



# ENGINEERING REPORT

## SITE INFORMATION

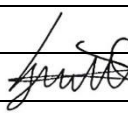
### PROPOSED LOT 6, MAHCOLL COMMERCIAL DEVELOPMENT

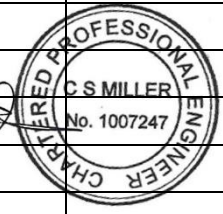
FOR MAHCOLL COMMERCIAL DEVELOPMENTS LIMITED

**CLIENT:** Mahcoll Commercial Developments Limited

**PROJECT TITLE:** Site Information

**DOCUMENT NUMBER:** RPT-5083-01 REV-A

Issue	Description	Date	Prepared By	Checked By	Approved
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		Date	October 2022		October 2022
		Signature			
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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 6 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 6 was grassed farmland. The site is situated above the unnamed tributary of the Waihi Stream to the south east of the site.



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 from Road 2 will be shared by the proposed Lot 7 accessway, located at the north-western boundary of Lot 7. This access point will be 10 m wide at the legal boundary of Lot 7 and enter proposed Lot 6 from its north-western boundary. Refer to Figure 2-1 below.

Indicatively, the Lot 8 driveway will have an approximate 1.4% grade back to the ROW. The ROW falls to Road 2 at an grade of approximately 1.2%.

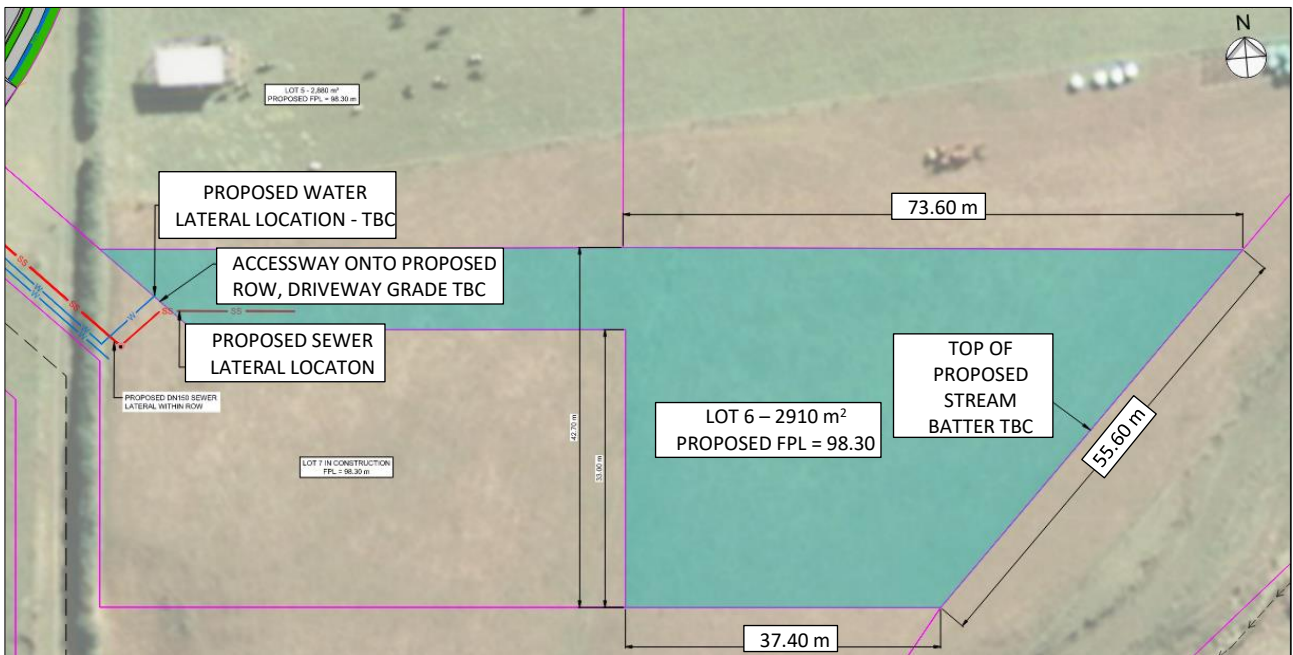


Figure 2-1: Lot 6 Site Information Plan Excerpt

### **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 80 m of 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 0.7 m of fill at the lowest points of the Lot and up to 2.0 m of cut at the high point along the north boundary. The Lot will be elevated approximately 1.80 m above Road 2.

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.

Minor 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





LOT 5 - 2,880 m<sup>2</sup>  
PROPOSED FPL = 98.30 m

PROPOSED WATER LATERAL LOCATION.  
DOUBLE CHECK VALVE WILL BE LOCATED AT  
ROAD 2 BOUNDARY

ACCESS POINT ONTO PROPSOED ROW.  
DRIVEWAY GRADE TBC.

PROPOSED FUTURE SEWER LATERAL LOCATION.  
RODDING POINT INSTALLED WITHIN ROAD BOUNDARY

PROPOSED DN150 SEWER  
LATERAL WITHIN ROW

LOT 7 IN CONSTRUCTION  
FPL = 98.30 m

LOT 6 - 2,910 m<sup>2</sup>  
PROPOSED FPL = 98.30 m

TOP OF PROPOSED STREAM  
BATTER TO BE CONFIRMED

42.70 m

33.00 m

73.60 m

55.60 m

37.40 m

LOT 8 - 6,040 m<sup>2</sup>  
PROPOSED FPL = 95.00 m

- 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 6 SITE INFORMATION PLAN**  
SCALE 1:400

**INFORMATION**



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29.09.22	A	INFORMATION	MM	LB	-	CM
DATE	REV	REV RECORD	BY	CHD	VER	APP

Client  
**MAHCOLL COMMERCIAL DEVELOPMENTS LIMITED**

Project  
**COMMERCIAL DEVELOPMENT FITZGERALD LANE HAWERA**

Sheet Title  
**LOT 6 SITE INFORMATION PLAN**

Drawing No. <b>100-480</b>		<b>A3</b>
Job No. <b>3935</b>	Sheet No. <b>C3-4</b>	REV. <b>A</b>

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