



Juffermans Surveyors Ltd

ENGINEERS REPORT

PROPOSED TWO LOT SUBDIVISION FOR N KATENE 65 EGMONT STREET HAWERA

A handwritten signature in blue ink, appearing to read 'Kim Jansen', is positioned above the author's name.

Report Author

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22 October 2021

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1. Introduction

The site is located at 65 Egmont Street, Hawera and comprises formation of a rear Lot to the existing property legally described as Lot 4 DP 3734.

This report covers the engineering aspects with respect to the suitability of the proposed two lot subdivision to comply with the requirements of the South Taranaki District Council with respect to suitable soil strength for building platforms, wastewater disposal and stormwater disposal.

Historic use of the land is a residential dwelling and rear yard with a mixture of lawn and trees.

The site has slight fall to the south within Lot 2 as indicated in Figure 1.1 below.



Figure: 1.1 Juffermans Surveyors Site Plan

2. Soil Investigations

Juffermans Surveyors carried out soil investigations on the 18th of October with Lot 2 having Scala Penetrometer testing to a minimum depth of 1.9 metres and hand auger inspection of the soil types and shear vane testing to a depth of 3.0 metres as shown in Appendix C.

Three tests were undertaken within Lot 2. Testing was undertaken in the approximate centre of the lot as well as in the north east and south west areas of the Lot.

3. Building platform

The subsoil conditions were consistent at the three test locations with scala penetrometer results indicating poor bearing capacity. The subsoil conditions on Lot 2 did not meet the strength requirements as set out in NZS 3604:2011 “Good Ground” - any rock or soil capable of permanently withstanding an ultimate bearing capacity of 300 kPa, (i.e. an allowable bearing pressure of 100 kPa using a factor of safety of 3)

The subsoil conditions on Lot 2 are not suitable for standard NZS 3604:2011 building foundations such as concrete slab on grade or timber pile.

Specific Engineering Design will be required for dwelling foundations as described above.

The subsoil conditions do provide sufficient bearing capacity for some rib raft floors as set out in the Firth Rib Raft Floor manual and as such specific engineering design may not be required if a Firth Rib Raft Floor foundation design is to be used.

It is recommended that further subsoil investigations are undertaken at time of building platform location being confirmed to ensure that ground conditions are consistent and to ensure a site-specific Engineering Design for foundations is carried out if required.

4. Stormwater Management

The land gently slopes to the south.

It is considered that any overland flow will not have a negative impact on adjoining properties provided the requirements for floor heights are in accordance with NZS 3604:2011, the site will provide a flood -free building platform.

Hand augering encountered the ground water table at a depth of 3.0 metres below surface level. The fine brown silty ash encountered at a depth of 1.0 is moist and expansive. Moisture progressively increased with depth and the silty ash became grey brown with the increased moisture content. Lined soak holes to the water table will be appropriate for this site.

Alternatively, shallow soak holes, soakage trenches, rock soak pits or rain cell modules designed by a suitably qualified person may be employed.

Soakage capacity by percolation tests in accordance with NZBC E1 clause 9.0.2 have not been carried out at this time.

There are two downpipes along the southern walls of the existing building on Lot 1. Any soak holes which serve these downpipes must be located within Lot 1 in accordance with NZBC E1.

5. Wastewater Management

The two lot subdivision will be serviced with reticulated wastewater. There is an existing wastewater main on the east side of Egmont Street. It is proposed that Lot 2 will connect into the wastewater main with a separate 100 mm diameter connection.

6. Conclusions and Recommendations

The soil testing and site investigation for the proposed subdivision has identified the following:

Lot No.	Building Platform Requirements	Stormwater Requirements and Overland Flow Paths
2	<p>The soil conditions on site consist of fine silty Taranaki ash.</p> <p>The ground is NOT SUITABLE for supporting residential buildings with conventional foundations.</p> <p>Specific Engineering Design for Foundations IS REQUIRED for this site as the variable soil conditions do not meet the definition of “good ground” in accordance with NZS 3604:2011 (see note 1).</p> <p>Further soil testing should be undertaken once a building platform location has been chosen to ensure foundation design is site specific.</p>	<p>The Lot has fall to the south.</p> <p>Due to the fine silty Taranaki ash being expansive CONVENTIONAL SOAKHOLES are not appropriate for this Lot (see note 2). Lined deep soak holes will be appropriate at this site.</p> <p>Alternatively, shallow soakage trenches, rain cell modules or rock soak pits may be also employed</p> <p>Provided the floor levels are in accordance with NZBC E1, the Lots shall have FLOOD FREE BUILDING PLATFORMS</p>

Notes

1. The definition of as set out in NZS 3604:2011 “Good Ground” - any rock or soil capable of permanently withstanding an ultimate bearing capacity of 300 kPa, (i.e. an allowable bearing pressure of 100 kPa using a factor of safety of 3).

Specific Engineering Design of Foundations may include shallow foundation design such as rib raft or slab on grade on granular mat or deep foundation such as driven piles.

It is recommended that further soil investigations are undertaken once an exact building platform site is determined to ensure that conventional foundations to NZS 3604:2011 are appropriate. If the ground is considered to not meet the Soil Bearing Capacity requirements, Specific Engineering Design will be required which may include a gravel raft or piled foundation.

2. Conventional soakholes refers to unlined soakholes augured into the volcanic ash subgrade or soakage trenches to service a new building.

Alternative onsite stormwater management using shallow soakage techniques in accordance with NZBC.E1 Figure 13 may be used provided there is sufficient area available for these structures.

7. Limitations

This report has been produced by Juffermans Surveyors Limited for the client N Katene and is solely for the client's use for which the report was intended.

The use of the report and/or information which forms the report by any person without the consent of the Client or Juffermans Surveyors Ltd will be at their own risk.

The geotechnical opinions and recommendations contained in this report relate to the site conditions encountered on the day of soil strength and classification investigations.

Juffermans Surveyors should be notified of any differing conditions to be able to review and revise this report if required.

8. Appendix A Scheme Plan



9. Appendix B Photographs



PHOTO 1: Looking north east across Lot 2.



PHOTO 2: Lot 2 looking south west along western boundary.



PHOTO 3: Lot 2 looking south east.



PHOTO 4: Lot 2 looking south west from north east corner, note hedges and trees.



PHOTO 5: Lot 2 looking north west from south east corner, many tree stumps requiring removal.



PHOTO 6: Dark brown fine top soil.



PHOTO 7: Fine brown silty Taranaki ash.



PHOTO 8: Moisture increase in silty Taranaki ash.



PHOTO 9: Light grey brown silty ash at 2.7 metres depth.



PHOTO 10: Downpipes from Lot 1 building, need to ensure soak holes are not in Lot 2.

10. Appendix C Soil Test Results

SOIL TEST RESULTS

Date 18/10/2021
Job No 21161
Location 65 Egmont Street Hawera
Client Katene
Page 1 of 3
Tested By K.Jansen



Overland Flow paths

Test Locations

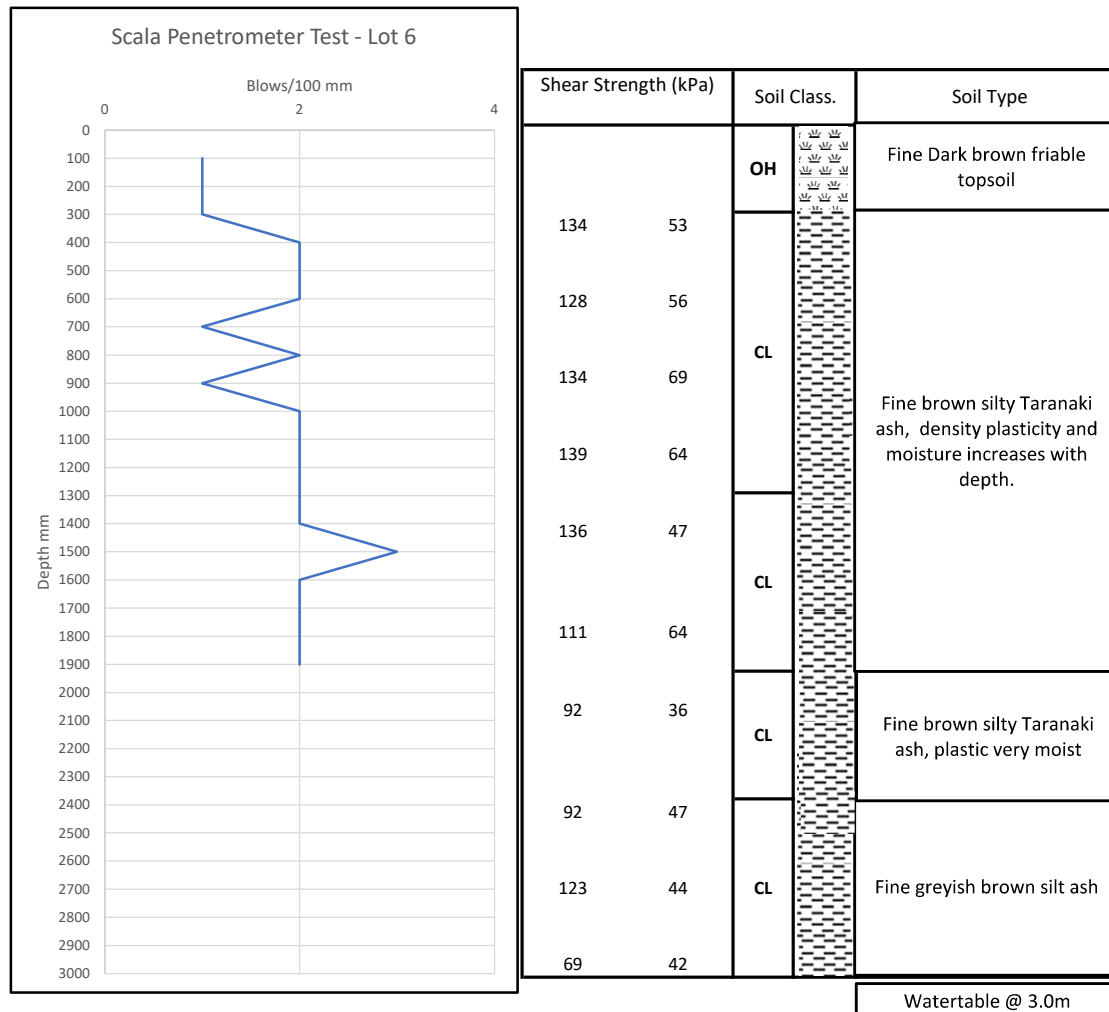


SOIL TEST RESULTS - LOT 2

Date 18/10/2021
 Job No 21161
 Location 65 Egmont Street, Hawera
 Client Katene
 Page 2 of 3
 Tested By K.Jansen
 Watertable
 depth : 3.0m



Notes:



SOIL TEST RESULTS -

Date 18/10/2021
Job No 21161
Location 65 Egmont Street Hawera
Client Katene
Page 3 of 3
Tested By K.Jansen
Watertable
depth : Not found

