



ENGINEERING REPORT

SITE INFORMATION

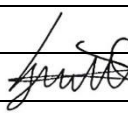
PROPOSED LOT 4, MAHCOLL COMMERCIAL DEVELOPMENT

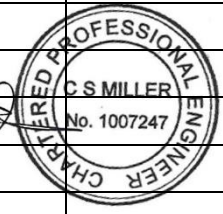
FOR MAHCOLL COMMERCIAL DEVELOPMENTS LIMITED

CLIENT: Mahcoll Commercial Developments Limited

PROJECT TITLE: Site Information

DOCUMENT NUMBER: RPT-5081-01 REV-A

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1. INTRODUCTION

At the request of Mahcoll Commercial Developments Limited, Red Jacket Engineering Services has been engaged to provide relevant site information for the proposed Lot 4 commercial building platform within the Mahcoll Investments commercial development at 210 Glover Road, Hawera, existing legal descriptions Lot 7, DP 2198, Lot 19, DP 1529, and Lot 4, DP 464398.

This report has been prepared to provide site information for the proposed Lot and is not intended for consent applications or detailed engineering design.

1.1 SITE DESCRIPTION

The site is located within Stage 1 of the proposed Mahcoll Commercial Developments Limited commercial development and is currently accessed off the end of Fitzgerald Lane via the site construction entrance. The Lot will have access off proposed Road 2 and will have a formed building platform post-development.

The existing environment within Lot 4 was grassed farmland with a gully running east to west to the north of the site, ultimately terminating at an unnamed tributary of the Waihi Stream 300 m beyond the western Lot boundary.

The nearest waterbody is another tributary of the Waihi Stream 150 m to the southeast from the centre of the proposed Lot.



Figure 1-1: Proposed Development Scheme Plan

2. SITE INFORMATION

2.1 STDC CONSENTING CRITERIA

The proposed Lot will be part of the Macholl Commercial Developments Ltd Stage 1 development. The subdivision Resource Consent is yet to be submitted to STDC for approval.

Therefore, the development of the Lot prior to the proposed subdivision Resource Consent will require a Land use Consent Application.

As part of the proposed subdivision, the proposed Lot will have access to STDC reticulated wastewater and potable water. Until reticulated networks are available all proposed Lots shall be self-sufficient for wastewater, potable water, and stormwater disposal. The development shall be designed to accommodate future connections to the wastewater and potable water reticulation.

Refer Appendix A for the site information plan.

2.2 LOT ACCESS

The Lot will be accessed off the eastern side of proposed Road 2 within the Mahcoll commercial development. The proposed vehicle access point will be 10 m wide at the legal boundary and located centrally to the western boundary of the Lot. Refer to Figure 2-1 below.

Indicatively, the crossing point will require a ramp up to the site at a grade no steeper than 5H:1V with appropriate transitions over the 1.5 m of vertical change.

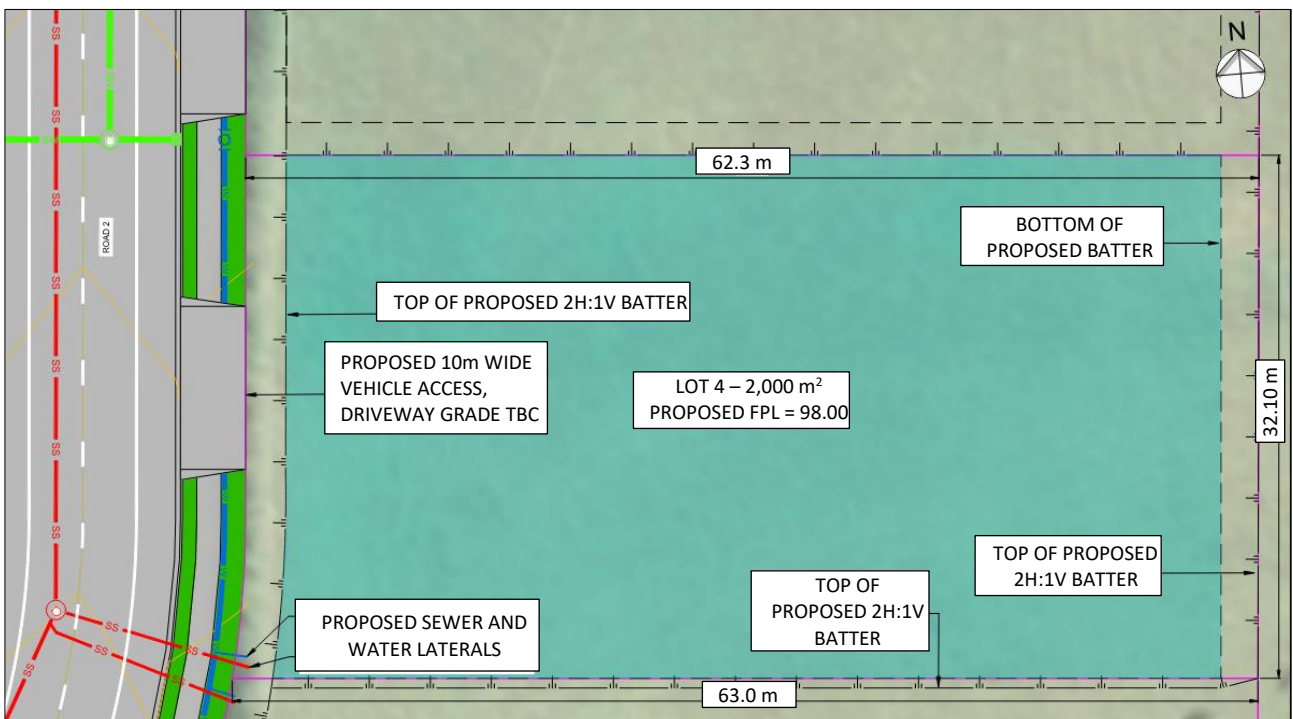


Figure 2-1: Lot 4 Site Information Plan Excerpt

2.3 POTABLE WATER

A connection to the STDC DN250 water main along the eastern side of proposed Road 2 will be provided prior to the completion of the subdivision, allowing for the site to have access to potable water.

This site will be provided a DN25 MDPE water lateral and STDC boundary box at the boundary. Vendors requiring larger water lateral connections, i.e., fire water, shall be installed during the Land Use/Building consent stage of works unless prior arrangements have been made with the developer.

2.4 STORMWATER

Connections to the proposed STDC reticulated stormwater network are not provided for this Lot. On-site stormwater retention/soakage systems are required to attenuate stormwater in accordance with NZBC E1. All stormwater systems shall be designed and installed in accordance with NZBC E1.

All soakage systems will require evaluation of the soakage rate via an NZBC E1 soakage test. This shall be undertaken by a suitably qualified person.

Where applicable, the Lot shall be graded to ensure all overland flow of stormwater shall be directed towards the Road and remain compliant with NZBC E1. All stormwater directed towards engineered or original batters shall mitigate erosion with appropriate facing or lining of the exposed face.

2.5 WASTEWATER

A connection to the STDC wastewater network will be provided during the subdivision construction. The network will ultimately connect to the proposed sewer pump station within the subdivision.

Until the pump station becomes operational, the Lot shall dispose of wastewater on-site. All on-site wastewater disposal systems shall be designed in accordance with AS/NZS1547:2012 by a suitably qualified person.

Future connection into the STDC wastewater network shall be considered during the Land Use/Building Consent Stage of works. This connection shall terminate at the road front boundary near the proposed STDC Sewer lateral as indicated by the site information plan in Appendix A.

2.6 SUBSURFACE INVESTIGATION

Subsoil investigations to date have comprised a mechanical continuous flight auger borehole within the proposed Lot. It should be noted that geotechnical investigations were not undertaken specifically within the proposed Lot therefore, the ground conditions at depth may vary.

The subsoils consisted of Taranaki Volcanic Ash material underlain by alluvial deposits including PEAT at approximately 5.0 m below existing ground level and inorganic alluvial deposits until end of hole at 16 m below ground level.

Shear vanes were undertaken in the initial 3.0 m of subsoils with undrained shear strength that typically ranged between 130 – 170 kPa.

Groundwater table depth was not identified within this test location but is likely to be within 4.0 m of the existing ground surface.

2.7 EARTHWORKS

Earthworks Completed to Date

The site has been subjected to major cut and fill earthworks with up to 1.5 m of fill at the lowest point in the south-eastern corner and 2.0 m of cut along the high point along the western boundary. The Lot will be elevated approximately 1.0 m and 1.7 m above Road 2 in the south-western and north-western corner of the Lot, respectively.

Red Jacket has designed, supervised, and approved all earthworks undertaken to date. Testing of the engineered fill material installed has indicated an ultimate bearing capacity of 300 kPa within the installed engineered fill material.

Earthworks are still required to bring the Lot up to designed finished level at the time of this report.

Further Testing

Further subsoil investigations will be undertaken to determine the global liquefaction potential, settlement potential, and slope stability of the proposed commercial development and to verify the bearing capacity and undrained shear strength of the fill material.

Additional subsoil investigations for individual Lots shall be undertaken by suitably qualified engineering professionals at the vendor's request. All subdivision subsoil investigations do not limit these findings. Final architectural or structural drawings for any proposed structure on-site shall be reviewed by Red Jacket or a suitably qualified geotechnical professional prior to building consent being approved.

2.8 FOUNDATION CONSIDERATIONS

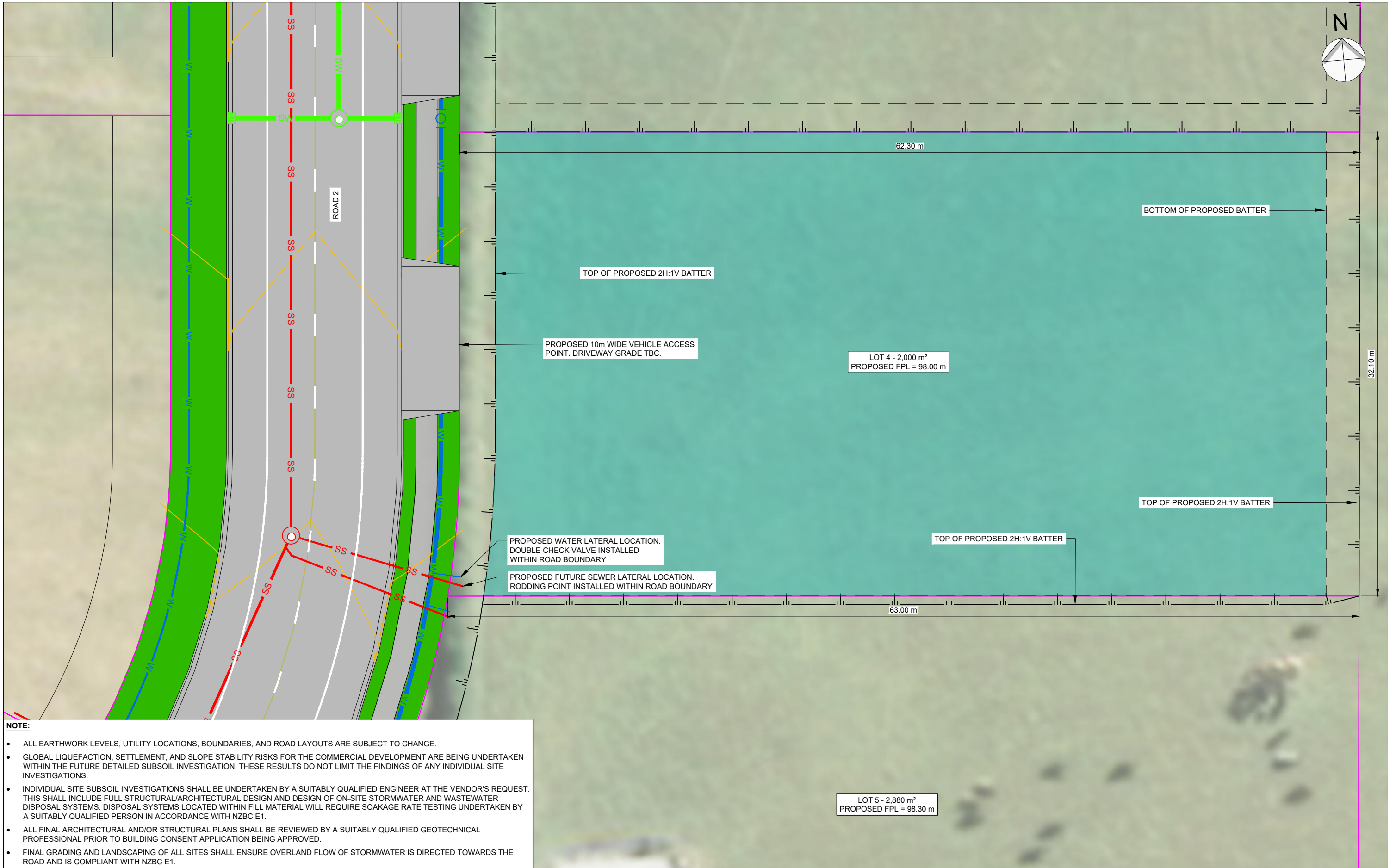
The future commercial building will likely be founded on shallow foundations. It is recommended typical strip and pad foundation footings are limited to 0.5m and 1.0m wide respectively to minimise primary settlement. Assuming the foundation footings are limited to the widths stipulated above then an ultimate bearing capacity of 300kPa is likely to be assumed in the structural design.

Alternatively, raft foundations may also be utilised in the structural design for the future commercial building. This is assuming there is a sufficient crust of suitably stiff volcanic ash and fill deposits to bridge over the underlying peat deposits. Once the future development details are known and the additional testing has been undertaken at the completion of site formation works, specific foundation recommendations will be provided.

These recommendations are subject to additional deep investigations across the Lot and detailed analysis of the geotechnical risks such as liquefaction and settlement.

Appendix A SITE INFORMATION PLAN

File Name: Z:\JOB\Sg 3501-4000\3901-3950\3935 Fitzgerald Lane, Hawera - Agrans Upgrade\Drawing\Commercial Development\100-480_C3-2_Plot Date: 29/09/2022_Plot Time: 15:25



NOTE:

- ALL EARTHWORK LEVELS, UTILITY LOCATIONS, BOUNDARIES, AND ROAD LAYOUTS ARE SUBJECT TO CHANGE.
- GLOBAL LIQUEFACTION, SETTLEMENT, AND SLOPE STABILITY RISKS FOR THE COMMERCIAL DEVELOPMENT ARE BEING UNDERTAKEN WITHIN THE FUTURE DETAILED SUBSOIL INVESTIGATION. THESE RESULTS DO NOT LIMIT THE FINDINGS OF ANY INDIVIDUAL SITE INVESTIGATIONS.
- INDIVIDUAL SITE SUBSOIL INVESTIGATIONS SHALL BE UNDERTAKEN BY A SUITABLY QUALIFIED ENGINEER AT THE VENDOR'S REQUEST. THIS SHALL INCLUDE FULL STRUCTURAL/ARCHITECTURAL DESIGN AND DESIGN OF ON-SITE STORMWATER AND WASTEWATER DISPOSAL SYSTEMS. DISPOSAL SYSTEMS LOCATED WITHIN FILL MATERIAL WILL REQUIRE SOAKAGE RATE TESTING UNDERTAKEN BY A SUITABLY QUALIFIED PERSON IN ACCORDANCE WITH NZBC E1.
- ALL FINAL ARCHITECTURAL AND/OR STRUCTURAL PLANS SHALL BE REVIEWED BY A SUITABLY QUALIFIED GEOTECHNICAL PROFESSIONAL PRIOR TO BUILDING CONSENT APPLICATION BEING APPROVED.
- FINAL GRADING AND LANDSCAPING OF ALL SITES SHALL ENSURE OVERLAND FLOW OF STORMWATER IS DIRECTED TOWARDS THE ROAD AND IS COMPLIANT WITH NZBC E1.

LOT 4 SITE INFORMATION PLAN
SCALE 1:250

INFORMATION

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29.09.22	A	INFORMATION	MM	LB	-	CM
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Client
MAHCOLL COMMERCIAL DEVELOPMENTS LIMITED

Project
COMMERCIAL DEVELOPMENT FITZGERALD LANE HAWERA

Sheet Title
LOT 4 SITE INFORMATION PLAN

Drawing No. 100-480		A3
Job No. 3935	Sheet No. C3-2	REV. A