand and becomes yellowish brown					198+	
	0.5	Sandy SILT (MS); yellowish brown . Stiff to very stiff, moist, non-plastic; sand, fine.		MS			127/28	
		0.8m: Silt with some sand and moist					59/17	
	1.0	SAND (S); greyish. Very loose, moist, sand, fine to medium.		S	VL			1
								2
	1.5	EOH: 1.50m						2

Remarks:

Scala Penetrometer and Test Bore log tests give an indication of the ground condition at the location of the tests only. While they are representative of typical conditions across the site, they do not identify variations in the ground away from the test locations.

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SCALA PENETROMETER, SHEAR VANE & HAND AUGER RESULTS

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Client:	Page Earthworks	Scala Penetrometer:	SP-03
Site Address:	62L Grace Road	Hand Auger No.	HA-03
Town/City:	Tauranga	Job No.:	2020639
Logged By:	SS	Checked By:	NW
Logged Date:	19/06/23	Checked Date:	22/06/23
		Date:	15/06/23
		Weather:	Fine
		Operator:	SS

Geological Formation	Depth (m)	Sample Description	Graphic	USCS	D_r	Water Table	Undrained Shear Strength Su (kPa)	Blows per 100 mm of Penetration
Younger Ash	0.0	SILT (M); brownish. Very stiff to hard, dry to moist, non-plastic.		M		Groundwater Not Encountered	UTP	
		0.3m: Silt with minor sand and becomes yellowish brown					198+	
	0.5	Sandy SILT (MS); yellowish brown. Stiff to very stiff, moist, non-plastic; sand, fine.		MS			127/28	
		0.9m: becomes light brown					59/17	
	1.0	SAND (S); greyish. Very loose, moist, sand, fine to medium.		S	VL			2
								2
					L			3
	1.5	EOH: 1.50m						

Remarks:

Scala Penetrometer and Test Bore log tests give an indication of the ground condition at the location of the tests only. While they are representative of typical conditions across the site, they do not identify variations in the ground away from the test locations.

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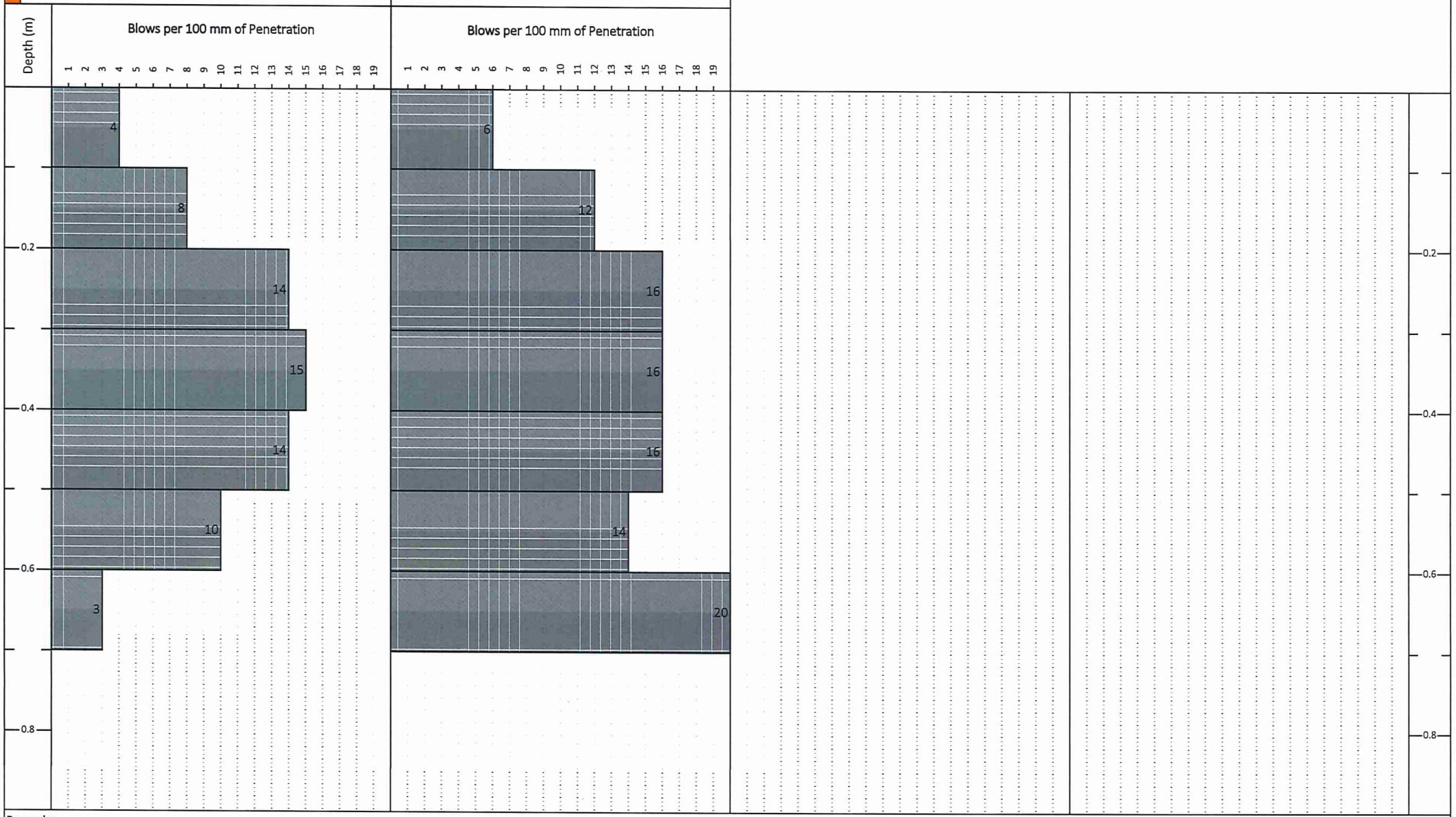
SCALA DATA (SIDE-BY-SIDE)

Job No.:	Client:	Site Address:	Town/City:	Date:	Weather:	Operator:	Project:
2020639	Page Earthworks	62L Grace Road	Tauranga	20/06/23	Fine	GB	62L Grace Road

KIRK ROBERTS CONSULTING



Remarks:

Scala Penetrometer log tests give an indication of the ground condition at the location of the tests only. While they are representative of typical conditions across the site, they do not identify variations in the ground away from the test locations.

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Natural Hazards