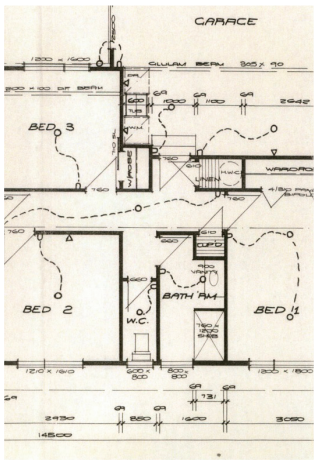
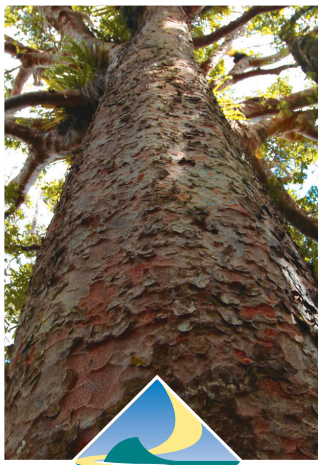
LIM

Land Information Memorandum





Tauranga City

Land Information Memorandum

This L.I.M. has been prepared for:

Applicant	**Manuel Quiroz**
Client	**Manuel Quiroz**
Property Address	**19 Mamauku Rise** **Welcome Bay** **Tauranga**
Legal Description	**Lot 34 DPS 82071 Interest in** **Access Lot 58 DPS 82071**
Application Date	**12 October 2024**

This Land Information Memorandum has been prepared for the purposes of Section 44A of the Local Government Official Information and Meetings Act 1987 and, in addition to the information provided for under section 44A(2), may contain such other information concerning the land that Council considers, at its discretion, to be relevant. It is based on a search of Council records only. Information in this Land Information Memorandum is deemed to be relevant at the date of issue only. 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.

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

Contents

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

Copy of Deposited Plan Attached	**Yes**
Service Print Attached	**Yes**
Method of Sewer Disposal	**To Public Sewer**
Existing Method of Stormwater Disposal	**To Connection**
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 69ZH Health Act 1956	**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" (Click here for link)) 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 69ZH of the Health Act 1956 is included in this Land Information Memorandum.

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 2024.

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	**06619 075 34**
Capital Value	**$755,000**
Land Value	**$340,000**
Improvement Value	**$415,000**

Rating Details

Current Annual Rates	**$3,103.57**
Balance Owing	**$Nil**

Water Meter Details

Water Meter On Property	**Yes**
Meter Type	**Individual Meter**
Water Rates Owing	**$20.98**

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	**$61.15**
Balance Owing	**$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.

Building Permits: For Building Permits issued prior to 1993 a copy of the inspection records, if these are held by Council, are attached.

Building Consents: For Building Consents issued after 1 January 1993 a Code Compliance Certificate (CCC) will be issued where the building work for which the building consent relates has been completed in accordance with the NZ Building Code.

Swimming/Spa Pools: If the property contains a swimming pool or spa pool, the pool must have a physical barrier restricting access to the pool that meets the requirements of the Building Act 2004. For more information, go to https://www.tauranga.govt.nz/living/building-and-renovations/inspections-and-approvals/swimming-pool-safety-barriers.

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.

Permits and Consents

Building Consents

Date Issued	Description of Work	BC Number	CCC Issued
23/07/01	Erect Dwelling & Retaining Walls	5950	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 or industrial. 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.The City Plan is currently undergoing five Proposed Plan Changes as follows:

- Plan Change 27 (Flooding from Intense Rainfall Events);
- Variation 1 to Plan Change 33 (Tauriko West Urban Growth Area)
- Plan Change 34 (Belk Road Rural Residential)
- Private Plan Change 35 (Tauriko Business Estate – Stage 4)
- Private Plan Change 39 (Upper Ohauiti)

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 visit the Tauranga City Council website www.tauranga.govt.nz.

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.

City Planning (cont.)

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 and certificates of acceptance. 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 http://www.tauranga.govt.nz/council/council-documents/strategies-plans-and-reports/plans/reserve-management-plans.

Relevant Planning Information

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

Instructions on how to navigate the ePlan can be found at the following link: https://www.tauranga.govt.nz/council/council-documents/tauranga-city-plan/how-to-use-the-city-plan.

Zone: Operative Tauranga City Plan	**Medium Density Residential**
Identified Plan Areas	**None Known**
Utilities / Designations	**None**
Protected Heritage/Notable or Groups of Trees, or Protected Buildings	**None Known**
Archaeological or Heritage Sites	**Refer plan of archaeological sites as attached. Further enquiries on these sites should be directed to Heritage New Zealand, Level 1, 26 Wharf Street, Tauranga phone (07) 577 4530 quoting reference U14/3445.**
Council Consents, Certificates, Notices, Orders or Bonds Affecting the Land:	**No**

Land Features

This information relates to city-wide studies and may not reflect the on site situation or natural hazard investigations and mitigation done on a property level.

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

The land form 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 Land Form within Tauranga District" as attached.

Microzoning for Earthquake Hazards

The Council has received reports and results that have assessed Tauranga City's vulnerability to liquefaction when considering a range of earthquake events. These reports and results, and a summary of them, are available by accessing https://www.tauranga.govt.nz/living/natural-hazards/understanding-our-hazards-studies-maps-and-data/earthquakes-and-liquefaction

The reports and results reflect the most up-to-date vulnerability to liquefaction from an earthquake event.

It is important to note that different properties are exposed to different levels of probability that land damage from liquefaction and lateral spread will in fact occur. The reports and results are undertaken at a City-wide scale and may be superseded by detailed, site specific assessments undertaken by qualified and experienced practitioners using improved or higher resolution data than presented in these reports.

The vulnerability and land damage maps are prepared based on an assessment of natural ground conditions and therefore do not take into account the influence of recent human activities that may influence liquefaction response (i.e. earthworks, ground improvement, foundation design), unless specifically stated within the technical reports. As such, the degree of land damage may be less than predicted for a given property where liquefaction risk was addressed during landform or building foundation design.

The presence of liquefaction and lateral spread information on a property may have implications for the use and development of that property including, but not limited to, the requirements for and assessments of building consent applications under the Building Act 2004 and Building Code (refer to the NZ Standard AS/NZ 1170 and design standard outlined in Chapter 10.10.6 Liquefaction of Tauranga City Council's Infrastructure Development Code), subdivision consent applications under the Resource Management Act, and infrastructure design.

The assessed hazard applicable to the area this property has been assessed within, is available by accessing the web-viewer available through the following link: https://www.tauranga.govt.nz/living/natural-hazards/understanding-our-hazards-studies-maps-and-data/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 landsliding triggered by rainfall, and the other by earthquakes. A report detailing the assessment and maps are available on https://www.tauranga.govt.nz/landslide-susceptibility.

Special Land Features Relevant to the Subject Property

Yes

Comments:

1. Refer copies of following reports by Mark T Mitchell Ltd as attached:

    a. Soils Investigation and Inspecting Engineers Report dated 4 November 1998.

    b. Inspecting Engineers Geotechnical Summary Report dated 4 November 1998, reference T-4255/2.

    c. Supplement to Inspecting Engineers Report dated 3 December 1998, reference T-4255/2.

2. On a number of sites within this subdivision the upper 1-2.5 metres of soils were found to comprise topsoil, certified fill, topsoil again, then back to virgin ground, casting doubt on the reports from Mark T Mitchell. Any further development on this site may require foundation investigation/design by a Chartered Professional Engineer.

3. **Depth and Velocity**
   Tauranga City Council model for Depth & Velocity of flood water. This gives us important information about where flood waters flow during a 1 in 100-year rainfall event. Please see attached map which illustrates the effect on this property.

Additional Information

Licences

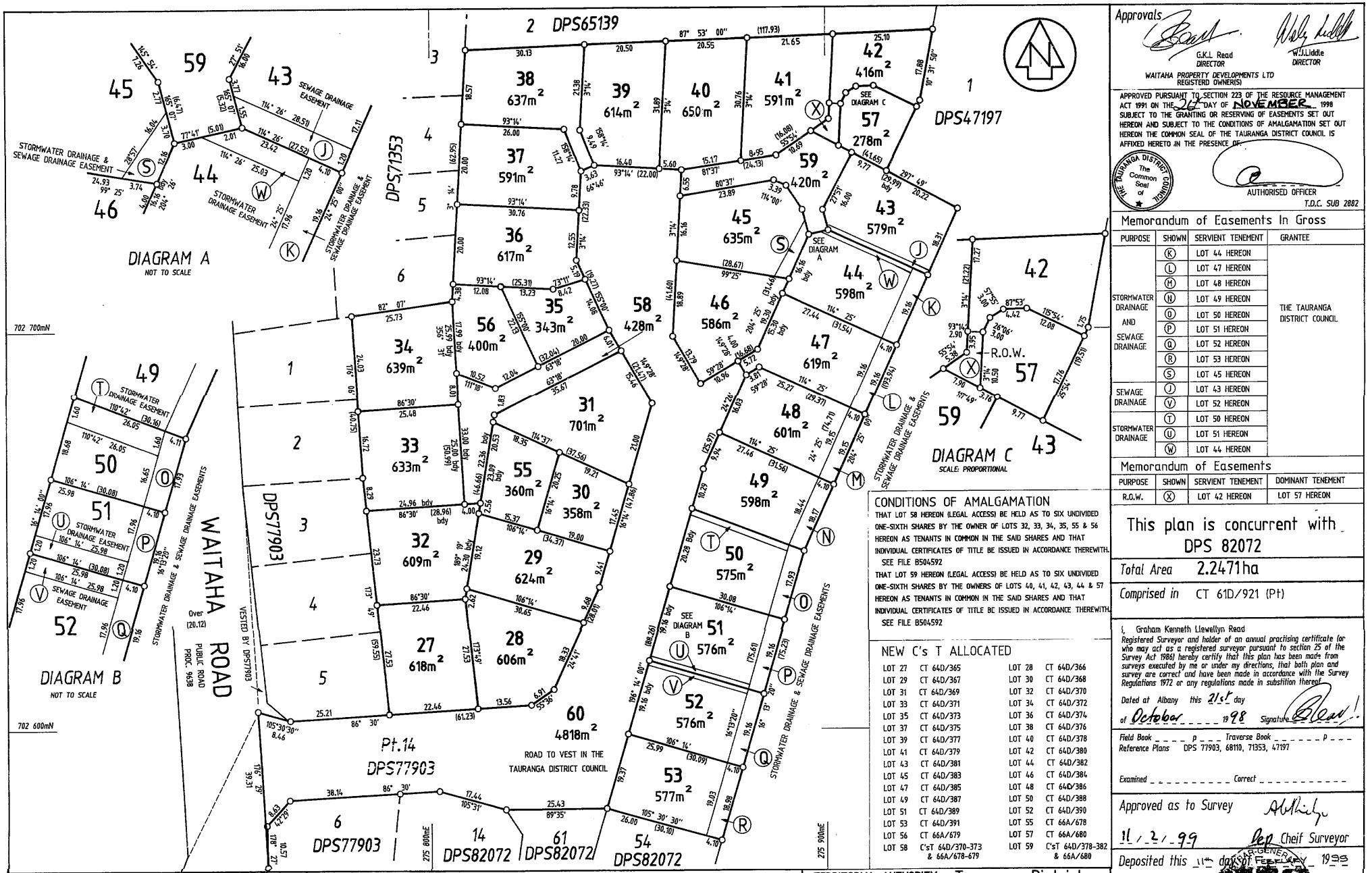
Licences Affecting the Land or Buildings **No**

Signed for and on behalf of the Council:

Position held: LIM & Property File Officer

Date: 25 October 2024

Tauranga City



Approvals

G.K.L. Read
DIRECTOR

W.J.Liddle
DIRECTOR

WAITAHA PROPERTY DEVELOPMENTS LTD
REGISTERD OWNER(S)

APPROVED PURSUANT TO SECTION 223 OF THE RESOURCE MANAGEMENT ACT 1991 ON THE 26th DAY OF NOVEMBER 1998 SUBJECT TO THE GRANTING OR RESERVING OF EASEMENTS SET OUT HEREON AND SUBJECT TO THE CONDITIONS OF AMALGAMATION SET OUT HEREON THE COMMON SEAL OF THE TAURANGA DISTRICT COUNCIL IS AFFIXED HERETO IN THE PRESENCE OF:

THE TAURANGA DISTRICT COUNCIL The Common Seal of

AUTHORISED OFFICER

T.D.C. SUB 2882

Memorandum of Easements In Gross

PURPOSE	SHOWN	SERVIENT TENEMENT	GRANTEE
STORMWATER DRAINAGE AND SEWAGE DRAINAGE	(K)	LOT 44 HEREON	THE TAURANGA DISTRICT COUNCIL
	(L)	LOT 47 HEREON	
	(M)	LOT 48 HEREON	
	(N)	LOT 49 HEREON	
	(O)	LOT 50 HEREON	
	(P)	LOT 51 HEREON	
	(Q)	LOT 52 HEREON	
	(R)	LOT 53 HEREON	
	(S)	LOT 45 HEREON	
SEWAGE DRAINAGE	(J)	LOT 43 HEREON	
	(V)	LOT 52 HEREON	
STORMWATER DRAINAGE	(T)	LOT 50 HEREON	
	(U)	LOT 51 HEREON	
	(W)	LOT 44 HEREON	

Memorandum of Easements

PURPOSE	SHOWN	SERVIENT TENEMENT	DOMINANT TENEMENT
R.O.W.	(X)	LOT 42 HEREON	LOT 57 HEREON

This plan is concurrent with DPS 82072

Total Area 2.2471ha

Comprised in CT 61D/921 (Pt)

CONDITIONS OF AMALGAMATION

THAT LOT 58 HEREON (LEGAL ACCESS) BE HELD AS TO SIX UNDIVIDED ONE-SIXTH SHARES BY THE OWNER OF LOTS 32, 33, 34, 35, 55 & 56 HEREON AS TENANTS IN COMMON IN THE SAID SHARES AND THAT INDIVIDUAL CERTIFICATES OF TITLE BE ISSUED IN ACCORDANCE THEREWITH. SEE FILE B504592

THAT LOT 59 HEREON (LEGAL ACCESS) BE HELD AS TO SIX UNDIVIDED ONE-SIXTH SHARES BY THE OWNERS OF LOTS 40, 41, 42, 43, 44 & 57 HEREON AS TENANTS IN COMMON IN THE SAID SHARES AND THAT INDIVIDUAL CERTIFICATES OF TITLE BE ISSUED IN ACCORDANCE THEREWITH. SEE FILE B504592

NEW C's T ALLOCATED

LOT 27	CT 64D/365	LOT 28	CT 64D/366
LOT 29	CT 64D/367	LOT 30	CT 64D/368
LOT 31	CT 64D/369	LOT 32	CT 64D/370
LOT 33	CT 64D/371	LOT 34	CT 64D/372
LOT 35	CT 64D/373	LOT 36	CT 64D/374
LOT 37	CT 64D/375	LOT 38	CT 64D/376
LOT 39	CT 64D/377	LOT 40	CT 64D/378
LOT 41	CT 64D/379	LOT 42	CT 64D/380
LOT 43	CT 64D/381	LOT 44	CT 64D/382
LOT 45	CT 64D/383	LOT 46	CT 64D/384
LOT 47	CT 64D/385	LOT 48	CT 64D/386
LOT 49	CT 64D/387	LOT 50	CT 64D/388
LOT 51	CT 64D/389	LOT 52	CT 64D/390
LOT 53	CT 64D/391	LOT 55	CT 66A/678
LOT 56	CT 66A/679	LOT 57	CT 66A/680
LOT 58	C'sT 64D/370-373 & 66A/678-679	LOT 59	C'sT 64D/378-382 & 66A/680

I, Graham Kenneth Llewellyn Read
Registered Surveyor and holder of an annual practising certificate (or who may act as a registered surveyor pursuant to section 25 of the Survey Act 1986) hereby certify that this plan has been made from surveys executed by me or under my directions, that both plan and survey are correct and have been made in accordance with the Survey Regulations 1972 or any regulations made in substition thereof.

Dated at Albany this 21st day of October 1998 Signature

Field Book ____ p ____ Traverse Book ____ p ____
Reference Plans DPS 77903, 68110, 71353, 47197

Examined ____ Correct ____

Approved as to Survey 11/2/99 Chief Surveyor

Deposited this 11th day of FEBRUARY 1999

for Registrar-General of Land / District Land Registrar

File
Received 4.2.99
Instructions

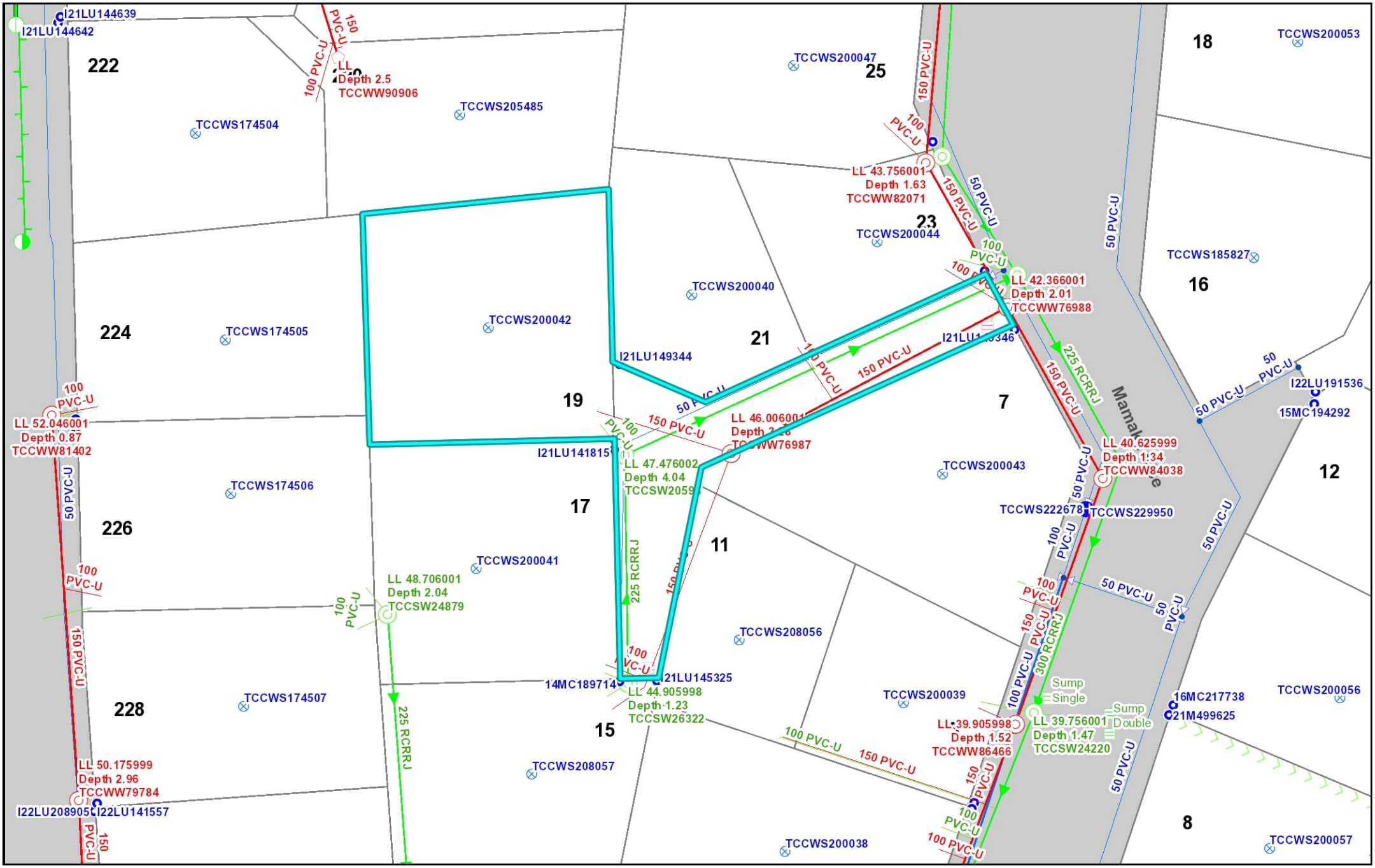
DPS 82071

Land District SOUTH AUCKLAND
Survey Blk. & Dist. XV TAURANGA
NZMS 261 SHT RECORD MAP No

LOTS 27-53, 55-60 BEING SUBDIVISION OF PART LOT 14 DPS77903

TERRITORIAL AUTHORITY Tauranga District
1307v01plt01
Surveyed by GRAHAM READ CONSULTANTS
Scale 1 : 600 Date August 1998

18 FEB 1999



Services Plan

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0 16.25 32.50 Meters

N

Tauranga City

SmartZoom
Utility Services

Services

Wastewater

- Wastewater Manhole
- Wastewater Chamber
- Wastewater Pump Station
- Wastewater Valve
- Wastewater Node
- Wastewater Service Line
- Odour Duct
- Wastewater Main
- Rising Main
- Reclaimed

Stormwater

- Stormwater Manhole
- Stormwater Chamber
- Stormwater Pump Station
- Sump
- Stormwater Outlet
- Stormwater Inlet
- Stormwater Soakhole
- Stormwater Node
- Stormwater Service Line
- Stormwater Main
- Culvert
- Stormwater Drain
- Overland Flow Path

Water

- Water Scour Valve
- Water Valve
- Water Meter
- Water Service Line
- Water Reservoir
- Water Node
- Hydrant
- Bore
- Rider Main
- Reticulation Main
- Trunk Water Main

Rates Information

Location	19 MAMAKU RISE
Valuation Ref	06619 075 34
Legal Description	LOT 34 DPS 82071 INT IN ACCESS LOT 58
DPS 82071	
Area	0.0639
Land Value	340,000
Capital Value	755,000

Total rates assessed this year

Tauranga Council	Units	Rate	Annual Amount
Uniform Annual General	1	259.13043478	259.13
Stormwater - Residential	755,000	0.00000578	4.36
General - Residential	755,000	0.00206106	1556.10
Resilience - Residential	755,000	0.00001280	9.66
Urban Growth - Rest of City	1	31.13043478	31.13
Wastewater Connected	1	625.32173913	625.32
Waste Collection Standard	1	213.04347826	213.04
Total Rates			2,698.74
IFF Transportation - Residential	755,000	0.00007043	53.17
Total IFF Levy			53.17
	Includes GST of		*$412.81*
	Total Rates (01 JUL 2024 to 30 JUN 2025)		$3164.72

Water Rates

Metered A/C # 1 Route # M Class # Rate: 0 /m3 Supply Area: METERED WATER

What are rates?

The amount you pay in rates doesn't directly relate to the amount of things Council does for you personally. Rates are not a 'charge for services', they are a tax on the value of your property. It is not a perfect system but it is one of the very few ways the Government allows Councils to collect revenue. Rates provide 55% of the Council's income.

Rates Information

The rating year starts on 1 July each year to 30 June the following year.

- Rates and charges are inclusive of GST.
- Annual Rates are set in July each year.
- Rates are payable in two instalments and are paid in advance.

Each year an assessment is sent out to property owners on 1 August together with the first instalment invoice. Payments are due on the last working day in August. The second instalment invoice is sent out to property owners on 1 February each year and is due on the last working day of February.

What are the charges for rates and how are they calculated?

Rates are a tax on the value of your property. The value of your property is set by an independent agency and is driven by national legislation. Revaluations are done every three years.

What do General Rates pay for?
Rates are used to pay for a wide range of services and capital projects such as new roads, storm water, libraries, reserves and so on. Councils long term plan is a good place to find out more about how Council plans to spend rates income.

Tauranga City Rates Schedule 2023/24		
Description	**Inclusive of GST**	**Charge**
Uniform Annual General	$298.00	per occupancy
Kerbside Waste Service – Standard Use	$245.00	per service bundle
Kerbside Waste Service – Low Use	$210.00	per service bundle
Kerbside Waste Service – High Use	$350.00	per service bundle
Wastewater	$719.12	per residential property or per connection for commercial
Wastewater Availability	$359.56	per property
Stormwater - Residential	$0.00000665	Capital value
Stormwater – Commercial	$0.00001064	Capital value
General Residential	$0.00237022	Capital value
General Commercial	$0.00497745	Capital value
General Industrial	$0.00616256	Capital Value
City Mainstreet	$0.00038877	Capital value
Greerton Mainstreet	$0.00152185	Capital value
Papamoa Mainstreet	$0.00034148	Capital value
Mount Mainstreet	$0.00060547	Capital value
Economic Development	$0.00035791	per commercial property
The Lakes Targeted Rate	$105.26	per property in the subdivision
The Coast Targeted Rate	$36.00	per property in the subdivision
Excelsa Targeted Rate	$53.07	per property in the subdivision
Resilience – Residential	$0.00001472	Capital value
Resilience – Comm/Ind	$0.00002356	Capital value
Urban Growth – Wairakei	$107.39	Per property
Urban Growth – Papamoa	$71.59	Per property
Urban Growth – City Wide	$35.80	Per property
Garden Waste Service – 2-weekly	$110.00	per service
Garden Waste Service – 4-weekly	$80.00	per service
Pool Inspection	$107.00	Per Property with a Pool
Garden Waste Service – 2-weekly	$105.00	per service
Garden Waste Service – 4-weekly	$75.00	per service
IFF Infrastructure Levy - Residential	$0.00008099	Capital Value
IFF Infrastructure Levy – Comm/Ind	$0.00034098	Capital Value

*From 1 July 2022. Tauranga City no longer collects rates on behalf of Bay of Plenty Regional Council, you will need to contact them directly to find out the rates calculated on this property.

Uniform Annual General Rates (UAGC)
This is a fixed charge per rateable property and is irrespective of the value of a property. For residential properties it is a charge per occupancy.

Each occupancy is defined by physically having a separate living area, bedroom, bathroom facilities, entrance (including shared foyers) and cooking facilities. E.g. a property with a self-contained flat on the ground floor would be rated for two UAGC's and two wastewater connections.

(Note: This rate is not based on ability to earn revenue or rent, frequency of use or the relationship of person/s using or able to use the separate area. This does not relieve the owner or occupier of any duty or responsibility under the Building Act 2004 or the Resource Management Act 1991 or the Tauranga City Plan) For commercial properties this is a charge on the number of separate businesses or leases.

General Rate
The General rate provides for the following costs, City and Infrastructure, Community People and partnerships, Arts and

Culture, Venues and Events, Community Partnerships, Libraries, Economic Development, Emergency Management, Animal services, Building services, Environmental Planning, Environmental Health and Licensing, Regulation Monitoring, Marine Facilities, Spaces and Places, Support Services, Sustainability and Waste. This variable rate is charged on the capital value of a property. Capital value is land value plus improvements value.

Wastewater Rates
Residential properties connected to Council wastewater pay a uniform annual charge for one toilet per occupancy. Commercial properties connected to Council wastewater pay a uniform annual charge for each toilet or urinal.

Those properties with wastewater available (i.e. they are within 100m of wastewater lines) but not connected will pay an availability charge.

Kerbside Waste Service The waste collection service provides for the collection and disposal of glass, food, recycling and waste for residential properties. This is a fixed charge per separately used or inhabited part of a rating unit. There are three bundles offered, low user, standard user and high user.

StormwaterThe purpose of this rate is to fund some of the costs of stormwater infrastructure investments. This variable rate is charged on the capital value of a property. Capital value is land value plus improvements value.

Garden Waste Service The waste collection service provides for the collection and disposal of garden waste material available for residential properties. This is a fixed charge per rating unit. This is an optional service that ratepayers choose to receive. There are two frequencies of collection, these being 2-weekly or 4-weekly.

Please note, that after 1 July until 30 June, ratepayers cannot opt out of the service if they have opted in. An opt-out request will take place in the rating year following this request.

ResilienceThe purpose of this rates is to provide some of the costs of resilience infrastructure investments in the water, wastewater, stormwater, transportation, and emergency management activities.

Urban Growth Council is committing significant transport investments, benefiting the city and urban growth areas of Pāpāmoa and Wairākei, that also support future development in Te Tumu.

Council has three new Urban Growth targeted rates. A full benefit area, wide benefit area and a city wide rate across ratepayers outside of these areas.

The Lakes, Papamoa Coast and Excelsa Targeted Rate The Lakes Development at Tauriko/Pyes Pa and Papamoa Coast and Excelsa developments at Papamoa have significantly increased level of service costs as a result of wider roads, more gardens, reserves and streetlights etc. All properties in these subdivisions are charged this targeted rate. This rate is charged on the capital value of a property. Capital value is land value plus improvements value.

Economic Development Rate
This rate is charged on the capital value of a property. It is charged to commercial properties only and funds economic development through Priority One and Tourism Bay of Plenty.

Mainstreet Rates
This rate is charged on the capital value of a property. It is charged to commercial properties only and funds the Tauranga, Papamoa, the Mount and Greerton Village Mainstreet organisations.

Pool Inspection
This rate is charged to properties with swimming pools that require inspection. The cost of the inspection is spread over the three years through rates bills.

IFF Transportation Levy
The rate is charged to all ratepayers and will fund the cost of 13 transport projects across the region. For more information go to www.tauranga.govt.nz/tsplevy

Willow Street, Tauranga
Private Bag, Tauranga
Telephone: 07 577 7000. Facsimile 07 577 7034

BUILDING CONSENT

NO: 5950

Issued By: Tauranga City Council pursuant to Section 35 of the Building Act 1991

APPLICANT	PROJECT
ABIDE HOMES (2008) LIMITED PO BOX 3180 GREERTON TAURANGA 3142	ERECT DWELLING AND RETAINING WALLS Intended Life: 50 Estimated Value: $162800
PROJECT LOCATION	**LEGAL DESCRIPTION**
Street Address: 19 MAMAKU RISE	Property No: P/8769/19 Valuation No: 06619 075 34 Legal Description: LOT 34 DPS82071

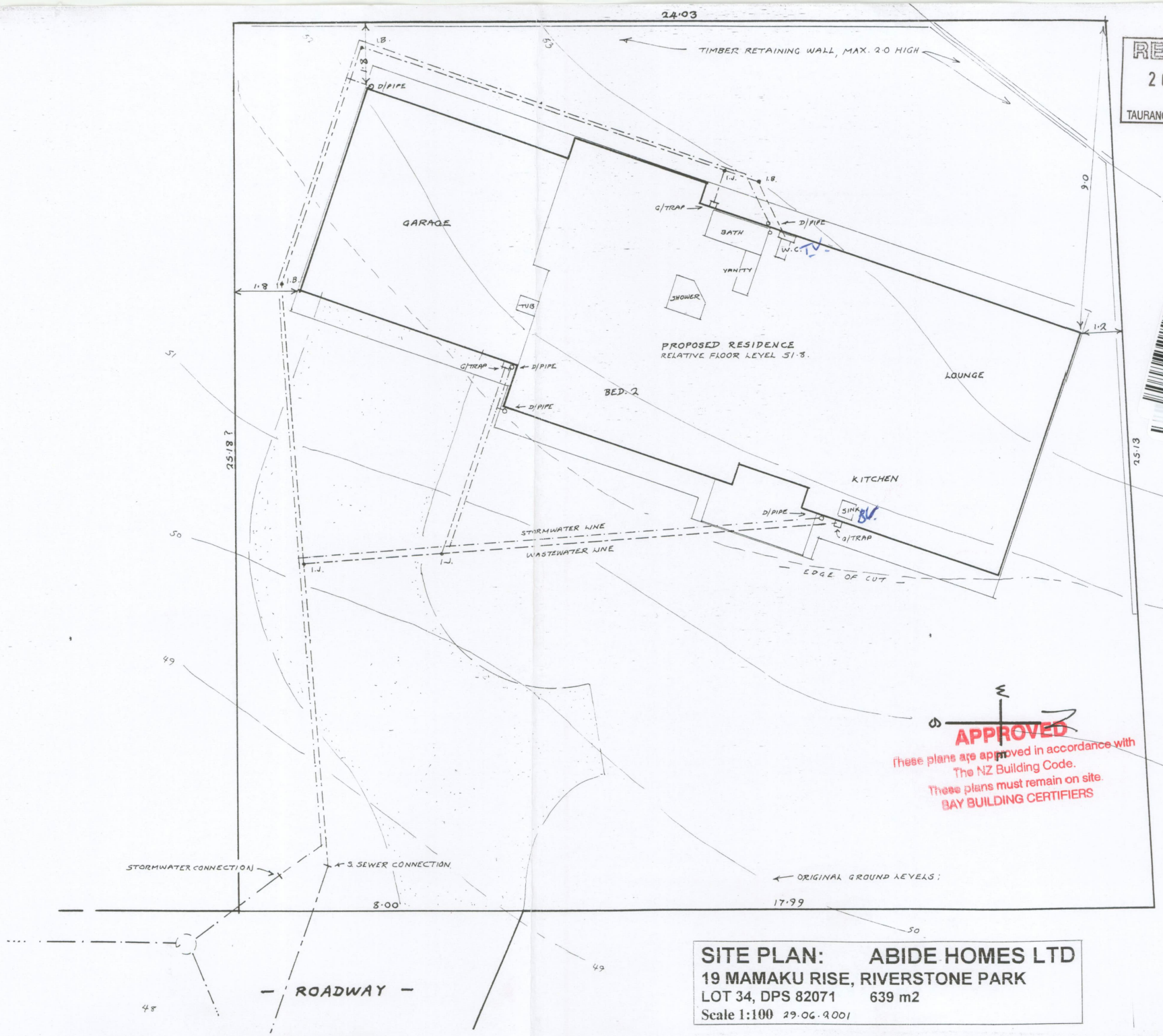
This building consent is a consent under the Building Act 1991 to undertake building work in accordance with the attached plans and specifications so as to comply with the provisions of the building code. It does not affect any duty or responsibility under any other Act nor permit any breach of any other Act.

This building consent is issued subject to endorsements shown on the approved plans and may be subject to any conditions as listed below :

On behalf of the Tauranga City Council:

Name: _____

Date: 7/23/2001

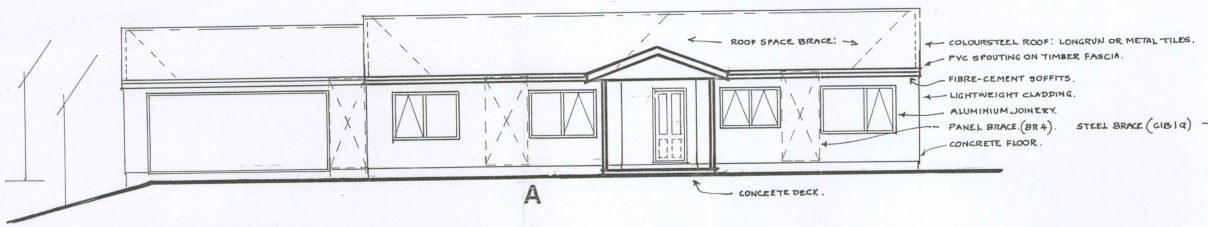


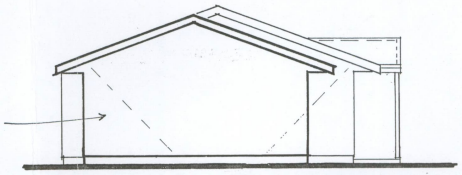
SITE PLAN: ABIDE HOMES LTD

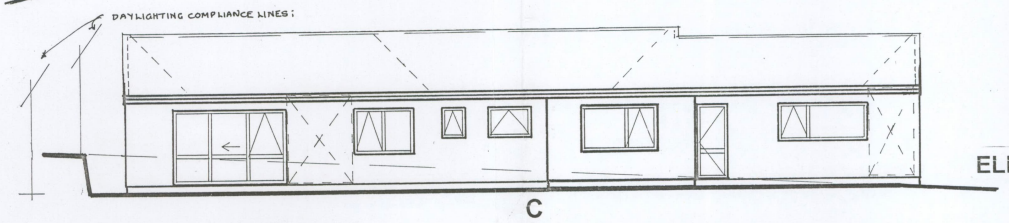
19 MAMAKU RISE, RIVERSTONE PARK

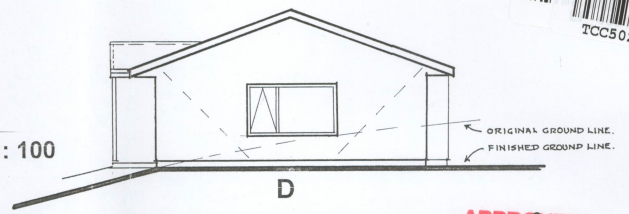
LOT 34, DPS 82071 639 m2

Scale 1:100 29.06.2001







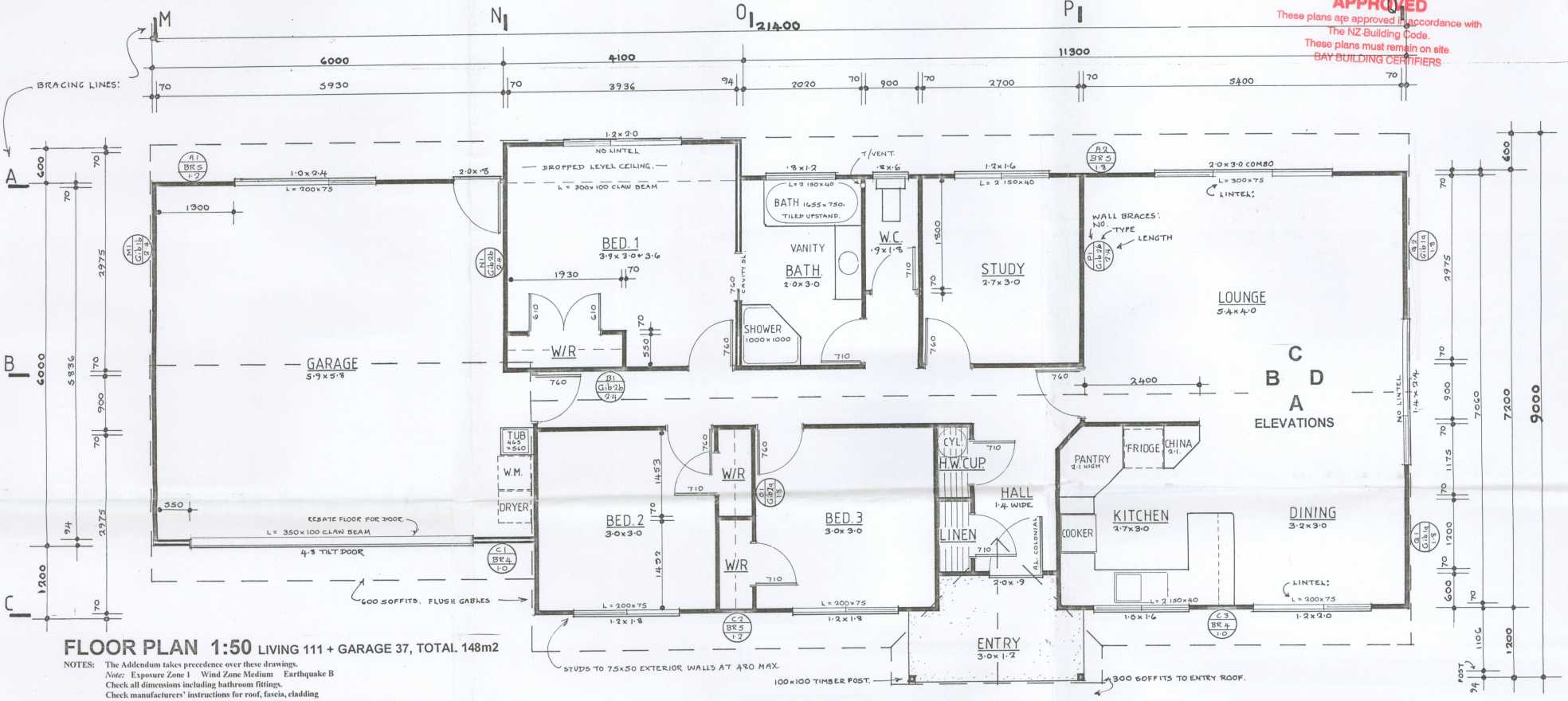


ELEVATIONS 1: 100

RECEIVED
20 JUL 2001
TAURANGA DISTRICT COUNCIL

TCC502817

APPROVED
These plans are approved in accordance with The NZ Building Code.
These plans must remain on site.
BAY BUILDING CERTIFIERS



FLOOR PLAN 1:50 LIVING 111 + GARAGE 37, TOTAL. 148m2

NOTES: The Addendum takes precedence over these drawings.
Note: Exposure Zone 1 Wind Zone Medium Earthquake B
Check all dimensions including bathroom fittings.
Check manufacturers' instructions for roof, fascia, cladding exterior joinery and any other relevant materials.
Door frames: one side generally hard against linings.

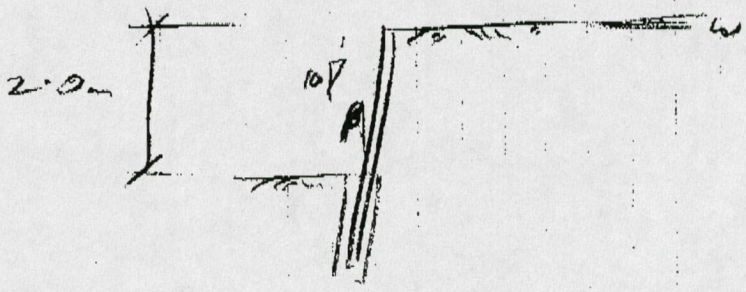
Abide Homes Ltd
28 GlenLyon Avenue,
P O Box 3160, Tauranga.
Phone (07) 578-8073.
Fax (07) 578-9328.

ABIDE HOMES LTD: 19 MAMAKU RISE, RIVERSTONE PARK 29.06.2001

ACENZ
ARNOLD & JOHNSTONE LTD
CONSULTING CIVIL & STRUCTURAL ENGINEERS

JOB No 8450
PAGE 1
BY RM
DATE 12/7/01
JOB

2.0 HIGH RETAINING WALL



Soil Properties $\gamma = 19\ kN/m^3$
$\phi = 30°$
$C_u = 60$ $\phi = 0.50$
$\delta = 10°$ $(\frac{1}{3}\phi)$
$\beta = -5.7°$ $(1/10)$
$\omega = 5.7°$ $(1/10)$

$$k_a = \frac{\cos^2(\phi-\beta)}{\cos^2\beta \times \cos(\delta+\beta)\left[1+\sqrt{\frac{\sin(\phi+\delta)\sin(\phi-\omega)}{\cos(\delta+\beta)\cos(\omega-\beta)}}\right]^2}$$

$$= \frac{\cos^2(30+5.7)}{\cos^2 5.7 \times \cos(10-5.7)\left[1+\sqrt{\frac{\sin(30+10)\sin(30-5.7)}{\cos(10-5.7)\cos(5.7+5.7)}}\right]^2}$$

$$= 0.29$$

9.86

Pole: $M^* = 1.6\left[.29 \times 19 \times 2.0^2\left(\frac{2.0}{3}+1\right)\right] = 42.1\ kNm/m$

@ 1200 c-c $\Rightarrow 14.5\ kNm$

225SED $d_b = 225 + 6 \times 2.0 = 237$
$Z = \pi \times 237^3/32 = 1.31 \times 10^6$

$\phi M_b = .8 \times 1.31 \times 38 \times .85 \times .85 \times .6 = 17.3$ ✓

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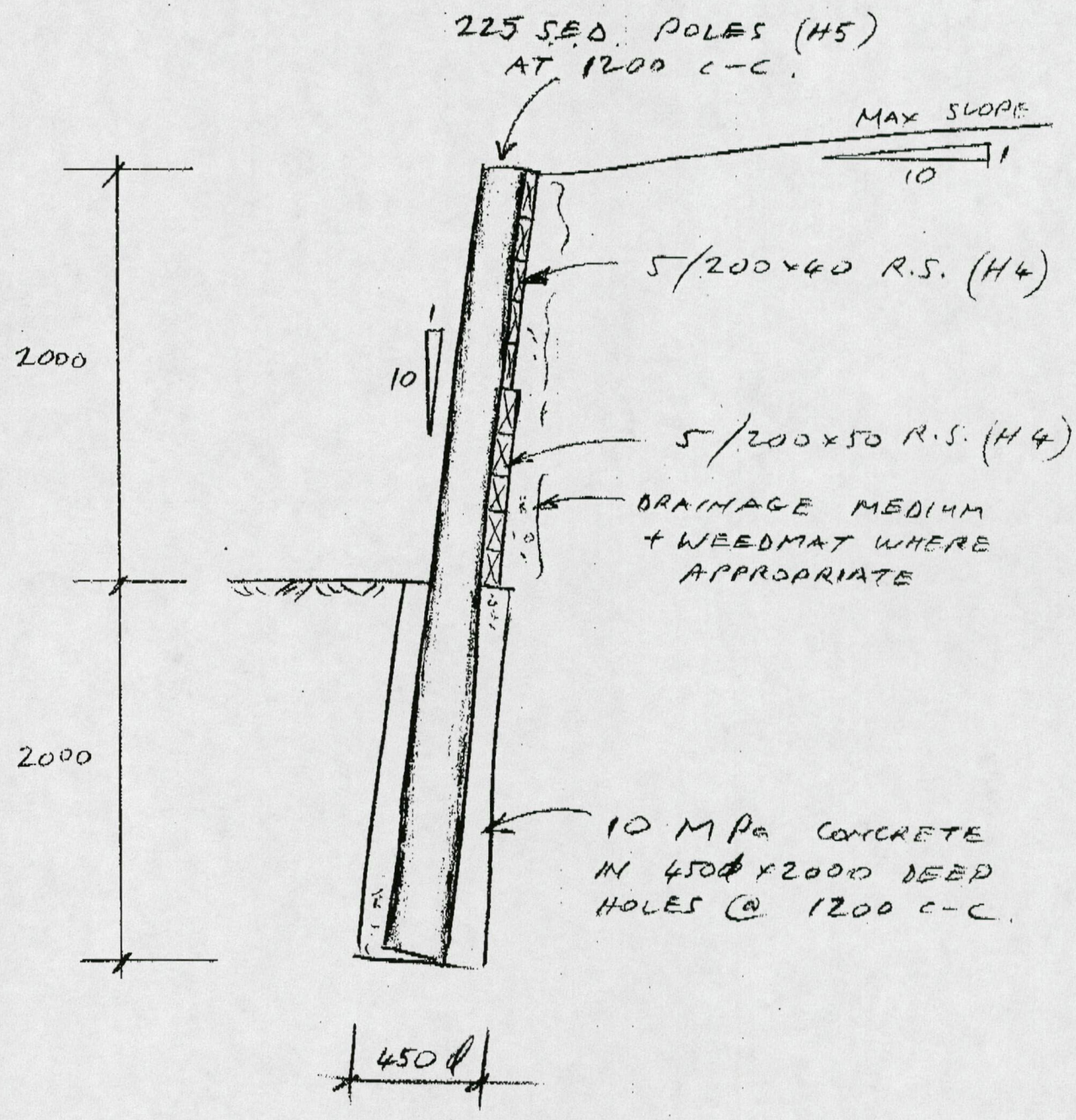
CONSULTING CIVIL & STRUCTURAL ENGINEERS

JOB No 8450
PAGE S4.1
BY
DATE

JOB ABIDE HOMES



NOTE: HORIZ PALINGS TO BE CONTINUOUS OVER 2 SPANS MINIMUM, WITH STAGGERED JOINTS

As Built

Drainage Plan for:

Drainage Plan

Street No: 19

Street MAMAKU RISE Lot 34 D.P. S 82071

Suburb WELCOME BAY

Owner ABIDE HOMES

Type of Building

Drainlayer W H KELLY

Date of Inspection 18.6.02

Inspector

Drainage Permit No: 5950

NOTE: Plan to be drawn in black ballpoint on graph opposite

Plan to include:

1 The correct position of the drains in relation to the building and boundaries.

2 The position of the street frontage.

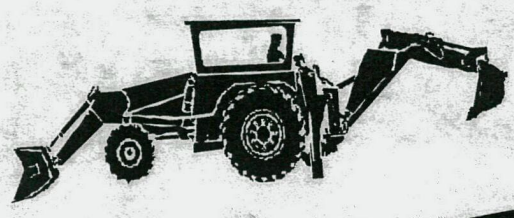
3 Depth of drains at connection point.

4 Both foulwater and stormwater drains to be drawn.

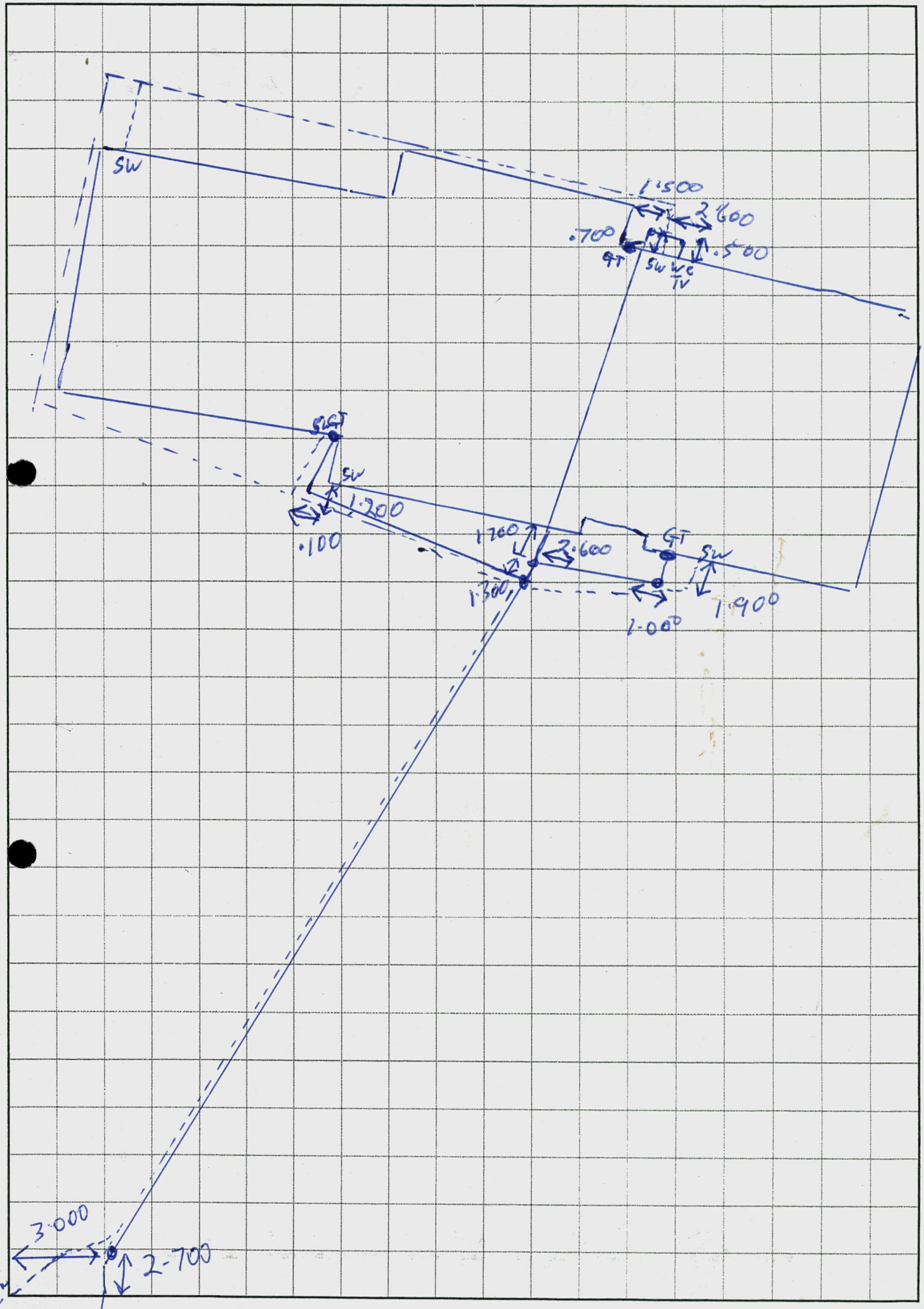
5 Clearly define all inspection openings, with accurate measurements from two points.

6 Clearly define all buildings and boundaries.

7 Refer to example drain plan back page.



Tauranga District Council


SW
1·500
2·600
·700
GT
SW WC TV
·500
GT
SW
1·200
·100
1·200
2·600
GT
SW
1·300
1·900
1·000
3·000
2·700

P8769-19-1

CODE COMPLIANCE CERTIFICATE NO: 5950

Section 56, Building Act 1991

ISSUED BY **Bay Building Certifiers Ltd**

20 Park Street, P.O.Box 2230 Tauranga
Ph. 07 578-3427 Fax 07 578-5395

Building Certifier No.9, currently registered and approved as a building certifier for all clauses of the New Zealand building code, without limitation.

Consent Number 5950

☑

PROJECT		PROJECT LOCATION	
All	☑	Address	19 Mamaku Rise Welcome Bay
Stage No. .... of an intended .... stages			
New or relocated building	☑		
Alteration	☐	Lot	34
Intended use(s) (in detail)		D.P.	S 82071
Erect dwelling and retaining walls.			
		Owner	
			Abide Homes Ltd PO Box 3180 Tauranga
Intended Life:			
Indefinite, but not less than 50 years	☑		
Specified as ... years	☐		
Demolition	☐		

This is:

☑ A final code compliance certificate issued in respect of all of the building work under the above building consent excluding N.Z. Building Code clauses G9 (Electricity) and G11 (Gas as an energy source)

☐ An interim code compliance certificate in respect of part only, as specified in the attached particulars, of the building work under the above building consent

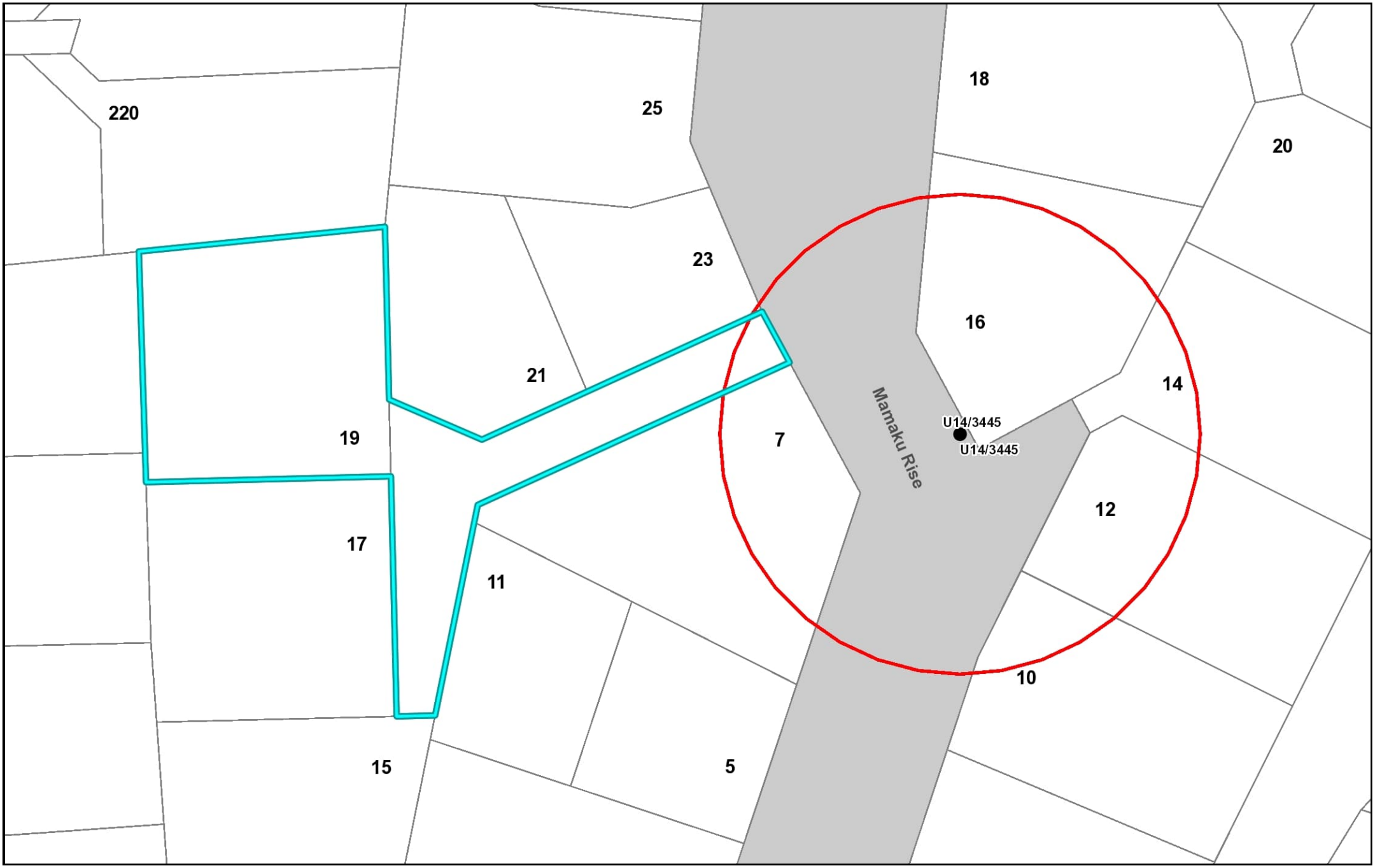
☐ This certificate is issued subject to the conditions specified in the attached .... page(s) headed 'Conditions of Code Compliance Certificate No. 5950' (being this certificate).

Signed

Name: .....

Position: ..... Date: Wednesday, 26 February 2003

Wayne Wellington
MANAGING DIRECTOR



Printed 23-October-2024

Archaeological Site Plan

1:500 @A4

0 16.25 32.50 Meters

N

Tauranga City

General Description of Land Form within Tauranga District

The land form 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 set back 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.

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SOILS INVESTIGATION AND
INSPECTING ENGINEER'S REPORT
STAGE II
RIVERSTONE PARK RESIDENTIAL SUBDIVISION
WAITAHA ROAD, WELCOME BAY, TAURANGA

for

Waitaha Property Developments Ltd
c/o Manukau Consultants Ltd
Consulting Engineers and Land Surveyors
Level 5 Harrington House, Harrington Street
P O Box 13 248 Tauranga

by

Mark T Mitchell Ltd
Consulting Geotechnical Engineer
1202/1 Victoria Street - P O Box 9123
Hamilton

4 November, 1998

SOILS INVESTIGATION AND INSPECTING ENGINEER'S REPORT STAGE II RIVERSTONE PARK RESIDENTIAL SUBDIVISION WAITAHA ROAD, WELCOME BAY, TAURANGA

I. INTRODUCTION

This report presents the results of a soils and foundation investigation, together with a summary of the engineering construction works, that have been carried out in association with the formation of Stage II of the Riverstone Park Residential Subdivision, located off Waitaha Road, Tauranga. The engineering design of the project was carried out by Graham Read Consultants, Registered Surveyors and Development Consultants on behalf of the project developers, Waitaha Property Developments Ltd.

Geotechnical aspects of the project were overseen by Mark T Mitchell Ltd, Consulting Geotechnical Engineer with soil sampling, testing and on-site supervision of earthworks carried out by Manukau Consultants Limited in conjunction with Mark T Mitchell Ltd. Some of the on-site testing and all laboratory testing of soil samples carried out by Geocon Soil Testing Ltd.

A Site Plan that shows the overall project site area that existed prior to the recent development is shown on the attached Drawing No. 4069-01. The ground at that time within the Stage II area was gently sloping and consisted of a broad gully formation where all areas sloped gently towards the central eastern boundary. A Kiwifruit Orchard originally occupied most of the Stage II area with the remaining areas consisting of pastureland.

This report also serves as part of the Completion Geotechnical Engineering Report for Stage II of the project, sometimes termed the "Inspecting Engineer's (Geotechnical) Report". Stage II comprises Lot Nos. 14, 15 and 26 to 60. The site development works consisted of general site clearing, earthfilling, together with the construction of the road and right-of-way formations. An Inspecting Geotechnical Engineer's Summary Report, which accompanies this report and contains Engineering Certifications for the site soils, has also been prepared.

The general site layout for Stage II is presented on the attached Drawing No. 4255-20.

II. FIELD INVESTIGATIONS

The project was initially investigated in September 1995 by drilling a series of eight hand auger borings over the project site area. Bore Hole Nos. 2 to 8 were drilled in the Stage II area and their logs are presented on Figs. A-1 to A-4 with their locations shown on the attached Site Plan, Drawing No. 4069-01. Bore Hole No. 1 was drilled immediately outside of the Stage II area but is also included for completion purposes.

As a result of the soil conditions encountered during the initial investigation, the site was further investigated in July and August, 1996 by drilling a series of twelve hand auger borings. Bore Hole Nos. 14 and 16 to 20 were drilled within the Stage II area and their logs are presented on Fig. A-7 to A-10.

The depths of the subsurface investigations within the Orchard area were somewhat restricted due to the wires and vines that were present. A tractor mounted auger drilling rig was therefore used to drill a further series of test holes designated Nos. 21 to 30. The locations of bore holes are shown on the attached Drawing No. 4069-01 and their logs are presented on Figs A-11 to A-17.

III. SOIL CONDITIONS and SITE GEOLOGY

1. Natural Soils

The naturally occurring, near-surface soils over the site have been produced by natural weathering activity upon a sequence of airfall volcanic ashes. These ash deposits contain soils horizons that are readily distinguishable with soil types varying from relatively unweathered silty sand, to well-weathered clayey silt and clay. The ash deposits are generally subdivided into two geologic formations; "Younger Ashes", being a less weathered formation which has been deposited in about the last 50,000 years, and "Older Ashes", being the more clayey soils deposited prior to 50,000 years ago.

The boundary between the younger and older ashes is generally distinct and so provides useful data for determining the extent of former landslide activity or former man-induced disturbance at the bore hole location. Where the upper soil formations are intact, it may be ascertained that the ground surface in the vicinity of the bore hole has been unaffected by slope instability or other disturbance in recent times. Where the ash formations are not present, it is probable that ground instability has occurred.

The soils underlying the Older Ash deposit at this site consist of either weathered Ignimbrite in the higher ground areas, or a sedimentary deposit (ie. silt and sand deposits), termed the "Tauranga Beds" within the lower (gully) parts of the site. The Ignimbrite is a volcanic deposit that was not encountered during the investigations, but its presence is assumed on the basis of other information available.

Within the lower areas of the site, the Tauranga Beds, which consist of Silts, Sands and organic layers, were encountered in a number of the deeper tractor drilled bore holes.

2. Fill Areas

A considerable amount of Uncertified Fill soils consisting of a variable mixture of Silts, Sands and Clays overlying the original gully bottom and stream bed sediments were encountered within the Stage II area.

This bore hole information together with an analysis of aerial photographs, indicated that the conversion of the original farmland into a Kiwifruit Orchard sometime after 1978 had resulted in some major earthworks having taken place. It appeared that these earthworks were undertaken primarily to create a gentle, north-east facing slope and to ease out part of a former, moderately steep sided gully system. The location of the original gully feature is presented on the original Site Plan.

From the information available, it also appeared that some filling has been pushed over the top of the bank immediately upslope of the Recreation Reserve (Lot 54) and the rear (eastern) parts of Lots 43, 44, 47 and 48.

A further Fill area was identified during the initial Site Investigation and this area is located within the north-western corner of the property. The Fill material was located at the boundary of Lot Nos. 37 and 38 and has a depth of 0.6 metres. Most, if not all, of this material was removed during the recent earthworks operations and is therefore not shown on the accompanying Site Plans.

IV. REVIEW OF SLOPE STABILITY

1. Stability of Former Natural Slopes

An inspection of the site prior to the recent development showed no evidence of past major slope instability within the property and a review of the bore hole logs in the upper site areas, away from the fill areas, indicates that the upper Younger Ash layers were essentially intact.

The original steep gully slopes that would have originally been present within the Stage II area have since been eliminated as a result of the gully infilling. The fill material pushed over the banks of the steeper slopes has also resulted in reduced slope gradients.

The upper site topography has been formed as the result of an Ignimbrite volcanic rock formation producing the major ridge structure, with a mantling of consistent layers of weathered volcanic ash. The Ignimbrite formation provides a stable base to the area, however groundwater is likely to accumulate and flow within the rock fissures. The formation of gullies in this type of formation, such as the one that was originally present within the centre of the property, are associated with groundwater outflows which may themselves create further instability unless adequate drainage measures are carried out to intercept this flow.

As groundwater outflow is likely to be a dominant factor in producing slope instability, it is considered that the site is not suitable for the in-ground disposal of concentrated stormwater and wherever possible stormwater should be collected and piped off-site. The recent site development works have ensured that this is the situation.

The steeper parts of the project site are located along the eastern boundary and reference to building restriction in these areas is provided below.

2. Stability of Slopes – as Developed

The project site has been re-graded so as to provide road and property gradients that are appropriate for a residential subdivision. The gradients of the relatively steep slopes that were present along the eastern boundary have therefore been reduced further.

However, recent construction of relatively deep stormwater and sanitary sewer lines along the eastern site boundary (Lots 26, 43, 44, and 47 to 53) has taken place. This together with he presence of Uncertified Filling within the eastern parts of many of these lots has required that foundation construction take place away from these areas and at a location where the supporting ground is suitably stable.

It is therefore recommended that a Building Restriction Line (BRL) be applied to each of these lots. The location of the BRL is presented on the attached Site Plan, Drawing No. 4255-23 and indicates that the restriction line is located 10 metres from the rear boundary of each of these lots.

V. SITE DEVELOPMENT

1. Site Excavations and Fill Placement

The construction of the roadways and right-of-ways commenced with the removal of topsoil from both cut and fill areas. The subsequent earthworks included excavations in the major cuts of several metres high within both the Stage II and III areas with the soils then placed and compacted in the fill areas.

The existing Uncertified Filling and underlying gully soils that were present within the original filled gully area were also removed from below each of the affected lots. This excavation depth was generally in the order of less than 1.5 metres within Lots 14, 27 to 31 and 55, and up to 3 metres within Lots 48 to 54. An approximate 10-metre wide bund of original Uncertified Filling was however left remaining within the eastern parts of Lots 48 to 54 as this area has been used for the construction of the stormwater and sanitary sewer lines. The Filling was also left remaining below the proposed road carriageway.

The open void created by the removal of the Uncertified Filling within Lots 48 to 54 was then refilled with Rhyolitic Rubble or crushed rock aggregate. Materials within all remaining fill areas consisted of clay soils derived from weathered volcanic deposits, commonly known as "Younger" and "Older" ashes.

The purpose of the filling which was carried out within the Stage II area was to merge the pre-existing ground levels with those of the new roading levels and to provide access to the various lots within the subdivision.

2. Controlled Fill Areas

a. Certified Fill

The majority of the fill that has been placed in the subdivision is classified as a Certified Fill. In these areas, the site was first stripped of all topsoil and any organic Silt soils that might have been present and then filled with suitable soils as described above.

The soils in the Certified Fill areas were compacted in layers with compaction applied with a sheepsfoot roller. The level of compaction effort applied was so as to achieve a density which is acceptable for building construction purposes. Field testing of the Certified Fill areas was carried out by staff from our service company, Geocon Soil Testing Ltd and by Manukau Consultants Ltd staff. The test results, as presented on the attached Table 1, indicated that an adequate density was being achieved in the areas tested. We are therefore of the opinion that the Certified Fill areas are generally able to support conventional foundations in their as-compacted state, as indicated by the accompanying Fill Certification.

It should be noted that the extent of involvement of technical staff from Manukau Consultants Ltd did not involve the full-time supervision of earthworks at the site. The works were instead supervised by the Contractor's superintendent, rather than by consulting engineering technical staff. It is for this reason that the paragraphs within the Fill Certifications refer to statements being based on a professional opinion, and not to be taken as a guarantee.

Under the circumstance of earthworks construction by large machines, it is possible that isolated areas of softer soils may occur within the Certified Fill areas. Where such softer soils are encountered during excavations for house foundations, they may need to be over-excavated and the foundations deepened or increased in size by a minor amount so as to decrease the foundation bearing pressures on the soil.

It has also been agreed by the developer and the purchaser of Lot Nos. 26 and 48 to 53 to place Topsoil to a depth 0.6 metres on each of these lots. At the time of house construction, the purchaser is to remove the Topsoil material from below the proposed building site areas and replace it with hardfill.

b. Uncertified Fill

A class of earth filling which is termed "Uncertified Fill" exists within particular areas of the subdivision site. The area where this particular class of fill is present is along the eastern boundaries of Lot Nos. 26, and 48 to 54. The soils placed in these areas consist of the original random mixture of Ash materials and would have only been compacted to a standard suitable for farming purposes. The original gully and streambed soils were also left remaining below these fill soils. Further uncertified Fill materials were then placed in these areas during the recent earthworks construction season. The soils placed in these areas were track rolled but not compacted to the density of the Certified Fill areas.

All filling which is classified as Uncertified Fill is considered to be of an inadequate and inconsistent density to be able to adequately support shallow foundations for residential buildings.

c. Other Fill Areas

The construction of stormwater and sewer lines through the project site has also resulted in the disturbance of the ground. As the degree of compaction of the trench backfill and disturbed soil around can not be verified, all backfill soils are classified as "Uncertified Fill". Where foundations for buildings, including garage structures, are located near sewer or stormwater pipes, foundations will need to be constructed in accordance with NZ Standard Building Code requirements.

As a general rule, these foundations will need to be deepened to found below the level of all backfill soils. A further criteria is for foundations which are located near these services is that foundations should be located below a 45 degree line drawn upwards from the pipe invert level, or be subject to an Engineers design.

It is possible that old filling may be present in other parts of the site but was not detected during the development of the site. For example, shallow filling to 0.6 metres depth was encountered in the vicinity of Lot 38. Where such filling is encountered during house foundation excavations, foundations should be deepened to found into the original soils below.

d. Density Test Results

The results of soil testing which was carried out during the placement and compaction of the Certified Fill areas is presented on the attached Table 1. The location of the tests are shown on the attached Drawing No 4255-21.

e. Location and Extent of Fills and Cuts

The locations where fill has been placed are shown on the attached Site Plan, Drawing No 4255-20, with the depth of the Certified Fill shown as fill depth contours on Drawing No. 4255-21. Prior to placement of the filling, the fill areas were stripped of topsoil and then benched. Fill has also been placed in the vicinity of the stormwater and sewer lines and some of the near-surface soils near these lines may consist of re-spread filling that is mixed in with the re-spread topsoil layer.

The depth of cutting which was carried out during the regrading of Stages II and III of the subdivision is shown by a series of contour lines which are presented on the attached Site Plan, Drawing No. 4255-22. Topsoil and other friable subsoils were spread over these areas following completion of the bulk earthworks and then sown with grass.

3. Fill Certification

The attached Table 1 presents the results of the quality control testing for bulk earthworks of Stage II of the subdivision. The test results presented on this Table indicate that the fill at the test locations, which are believed to be representative of all of Certified Fill areas, has been placed and compacted to the standards required in the NZ Standard Code of Practice for Earth Fill for Residential Development, NZS 4431 and to the Tauranga District Council Code of Practice for Development.

In the Certified Fill Areas, we advise that the fill, in general terms, has a satisfactory stability for residential construction involving one-storey and two-storey timber framed buildings, for masonry buildings and for buildings of both timber and masonry not requiring Specific Design in terms of NZS 3604, NZS 4229 and the New Zealand Standard Building Code, 1992.

The 'Certified Fill Areas' are also considered to have a satisfactory stability for the support of services, such as sewers and water supply lines.

VI. GENERAL RECOMENDATIONS FOR THE CONSTRUCTION OF FOUNDATIONS

Because of general variations in soil type and densities across the site, it is not possible to provide specific recommendation for the construction of foundations for all residential dwellings to be constructed within the subdivision. Instead, generalised guidelines are provided as follows. After foundations are actually excavated, variations in soil conditions encountered may require foundation construction other than that suggested below.

1. Foundations Constructed in Natural Ground Areas

The available soils information indicates that in most of the natural ground areas (Lots 15, 27, 32 to 47, 56 and 57) the soils present are of a relatively high shear strength and density. However, it should be noted that soft soil layers will occasionally occur in these deposits and their presence may affect foundation construction.

The NZ Standard Code of Practice for Light Timber Frame Buildings not requiring specific design (NZS 3604) requires that the supporting soil to the foundations has a safe bearing pressure of 100 kPa. In general, where Scala Penetrometer values are in excess of 3 to 4 blows per 100mm, or shear strength values are in excess of 60 kPa, the supporting ground will have an adequate safe bearing pressure. This situation would generally apply where foundations are located within the Certified Fill and in better natural ground areas.

For the situation of slightly lower Scala or shear strength values, such as Scala values between about 2 and 3 blows per 100mm and shear strength values less than 50 kPa, other factors need to be taken into consideration, such as the structural design of the perimeter footings, and the nature of the structure. However, in most circumstances, an increase in the size of the footing would be appropriate in locations where these lower test results are obtained.

Where the Scala values are in the order of 2 blows per 100mm, or less, or shear strengths are less than about 30 kPa, over-excavation and replacement of soils will be required in the case of a concrete floor foundation. Where a timber floor is to be supported, deepened foundations will most likely be required.

Concrete Slab-on-Grade Floor construction should be carried out by firstly excavating and removing all shallow silt/topsoil fill and topsoil materials from below the proposed foundation area. If soft soils are encountered at this level, some over-excavation of these soils will be required, and compacted hardfill used as a replacement. The shape of this excavation would be to a minimum of 600mm outside of the building lines, with the excavation taken to a deeper level below footing lines.

Timber Floor construction may be supported by either conventional cast-in-place concrete pad foundations or by driven timber pile foundations. If soft soils are found to be present at founding level, the size of the foundation will either need to be increased, or the foundation deepened, depending upon the nature of soils present below the foundations. In the situation of Rhyolite rock being encountered at foundation level and which prevents the drilling of piles to design depth of deeper piles, such as for anchor piles, an alternative subfloor bracing system will need to be employed.

2. Foundations Constructed in Certified Fill Areas

The available soils information indicates that within Certified Fill areas, the soils present are of a relatively high shear strength and density. However, it should be noted that soft soil layers within the fill could occasionally occur, as described in the above section, in which case, a minor increase in footing size may be required.

The NZ Standard Code of Practice for Light Timber Frame Buildings not requiring specific design (NZS 3604) requires that the supporting soil to the foundations has a safe bearing pressure of 100 kPa. In general, the Certified Fill will provide this support to foundations.

3. Foundations Constructed in Uncertified Fill Areas

It is unlikely that building construction will take place within any of the uncertified fill areas, including the sanitary sewer and stormwater sewer trench backfilling. However, if building construction is to take place in these areas, a separate soils investigation will be required and if stable soils are found to be present, a Specific Design of Foundations by a Registered Engineer will be required.

4. Inspection of Foundations

In the case of concrete slab-on-grade construction, it is recommended that at the time when the building site area is set out on site and the topsoil removed, the exposed surface should be inspected by a suitably qualified person. That suitably qualified person may be an approved Building Certifier, or a Registered Engineer.

If any soft areas are present at or below this level, they should be excavated from below critical areas, with footing and concrete slab details amended where necessary. The replacement hardfill used below the concrete slab and footing areas should be placed in layers not exceeding 200 mm in thickness, with each layer thoroughly compacted with the vibratory roller.

In the case of foundations supporting a timber floor, it is recommended that after the pile holes have been drilled, the foundation soils are inspected and tested by a suitably qualified person, as listed above. If any soft areas are found to be present at or below foundation level, the foundation holes should be either deepened or widened as necessary.

If and where any extensive areas of soft soils are encountered at foundation level, our office should be advised prior to the commencement of the removal of the soft soils or deepening of foundations.

5. Building Restriction Lines (BRL)

Much of the eastern margin of the subdivided area contains a steep batter slope of Uncertified Filling and also contains stormwater and sewer lines at the base of the slope. This part of the project site is therefore unsuitable for residential building construction. The western extent of this area is defined by a Building Restriction Line that is located 10 metres off the eastern boundary. Where it is desired to build closer than 10 metres from this boundary, it will be necessary to carry out a separate soils investigation at that location. If it is determined that this option is feasible, a Specific Foundation Design by a Registered Engineer will be required.

VII. LIMITATIONS

The geotechnical opinions and recommendations which are contained in this report are based on site conditions as they presently exist and further assume that the exploratory holes and soundings and site testing and observations during construction are representative of soil conditions throughout the site. i.e. inferences about the nature and continuity of ground conditions away from the bore holes and test locations have been made in providing the recommendations as set out in this and other soils reports for this project. It is assumed that subsurface conditions everywhere are not significantly different from those disclosed by the investigations and by site testing.

We should be notified of any subsurface conditions which appear to be different from those as described in the soils reports so that these conditions may be reviewed and our recommendations reconsidered where necessary. Such a review would be at the cost of the new property owner.

VIII. CONCLUSION

The results of our studies and investigations indicate that there is a stable building site available on each of the proposed lots. A Certified Fill has been placed over a portion of the subdivision, and this filling is able to provide a suitable support for conventional shallow foundations for residential dwellings.

This and other soils reports and associated certifications which have been completed for this project site do not preclude routine foundation inspections by the Builder or by Building Certifiers or by others employed by the Tauranga District Council.

Yours faithfully,

Mark T Mitchell Ltd

Consulting Geotechnical Engineer

TABLE 1

EARTH FILL DENSITY TEST RESULTS — **DATE: December 1998**

JOB: RIVERSTONE PARK - STAGE II, WAITAHA ROAD, TAURANGA. — **JOB NO: T-4255/2**

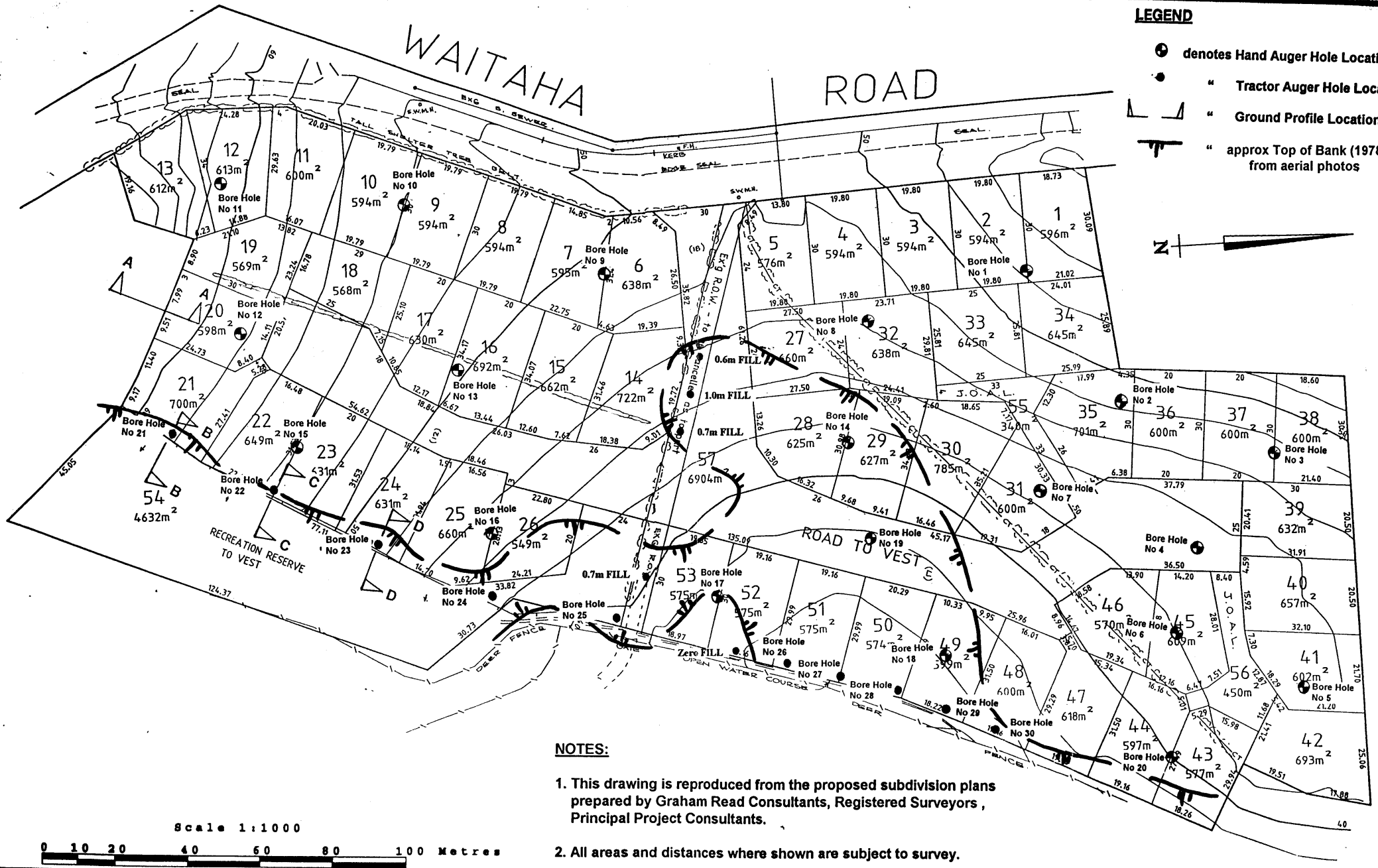
TEST METHOD: NZS 4402:1986 Determination of the Density of Soil

Test 5.1.3 Sampling Tube Method

Sample No.	Location	Date Sampled	Wet Density kg/m3	Water Content %	Optimum W. Content %	Dry Density kg/m3	Compaction %	Air Voids %	Notes
1	Lot No. 28	4/5/98	1591	40.2	39.0	1135	96	11.6	Pass
2	Lot No. 29	4/5/98	1772	29.0	29.0	1374	100	8.3	Pass
3	Lot No. 49	6/5/98	1724	41.3	36.0	1220	96	3.6	Fail (too wet)
4	Lot No. 51	6/5/98	1568	42.5	39.0	1100	93	11.7	Fail (under compacted)
5	Lot No. 14	6/5/98	1576	43.7	39.0	1097	93	10.7	Fail (under compacted)
6	Lot No. 28	13/5/98	1585	47.2	48.0	1077	98	8.5	Pass
7	Lot No. 14	13/5/98	1652	54.3	48.0	1071	97	1.5	Fail (too wet) - Repeat of Test 5
8	Lot No. 14	20/5/98	1635	56.9	48.0	1042	95	1.4	Fail (too wet) - Repeat of Test 7
9	Lot No. 14	2/10/98	1689	44.3	48.0	1170	99	4.0	Pass - Repeat of Test 8

Notes:

1. % Compaction is based on the Maximum Dry Density
2. Air Voids are calculated using an assumed S.G. = 2.65
3. Specification requires samples to be compacted within 95 % of Max. Dry Density and within +3% and -5% of Optimum Water Content



NOTES:

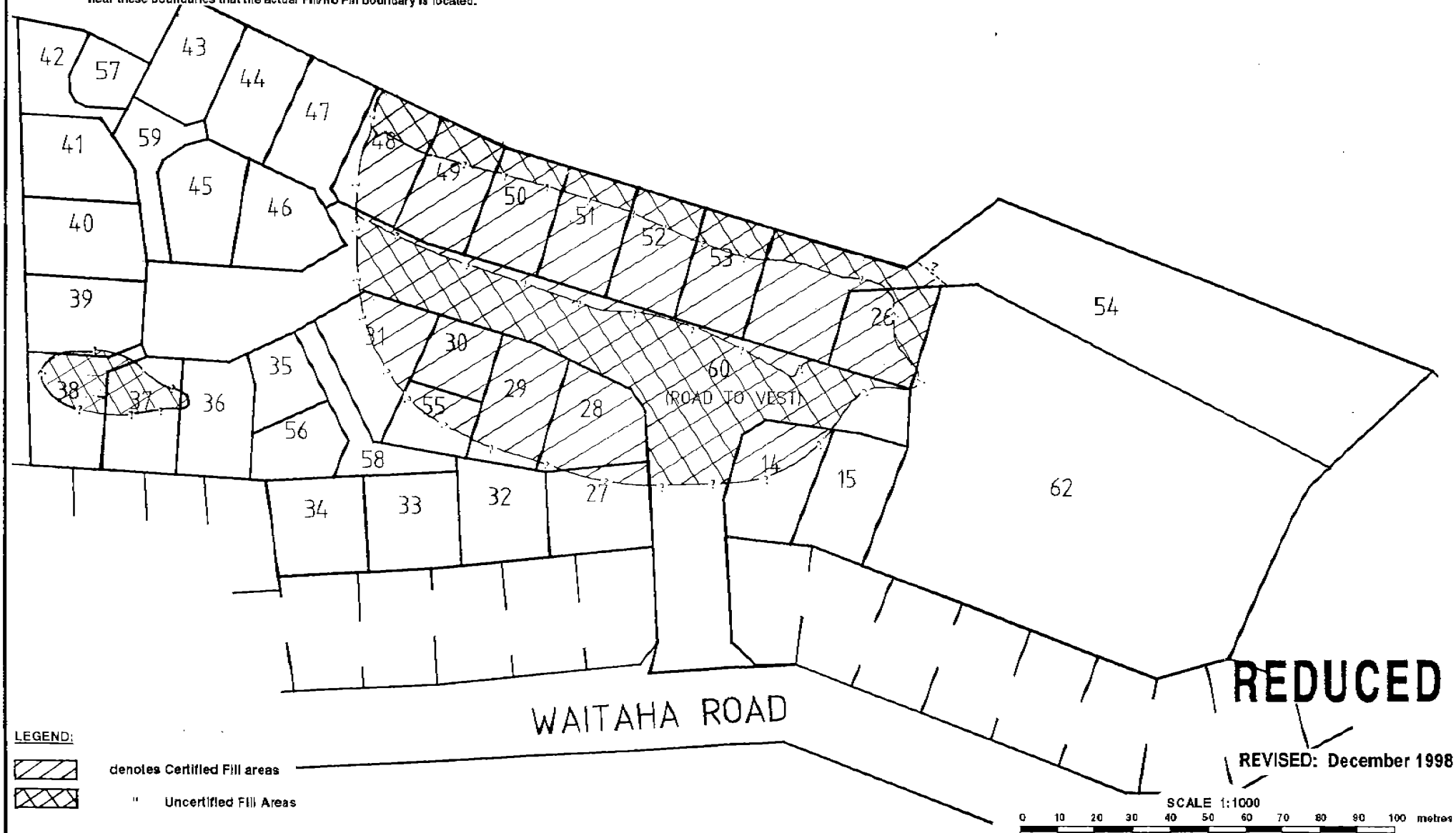
1. This drawing is reproduced from the proposed subdivision plans prepared by Graham Read Consultants, Registered Surveyors , Principal Project Consultants.
2. All areas and distances where shown are subject to survey.

Scale 1:1000

0 10 20 40 60 80 100 Metres

Mark T Mitchell Consulting Geotechnical Engineer 1202 Victoria Street, P.O. Box 9123, Hamilton	WAITAHA PROPERTY DEVELOPMENTS LTD Proposed Subdivision of Lot 3 DPS 65139 & Lot 2 DPS 68110 Waitaha Road, Tauranga.	**SITE PLAN**	DRAWING No. 4069-01 DATE July 1996 ISSUE One

NOTES:
1. This Drawing has been reproduced from the approved Subdivision Plans prepared by Graham Read Consultants, Registered Surveyors and Development Consultants, Principal Project Surveyors.
2. All areas and distances where shown are subject to survey.
3. The locations of the Fill/No Fill boundaries are approximate only. Care should be taken when constructing foundations near these boundaries that the actual Fill/No Fill boundary is located.



REDUCED

LEGEND:

denotes Certified Fill areas

" Uncertified Fill Areas

REVISED: December 1998

SCALE 1:1000

0 10 20 30 40 50 60 70 80 90 100 metres

Mark T Mitchell Ltd Consulting Geotechnical Engineer 1202 Victoria Street, PO Box 9123, Hamilton	WAITAHA PROPERTY DEVELOPMENTS Riverstone Park Residential Subdivision – Stage II Waitaha Road, Welcome Bay, Tauranga	**SITE PLAN**	DRAWING No. 4255-20 DATE October 1998 ISSUE One

NOTES: 1. This Drawing has been reproduced from the approved subdivision plans prepared by Graham Read Consultants, Registered Surveyors and Development Consultants, Principal Project Surveyors.
2. All areas and distances where shown are subject to survey.

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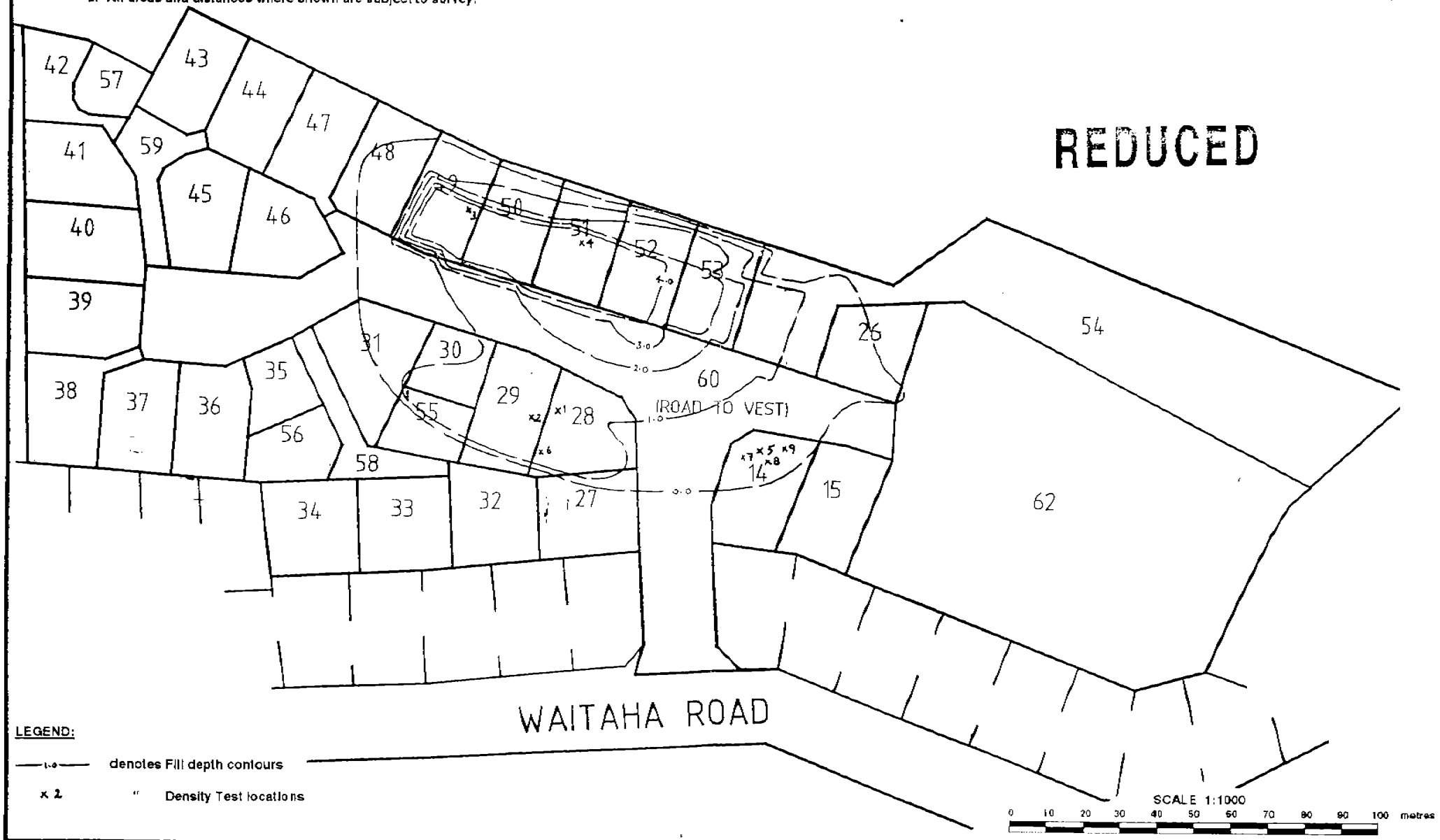
REDUCED



LEGEND:

—1.0— denotes Fill depth contours

x 2 " Density Test locations

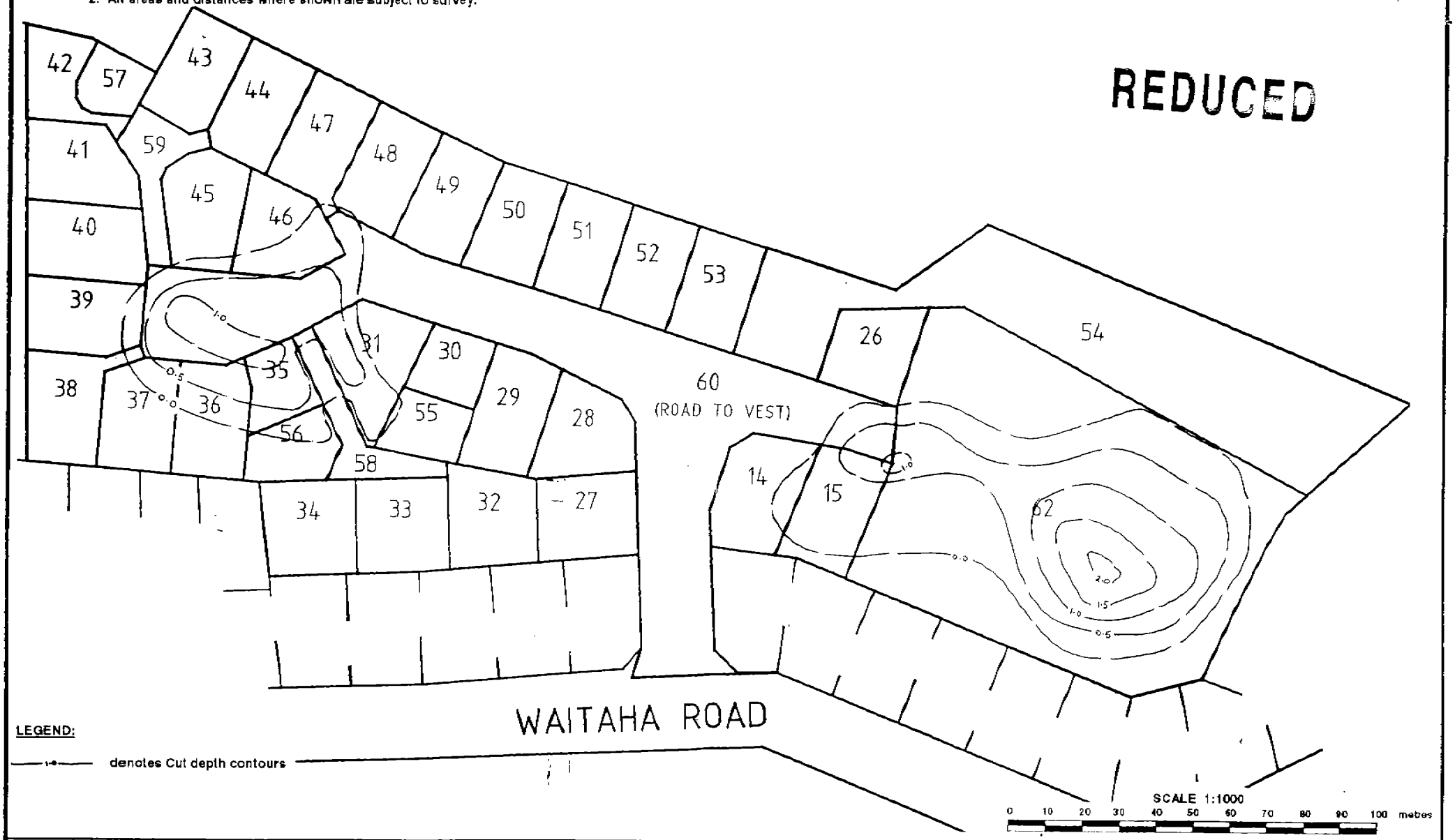
SCALE 1:1000

0 10 20 30 40 50 60 70 80 90 100 metres

Mark T Mitchell Ltd Consulting Geotechnical Engineer 1202 Victoria Street, PO Box 9123, Hamilton	WAITAHA PROPERTY DEVELOPMENTS Riverstone Park Residential Subdivision – Stage II Waitaha Road, Welcome Bay, Tauranga	SITE PLAN	DRAWING No. 4255-21 DATE October 1998 ISSUE One

NOTES: 1. This Drawing has been reproduced from the approved subdivision plans prepared by Graham Read Consultants, Registered Surveyors and Development Consultants, Principal Project Surveyors.
2. All areas and distances where shown are subject to survey.

REDUCED



LEGEND:

1·0 denotes Cut depth contours

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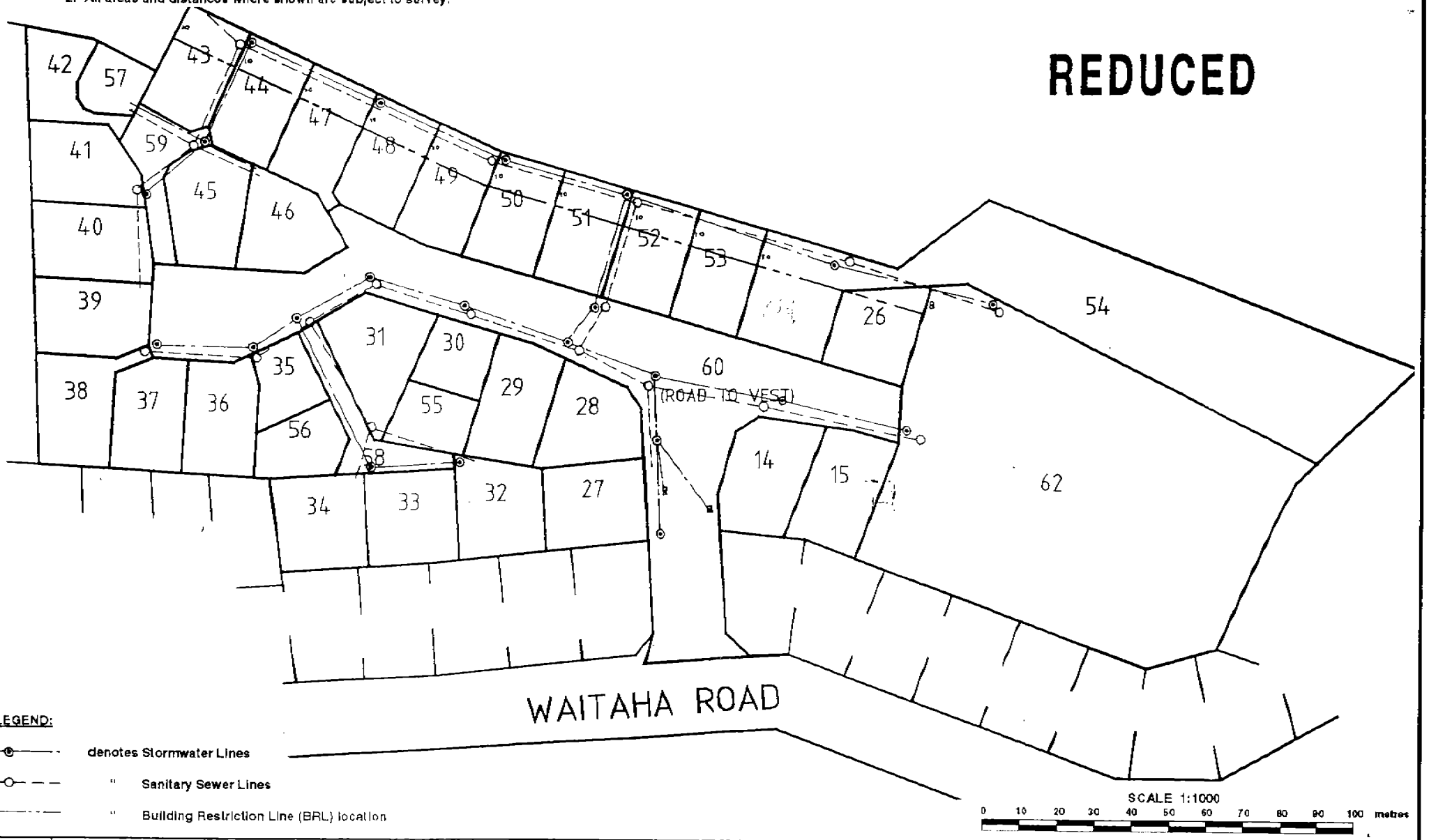
NOTES: 1. This Drawing has been reproduced from the approved subdivision plans prepared by Graham Read Consultants, Registered Surveyors and Development Consultants, Principal Project Surveyors.
2. All areas and distances where shown are subject to survey.

N

REDUCED



LEGEND:

denotes Stormwater Lines

" Sanitary Sewer Lines

" Building Restriction Line (BRL) location

SCALE 1:1000

0 10 20 30 40 50 60 70 80 90 100 metres

Mark T Mitchell Ltd Consulting Geotechnical Engineer 1202 Victoria Street, PO Box 9123, Hamilton	WAITAHA PROPERTY DEVELOPMENTS Riverstone Park Residential Subdivision – Stage II Waitaha Road, Welcome Bay, Tauranga	SITE PLAN	DRAWING No. 4255-23 DATE October 1998 ISSUE One

SOIL DESCRIPTION

FIELD TEST DATA

Depth in Metres | Vane Shear Strength (kPa) | Scala Penetrometer (blows per 100mm. drop)

BORE HOLE LOG No. 1

TOPSOIL.

Stiff, yellowish brown, fine sandy clayey, SILT.

Loose to very loose, yellowish brown, silty, medium SAND.
Becoming light orangy brown & medium - coarse SAND @ 0.9m.

Soft, light brown, fine - medium sandy clayey, SILT.

Loose, light brown, slightly clayey silty fine - medium SAND.
Becoming lighter from 1.8m.

Loose, creamy brown, clayey silty, fine SAND.

Bottom of Bore Hole completed 5/9/95

Vane Shear Strength (kPa): 110, 36, 36

BORE HOLE LOG No. 2

TOPSOIL.

Stiff, light yellowish brown, fine sandy clayey, SILT.
Becoming pale brown @ 1.0m.

Firm, brownish yellow, fine sandy clayey, SILT.

Medium dense, light orangy brown, silty medium - coarse SAND.

Bottom of Bore Hole completed 5/9/95

Vane Shear Strength (kPa): 110, 84, 87, 82, 86, 57

NOTE: The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

BORE HOLE LOG No. 1 & 2

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August 1995 W. 4069

Fig A-1

SOIL DESCRIPTION

FIELD TEST DATA

Depth in Metres | Vane Shear Strength (kPa) | Scala Penetrometer (blows per 100mm. drop)

BORE HOLE LOG No. 3

TOPSOIL.

FILL. Mixture of TOPSOIL & yellowish brown, fine sandy clayey SILT.

Stiff, yellowish brown, fine sandy clayey, SILT,

Stiff, brown, clayey, SILT.

Firm, brownish yellow, fine sandy clayey, SILT.

Bottom of Bore Hole completed 5/9/95

Vane Shear Strength (kPa): 102, 80, 88, 86, 71, 84, 55, 44

BORE HOLE LOG No. 4

TOPSOIL.

Firm, brown, fine sandy SILT.
Becoming light brown @ 0.6m.
Becoming light yellowish brown & slightly clayey @ 0.7m.

Firm, light brownish yellow, fine sandy clayey, SILT.

Firm, light brown, clayey, SILT.

Firm, light brownish yellow, fine sandy clayey, SILT.

Bottom of Bore Hole completed 5/9/95

Vane Shear Strength (kPa): 55, 69, 86, 84, 74, 68, 46, 42

NOTE: The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

BORE HOLE LOG No. 3 & 4

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Fig A-2

SOIL DESCRIPTION

FIELD TEST DATA

Depth in Metres | Vane Shear Strength (kPa) | Scala Penetrometer (blows per 100mm. drop)

BORE HOLE LOG No. 5

Depth	Vane Shear Strength (kPa)
TOPSOIL.	
Very soft becoming stiff, yellowish brown, fine sandy slightly clayey, SILT.	104
Stiff, yellowish brown, fine sandy clayey, SILT.	112, 110
Firm, light brown, slightly fine sandy clayey, SILT.	60, 71, 66, 76
Firm, light brownish yellow, fine sandy clayey SILT. Becoming more yellow @ 2.1m.	90, 65
Bottom of Bore Hole completed 5/9/95	

BORE HOLE LOG No. 6

Depth	Vane Shear Strength (kPa)
TOPSOIL.	
Firm, brown, fine sandy SILT.	107
Stiff, yellowish brown, fine sandy slightly clayey, SILT. Becoming more clayey @ 0.9m.	91, 80, 67
Firm, light brown, slightly fine sandy clayey, SILT.	25, 86, 90
Firm, light brownish yellow, fine sandy clayey, SILT.	58, 36
Bottom of Bore Hole completed 5/9/95	

NOTE: The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

BORE HOLE LOG No. 5 & 6

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Fig A-3

SOIL DESCRIPTION

FIELD TEST DATA

Depth in Metres | Vane Shear Strength (kPa) | Scala Penetrometer (blows per 100mm. drop)

BORE HOLE LOG No. 7

Depth	Vane Shear Strength (kPa)
TOPSOIL.	
FILL. TOPSOIL & yellowish brown, fine sandy clayey, SILT mixture with a thin METAL layer @ base.	104
TOPSOIL.	100
Loose, brown, silty fine - medium SAND.	78
Stiff, yellowish brown, fine sandy clayey, SILT. Becoming brownish yellow @ 1.5m.	88, 62, 61
Bottom of Bore Hole completed 5/9/95	

BORE HOLE LOG No. 8

Depth	Vane Shear Strength (kPa)
TOPSOIL.	
Stiff, light greyish brown, sandy, SILT.	64
Firm, light brownish yellow, fine sandy clayey, SILT. Becoming light brown @ 0.9m.	90, 73, 91
Firm, brownish yellow fine sandy clayey, SILT.	74, 69
Loose, light orangy brown, medium - coarse SAND.	
Bottom of Bore Hole completed 5/9/95	

NOTE: The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

BORE HOLE LOG No. 7 & 8

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Fig A-4

SOIL DESCRIPTION

FIELD TEST DATA

BORE HOLE LOG No 9

Depth in metres	Vane Shear Strength (kPa)	Scala Penetrometer (blows per 100mm drop) 0 2 4 6 8 10
TOPSOIL		
0	70	
Firm to stiff, light brownish yellow, fine sandy, clayey SILT.	40	
Very loose, light brownish yellow, silty, fine-medium SAND.		
1 Soft to firm, light brownish yellow, fine sandy, clayey, SILT.		
Very loose to loose, pale brown, medium SAND.		
2		
Stiff, pale brown, clayey SILT.		
Bottom of Bore Hole completed 26/7/96		
3		

BORE HOLE LOG No 10

Depth in metres	Vane Shear Strength (kPa)	Scala Penetrometer (blows per 100mm drop) 0 2 4 6 8 10
TOPSOIL		
0	86	
Stiff, brownish yellow, fine sandy, clayey SILT.	84	
	84	
1 Soft to stiff, light brown, clayey SILT.	68	
	51	
	32	
Loose, light brown, silty, medium-coarse SAND.		
2		
Bottom of Bore Hole completed 26/7/96		
3		

NOTE: The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

BORE HOLE LOG No 9 & 10

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Fig A-5

SOIL DESCRIPTION

FIELD TEST DATA

BORE HOLE LOG No 11

Depth in metres	Vane Shear Strength (kPa)	Scala Penetrometer (blows per 100mm drop) 0 2 4 6 8 10
TOPSOIL		
0	120+	
	105	
Stiff to very stiff, light brownish yellow, clayey SILT.	76	
	72	
1	60	
	62	
	110	
Loose, light orangy brown, slightly silty, medium-coarse SAND.		
2		
Bottom of Bore Hole completed 26/7/96		
3		

BORE HOLE LOG No 12

Depth in metres	Vane Shear Strength (kPa)	Scala Penetrometer (blows per 100mm drop) 0 2 4 6 8 10
TOPSOIL		
0 Very loose, pale brown, silty, fine-medium SAND.		
Firm, light brown, fine sandy, clayey SILT.	48	
Very loose to loose, light brown, silty, medium SAND.		
1		
Loose to medium dense, very pale brown, medium SAND.		
2 Soft, brown, silty CLAY.	32	13 15 15
Bottom of Bore Hole completed 26/7/96		
3		

NOTE: The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

BORE HOLE LOG No 11 & 12

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Fig A-6

SOIL DESCRIPTION

FIELD TEST DATA

Depth in metres | Vane Shear Strength (kPa) | Scala Penetrometer (blows per 100mm drop) 0 2 4 6 8 10

BORE HOLE LOG No 13

TOPSOIL

Medium dense, pale grey, medium, silica SAND

Firm, grey (slightly iron stained) clayey SILT.

Medium dense, pale greyish brown, slightly clayey, silty, medium SAND.

Bottom of Bore Hole completed 26/7/96

0 1 2 3

60

11 11 12

BORE HOLE LOG No 14

TOPSOIL.

FILLING. Pale brown, fine-medium SAND mixed with orangy brown CLAY.

Bottom of Bore Hole completed 6/8/96

0 1 2 3

60

NOTE: The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

BORE HOLE LOG No 13 & 14

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Fig A-7

SOIL DESCRIPTION

FIELD TEST DATA

Depth in metres | Vane Shear Strength (kPa) | Scala Penetrometer (blows per 100mm drop) 0 2 4 6 8 10

BORE HOLE LOG No 15

TOPSOIL

Firm to stiff, orangy brown, slightly fine sandy, silty CLAY.

Loose, light orangy brown, clayey, silty, medium SAND.

Stiff, yellowish brown, silty CLAY.

Bottom of Bore Hole completed 26/7/96

0 1 2 3

62 100 120 98 100 95 120+ 120+ 80

11 13 13

BORE HOLE LOG No 16

TOPSOIL

Firm, orangy brown, silty CLAY.

Firm, yellowish brown, fine sandy, clayey SILT.

Very loose to loose, pale brown, slightly clayey, silty, medium SAND.

Loose, pale brown, medium SAND.

Medium dense, pale greyish brown, silty fine SAND

Bottom of Bore Hole completed 26/7/96

0 1 2 3

40 50 70 62 52

NOTE: The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

BORE HOLE LOG No 15 & 16

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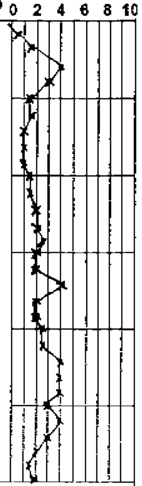
Fig A-8

SOIL DESCRIPTION

FIELD TEST DATA — Depth in metres | Vane Shear Strength (kPa) | Scala Penetrometer (blows per 100mm drop) 0 2 4 6 8 10

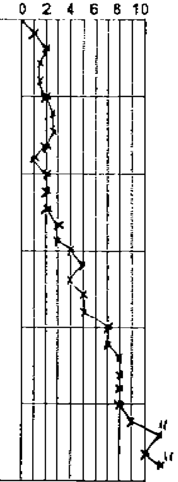
BORE HOLE LOG No 17

Soil description	Depth (m)	Vane Shear Strength (kPa)
TOPSOIL	0	
Soft to stiff, yellowish brown, clayey SILT.		94 52 30
Very loose, orangy brown, silty, medium SAND.	1	
Firm, yellowish brown, slightly fine sandy, clayey SILT.		
Loose, pale greyish brown, slightly silty, medium SAND.	2	
Bottom of Bore Hole completed 26/7/96	3	



BORE HOLE LOG No 18

Soil description	Depth (m)
TOPSOIL	0
FILLING. Mixture of various coloured SILT, SAND and CLAY.	
FILLING. Yellowish brown, slightly fine sandy, silty, CLAY.	1
FILLING. Light orangy brown, clayey, silty, medium-coarse SAND.	
FILLING. Pale brown, granular, silty, CLAY.	2
Bottom of Bore Hole completed 26/7/96	3



NOTE: The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

BORE HOLE LOG No 17 & 18

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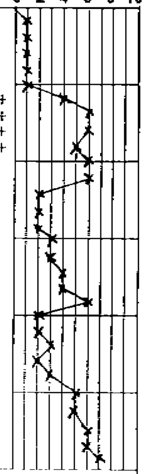
Fig A-9

SOIL DESCRIPTION

FIELD TEST DATA — Depth in metres | Vane Shear Strength (kPa) | Scala Penetrometer (blows per 100mm drop) 0 2 4 6 8 10

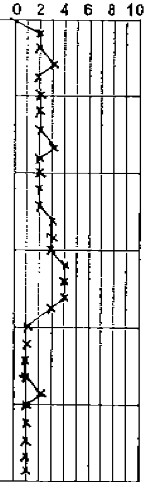
BORE HOLE LOG No 19

Soil description	Depth (m)	Vane Shear Strength (kPa)
TOPSOIL	0	
FILLING. Bright orangy brown, granular, silty CLAY.		28 88
FILLING. Pale brown, granular, silty CLAY. Pale greyish white, silty, fine-medium SAND @ 1.0-1.1m	1	120+ 120+ 120+ 120+
	2	
Bottom of Bore Hole completed. 6/8/96	3	



BORE HOLE LOG No 20

Soil description	Depth (m)	Vane Shear Strength (kPa)
TOPSOIL	0	
Stiff, orangy brown, granular, slightly clayey SILT	1	92 90 96 88 98 94 96
Soft, bright orangy brown, granular, clayey SILT	2	
Bottom of Bore Hole completed. 6/8/96	3	



NOTE: The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

BORE HOLE LOG No 19 & 20

GEOCON SOIL TESTING LTD
Civil Engineering Laboratory
1202 Victoria St, P.O. Box 9123, Hamilton

WAITAHA PROPERTY DEVELOPMENTS LTD
Proposed Subdivision of Lot 3 DPS 65139 & Lot 2 DPS 68110, Waitaha Road, Tauranga.
August 1996 W. 4069

Fig A-10

SOIL DESCRIPTION

FIELD TEST DATA

Depth in metres | Vane Shear Strength (kPa) | Scala Penetrometer (blows per 100mm drop) 0 2 4 6 8 10

BORE HOLE LOG No 21

TOPSOIL

FILLING. Clean yellowish brown, SILT & CLAY mixture.

FILLING. Dirty blackish brown, TOPSOIL.

FILLING. Slightly dirty, brown, CLAY containing some minor TOPSOIL.

Yellowish brown, fine sandy clayey SILT.

Bottom of Bore Hole completed. 6/8/96

BORE HOLE LOG No 22

TOPSOIL

FILLING. Clean yellowish brown, SILT & CLAY mixture.

Yellowish brown, fine sandy clayey SILT.

Light orangy brown, clayey silty medium SAND.

Bottom of Bore Hole completed. 6/8/96

NOTE: The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

BORE HOLE LOG No 21 & 22

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August 1996 W. 4069

Fig A-11

SOIL DESCRIPTION

FIELD TEST DATA

Depth in metres | Vane Shear Strength (kPa) | Scala Penetrometer (blows per 100mm drop) 0 2 4 6 8 10

BORE HOLE LOG No 23

TOPSOIL.

FILLING. Clean brown & yellowish brown, SILT & CLAY mixture.

Yellowish brown, fine sandy clayey SILT.

Light orangy brown, clayey silty medium SAND.

Bottom of Bore Hole completed. 6/8/96

BORE HOLE LOG No 26

W.L.

FILLING. Black TOPSOIL.

Yellowish brown, fine sandy clayey SILT.

Brown, clayey SILT.

Bottom of Bore Hole completed. 6/8/96

NOTE: The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

BORE HOLE LOG No 23 & 26

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Civil Engineering Laboratory
1202 Victoria St, P.O. Box 9123, Hamilton

WAITAHA PROPERTY DEVELOPMENTS LTD
Proposed Subdivision of Lot 3 DPS 65139 & Lot 2 DPS 68110, Waitaha Road, Tauranga.
August 1996 W. 4069

Fig A-14

SOIL DESCRIPTION

BORE HOLE LOG No 24

FIELD TEST DATA

Depth in metres	Vane Shear Strength (kPa)	Scala Penetrometer (blows per 100mm drop) 0 2 4 6 8 10
0		
TOPSOIL.		
1		
FILLING. Dirty, TOPSOIL & CLAY mixture.		
2		
FILLING. Clean, yellowish brown, SILT & CLAY mixture.		
3		
FILLING. Pale grey, clayey, silty, medium SAND.		
4		
FILLING. Dirty grey, SAND, TOPSOIL & CLAY mixture		
5		
Black, organic SILT. (Original Gully Bottom)		
6		
Bottom of Bore Hole completed 6/8/96		

NOTE: The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

BORE HOLE LOG No 24

GEOCON SOIL TESTING LTD
Civil Engineering Laboratory
1202 Victoria St, P.O. Box 9123, Hamilton

WAITAHA PROPERTY DEVELOPMENTS LTD
Proposed Subdivision of Lot 3 DPS 65139 & Lot 2 DPS 68110, Waitaha Road, Tauranga.
August 1996 W. 4069

Fig A-12

SOIL DESCRIPTION

BORE HOLE LOG No 25

FIELD TEST DATA

Depth in metres	Vane Shear Strength (kPa)	Scala Penetrometer (blows per 100mm drop) 0 2 4 6 8 10
0		
TOPSOIL.		
1	W.L.	
FILLING. Clean, yellowish brown, SILT & CLAY mixture.		
2		
FILLING. Dirty, grey, SAND & CLAY mixture.		
3		
Black, organic SILT. (Original Gully Bottom)		
4		
Grey, silty, medium SAND.		
5		
Bottom of Bore Hole completed 6/8/96		
6		

NOTE: The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

BORE HOLE LOG No 25

GEOCON SOIL TESTING LTD
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August 1996 W. 4069

Fig A-13

SOIL DESCRIPTION

FIELD TEST DATA

Depth in metres | Vane Shear Strength (kPa) | Scala Penetrometer (blows per 100mm drop) 0 2 4 6 8 10

BORE HOLE LOG No 27

0
TOPSOIL.

FILLING. Clean, yellowish brown, SILT & CLAY mixture.

1
Black TOPSOIL.

2
Yellowish brown, fine sandy, clayey SILT.
Becoming more sandy @ 2.2m .

Light brownish grey, clayey silty medium SAND

3
Bottom of Bore Hole completed. 6/8/96

BORE HOLE LOG No 30

0 2 4 6 8 10

0
FILLING. Black TOPSOIL.

1
Yellowish brown, fine sandy, clayey SILT.

2
Yellowish brown, fine sandy, silty CLAY.

3
Bottom of Bore Hole completed. 6/8/96

NOTE: The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

BORE HOLE LOG No 27 & 30

GEOCON SOIL TESTING LTD
Civil Engineering Laboratory
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WAITAHA PROPERTY DEVELOPMENTS LTD
Proposed Subdivision of Lot 3 DPS 65139 & Lot 2 DPS 68110, Waitaha Road, Tauranga.
August 1996 W. 4069

Fig A-15

SOIL DESCRIPTION

FIELD TEST DATA

Depth in metres | Vane Shear Strength (kPa) | Scala Penetrometer (blows per 100mm drop) 0 2 4 6 8 10

BORE HOLE LOG No 28

0
FILLING. Black mixture of TOPSOIL & GRAVEL.

1
FILLING. Clean, yellowish brown, SILT & CLAY mixture.

2
Black, organic SILT. (Original Gully Bottom)

3
Grey, silty, medium SAND.

4
Very pale brownish yellow, clayey, silty, medium SAND.

5
Bottom of Bore Hole completed 6/8/96

6

NOTE: The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

BORE HOLE LOG No 28

GEOCON SOIL TESTING LTD
Civil Engineering Laboratory
1202 Victoria St, P.O. Box 9123, Hamilton

WAITAHA PROPERTY DEVELOPMENTS LTD
Proposed Subdivision of Lot 3 DPS 65139 & Lot 2 DPS 68110, Waitaha Road, Tauranga.
August 1996 W. 4069

Fig A-16

SOIL DESCRIPTION

BORE HOLE LOG No 29

FIELD TEST DATA

Depth in metres		Vane Shear Strength (kPa)	Scala Penetrometer (blows per 100mm drop) 0 2 4 6 8 10
0	TOPSOIL.		
1	FILLING. Clean, yellowish brown, SILT & CLAY mixture.		
2			
3	Grey, silty, medium SAND.		
4	Brown, fine sandy clayey SILT.		
5	Light yellowish brown, clayey, fine sandy SILT.		
6	Bottom of Bore Hole completed 6/8/96		

NOTE: The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

BORE HOLE LOG No 29

GEOCON SOIL TESTING LTD
Civil Engineering Laboratory
1202 Victoria St, P.O. Box 9123, Hamilton

WAITAHA PROPERTY DEVELOPMENTS LTD
Proposed Subdivision of Lot 3 DPS 65139 & Lot 2 DPS 68110, Waitaha Road, Tauranga.
August 1996 W. 4069

Fig A-17

Mark T Mitchell Ltd

Consulting Geotechnical Engineer

1202/1 Victoria Street
P.O. Box 9123
Hamilton New Zealand
Facsimile 07 839 3125
Telephone 07 838 3119
e-mail: geocon@voyager.co.nz

Ref: T - 4255/2
4 November, 1998

The Development Engineer
Tauranga District Council
Private Bag
Tauranga

Dear Sir,

Re: Inspecting Geotechnical Engineer's Summary Report
Stage II, Riverstone Park Residential Subdivision, Waitaha Road, Tauranga

I advise that I have carried out the function of Inspecting Engineer for the Stage II Development of Riverstone Park Residential Subdivision and have the appropriate qualifications and experience to carry out this work. I was retained for this work by the Owner, Waitaha Property Developments Ltd and by Manukau Consultants Ltd to advise on geotechnical aspects of the above referenced subdivision.

1. Earth Fills

An outline of the earthworks construction which was carried out as part of the subdivision development is presented in the attached report dated 3 November, 1998. Part of this work included the construction of earth fills. The fills (termed "Certified Fills") which are located within areas where residential dwellings are to be constructed have been placed and compacted in accordance with the relevant NZ Standard Code of Practice for Earth Fills.

In other areas, where building construction is unlikely, the fills have been constructed to a lesser standard. These fills are termed "Uncertified Fill" areas and have been placed over the edge of the steeper slopes within the site.

The lots where a Certified Fill has been placed are:

Lot Nos. 14, 26 to 31 and 48 to 55

The lots where Uncertified Fill exists or has been recently placed are:

Lot Nos. 26 and 48 to 54

Uncertified Fill has also been placed within trench backfilling wherever stormwater and sewer pipes have been constructed. However this backfilling is within the Drainage Reserve areas and therefore outside of building site locations.

An old fill to 0.6 metres depth was encountered near Lot 38. This area was left unaltered during the site development works and therefore the extent of this uncertified filling is unknown. However it may be assumed that this shallow, uncertified filling also extends into nearby Lots 37 and 39.

Limitations as to building construction within these areas are set out in the attached Soils Investigation and Inspecting Engineer's report dated 3 November, 1998.

2. Foundation Construction

The available soils information indicates that in most of the natural ground areas and within Certified Fill areas, the soils present are of a relatively high shear strength and density. Therefore, over much of the project site, the soil conditions are such that foundations may be constructed in accordance with the relevant NZ non-specific design codes of practice for building work, such as NZS 3604 and NZS 4229.

However this does not alleviate the necessity for a Building Certifier or an Engineer to carry out normal inspection of foundations prior to the pouring of concrete. Soft soil layers are likely to occur occasionally in natural ground areas and it is important that sufficient testing and probings be carried out to ensure that no undetected fill, loose or soft soils underlie the footings.

Council sewer and stormwater lines cross several of the lots within the subdivision and the construction of these services has resulted in the disturbance of natural ground. It should also be noted that these services were primarily constructed after the Certified Fills had been completed with excavations made into these fills in some locations. Therefore in the vicinity of these lines, some of the near-surface soils may consist of re-spread filling which has not been compacted to the same standard as for a Certified Fill. All stormwater and sewer lines have been constructed within an easement set aside for these services.

During site development, after the project site had been excavated and filled to the desired grades, topsoil was spread over the completed surface. Site Plans that show areas of cut and fill are included with the accompanying report.

3. Building Restriction Line

Much of the eastern margin of the subdivided area contains a steep batter slope of Uncertified Filling and also contains stormwater and sewer lines at the base of the slope. The western extent of this area is defined by a Building Restriction Line that is located 10 metres off the eastern boundary. Where it is desired to build closer than 10 metres from this boundary, it will be necessary to carry out a separate soils investigation at that location. If it is determined that this option is feasible, a Specific Foundation Design by a Registered Engineer will be required.

4. Site Certification

The Tauranga District Council requires in their Code of Practice that upon completion of construction the Soils Engineer is to provide a statement of professional opinion as to the suitability of the land for building development and that the earth fills are also suitable for residential development.

A Statement of Professional Opinion as to the Geotechnical Suitability of Land for Building (Tauranga District Council Form G2) is attached to this report. A Summary Form of Geotechnical Data/Recommendations/Requirements for Individual Lots (Tauranga District Council Form G2a) is also attached.

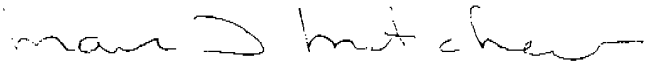
5. General Soils Report

The Tauranga District Council requires for their records, a Soils Report that sets out the results of site investigations that were carried out prior to the subdivision development as well as construction inspection data and other relevant geotechnical information.

The attached Soils Investigation and Inspecting Engineers Report dated 3 November, 1998 summarises the results of earlier soils investigations and presents data and recommendations relative to the recent construction works.

Yours faithfully,

Mark T Mitchell Ltd



Consulting Geotechnical Engineer

Mark T Mitchell Ltd

Consulting Geotechnical Engineer

1202/1 Victoria Street
P.O. Box 9123
Hamilton New Zealand
Facsimile 07 839 3125
Telephone 07 838 3119
e-mail: geocon@voyager.co.nz

SECTION 2: FORM G2

Ref: T – 4255

To: The Director of Environmental Services
Tauranga District Council
Private Bag
Tauranga

STATEMENT OF PROFESSIONAL OPINION AS TO

GEOTECHNICAL SUITABILITY OF LAND FOR BUILDING

Development : Stage 2, Riverstone Park Residential Subdivision
Owner/Developer : Waitaha Property Developments Ltd
Location : Waitaha Road, Welcome Bay, Tauranga

I, Mark Thomson Mitchell of Mark T Mitchell Ltd, Consulting Geotechnical Engineer of 1202/1 Victoria Street, Hamilton, hereby confirm that:

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

2. An appropriate level of site investigation and construction overview has been carried out by our firm under my direction. Day-to-day construction inspection has been carried out by the Project Engineers for the development, Manukau Consultants Ltd. A Soils Investigation and Inspecting Engineer's Report, dated 3 November, 1998, together with an Inspecting Geotechnical Engineer's Summary Report dated 4 November, 1998 have been prepared for the project.

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

   a. The areas shown in my report dated 3 November, 1998 of each new allotment is suitable for the erection thereon of the building types appropriate to the zoning of the land, provided that all recommendations contained in my Soils Investigation and Inspecting Engineer's Report of 3 November, 1998 are followed.

   b. The earth fills shown on the attached Drawing No. 4255-22 have been placed in accordance with the Code of Practice for Development of the Tauranga District Council.

   c. The completed works give due regard to all land slope and foundation stability considerations.

   d. The filled ground is suitable for the erection thereon of residential buildings not requiring specific design in terms of NZS 3604:1991 and related documents provided all recommendations contained in my Soils Investigation and Inspecting Engineer's Report of 3 November, 1998 are followed.

4 November, 1998

Ref: T - 4255

e. The original ground not affected by filling is suitable for the erection thereon of residential buildings not requiring specific design in terms of NZS 3604:1991 and related documents provided all recommendations contained in my Soils Investigation and Inspecting Engineer's Report of 3 November, 1998 are followed.

4. This professional opinion is furnished to the Tauranga District Council, the Owner/Developer and to the Initial Purchaser of each property for their purpose 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 of any dwelling.

for **Mark T Mitchell Ltd**
Consulting Geotechnical Engineer

4 November, 1998.

TAURANGA DISTRICT COUNCIL

LOT SUMMARY REPORT

MAY 98

G2a △

VERSION 1

Summary of Geotechnical Data/Recommendations/Requirements for Individual Lots

Lot #	Area (m^2)	Subsurface Data						Foundations		Building line restriction ?	Recommendations/restrictions
		Shear strength (kPa)	Subdivision filling		Natural topography unworked?	Natural topography earthworked?		Coventional shallow foundation to NZS 3604: 1991 ?	Specific Design?		
			Y/N	Depth (m)	Y/N	Y/N	Depth (m)	Y/N/NA	Y/N/NA	Y/N	
14	722	-	Y	0.5	N	Y	0.5	Y	N	N	
15	662	-	N	-	N	Y	0.5	Y	N	N	
26	549	-	Y	0.5	N	Y	0.5	Y	N	Y	Building Restriction Line as shown on Drawing No. 4255-23
27	650	-	Y	1.0	N	Y	1.0	Y	N	N	
28	625	60	Y	1.5	N	Y	1.5	Y	N	N	
29	627	60	Y	1.5	N	Y	1.5	Y	N	N	
30	-	-	Y	1.5	N	Y	1.5	Y	N	N	
31	-	> 78	Y	1.5	N	Y	1.5	Y	N	N	
32	638	> 70	N	-	Y	N	-	Y	N	N	
33	645	-	N	-	Y	N	-	Y	N	N	
34	645	-	N	-	Y	N	-	Y	N	N	
35	701	> 84	N	-	N	Y	1.0	Y	N	N	
36	600	-	N	-	N	Y	1.0	Y	N	N	
37	600	> 80	N	-	N	Y	0.5	Y	N	N	Presence of Old shallow Filling
38	600	> 80	N	-	Y	N	-	Y	N	N	Presence of Old shallow Filling
39	632	-	N	-	Y	N	-	Y	N	N	
40	657	-	N	-	Y	N	-	Y	N	N	
41	602	> 60	N	-	Y	N	-	Y	N	N	

Comments: Lot areas are taken from the original scheme plan and may be subject to variations

TAURANGA DISTRICT COUNCIL

LOT SUMMARY REPORT

MAY 98

G2a △

VERSION 1

Summary of Geotechnical Data/Recommendations/Requirements for Individual Lots

Lot #	Area (m^2)	Subsurface Data						Foundations		Building line restriction ?	Recommendations/restrictions
		Shear strength (kPa)	Subdivision filling		Natural topography unworked?	Natural topography earthworked?		Coventional shallow foundation to NZS 3604 1991 ?	Specific Design?		
			Y/N	Depth (m)	Y/N	Y/N	Depth (m)	Y/N/NA	Y/N/NA	Y/N	
42	-	-	N	-	Y	N	-	Y	N	N	
43	577	-	N	-	Y	N	-	Y	N	Y	Building Restriction Line as shown on Drawing No. 4255-23
44	597	-	N	-	Y	N	-	Y	N	Y	Building Restriction Line as shown on Drawing No. 4255-23
45	609	> 70	N	-	Y	N	-	Y	N	N	
46	570	-	N	-	N	Y	0.5	Y	N	N	
47	618	-	N	-	Y	N	-	Y	N	Y	Building Restriction Line as shown on Drawing No. 4255-23
48	600	-	Y	1.0	N	Y	1.0	Y	N	Y	Building Restriction Line as shown on Drawing No. 4255-23
49	599	-	Y	4.0	N	Y	4.0	Y	N	Y	Building Restriction Line as shown on Drawing No. 4255-23
50	574	-	Y	4.0	N	Y	4.0	Y	N	Y	Building Restriction Line as shown on Drawing No. 4255-23
51	574	-	Y	4.0	N	Y	4.0	Y	N	Y	Building Restriction Line as shown on Drawing No. 4255-23
52	575	-	Y	4.0	N	Y	4.0	Y	N	Y	Building Restriction Line as shown on Drawing No. 4255-23
53	575	-	Y	3.0	N	Y	3.0	Y	N	Y	Building Restriction Line as shown on Drawing No. 4255-23
54	4632	-	Y	2.0	N	Y	2.0	Y	N	Y	Building Restriction Line as shown on Drawing No. 4255-23
55	-	-	Y	1.5	N	Y	1.5	Y	N	N	
56	-	> 84	N	-	N	Y	0.5	Y	N	N	
57	-	-	N	-	Y	N	-	Y	N	N	

Comments: Lot areas are taken from the original scheme plan and may be subject to variations

Mark T Mitchell Ltd

Consulting Geotechnical Engineer

1202/1 Victoria Street
P.O. Box 9123
Hamilton New Zealand
Facsimile 07 839 3125
Telephone 07 838 3119
e-mail: geocon@voyager.co.nz

Ref: T – 4255/2
3 December, 1998

The Director of Environmental Services
Tauranga District Council
Private Bag
Tauranga

Attn: Mr Paul Baunton
Development Engineer

Dear Sirs,

Re: Supplement to Inspecting Engineers Report
Stage 2, Riverstone Park Residential Subdivision

This supplement to our Inspecting Engineer's Report for Stage 2, Riverstone Park Residential Subdivision is prepared in order to clarify aspects of that report, which is dated 4 November, 1998.

1. Filling within Lots 37 and 38

During our initial Site Investigation of August 1995, a small area of old Filling was encountered within a bore hole that was drilled within the vicinity of Lots 37 and 38. This Filling, which was relatively shallow at the bore hole location, was classified as an Uncertified Fill. The earthworks plans for this part of the site were not clear as to whether this Filling had actually been removed. Therefore our report of 4 November, 1998 advised that shallow filling may be present in the vicinity of Lot 38.

Our staff have subsequently carried out a number of shallow hand auger bore holes within this general area in order to determine the extent of the Fill soils. These tests indicate that Uncertified Fill material does occur within a part of Lot Nos. 37 and 38 but it is only to a maximum depth of 0.4 metres below existing ground level. In other subdivision, it is not unusual for topsoil and subsoils to be replaced to this depth and therefore the presence of this filling should not detract from the suitability of these lots as residential building sites.

However, because shallow Fill is present in this general area, it is necessary that prospective purchasers of sections be advised of its presence. Therefore, our recommendations remain unchanged from our Inspecting Engineers Report. That is, the Page 5 statement; "Where such filling is encountered during house foundation excavations, foundations should be deepened to found into the original soils below". Although obviously, conventional foundations could be used if the unsuitable filling were to be removed and replaced with compacted hardfill.

An amended Drawing 4255-20 is attached which shows the approximate extent of the Uncertified Filling.

2. Amended Table 1

Table 1 of our November report has been amended to include a column showing Optimum Water Content. It will be appreciated that because of the variable nature of soils present at this site, it was necessary to compile several different laboratory density curves. This accounts for the several values of Optimum Water Content that are shown in the table.

3. Amended Lot Summary Report

The Lot Summary Report (Tauranga District Council, Section 2, Form G2a) has also been amended slightly to indicate that Lots 36 and 39, in addition to the adjacent Lots 37 and 38 may contain old shallow filling. "Y" values are also shown in the Building Line Restriction column so as to correspond with information indicated in the adjacent recommendations/ restrictions column.

4. Reference to Tauranga District Council Building Requirements

Reference is made on Page 5 of our 3 November, 1998 report that foundations should be constructed in accordance with Tauranga District Council requirements. While it is understood that Tauranga District Council requires all residential structures to be constructed in accordance with NZ Standard Building Code Requirements, the wording of this section of our report is not strictly correct.

The amended paragraph should therefore read:

The construction of stormwater and sewer lines through the project site has also resulted in the disturbance of the ground. As the degree of compaction of the trench backfill and disturbed soil around can not be verified, all backfill soils are classified as "Uncertified Fill". Where foundations for buildings, including garage structures, are located near sewer or stormwater pipes, foundations will need to be constructed in accordance with *NZ Standard Building Code requirements.*

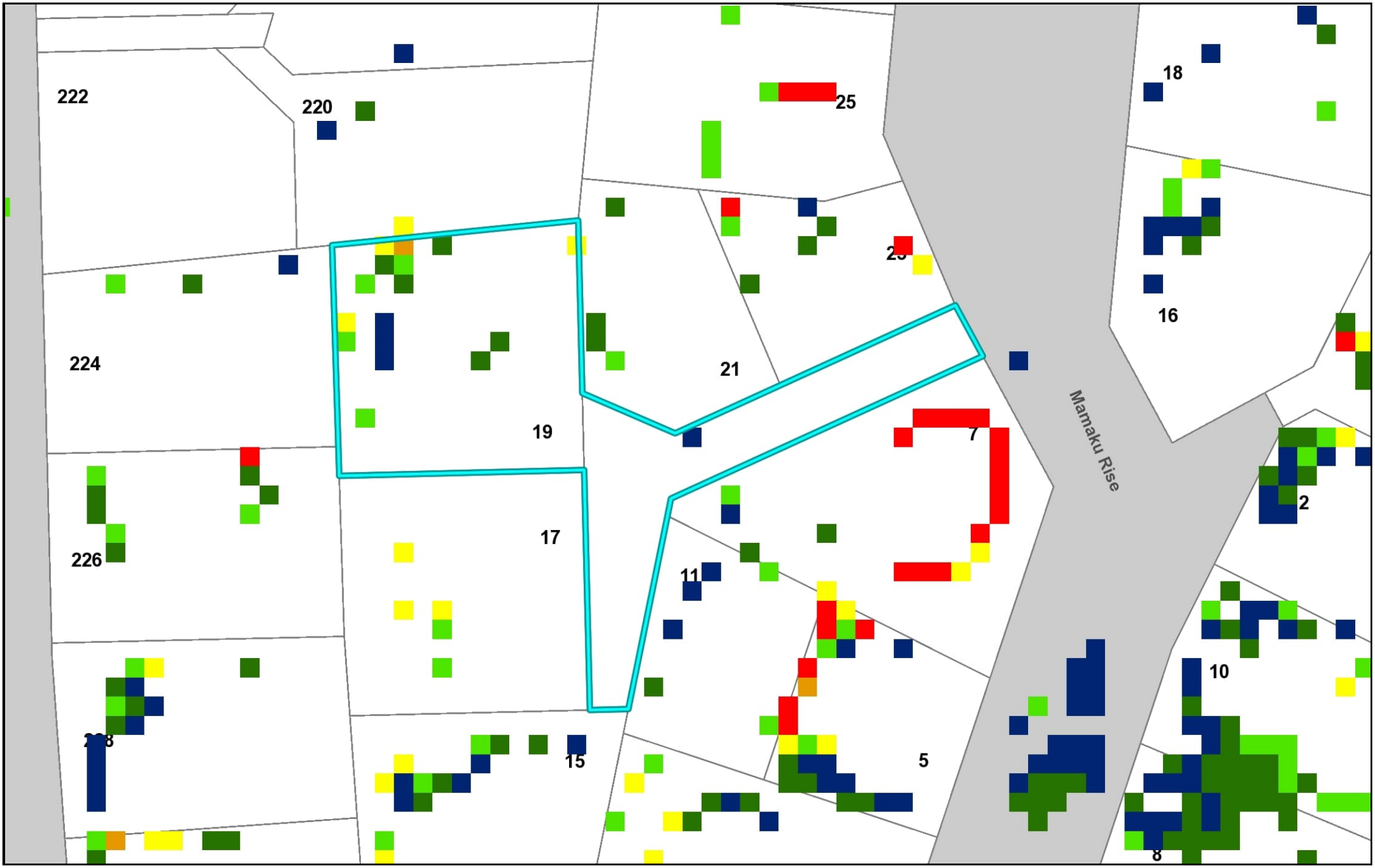
A copy of the amended page 5 of our report is attached.

Yours faithfully

Mark T Mitchell Ltd

Consulting Geotechnical Engineer

cc. Manukau Consultants
Attn: Bruce Cameron



Depth x Velocity 100 Year Event

1:500 @A4

0 16.25 32.50 Meters

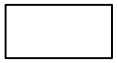
N

Tauranga City

SmartZoom

Natural Hazards Key

Flood from Rainfall (Depth x Velocity 100yr Event)


0 - 0.05


0.05 - 0.1


0.100000001 - 0.2


0.2 - 0.4


0.4 - 0.6


0.6 - 0.8


0.8 - 2.515182734

Flood Risk


Floodplain


Flood Prone Area (Depth > 300mm)


Flood Prone Area (Depth 100 - 300mm)


Overland Flow Path (Major)


Overland Flow Path (Minor)