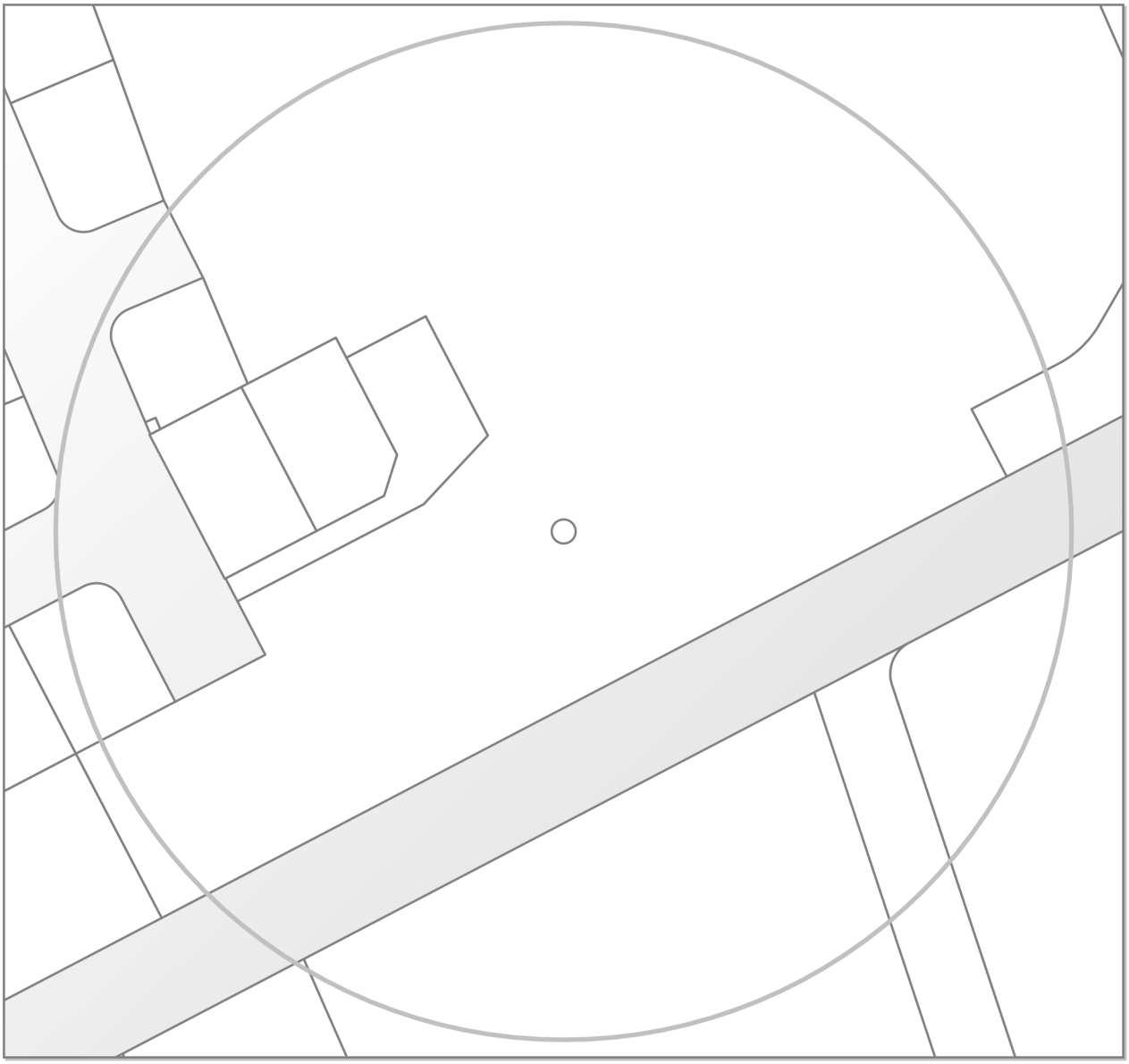
Christchurch City Council

Land Information Memorandum



Property address:

155 Mairehau Road

LIM number: H01368368

Christchurch City Council

53 Hereford Street, PO Box 73015
Christchurch 8154, New Zealand
Tel 64 3 941 8999
Fax 64 3 941 8984

www.ccc.govt.nz

Land Information Memorandum

Christchurch City Council

Application details

Date issued	31 October 2023
Date received	26 October 2023

Property details

Property address	155 Mairehau Road, Burwood, Christchurch
Valuation roll number	21800 47647
Valuation information	Capital Value: $1,900,000 Land Value: $1,900,000 Improvements Value: $0 *Please note: these values are intended for Rating purposes*
Legal description	Lot 3030 DP 577687
Existing owner	CDL Land New Zealand Limited PO Box 3248 Auckland 1140

Council references

Rate account ID	73205653
LIM number	H01368368
Property ID	1197814

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Land Information Memorandum

Document information

This Land Information Memorandum (LIM) has been prepared for the purpose of section 44A of the Local Government Official Information and Meetings Act 1987 (LGOIMA). It is a summary of the information that we hold on the property. Each heading or "clause" in this LIM corresponds to a part of section 44A.

Sections 1 to 10 contain all of the information known to the Christchurch City Council that must be included under section 44A(2) LGOIMA. Any other information concerning the land as the Council considers, at its discretion, to be relevant is included at section 11 of this LIM (section 44A(3) LGOIMA). If there are no comments or information provided in these sections this means that the Council does not hold information on the property that corresponds to that part of section 44A.

The information included in this LIM is based on a search of Council records only and there may be other information relating to the land which is unknown to the Council. Please note that other agencies may also hold information relevant to the property, or administer legislation relevant to the use of the land, for example, the Regional Council (Ecan), Heritage New Zealand Pouhere Taonga, and Land Information New Zealand.

Council records may not show illegal or unauthorised building or works on the property. The applicant is solely responsible for ensuring that the land is suitable for a particular purpose.

A LIM is only valid at the date of issue as information is based only upon information the Council held at the time of that LIM request being made.

Property file service

This Land Information Memorandum does not contain all information held on a property file. Customers may request property files by phoning the Council's Customer Call Centre on (03) 941 8999, or visiting any of the Council Service Centres. For further information please visit www.ccc.govt.nz.

To enable the Council to measure the accuracy of this LIM document based on our current records, we would appreciate your response should you find any information contained therein which may be considered to be incorrect or omitted. Please telephone the Customer Call Centre on (03) 941 8999.

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Land Information Memorandum

A search of records held by the Council has revealed the following information:

1. Special features and characteristics of the land

Section 44A(2)(a) LGOIMA. This is information known to the Council but not apparent from the district scheme under the Town and Country Planning Act 1977 or a district plan under the Resource Management Act 1991. It identifies each (if any) special feature or characteristic of the land concerned, including but not limited to potential erosion, avulsion, falling debris, subsidence, slippage, alluvion, or inundation, or likely presence of hazardous contaminants.

☎ For enquiries, please phone (03) 941 8999 or visit www.ccc.govt.nz.

- **Borelog/Engineer Report Image Available**

  Borelog/Engineer Report Image Available

- **Contains or contained a Tank**

  Council Records indicate that this site contains or contained a Tank Details of Tank are as follows:Date Installed: NA Tank Function: Septic Tank Volume(l): NA Underground or Above Ground: Underground Tank Status: Tank Exists Date Removed: NA Condition when Removed: NA TankID: 1218

- **Coastal Hazard Inundation**

  The Council has a report, Coastal Hazard Assessment for Christchurch and Banks Peninsula (2017), that indicates this property or part of this property may be susceptible to coastal inundation (flooding by the sea). The 2017 report considers four sea level rise scenarios through to the year 2120. A copy of the 2017 report and other coastal hazard information can be found at www.ccc.govt.nz/coastalhazards.

- **Property located in Tsunami Risk Zone**

  This property may be affected by flooding by some tsunami scenarios as shown in reports by GNS and NIWA commissioned by ECan and CCC. Links to reports can be found at https://ccc.govt.nz/tsunami-evacuation-zones-and-routes/ and on ECan's web site https://www.ecan.govt.nz by searching for the terms tsunami hazard.

- **Fill**

  This property is located in an area known to have been filled. The year the fill occurred is 2023. The filling was, according to the Councils records carried out in a controlled manner and comprises Sand.

- **Liquefaction Assessment**

  Christchurch City Council holds indicative information on liquefaction hazard for Christchurch. Information on liquefaction, including an interactive web tool, can be found on the Council website at ccc.govt.nz/liquefaction. Depending on the liquefaction potential of the area that the property is in, the Council may require site-specific investigations before granting future subdivision or building consent for the property.

- **Consultant Report Available**

  Land Information New Zealand (LINZ) engaged Tonkin and Taylor to provide a Geotechnical Report on Ground Movements that occurred as a result of the Canterbury Earthquake Sequence. The report indicates this property may have been effected by a degree of earthquake induced subsidence. The report obtained by LINZ can be accessed on their website at https://www.linz.govt.nz and search Information for Canterbury Surveyors.

Related Information

- There is attached a soil investigation report for this subdivision.
- Attached is an aerial photograph of the approximate location of the tank.

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2. Private and public stormwater and sewerage drains

Section 44A(2)(b) LGOIMA. This is information about private and public stormwater and sewerage drains as shown in the Council's records.

☎ For stormwater and sewerage enquiries, please phone (03) 941 8999 or visit www.ccc.govt.nz.

- **Vacuum Sewer System Constraint**

  This property is connected to a vacuum sewer system. The vacuum sewer system has limited capacity and development must align with the Prestons Sewer Master Plan. Developers wanting to develop in the Prestons area should send an enquiry to the Council's wastewater capacity mailbox (WastewaterCapacity@ccc.govt.nz) to see what can be accommodated.

Related Information

- No up-to-date drainage plan is available for the development of this site. However, the installation of a water connection along with sewer and stormwater drains is checked by the Council prior to the issue of a Code Compliance Certificate.

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3. Drinking Water Supply

Section 44A(2)(ba) and (bb) LGOIMA. This is information notified to the Council about whether the land is supplied with drinking water, whether the supplier is the owner of the land or a networked supplier, any conditions that are applicable, and any information the Council has about the supply.

Please note the council does not guarantee a particular water quality to its customers. If you require information on current water quality at this property please contact the Three Waters & Waste Unit.

☎ For water supply queries, please phone (03) 941 8999 or visit www.ccc.govt.nz.

Water supply

Christchurch City Council is the networked supplier of water to this property. This property is connected to the Christchurch City Council Water Supply. The conditions of supply are set out in the Christchurch City Council Water Supply and Wastewater Bylaw (2022), refer to www.ccc.govt.nz.

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4. Rates

Section 44A(2)(c) LGOIMA. This is information on any rates owing in relation to the land.

☎ For rates enquiries, please phone (03) 941 8999 or visit www.ccc.govt.nz.

(a) Annual rates

Annual rates to 30/06/2024: $7,572.82

	Instalment Amount	Date Due
Instalment 1	$1,893.17	15/09/2023
Instalment 2	$1,893.17	15/12/2023
Instalment 3	$1,893.17	15/03/2024
Instalment 4	$1,893.31	15/06/2024

Rates owing as at 31/10/2023: $-3,786.48

(b) Excess water charges

For excess water charge enquiries, please phone (03) 941 8999 or visit www.ccc.govt.nz/contact-us

(c) Final water meter reading required at settlement?

Property settlements must now ensure all water usage and outstanding debts are accurately accounted for.

To advise of a commercial property settlement, please complete the request for settlement information form at www.ccc.govt.nz/services/rates-and-valuations/solicitors-request

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5. Consents, certificates, notices, orders, or requisitions affecting the land and buildings

Section 44A(2)(d) LGOIMA. This is information concerning any consent, certificate, notice, order, or requisition, affecting the land or any building on the land, previously issued by the Council. The information in this section may also cover building consent and/or code compliance information issued by building certifiers under the Building Act 1991 and building consent authorities that are not the Council under the Building Act 2004.

You can check the property file to identify whether any consent or certificate was issued by a building certifier under the Building Act 1991.

Section 44A(2)(da) LGOIMA. The information required to be provided to a territorial authority under section 362T(2) of the Building Act 2004. There is currently no information required to be provided by a building contractor to a territorial authority under section 362T(2) of the Building Act 2004. The Building (Residential Consumer Rights and Remedies) Regulations 2014 only prescribed the information that must be given to the clients of a building contractor.

☎ For building enquiries, please phone (03) 941 8999, email EPADutyBCO@ccc.govt.nz or visit www.ccc.govt.nz.

(a) Consents

- BCN/2022/7729 Applied: 01/11/2022 Status: Completed
  157 Mairehau Road Burwood
  Exemption from building consent approved 18/11/2022
  Subdivision Drainage - Wastewater & Stormwater

(b) Certificates

Note: Code Compliance Certificates were only issued by the Christchurch City Council since January 1993.

(c) Notices

(d) Orders

(e) Requisitions

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6. Certificates issued by a building certifier

Section 44A(2)(e) LGOIMA. This is information notified to the Council concerning any certificate issued by a building certifier pursuant to the Building Act 1991 or the Building Act 2004.

☎ For building enquiries, please phone (03) 941 8999, email EPADutyBCO@ccc.govt.nz or visit www.ccc.govt.nz.

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7. Weathertightness

Section 44A(2)(ea) LGOIMA. This is information notified to the Council under section 124 of the Weathertight Homes Resolution Services Act 2006.

☎ For weathertight homes enquiries, please phone (03) 941 8999 or visit www.ccc.govt.nz.

If there is no information below this means Council is unaware of any formal Weathertight Homes Resolution Services claim lodged against this property.

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8. Land use and conditions

Section 44A(2)(f) LGOIMA. This is information relating to the use to which the land may be put and conditions attached to that use. The planning information provided below is not exhaustive and reference to the Christchurch District Plan and any notified proposed changes to that plan is recommended: https://ccc.govt.nz/the-council/plans-strategies-policies-and-bylaws/plans/christchurch-district-plan/.

There maybe some provisions of the Christchurch City Plan or Banks Peninsula District Plan that affect this property that are still operative.

☎ For planning queries, please phone (03) 941 8999, email DutyPlanner@ccc.govt.nz or visit www.ccc.govt.nz.

- **Regional plan or bylaw**

  There may be objectives, policies or rules in a regional plan or a regional bylaw that regulate land use and activities on this site. Please direct enquiries to Canterbury Regional Council (Environment Canterbury).

(a)(i)Christchurch City Plan & Banks Peninsula District Plan

(ii)Christchurch District Plan

- **Development Constraint**

  Council records show there is a specific condition on the use of this site: Consent Notice

- **Qualifying Matter**

  Property or part of property within the Waste Water Constraint Area qualifying matter, which has been publicly notifed

- **Liquefaction Management Area (LMA)**

  Property or part of property within the Liquefaction Management Area (LMA) Overlay, which is operative.

- **Outline Development Plan**

  Property or part of property is within an Outline Development Plan area, which is affected by specific provisions that are operative.

- **District Plan Zone**

  Property or part of property within the Residential New Neighbourhood Zone, which is operative.

- **Flood Management Area**

  Property or part of property within the Flood Management Area (FMA) Overlay which is operative.

- **Fixed Minimum Floor Overlay**

  This property or parts of the property are located within the Fixed Minimum Floor Overlay level in the Christchurch District Plan, which is operative. Under this plan pre-set minimum floor level requirements apply to new buildings and additions to existing buildings. The fixed minimum floor level can be searched at http://ccc.govt.nz/floorlevelmap. For more information please contact a CCC duty planner on 941 8999.

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(b) Resource consents

If there are any land use resource consents issued for this property the Council recommends that you check those resource consents on the property file. There may be conditions attached to those resource consents for the property that are still required to be complied with.

- RMA/2012/462 - Subdivision Consent
  400 LOT SUBDIVISION s223 issued 13/8/13 LT 466017 - Historical Reference RMA92019798
  Status: Consent issued
  Applied 30/03/2012
  Granted 19/09/2012
  Decision issued 19/09/2012

- RMA/2013/1085 - Subdivision Consent
  434 LOT FEE SIMPLE SUBDIVISION - STAGE 2 - Historical Reference RMA92022731. Replaced by RMA/2022/771 Reapplied under 2021 DC Policy
  Status: Surrendered in part
  Applied 18/06/2013
  s223 Certificate issued 11/03/2016
  s224 Certificate issued 14/03/2016
  Granted 26/06/2014
  Decision issued 26/06/2014

- RMA/2015/1309 - Subdivision Consent
  Fee Simple - Sixty Five Lots - Residential Layout changes - applicant to respond - Historical Reference RMA92029567
  Status: Withdrawn
  Applied 15/05/2015

- RMA/2015/2996 - Subdivision Consent
  Fee Simple Subdivision - Three Lots - Historical Reference RMA92031377
  Status: Processing complete
  Applied 28/10/2015
  s223 Certificate issued 08/08/2017
  s224 Certificate issued 08/08/2017
  Granted 14/01/2016
  Decision issued 15/01/2016

- RMA/2019/2745 - Subdivision Consent
  Fee simple subdivision - 254 lots and a number of amalgamation and boundary adjustments to Stage 2 Prestons Park. Replaced by RMA/2022/772 Reapplied under 2021 DC Policy
  Status: s223 Certificate issued
  Applied 25/11/2019
  s223 Certificate issued stage 1 02/11/2020
  s223 Certificate issued stage 2 04/03/2021
  s223 Certificate issued stage 3 04/05/2021
  s223 Certificate issued stage 4 15/06/2021
  s223 Certificate issued stage 5 07/10/2021
  s223 Certificate issued stage 6 15/12/2021
  s223 Certificate issued stage 7 15/05/2023
  s224 Certificate issued stage 1 02/11/2020
  s224 Certificate issued stage 2 04/03/2021
  s224 Certificate issued stage 3 19/05/2021
  s224 Certificate issued stage 4 25/06/2021

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s224 Certificate issued stage 5 05/11/2021
s224 Certificate issued stage 6 16/02/2022
Granted 17/03/2020
Decision issued 17/03/2020

- RMA/2022/772 - Subdivision Consent
  155 Mairehau Road Burwood
  Fee simple subdivision - 118 lots - Stage 5 Prestons Park Reapplied under 2021 DC Policy - Replaces RMA/2019/2745
  Status: s223 Certificate issued
  Applied 16/03/2022
  08/04/2022
  s223 Certificate issued stage 1 25/08/2022
  s224 Certificate issued stage 1 16/09/2022
  s223 Certificate issued stage 2 09/11/2022
  s224 Certificate issued stage 2 07/12/2022
  s223 Certificate issued stage 3 28/04/2023
  s224 Certificate issued stage 3 11/10/2023
  Granted 08/04/2022
  Decision issued 11/04/2022

Related Information

- The Council system shows a Development Constraint/Ongoing Condition Consent notice for this property. The consent notice should be registered against the record of title for the property and a search of that title and the consent notice will provide details in respect of the constraint / condition. If a search of the title does not record the consent notice or the consent notice is not clear then we suggest you contact the duty planner by either calling 941 8999 or emailing DutyPlanner@ccc.govt.nz. The Consent notice is as follows:
  Specific foundation design in accordance with TC category as defined in Aurecon geotechnical completion report Stages H1, G1 & G2 Rev 0 28/4/2023.

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9. Other land and building classifications

Section 44A(2)(g) LGOIMA. This is information notified to the Council by any statutory organisation having the power to classify land or buildings for any purpose.

☎ For land and building enquiries, please phone (03) 941 8999 or visit www.ccc.govt.nz.

Please refer to Section 1 for details

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10. Network utility information

Section 44A(2)(h) LGOIMA. This is information notified to the Council by any network utility operator pursuant to the Building Act 1991 or the Building Act 2004.

☎ For network enquiries, please phone (03) 941 8999 or visit www.ccc.govt.nz.

- **None recorded for this property**

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11. Other information

Section 44A(3) LGOIMA. This is information concerning the land that the Council has the discretion to include if it considers it to be relevant.

☎ For any enquiries, please phone (03) 941 8999 or visit www.ccc.govt.nz.

(a) Kerbside waste collection

- Your organics are collected Weekly on Wednesday. Please leave your organics at the Kerbside by 6:00 a.m.
- Your recycling is collected Fortnightly on the Week 2 collection cycle on a Wednesday. Please leave your recycling at the Kerbside by 6:00 a.m. Your nearest recycling depot is the Styx Mill EcoDrop.
- Your refuse is collected Fortnightly on the Week 2 collection cycle on a Wednesday. Please leave your rubbish at the Kerbside by 6:00 a.m. Your nearest rubbish depot is the Styx Mill EcoDrop.

(b) Other

- **Floor Levels Information**

  Christchurch City Council holds a variety of information relevant to building/property development across the city. This includes minimum finished floor levels that need to be set to meet the surface water requirements in clause E1.3.2 of the building code (where this applies), and the requirements of the Christchurch District Plan (where a property is in the Flood Management Area). Where this information has been processed for your site, it can be viewed at https://ccc.govt.nz/floorlevelmap/, otherwise site specific advice can be obtained by emailing floorlevels@ccc.govt.nz

- **Guest Accommodation**

  Guest accommodation (including whole unit listings on Airbnb; BookaBach; etc.) generally requires a resource consent in this zone when the owner is not residing on the site. For more information, please refer to: https://ccc.govt.nz/providing-guest-accommodation/.

- **Community Board**

  Property located in Coastal-Burwood-Linwood Community Board.

- **Tsunami Evacuation Zone**

  This property is not in a tsunami evacuation zone. It is not necessary to evacuate in a long or strong earthquake or during an official Civil Defence tsunami warning. Residents may wish to offer to open their home to family or friends who need to evacuate from a tsunami zone, and should plan with potential guests to do so in advance.More information can be found at https://ccc.govt.nz/services/civil-defence/hazards/tsunami-evacuation-zones-and-routes/

- **Electoral Ward**

  Property located in Burwood Electoral Ward

- **Listed Land Use Register**

  Hazardous activities and industries involve the use, storage or disposal of hazardous substances. These substances can sometimes contaminate the soil. Environment Canterbury identifies land that is used or has been used for hazardous activities and industries. This information is held on a publically available database called the Listed Land Use Register (LLUR). The Christchurch City Council may not hold information that is held on the LLUR Therefore, it is recommended that you check Environment Canterbury's online database at www.llur.ecan.govt.nz

- **Spatial Query Report**

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A copy of the spatial query report is attached at the end of this LIM. The spatial query report lists land use resource consents that have been granted within 100 metres of this property.

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1 : 2,200 on A4

31/10/2023 8:14:20 AM

Christchurch City Council

ph: 941-8300 fax: 941-8385

Accuracy not guaranteed. Onsite verification required. Display of data scale dependent, full detail available at 1:500. Client Selected Legend.

Property Info

Built Feature
- Building Characteristic
- Building Earthquake Remediation
- Building Foundation Detail
- Tank
- Non Compliance
- Swimming Pool by Compliance
- Pool Complies
- Pool Empty Non-Compliant
- Pool Reinspection Due
- Swimming Pool by Public and Private
- Private Pool
- Public Pool

Landbase
- T Street Number
- Road Name
- Road Hierarchy
- Central City Local Distributor
- Central City Main Distributor
- Collector
- Local Road
- Major Arterial
- Minor Arterial
- Motorway
- Pedestrian
- Private
- Rating Unit
- Rating Unit (Fill)
- Rating Unit (No Fill)

Aerial Photography Latest
- Aerial Photography Latest

Prestons Park Subdivision

Stages H1 G1 and G2 Geotechnical Completion Report

CDL Land New Zealand Ltd

Reference: 235361

Revision: 0

2023-04-28

aurecon

Bringing ideas to life

Document control record

Document prepared by:

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Document control						aurecon
Report title	Stages H1 G1 and G2 Geotechnical Completion Report					
Document code			**Project number**	235361		
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Client	CDL Land New Zealand Ltd					
Client contact	Jason Adams		**Client reference**			
Rev	**Date**	**Revision details/status**	**Author**	**Reviewer**	**Verifier** (if required)	**Approver**
A	2023-04-05	For review	T. Tremain	J. Muirson		I. McPherson
0	2023-04-28	Issue to client	T. Tremain	J. Muirson		I. McPherson
Current revision	**0**					

Approval			
Author signature		Approver signature	
Name	Tom Tremain	Name	Ian McPherson
Title	Geotechnical Engineer	Title	Technical Director – Ground Engineering

Contents

Executive Summary

CDL Land New Zealand Limited is developing Stages H1, G1 and G2 of the Prestons Park Subdivision, located on Prestons Road, Christchurch. As part of the work, a geotechnical completion report is required to confirm that the site works have been carried out to the required standard and provide recommendations for building developments. This report describes the earthworks and ground improvement involved with Stages H1, G1 and G2 of the Prestons Park Subdivision.

Based on Aurecon's geotechnical assessment, Stages H1, G1 and G2 comprised six lots classified as Technical Category TC2 and thirty-four lots classified as Technical Category TC1 equivalent prior to earthworks commencing.

Aurecon's role was to monitor the earthworks and fill compaction testing.

Extensive earthworks predominantly comprising filling have occurred on the site. The quality assurance testing of the engineered earth fill indicates that the earth fill placed within the Stages H1, G1 and G2 area has achieved the required compaction levels as per NZS4431:1989 (since superseded by the NZS 4431:2022 '*Engineered fill construction for lightweight structures*').

From the monitoring and testing undertaken as part of the development of Stages H1, G1 and G2 the following is concluded:

Certificate of Compliance

The standard of bulk earthworks generally meets the earthworks specification and the applicable codes, including NZS4431:1989 (since superseded by the NZS 4431:2022 '*Engineered fill construction for lightweight structures*').

Building Considerations

General

This report shall not be used for building consent application for buildings on individual lots. Site specific geotechnical investigations, in-line with NZS3604:2011, shall be undertaken at building consent application stage.

TC1 Foundations

For lots identified as TC1, NZS 3604:2011 type foundations are considered suitable. At the time of writing this report, the location and structural form of the future dwelling on the lots are unknown and this recommendation relates to NZS3604:2011 type lightweight timber or steel framed residential buildings only.

TC2 Foundations

For lots identified as TC2, dwellings shall be founded on TC2 type 'enhanced foundation slabs' as per Options 2, 3 or 4 from the MBIE Guidelines (2012) Section 5.3 to mitigate the effects of liquefaction induced vertical settlement. Alternatively, a specific design in accordance with MBIE Guidelines Section 5.4 could be undertaken by a suitably qualified chartered professional engineer.

Explanatory Statement

This report shall be read as a whole and our explanatory statement is presented in Section 7.

1 Introduction

1.1 Geotechnical Completion

CDL Land New Zealand Limited is developing Stages H1, G1 and G2 of the Prestons Park Subdivision, located on Prestons Road, Christchurch. Stages H1, G1 and G2 are sub-stages within Stage Five of the subdivision. The site works in Stages H1, G1 and G2 included bulk earthworks for the development of the lots. As part of this work, a geotechnical completion report is required to certify the site works have been carried out to the required standard and provide recommendations for building developments.

This report has been prepared for CDL Land New Zealand Limited and issued to Christchurch City Council (CCC). It describes the earthworks involved within Stages H1, G1 and G2 of the Prestons Park Subdivision (see Figure 1 in Appendix A1, A2 & A3 respectively).

The purpose of this geotechnical completion report is to present the following:

- Summarised information from previous investigations carried out as part of the subdivision consent and detailed design;
- Summarised information on the ground conditions and liquefaction risk;
- Extent of earthworks on the lots and compliance testing of bulk earthworks;
- Quality assurance test results for land for the purposes of technical category assessment;
- A summary of the findings, land technical category, and recommendations for building development.

This report has been prepared based on geotechnical data from site observations and compaction testing during and after earthworks construction. All references to cut-fill depths are based on subgrade levels.

This report shall be read as a whole and our explanatory statement is presented in Section 7.

1.2 Site Description

The Prestons Road subdivision is located on the northern fringes of Christchurch City. The site is made up of a series of adjacent properties forming an irregular and elongated rectangle shape, orientated approximately north to south. The total area of the overall Prestons Subdivision site is approximately 190ha. The site can be separated into two distinct blocks. Prestons North runs from the Lower Styx Road in the north through to Prestons Road in the south. Prestons Park continues from Prestons Road, through to Mairehau Road to the south.

The focus of this geotechnical completion report is on Stages H1, G1 & G2 of the Prestons Park Subdivision. Stages H1, G1 & G2 incorporates a block in the southeast part of the Prestons Park Subdivision (see Figure 1 in Appendix A1, A2 & A3 respectively).

2 Pre-Development Geotechnical Work

2.1 Geotechnical Testing

The subdivision consent and detailed geotechnical design for the subdivision included an extensive series of geotechnical investigations. These comprised Cone Penetration Tests (CPT), test pits, groundwater measurements and laboratory testing.

The details of these investigations are presented in the following Aurecon reports:

- *Caldwell Block Subdivision Resource Consent Geotechnical Report,* Revision 0 dated 11 July 2018.
- *Prestons Park Stage Five Gravel Embankment Design*, Revision 0 dated 9 October 2019.

The investigation tests carried out within Stages H1, G1 & G2 of the Prestons Park area are presented in Figure 2 in Appendix A1, A2 & A3 respectively.

2.2 Ground Conditions

From the extensive geotechnical investigations, the ground conditions within the Prestons Park Subdivision were divided into various geological areas. The typical ground conditions in the area are presented in Table 1.

Table 1: Typical ground conditions within Stages H1, G2 and G3.

Depth to Top of Unit (m)	Depth to Base of Unit (m)	Soil Unit
0	0.3 to 0.4	TOPSOIL.
0.3 to 0.4	3	SAND with minor silt, loose to medium dense.
3	12	SAND with minor silt, medium dense to dense.
12	Not determined	SAND, dense to very dense.

Groundwater levels ranged from 1m to 2.5m below ground level. During the site earthworks the above soil profile and groundwater levels were typically encountered within the area of interest.

2.3 Liquefaction Potential

As part of the geotechnical assessment and detailed design, a liquefaction assessment was carried out. The details of the liquefaction assessments are presented in the above reports. The land categorisation was based on the criteria of Ministry of Business, Innovation and Development (MBIE), Technical Category deformation performance limits are set out in Table 2.

Table 2: Technical category definitions and foundation implications (MBIE, 2012).

Technical Category	Liquefaction Deformation Limits				Likely Implications for House Foundations (Subject to individual assessment)
	Vertical		Lateral Spread		
	SLS	ULS	SLS	ULS	
TC1	15mm	25mm	nil	nil	Standard 3604-like foundation with tied slabs
TC2	50mm	100mm	50mm	100mm	MBIE Enhanced Foundation Solutions
TC3	>50mm	>100mm	>50mm	>100mm	Site Specific Measures – Piles or Ground Improvement

The results from the liquefaction assessment, detailed in the geotechnical report dated 11 July 2018, indicated that the Stage Five of Prestons Park Subdivision can be classified as Technical Category 1 (TC1) and Technical Category 2 (TC2).

3 Subdivision Earthworks

3.1 General

Bulk earthworks for Stages H1, G1 and G2 of Prestons were carried out in accordance with the requirements of NZS 4404:2010, "*Code of Practice for Urban Subdivision*" and NZS4431:1989 "*Code of Practice for Earthfill for Residential Development*" (since superseded by the NZS 4431:2022 "*Engineered fill construction for lightweight structures*"). The earthworks typically comprised stripping the site of topsoil, filling using imported pit run gravel or site-won sand, and then replacing topsoil. No excavation to remove in-situ organic material was undertaken as organics were infrequent, typically thin seams if encountered and at depths of greater than 2m.

3.2 Areas of Cut and Fill

Site earthworks within Stages H1, G1 and G2 have included predominantly filling in comparison to the site subgrade levels with some minor cuts. The fill material comprises site-won sand and pit run gravel overlying a natural sand subgrade. A layer of topsoil overlies the fill material. The extent of filling is shown in AB-PS-S5-EW-03 in Appendix A1, A2 & A3 respectively.

3.3 Compaction Quality Control Testing

Independent testing of earthfill compaction completed using conventional earthworks techniques was carried out using a Nuclear Densometer (NDM). The acceptance criterion was based on the Prestons Park Subdivision earthworks specification as follows:

- Compaction of fill is to be in accordance with NZS 4431: 1989 (since superseded by the NZS 4431:2022 '*Engineered fill construction for lightweight structures*').
- Compaction standard is 95% Maximum Dry Density (MDD) for all areas of bulk filling, per NZS4402 Test 4.1.3.

Fill materials comprised of site-won sand and imported pit run gravel. Compaction curves for each of the fill materials are presented in Appendix B.

The MDD from the compaction curves were used to determine the level of compaction required for the fill material. A summary of these NDM results is presented in Appendix C and the NDM testing locations are presented in Figure 4 in Appendix A1, A2 & A3 respectively.

On those occasions where quality control testing did not meet the specification, the Contractor was required to rework the fill to achieve the required compaction.

3.4 Compaction Results

The results presented in Appendix C indicate that 95% MDD or greater compaction has been consistently achieved in the areas of bulk fill. Where NDM results indicated the required compaction had not been achieved, the Contractor completed additional compaction effort and conforming NDM results were achieved. From these results and our site observations, we confirm that the earthfill placed within Stages H1, G1 and G2 have achieved the required compaction.

4 Gravel Embankments

4.1 Introduction

The construction of the pond running to the south of Stage G1 was identified as being a potential cause of lateral spreading in a large seismic event, even with ground improvement by impact rolling undertaken during previous stages. As the liquefiable layers are typically in the upper 2.5m to 3m depth of the soil profile, it was considered more feasible to remove the liquefiable layers and form a compacted gravel embankment to limit the potential hazard.

Lateral spreading requires the need for a continuous liquefiable layer through to the free face. By removing this continuous liquefiable layer and reinstating with compacted gravel, lateral spreading can be limited or eliminated.

4.2 Gravel Embankment Details

The design of the gravel embankments within Stage Five of Prestons Park Subdivision was undertaken by Aurecon and is presented in *"Prestons Park Stage Five Gravel Embankment Design"*, Revision 0 dated 9 October 2019. The gravel embankments were designed to limit lateral spreading displacements to within TC2 acceptable limits, which are given in Table 2. The purpose of the gravel embankments is to intercept the continuous layer of liquefiable soils adjacent to the free edge (basin or open channel), as lateral spreading requires a continuous liquefiable layer.

Depending on the depth and the extent of liquefiable layers near the free face, the gravel embankment size and depth varied. The gravel embankment design comprised compacted AP65 or pit run gravel with a layer of overlying topsoil. The design shape, extent and location of the gravel embankments is shown in PS-S5-EW-05, which is included in Appendix D.

4.3 Gravel Embankment Construction

The gravel embankment design required that a well graded sandy gravel material (such as AP65 or approved pit run) was used for the embankment construction. Material used on site comprised of imported, well graded pit run sandy gravel (AP100). The gravel was topped with approximately 300mm of topsoil. The design drawing required that compaction to 98% of MDD for the gravel was achieved, to ensure that the required embankment design parameters were attained.

Site observations by Aurecon Geotechnical and Civil Engineers confirm the gravel embankments have been constructed with imported well graded pit run gravel. In addition, the compaction quality testing discussed in Section 3 indicates that compaction of at least 95% of MDD has been achieved for the sandy gravel embankment fill material. This level of compaction is slightly less than the 98% of MDD specified in the design drawings but based on our site observations, the gravel embankment will meet the minimum design parameters required to achieve the intended performance of the embankments.

A review of as-built earthworks information provided by the civil engineers indicates that the required toe width and depth of the gravel embankment profile has been achieved. The cut slope angle of the gravel embankment sides was not specified, and the contractor was only required to construct the correct toe width and depth. As-built plans for the gravel embankments are provided in Appendix D.

Based on the intended design and the gravel embankment construction, Aurecon considers that the gravel embankments have been constructed appropriately and lateral spreading exceeding TC2 limits adjacent to the pond is unlikely. From a lateral spreading perspective, the lots adjacent to pond are likely to perform to the level of TC2 equivalent.

5 Building Development

5.1 Technical Category

Geotechnical testing has been carried out as part of the subdivision development. The testing indicates the lots within Stages H1, G1 and G2 are likely to perform to TC1 and TC2 equivalent. The technical category classification of the lots is provided in Figure 5 in Appendix A1, A2 & A3 respectively.

5.2 Earthworks on Building Lots

The extent of earthfill on the lots in Stages H1, G1 and G2 is shown on AB-PS-S5-EW-03 in Appendix A1, A2 & A3 respectively.

The fill areas have been constructed using materials and processes that have been randomly measured by independent testing. The testing shows that the placement of filling is generally in accordance with the specification and relevant standards.

5.3 Soil Suitability Criteria

Section 3 of New Zealand Standard NZS 3604:2011 "*Timber Framed Buildings not requiring specific Engineering Design*" provides several criteria for defining foundation soil suitability for lightweight timber or steel framed residential buildings.

Clauses 3.1.3 and 3.3 of NZS 3604:2011 provide criteria for determining strength and suitability of founding soils. Clauses 3.4.1 and 3.4.2 of NZS 3604:2011 discuss depths to competent founding. For purposes of this report, we have interpreted these clauses as meaning that for sound bearing at depths of 200mm to 600mm, standard shallow type foundations can be used.

For depths greater than this, specific foundation designs could be used or alternatively excavations can be backfilled to the required level with 10MPa site concrete or compacted hardfill. In line with the Client's brief, Aurecon will be undertaking site specific investigations on each residential lot. We will prepare site specific geotechnical reports addressing the foundation requirements on individual building lots. The testing data for the lot specific investigations will be uploaded to the New Zealand Geotechnical Database. For building consent purposes reports prepared for individual lots shall be used.

5.4 Building Considerations

The recommendations in this report shall not be used for individual building consent applications. Site specific investigations in accordance with NZS 3604:2011 are required.

TC1 Foundations

For lots identified as TC1 we consider NZS 3604:2011 type foundations are suitable. We note that at the time of writing this report, the location and structural form of the future dwelling on the lots are unknown and our recommendations relate to NZS3604:2011 type lightweight timber or steel framed residential buildings only.

TC2 Foundations

For lots identified as TC2 we recommend founding dwellings on TC2 type 'enhanced foundation slabs' as per Option 3 or 4 from the MBIE Guidelines (2012) Section 5.1.3 to mitigate the effects of liquefaction induced vertical settlement. Alternatively, in accordance with MBIE Guidelines Section 5.4 a specific design could be undertaken by a suitably qualified chartered professional engineer.

5.5 Future Earthworks

We do not anticipate that future earthworks will be required on the majority of the lots, however should such work be required the following should be noted.

- All earthworks should be carried out in accordance with the Health and Safety at Work Act 2015 and the Worksafe New Zealand Excavation Safety Good Practice Guidelines, 2016.
- Cuts that exceed 0.6m high around any of the house sites must be retained by a suitable retaining wall designed by a Chartered Professional Engineer.
- We recommend that no more than 450mm of fill is placed on the allotment without detailed engineering design.
- Earthworks (cut and fill) should not be undertaken adjacent to any timber retaining wall if present.
- Any development where excavations greater than 1.2m in depth are proposed, must be subject to specific investigation and design to confirm these works will have no adverse effect on land stability, infrastructure and/or structures on adjacent lots. Excavations near sensitive structures or near boundaries may require geotechnical engineering input even if shallower than 1.2m.

5.6 Construction Observations

The suitability of foundation conditions must be verified at the time of construction. Foundation inspections by a Building Inspector or a Chartered Professional Engineer who are familiar with this report must be carried out to ensure the adequacy of the foundation subgrade prior to the placement of granular hardfill or the construction of foundations.

6 References

Aurecon New Zealand Limited, 2018. *Caldwell Block Subdivision Resource Consent Geotechnical Report,* Rev 0. Christchurch, New Zealand.

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Christchurch City Council, 2010. *Infrastructure Design Standards – Part 4: Geotechnical Requirements*.

Idriss and Boulanger, 2008. *Soil Liquefaction during Earthquakes*. EERI Monograph Series MNO-12
Ishihara, 1985. *Stability of natural deposits during earthquakes*. Proceedings, 11th International Conference on Soil Mechanics and Foundation engineering, Vol 1, pp. 321-376.

Ministry of Business Innovation and Employment (MBIE), 2012. *Repairing and rebuilding houses affected by the Canterbury earthquakes*.

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NZS1170.0:2002. *Australia/New Zealand Standard, Structural Design Actions, Part 0: General Principals.* Standards New Zealand, Wellington, New Zealand.

NZS1170.5:2002. *Australia/New Zealand Standard, Structural Design Actions, Part 5: Earthquake Actions – New Zealand.* Standards New Zealand, Wellington, New Zealand.

NZS 3604:2011. *Timber Framed Buildings*. Standards New Zealand, Wellington, New Zealand.

NZS 4404:2010. *Land development and subdivision infrastructure*. Standards New Zealand, Wellington, New Zealand.

NZS 4431:1989. *Code of practice for earth fill for residential development*. Standards New Zealand, Wellington, New Zealand.

NZS 4431:2022 *Engineered Fill Construction for Lightweight Structures*. Standards New Zealand, Wellington, New Zealand.

Robertson and Wride, 1998. *Evaluating cyclic liquefaction potential using the cone penetration test*. Canadian Geotechnical Journal, Vol. 35, pp. 442 – 459.

Tonkin and Taylor (2013) *Liquefaction Vulnerability Study*, Tonkin and Taylor Report 52020.0200/v1.0. February 2013. 52 pages and 14 appendices.

Zhang, Robertson, and Brachman, 2002. *Estimating liquefaction-induced ground settlements from CPT for level ground.* Canadian Geotechnical Journal, Vol. 39, pp.1168 – 1180.

7 Explanatory Statement

This report has been prepared for CDL Land New Zealand Limited. It may be made available to others but only in full. As noted above, it shall not be used by any person as a substitute for specific field observations and testing once house sites are confirmed.

This report has been prepared as part of the development of the Prestons Park Stages H1, G1 and G2 Subdivision. It has been prepared to provide the following information:

- To report on the management of the earthworks during construction, including compaction standards of fills.
- To report on the extent of ground improvement and the resulting land technical category.

This report does not remove the responsibility of the Owner / Builder / Building Certifier to satisfy themselves of foundation depth and suitability at the finally selected house location.

Subsurface conditions relevant to construction works should be assessed by experienced Contractors and designers who can make their own interpretation of the factual data provided. They should perform any additional tests as necessary for their own purposes. Subsurface conditions, such as groundwater levels, can change over time. This should be borne in mind, particularly if the report is used after a protracted delay or in wet weather.

It is strongly recommended that any plans and specifications prepared by others and relating to the content of this report, or amendments to the original plans and specifications, are reviewed by Aurecon to verify that the intent of our recommendations is properly reflected in the design. During construction we request the opportunity to review our interpretations if the exposed site conditions are significantly different from those inferred in this report.

This report is not to be reproduced either wholly or in part without our prior written permission.

Appendix A
A1 – G1 Figures
A2 – G2 Figures
A3 – H1 Figures

Meters
0 40 80 120 160

NOTES - PROPERTY DATA FROM LINZ
- DEPTH BANDING DATA EXISTING TO FINISHED SURFACE

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R.Dawson	T Tremain
CHECKED	
J. Muirson	
APPROVED	DATE
J. Kupec	31/03/2023

PROJECT: PRESTONS PARK SUB-STAGE G1

TITLE: SITE PLAN

PROJECT No.: 235361
SCALE: AS SHOWN
SIZE: A3
DRAWING No.: FIG 1
REV: A

Path: C:\Users\Ros.Dawson\Desktop\prestons\GIS\SOUTH STAGE 5\G1\FIG 1 SITE PLAN.mxd

Meters
0 10 20 30 40

LEGEND

- BORE HOLE
- CPT LOCATION
- TEST PIT LOCATION

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PROJECT: PRESTONS PARK SUB-STAGE G1

TITLE: PREVIOUS INVESTIGATIONS

PROJECT No.: 235361
SCALE: AS SHOWN
SIZE: A3
DRAWING No.: FIG 2
REV: A

Path: C:\Users\Ros.Dawson\Desktop\prestons\GIS\SOUTH STAGE SG1\FIG 2 PREVIOUS INVESTIGATIONS.mxd

LEGEND

AS BUILT FILL Lower_value		Upper_value	Colour
-3	to	-2.4	m
-2.4	to	-1.8	m
-1.8	to	-1.2	m
-1.2	to	-0.6	m
-0.6	to	0	m
0	to	0.01	m
0.01	to	0.2	m
0.2	to	0.4	m
0.4	to	0.6	m
0.6	to	0.8	m
0.8	to	1	m
1	to	1.2	m
1.2	to	1.4	m
1.4	to	1.6	m
1.6	to	1.8	m

This AS BUILT drawing has been prepared based on information provided by the contractor "KB Contracting".

NOTE

1. FILL BANDING SHOWN IS BETWEEN EXISTING SUBGRADE (STRIPPED EXISTING SURFACE) TO FINISHED SUBGRADE

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D WATSON

APPROVED
DATE
K ASHBY

PROJECT
PRESTONS PARK

TITLE
AS-BUILT EARTHWORKS FILL PLAN
SUBSTAGE G1 & G2
STAGE 5

PRELIMINARY
NOT FOR CONSTRUCTION

PROJECT No.	
235361	
SCALE	SIZE
1:500	A1
DRAWING No.	REV
AB-PS-S5-EW-03	A

LEGEND

- NDM TEST LOCATION

Meters
0 10 20 30 40

NOTE:
A selection of NDM test points only has been shown due to NDM testing density. Full details of all NDM test results are provided in 235361 - Prestons Park Subdivision Stage G1 Geotechnical Completion Report

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PROJECT: PRESTONS PARK SUB-STAGE G1

TITLE: NDM LOCATIONS

PROJECT No.	
235361	
SCALE	SIZE
AS SHOWN	A3
DRAWING No.	REV
FIG 4	A

Path: C:\Users\Ros.Dawson\Desktop\prestons\GIS\SOUTH STAGE 3\G1\FIG 4 NDM.mxd

NOTE

TECHNICAL CATEGORY CLASSIFICATION HAS BEEN ASSESSED IN ACCORDANCE WITH SECTION 3 OF THE MBIE GUIDELINES (2012)

LEGEND

- TC1 EQUIVALENT BEHAVIOUR
- TC2 EQUIVALENT BEHAVIOUR

Meters
0 10 20 30 40

NOTES - PROPERTY DATA FROM LINZ

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PROJECT: PRESTONS PARK - SUBSTAGE G1

TITLE: TECHNICAL CATEGORY PLAN

PROJECT No.	
235361	
SCALE	SIZE
AS SHOWN	A3
DRAWING No.	REV
FIG 5	A

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PROJECT
PRESTONS PARK SUB-STAGE G2

TITLE
SITE PLAN

PROJECT No.
235361

SCALE	SIZE
AS SHOWN	A3
DRAWING No.	REV
FIG 1	A

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PROJECT: PRESTONS PARK SUB-STAGE G2

TITLE: PREVIOUS INVESTIGATIONS

PROJECT No.	235361
SCALE	AS SHOWN
SIZE	A3
DRAWING No.	FIG 2
REV	A

Path: C:\Users\Ros.Dawson\Desktop\prestons\GIS\SOUTH STAGE SIG2\FIG 2 PREVIOUS INVESTIGATIONS.mxd

LEGEND

AS BUILT FILL Lower_value		Upper_value	Colour
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-2.4	to	-1.8	m
-1.8	to	-1.2	m
-1.2	to	-0.6	m
-0.6	to	0	m
0	to	0.01	m
0.01	to	0.2	m
0.2	to	0.4	m
0.4	to	0.6	m
0.6	to	0.8	m
0.8	to	1	m
1	to	1.2	m
1.2	to	1.4	m
1.4	to	1.6	m
1.6	to	1.8	m

This AS BUILT drawing has been prepared based on information provided by the contractor "KB Contracting".

NOTE

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TITLE
AS-BUILT EARTHWORKS FILL PLAN
SUBSTAGE G1 & G2
STAGE 5

PRELIMINARY
NOT FOR CONSTRUCTION

PROJECT No.	
235361	
SCALE	SIZE
1:500	A1
DRAWING No.	REV
AB-PS-S5-EW-03	A

LEGEND

◆ NDM TEST LOCATION

0 10 20 30 40 Meters

NOTE:
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PROJECT: PRESTONS PARK SUB-STAGE G2

TITLE: NDM LOCATIONS

PROJECT No.: 235361
SCALE: AS SHOWN
SIZE: A3
DRAWING No.: FIG 4
REV: A

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NOTE

TECHNICAL CATEGORY CLASSIFICATION HAS BEEN ASSESSED IN ACCORDANCE WITH SECTION 3 OF THE MBIE GUIDELINES (2012)

LEGEND

- TC1 EQUIVALENT BEHAVIOUR
- TC2 EQUIVALENT BEHAVIOUR

Meters
0 10 20 30 40

NOTES - PROPERTY DATA FROM LINZ

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PROJECT: PRESTONS PARK - SUBSTAGE G2

TITLE: TECHNICAL CATEGORY PLAN

PROJECT No.: 235361
SCALE: AS SHOWN | SIZE: A3
DRAWING No.: FIG 5 | REV: A

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Meters
0 40 80 120 160

NOTES

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PROJECT
PRESTONS PARK SUB-STAGE H1

TITLE
SITE PLAN

PROJECT No.	
235361	
SCALE	SIZE
AS SHOWN	A3
DRAWING No.	REV
FIG 1	A

Path: C:\Users\Ros.Dawson\Desktop\prestons\GIS\SOUTH STAGE 5\H1\FIG 1 SITE PLAN.mxd

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PROJECT: PRESTONS PARK SUB-STAGE H1

TITLE: PREVIOUS INVESTIGATIONS

PROJECT No.: 235361
SCALE: AS SHOWN
SIZE: A3
DRAWING No.: FIG 2
REV: A

Path: C:\Users\Ros.Dawson\Desktop\prestons\GIS\SOUTH STAGE SH1\FIG 2 PREVIOUS INVESTIGATIONS.mxd

LEGEND

AS BUILT FILL Lower_value		Upper_value	Colour
-3	to	-2.4	m
-2.4	to	-1.8	m
-1.8	to	-1.2	m
-1.2	to	-0.6	m
-0.6	to	0	m
0	to	0.01	m
0.01	to	0.2	m
0.2	to	0.4	m
0.4	to	0.6	m
0.6	to	0.8	m
0.8	to	1	m
1	to	1.2	m
1.2	to	1.4	m
1.4	to	1.6	m
1.6	to	1.8	m

This AS BUILT drawing has been prepared based on information provided by the contractor "RJB Contracting".

NOTE

1. FILL BANDING SHOWN IS BETWEEN EXISTING SUBGRADE (STRIPPED EXISTING SURFACE) TO FINISHED SUBGRADE

aurecon
www.aurecongroup.com

CLIENT: CDL LAND NEW ZEALAND LIMITED

REV	DATE	REVISION DETAILS	APPROVED
A	22/03/23	ISSUED FOR INFORMATION	K ASHBY

DRAWN	DESIGNED
A COLUMBUS	A COLUMBUS
CHECKED: D WATSON	
APPROVED: K ASHBY DATE	

PROJECT: PRESTONS PARK

TITLE: AS-BUILT EARTHWORKS FILL PLAN SUBSTAGE H1 STAGE 5

PRELIMINARY NOT FOR CONSTRUCTION

PROJECT No.: 235361

SCALE	SIZE
1:500	A1

DRAWING No.	REV
AB-PS-S5-EW-03	A

LEGEND

- NDM TEST LOCATION

Meters
0 10 20 30 40

NOTE:
A selection of NDM test points only has been shown due to NDM testing density. Full details of all NDM test results are provided in 235361 - Prestons Park Subdivision Stage E3 Geotechnical Completion Report

aurecon
www.aurecongroup.com

CDL LAND
NEW ZEALAND LIMITED

REV	DATE	REVISION DETAILS	APPROVED
A	31/03/23	ISSUE FOR INFORMATION	J. Kupec

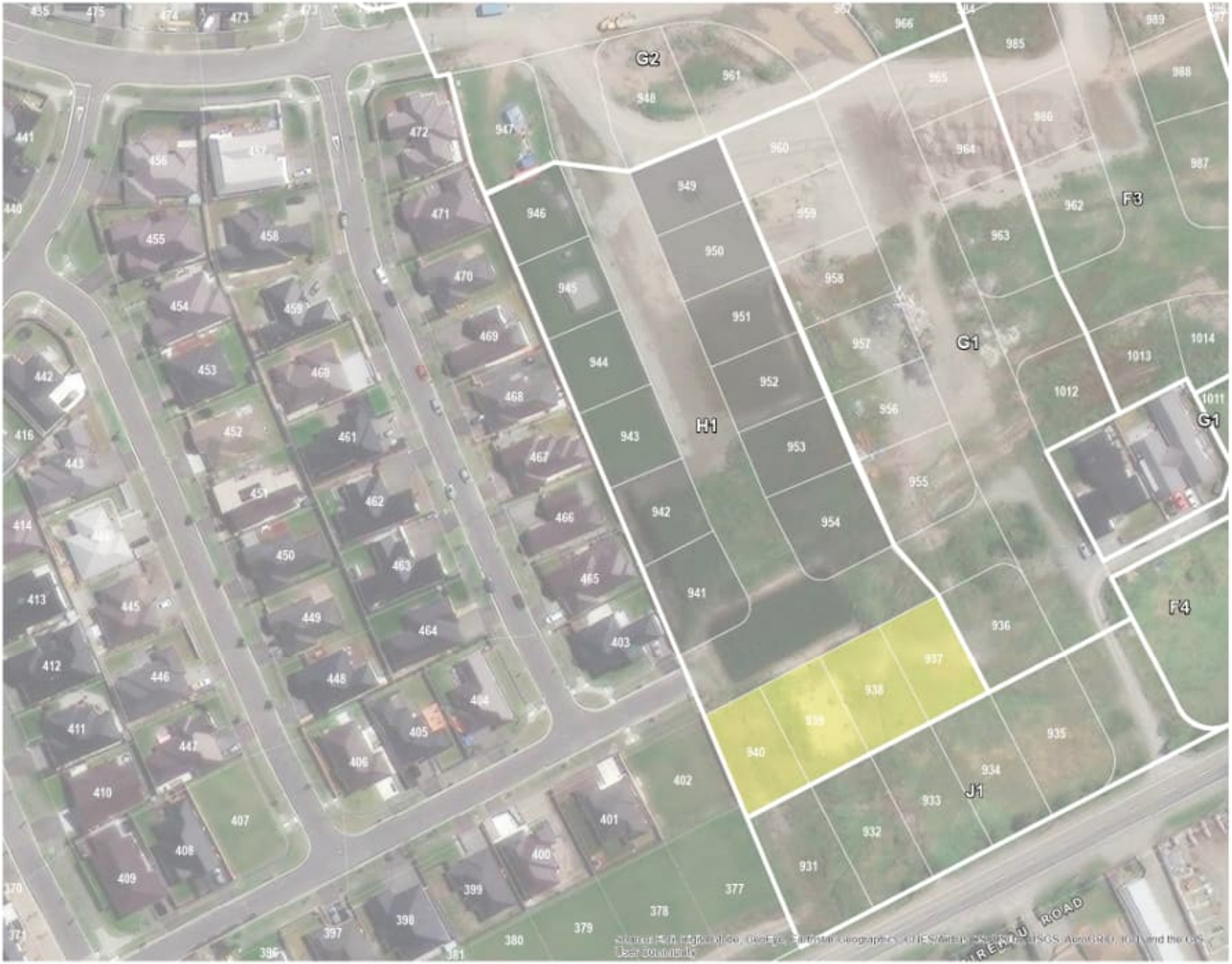
DRAWN	DESIGNED
R.Dawson	T.Tremain
CHECKED	
J. Muirson	
APPROVED	DATE
J. Kupec	31/03/2023

PROJECT: PRESTONS PARK SUB-STAGE H1

TITLE: NDM LOCATIONS

PROJECT No.	
235361	
SCALE	SIZE
AS SHOWN	A3
DRAWING No.	REV
FIG 4	A

Path: C:\Users\Ros.Dawson\Desktop\prestons\GIS\SOUTH STAGE SH1\FIG 4 NDM.mxd



NOTE

TECHNICAL CATEGORY CLASSIFICATION HAS BEEN ASSESSED IN ACCORDANCE WITH SECTION 3 OF THE MBIE GUIDELINES (2012)

LEGEND

- TC1 EQUIVALENT BEHAVIOUR
- TC2 EQUIVALENT BEHAVIOUR

Meters
0 10 20 30 40

NOTES - PROPERTY DATA FROM LINZ

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CLIENT: CDL LAND NEW ZEALAND LIMITED

REV	DATE	REVISION DETAILS	APPROVED
A	23/03/31	ISSUE FOR INFORMATION	J. Kupec

DRAWN	DESIGNED
R.Dawson	C. Scott
CHECKED	
J. Muirson	
APPROVED	DATE
J. Kupec	31/03/2023

PROJECT: PRESTONS PARK - SUBSTAGE H1

TITLE: TECHNICAL CATEGORY PLAN

PROJECT No.	
235361	
SCALE	SIZE
AS SHOWN	A3
DRAWING No.	REV
FIG 5	A

Path: C:\Users\Ros.Dawson\Desktop\prestons\GIS\SOUTH STAGE SHT\FIG 5 TC PLAN.mxd

Appendix B
Compaction Curves

Canterbury Laboratory

24 Miners Road, Templeton, Christchurch
PO Box 16-064, Christchurch 8441
Telephone: +64 3 349 9142
Facsimile: +64 3 349 9143
www.fultonhogan.com
0800 LABORATORY

Maximum Dry Density Report

Report No: MDD:CAN21S-00814
Issue No: 1

Client: City Care Limited
PO Box 7669
Sydenham

Christchurch 8240
NZ

Project: City Care

The tests reported herein (unless otherwise indicated) have been performed in accordance with the laboratory's scope of accreditation. Samples are tested as received, in natural condition, unless stated otherwise in the comments. This report may only be reproduced in full.

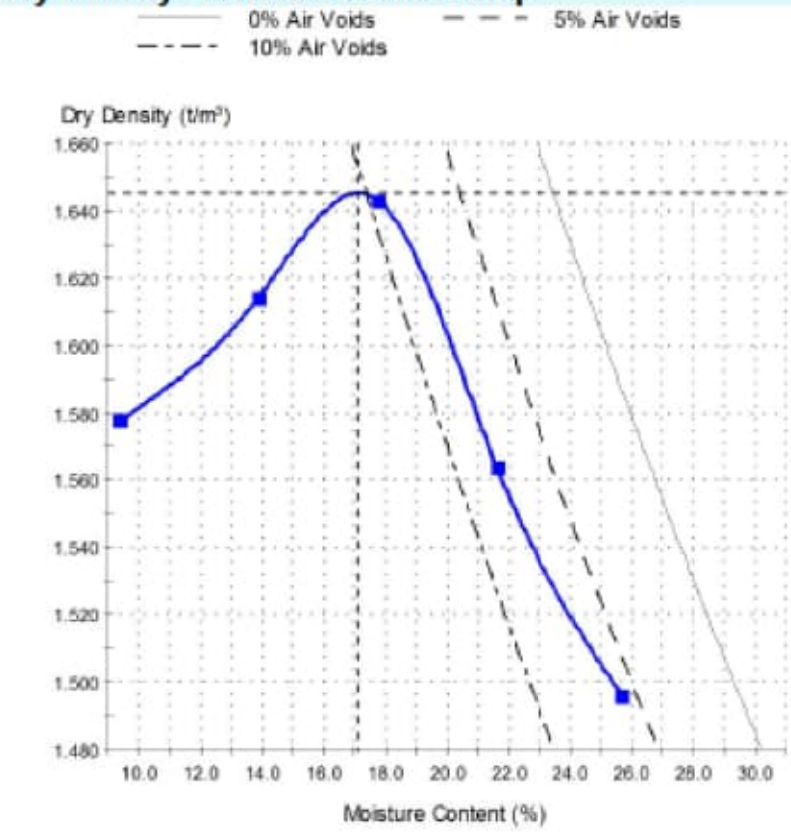
The results in this report relate only to the items / samples that were tested.

Approved Signatory: Liam Brennan
(Laboratory Technician)
IANZ Accreditation No:200
Date of Issue: 29/01/2021

Sample Details

Sample ID:	CAN21S-00814	**Client Sample ID:**	Lab Ref: 0095/21
Material:	Silty Sand	**Sample Source:**	Miscellaneous Material Source
Site/Sampled From:	Ex Oakbridge, Eastern BDY Reserve	**Date Sampled:**	27/01/2021
Specification:	Vibrating Hammer Compaction Test	**Sampled By:**	Advised - See Comments
Sampling Method:	As Received - Not Accredited	**Date Tested:**	28/01/2021
Technician:	Maciej Gaworecki	**Sampling Endorsed?:**	No

Dry Density - Moisture Relationship



Test Results

NZS 4402:1986 Test 4.1.3 - 1986

Maximum Dry Density (t/m³):	**1.64**
Optimum Moisture (%):	**17**
Solid Density (t/m³):	2.68 assumed
Fraction Tested Passes (mm):	37.5
Material Removed (%):	0
Sample History:	Natural
Tested By:	Maciej Gaworecki
Date Tested:	28/01/2021

Comments

Compaction for test points @ 21.6% & 25.7% ceased prior to 3 minutes due to oversaturation causing ejection of fines from sample.
Material sampled by Clive Gould

Road Science
Leading Transport Technology

CHRISTCHURCH LABORATORY

397 Mcleans Island Road, Harewood
P O Box 11-326, Sockburn, Christchurch 8443
Phone: (03) 359-0757

Test Report

Client:	K.B. Contracting & Quarries Limited	**Sample Date:**	08/12/2017	08:00
Address:	PO Box 19746, Woolston, Christchurch 8241	**Sampled By:**	Pete Haward	
Client Ref:	Not advised	**Laboratory No:**	C17/3810	
Job Location:	McLeans Island	**Report No:**	257833	**Final**
Material:	Pit Run	**Report Date:**	15/12/2017	Page 1 of 2
Material Source:	McLeans Island			

Test Methods:

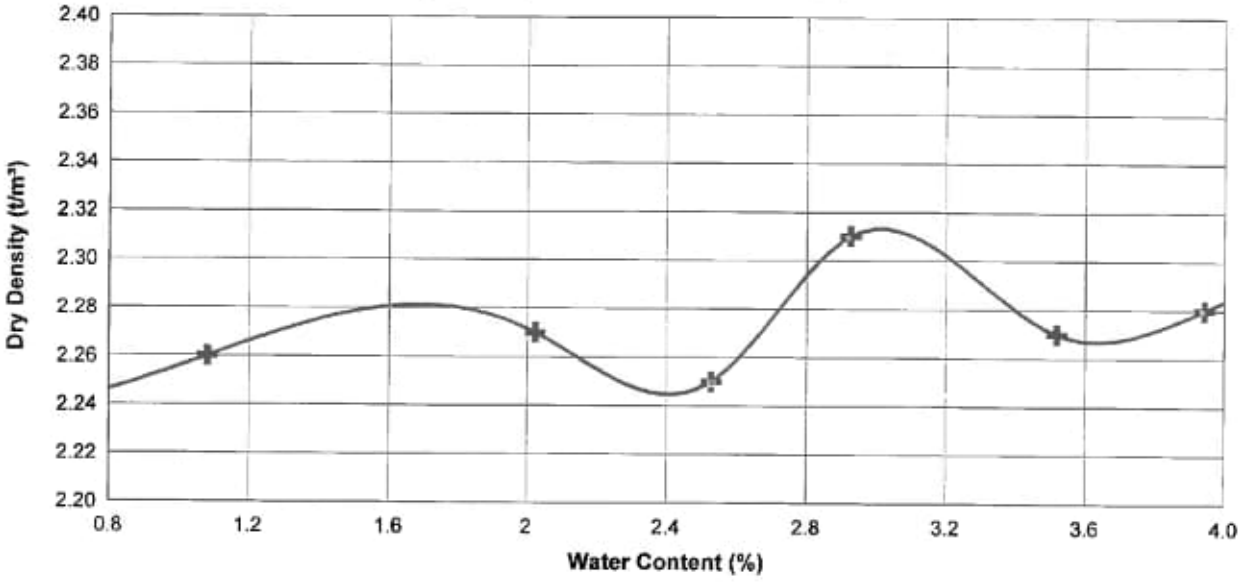
1#	Sampling from stockpiles of well graded aggregate - machine method	NZS4407:2015 2.4.6.3.2
2	Determination of the Dry Density/Water Content Relationship - New Zealand Vibrating Hammer Compaction Test	NZS4402:1986 Test 4.1.3

Test methods marked with a hash are not accredited.

Results

Water Content (%)	1.08	2.02	2.53	2.93	3.52	3.94
Dry Density (t/m³)	2.26	2.27	2.25	2.31	2.27	2.28

Dry Density/Water Content Relationship



Maximum Dry Density (t/m³)	2.32
Optimum Water Content (%)	3.0
History of Sample	Result obtained from oven-dried sample.
Test Fraction	Passing 37.5mm sieve
Test Date:	13/12/2017

Notes

Date of sample receipt: 08/12/2017

Vicky Henderson
Approved Signatory
Laboratory Manager
IANZ Accreditation No: 439
Date of Issue: 10/04/92

IANZ ACCREDITED LABORATORY

Tests indicated as not accredited are outside the scope of the laboratory's accreditation.

Road Science
Leading Transport Technology

CHRISTCHURCH LABORATORY
PO Box 11326, Sockburn, Christchurch, 8443
Phone: 03 359 0757

Test Report

Client:	K.B. Contracting & Quarries Limited	**Sample Date:**	14/10/2021	10:00
Address:	PO Box 19746, Woolston, Christchurch 8241	**Sampled By:**	Pete Haward	
Job Location:	Mcleans Island	**Laboratory No:**	C21/1895	
Material:	Pitrun	**Client Ref:**	Not Advised	
Material Source:	Mcleans Island	**Report No:**	52897	**Final**
		Report Date:	20/10/2021	

Test Methods

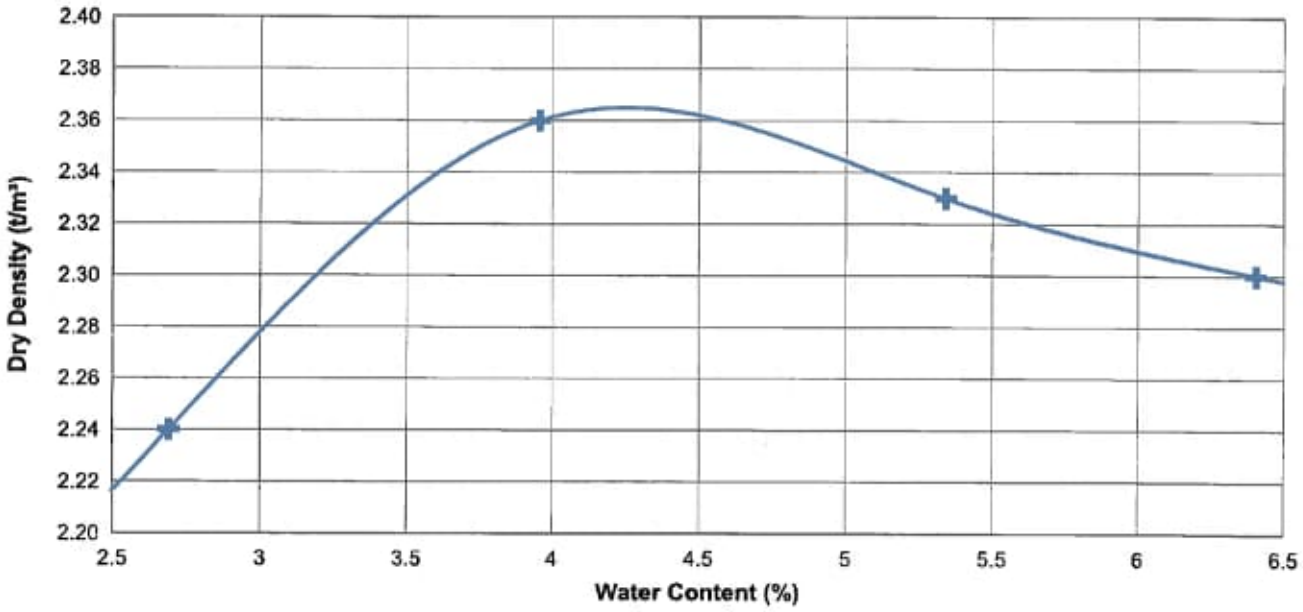
1	Determination of the dry density/water content relationship - New Zealand vibrating hammer compaction test	NZS4402:1986 Test 4.1.3
2	Sampling from stockpiles of well graded aggregate - machine method	NZS4407:2015 Test 2.4.6.3.2

Determination of the Dry Density/Water Content Relationship - New Zealand Vibrating Hammer Compaction Test

Results

Dry Density (t/m³)	2.24	2.36	2.33	2.30
Water Content (%)	2.7	4.0	5.3	6.4

Dry Density/Water Content Relationship



	Results
Natural moisture content (%)	3.5
Maximum Dry Density (t/m³)	2.36
Optimum Water Content (%)	4.2
Test Fraction	Passing 37.5mm sieve
Test Date:	19-10-2021

Road Science
Leading Transport Technology

CHRISTCHURCH LABORATORY
PO Box 11326, Sockburn, Christchurch, 8443
Phone: 03 359 0757

Laboratory No: C21/1895
Report No: 52897 **Final**
Report Date: 20/10/2021

Sample Notes

Sample received in a damp condition.

Test results apply to sample as received.

Date of sample receipt: 14/10/2021

Vicky Henderson
Laboratory Manager

Canterbury Laboratory

24 Miners Road, Templeton, Christchurch
PO Box 16-064, Christchurch 8441
Telephone: +64 3 349 9142
Facsimile: +64 3 349 9143
www.fultonhogan.com
0800 LABORATORY

Report No: MDD:CAN20S-17343
Issue No: 1

Maximum Dry Density Report

Client: Toni O'Regan
City Care Limited
PO Box 7669
Sydenham

Christchurch 8240
NZ

Project: QA Testing - City Care Ltd

ACCREDITED IANZ TESTING LABORATORY

The tests reported herein (unless otherwise indicated) have been performed in accordance with the laboratory's scope of accreditation. Samples are tested as received, in natural condition, unless stated otherwise in the comments. This report may only be reproduced in full.

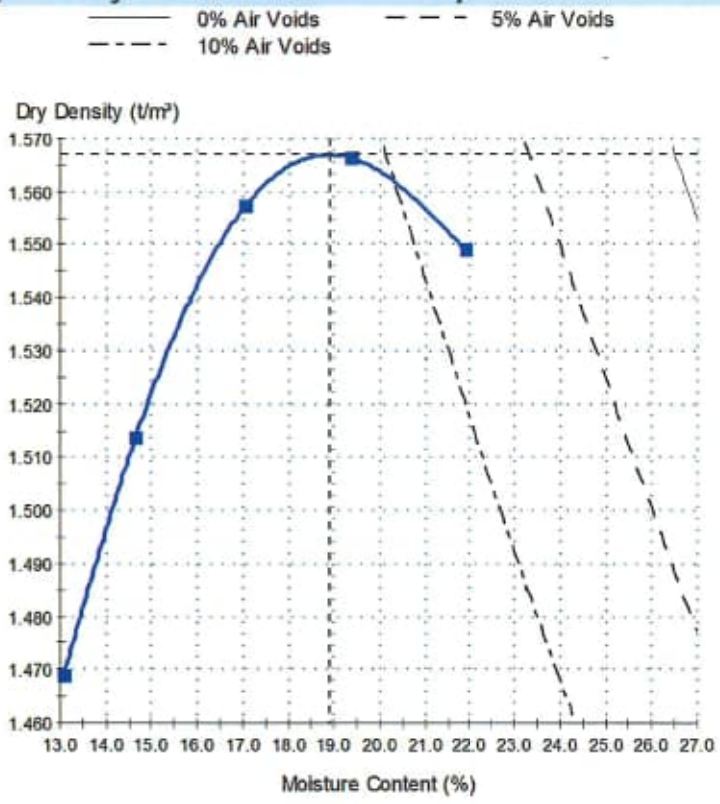
The results in this report relate only to the items / samples that were tested

Approved Signatory: Rebecca Royfee
(Laboratory Technician)
IANZ Accreditation No:200
Date of Issue: 23/10/2020

Sample Details

Sample ID:	CAN20S-17343	**Client Sample ID:**	1691/20
Material:	Sand	**Sample Source:**	Miscellaneous Material Source
Site/Sampled From:	CD2 Prestons - Stage 5 East side of S/P	**Date Sampled:**	20/10/2020
Specification:	Vibrating Hammer Compaction Test	**Sampled By:**	Advised - See Comments
Sampling Method:	Stated to be NZS 4407:2015 2.4.6.5	**Date Tested:**	22/10/2020
Technician:	Laura Cranston	**Sampling Endorsed?:**	No

Dry Density - Moisture Relationship



Test Results

NZS 4402:1986 Test 4.1.3 - 1986

Maximum Dry Density (t/m³):	**1.56**
Optimum Moisture (%):	**19**
Solid Density (t/m³):	2.68 assumed
Fraction Tested Passes (mm):	37.5
Material Removed (%):	0
Sample History:	Natural
Tested By:	Laura Cranston
Date Tested:	22/10/2020

Comments

Sampled by A Hadlee

Canterbury Laboratory

24 Miners Road, Templeton, Christchurch
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Facsimile: +64 3 349 9143
www.fultonhogan.com
0800 LABORATORY

Maximum Dry Density Report

Report No: MDD:CAN20S-01176
Issue No: 1

Client: Toni O'Regan
City Care Limited
PO Box 7669
Sydenham

Christchurch 8240
NZ

Project: QA Testing - City Care Ltd

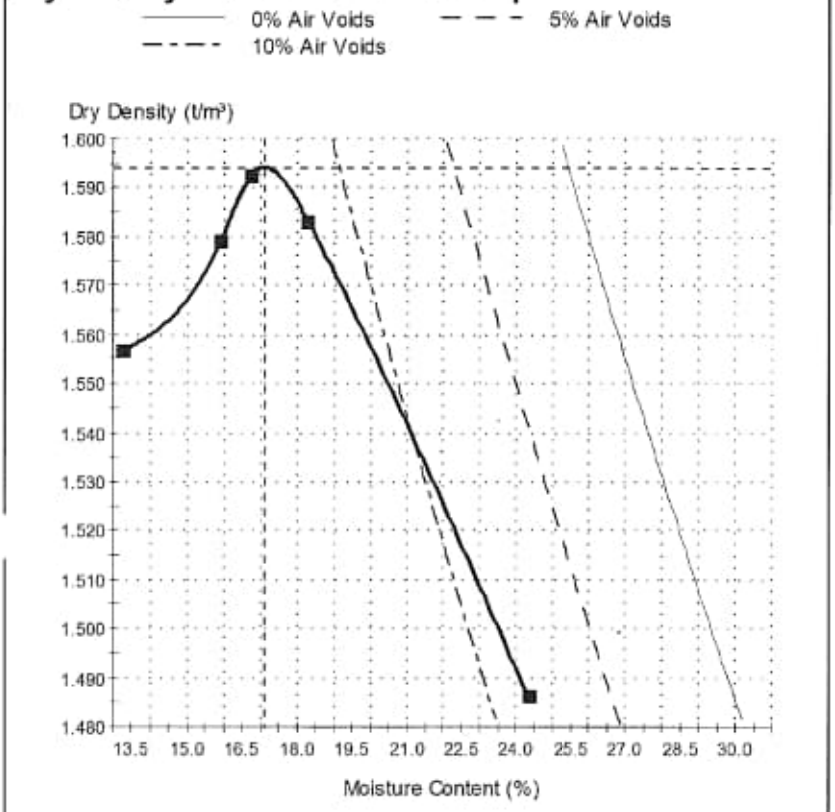
IANZ ACCREDITED LABORATORY

Approved Signatory: Max Burford (Supervisor)
IANZ Accreditation No:200
Date of Issue: 22/01/2020

Sample Details

Sample ID:	CAN20S-01176	**Client Sample ID:**	0055/20 Sample 3
Material:	Sand	**Sample Source:**	Miscellaneous Material Source
Site/Sampled From:	CDL Prestons Road	**Date Sampled:**	20/01/2020
Specification:	Vibrating Hammer Compaction Test	**Sampled By:**	Advised - See Comments
Sampling Method:	Not Advised	**Date Tested:**	21/01/2020
..chnician:	Atu Rova	**Sampling Endorsed?:**	No

Dry Density - Moisture Relationship



Test Results

NZS 4402:1986 Test 4.1.3

Maximum Dry Density (t/m³):	**1.60**
Optimum Moisture (%):	**17**
Solid Density (t/m³):	2.68 assumed
Fraction Tested Passes (mm):	37.5
Material Removed (%):	0
Sample History:	Natural
Tested By:	Atu Rova
Date Tested:	21/01/2020

Comments

* Sample 3
* Material sampled by Clive Gould.

Canterbury Laboratory

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Maximum Dry Density Report

Report No: MDD:CAN20S-01175
Issue No: 1

Client: Toni O'Regan
City Care Limited
PO Box 7669
Sydenham

Christchurch 8240
NZ

Project: QA Testing - City Care Ltd

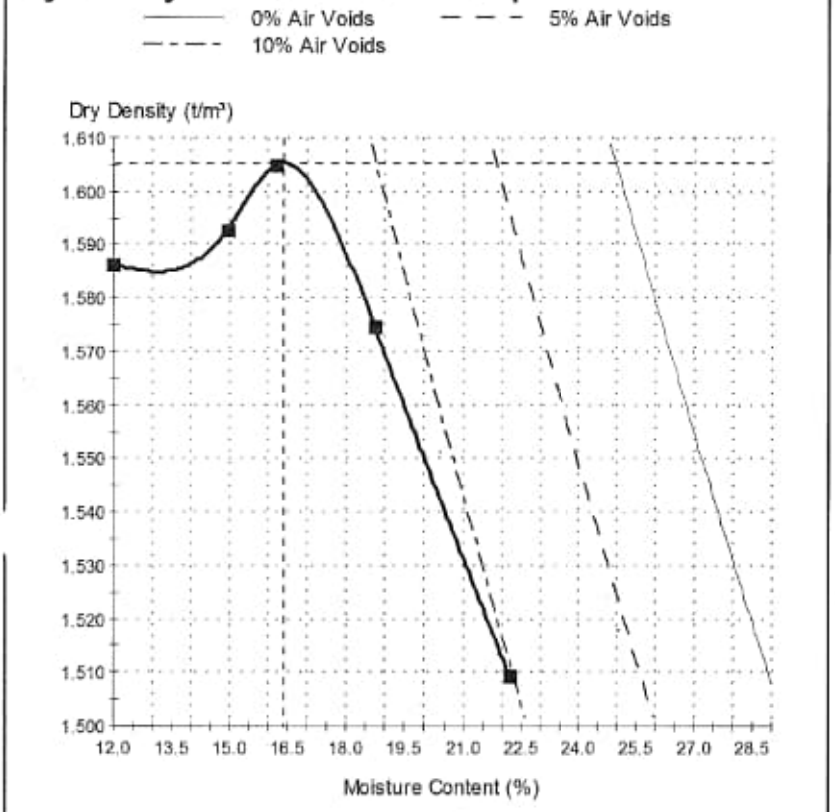
IANZ ACCREDITED LABORATORY

Approved Signatory: Max Burford (Supervisor)
IANZ Accreditation No:200
Date of Issue: 22/01/2020

Sample Details

Sample ID:	CAN20S-01175	**Client Sample ID:**	0054/20 Sample 2
Material:	Sand	**Sample Source:**	Miscellaneous Material Source
Site/Sampled From:	CDL Prestons Road	**Date Sampled:**	20/01/2020
Specification:	Vibrating Hammer Compaction Test	**Sampled By:**	Advised - See Comments
Sampling Method:	Not Advised	**Date Tested:**	21/01/2020
Technician:	Atu Rova	**Sampling Endorsed?:**	No

Dry Density - Moisture Relationship



Test Results

NZS 4402:1986 Test 4.1.3

Maximum Dry Density (t/m³):	**1.60**
Optimum Moisture (%):	**16**
Solid Density (t/m³):	2.68 assumed
Fraction Tested Passes (mm):	37.5
Material Removed (%):	0
Sample History:	Natural
Tested By:	Atu Rova
Date Tested:	21/01/2020

Comments

* Sample 2
* Material sampled by Clive Gould.

Appendix C
NDM Earthfill Testing Results

Project Prestons South Subdivision
Project No. 255561
Date 29-Nov-19

Title Summary of Compaction

COORDINATES LINKED TO TAB

Test Date	Test ID#	Test #	Unique ID#	mE	mN	Stage	MDD	Type	Lift #	Lot ID	Compaction (%)	Retest	Pass (Yes/No)	Comments
20/05/2021	0242_001 (0991/21)	13	360	395779.146	6119?8.464	Stage 5	1640	Sand (wester	Lift 2	Lot 959	97		YES	
20/05/2021	0242_001 (0991/21)	14	361	395788.935	611995.18	Stage 5	1640	Sand (wester	Lift 2	Lot 959	100		YES	
16/08/2022	5196_001 (1320/22)	1	825	395837.654	611991.311	Stage 5	1640	Sand	Lift 1	Lot 965	103		YES	Lift 1 done by City care on 20/July (2039_001 (1259/22)) but only done on half section
16/08/2022	5196_001 (1320/22)	2	826	395845.972	611975.114	Stage 5	1640	Sand	Lift 1	Lot 965	104		YES	Lift 1 done by City care on 20/July (2039_001 (1259/22)) but only done on half section
20/05/2021	0242_001 (0991/21)	7	354	395783.605	612011.951	Stage 5	1640	Sand (wester	Lift 2	Lot 960	96		YES	
20/05/2021	0242_001 (0991/21)	8	355	395775.809	611995.891	Stage 5	1640	Sand (wester	Lift 2	Lot 960	94	No	NO	
13/05/2021	0947-21	3	225	395783.605	612011.951	Stage 5	1640	Sand	Lift 1	Lot 960	105		YES	
13/05/2021	0947-21	4	226	395775.207	611996.386	Stage 5	1640	Sand	Lift 1	Lot 960	97		YES	
18/08/2022	5321_001 (1341/22)	1	827	395837.654	611991.311	Stage 5	1560	Sand	Lift 2	Lot 963	101		YES	
18/08/2022	5321_001 (1341/22)	2	828	395845.972	611975.114	Stage 5	1560	Sand	Lift 2	Lot 965	99		YES	
20/07/2022	2039_001 (1259/22)	9	801	395837.654	611991.311	Stage 5	1640	Sand	Lift 2	Lot 963 - Half section	108		YES	Not sure why it's Lift 2 as no previous data exists. Likely a over extension from Lot 962
20/07/2022	2039_001 (1259/22)	10	802	395845.972	611975.114	Stage 5	1640	Sand	Lift 2	Lot 963 - Half section	103		YES	Not sure why it's Lift 2 as no previous data exists. Likely a over extension from Lot 962
20/01/2022	3073_001 (0052/22)	7	338	395822.792	612008.21	Stage 5	1640	Sand (wester	Final Lift	Lot 964	102		YES	
20/01/2022	3073_001 (0052/22)	8	336	395837.927	611996.582	Stage 5	1640	Sand (wester	Final Lift	Lot 963	98		YES	
5/08/2022	2751_001 (1280/22)	3	787	395810.227	611907.771	Stage 5	1640	Sand	Lift 2 (Final	Lot 955	106		YES	
5/08/2022	2751_001 (1280/22)	4	788	395816.94	611925.145	Stage 5	1640	Sand	Lift 2 (Final	Lot 955	105		YES	
9/08/2022	2832_001 (1288/22)	1	773	395798.512	611955.125	Stage 5	2320	Pit run	Lift 1	Lot 956	98		YES	
9/08/2022	2832_001 (1288/22)	2	774	395818.449	611939.969	Stage 5	2320	Pit run	Lift 1	Lot 956	99		YES	
9/08/2022	KB22/301	1	812	395798.512	611955.125	Stage 5	2320	Pit Run	Lift 1	Lot 956	98		YES	Lift 1 exists already by CityCare on same date. KBs have confirmed that it was a 'comparison test' for their QA
9/08/2022	KB22/301	2	813	395813.449	611939.969	Stage 5	2320	Pit Run	Lift 1	Lot 956	100		YES	Lift 1 exists already by CityCare on same date. KBs have confirmed that it was a 'comparison test' for their QA
15/08/2022	KB22/0314	5	832	395798.512	611955.125	Stage 5	2320	Pit Run	Lift 2 (Final	Lot 956	96		YES	
15/08/2022	KB22/0314	6	834	395813.449	611939.969	Stage 5	2320	Pit Run	Lift 2 (Final	Lot 956	98		YES	
20/05/2021	0242_001 (0991/21)	3	350	395835.819	611999.333	Stage 5	1640	Sand (wester	Lift 2	Lot 964	103		YES	
20/05/2021	0242_001 (0991/21)	4	351	395815.934	612009.922	Stage 5	1640	Sand (wester	Lift 2	Lot 964	97		YES	
20/01/2022	3073_001 (0052/22)	5	336	395816.225	612028.32	Stage 5	1640	Sand (wester	Final Lift	Lot 965	97		YES	
20/01/2022	3073_001 (0052/22)	6	337	395831.361	612016.019	Stage 5	1640	Sand (wester	Final Lift	Lot 965	99		YES	
9/08/2022	2832_001 (1288/22)	3	775	395806.605	611956.159	Stage 5	2320	Pit run	Lift 1	Lot 957	100		YES	
9/08/2022	2832_001 (1288/22)	4	776	395792.389	611950.499	Stage 5	2320	Pit run	Lift 1	Lot 957	97		YES	
9/08/2022	KB22/301	3	814	395806.605	611956.159	Stage 5	2320	Pit Run	Lift 1	Lot 957	99		YES	Lift 1 exists already by CityCare on same date. KBs have confirmed that it was a 'comparison test' for their QA
9/08/2022	KB22/301	4	815	395792.389	611950.499	Stage 5	2320	Pit Run	Lift 1	Lot 957	98		YES	Lift 1 exists already by CityCare on same date. KBs have confirmed that it was a 'comparison test' for their QA
15/08/2022	KB22/0314	3	833	395806.605	611956.159	Stage 5	2320	Pit Run	Lift 2 (Final	Lot 957	96		YES	
15/08/2022	KB22/0314	4	832	395792.389	611950.499	Stage 5	2320	Pit Run	Lift 2 (Final	Lot 957	98		YES	
13/05/2021	0947-21	1	223	395827.08	612019.127	Stage 5	1640	Sand	Lift 1	Lot 965	96		YES	
13/05/2021	0947-21	2	224	395810.052	612024.426	Stage 5	1640	Sand	Lift 1	Lot 965	100		YES	
1/09/2022	KB22/0344	1	917	395815.877	612012.583	Stage 5	2320	Pit Run	Lift 1	Lot 965	98		YES	Previous lifts done on top half of lot and one 'final lift' by city care (log 3073_001)
1/09/2022	KB22/0344	2	918	395827.08	612019.127	Stage 5	2320	Pit Run	Lift 1	Lot 965	99		YES	Previous lifts done on top half of lot and one 'final lift' by city care (log 3073_001)
9/08/2022	2832_001 (1288/22)	5	777	395785.545	611968.268	Stage 5	2320	Pit run	Lift 1	Lot 958	96		YES	
9/08/2022	2832_001 (1288/22)	6	778	395799.234	611973.796	Stage 5	2320	Pit run	Lift 1	Lot 958	98		YES	
9/08/2022	KB22/301	5	816	395785.545	611968.268	Stage 5	2320	Pit Run	Lift 1	Lot 958	97		YES	Lift 1 exists already by CityCare on same date. KBs have confirmed that it was a 'comparison test' for their QA
9/08/2022	KB22/301	6	817	395799.234	611973.796	Stage 5	2320	Pit Run	Lift 1	Lot 958	98		YES	Lift 1 exists already by CityCare on same date. KBs have confirmed that it was a 'comparison test' for their QA
15/08/2022	KB22/0314	1	829	395785.545	611968.268	Stage 5	2320	Pit Run	Lift 2 (Final	Lot 958	97		YES	
15/08/2022	KB22/0314	2	830	395799.234	611973.796	Stage 5	2320	Pit Run	Lift 2 (Final	Lot 958	95		YES	
20/05/2021	0242_001 (0991/21)	5	352	395815.877	612012.583	Stage 5	1640	Sand (wester	Lift 2	Lot 965	96		YES	
20/05/2021	0242_001 (0991/21)	6	353	395825.594	612052.861	Stage 5	1640	Sand (wester	Lift 2	Lot 965	97		YES	
2/09/2022	KB22/0346	1	921	395813.877	612012.583	Stage 5	2320	Pit Run	Lift 2	Lot 965	99		YES	Previous lifts done on top half of lot and one 'final lift' by city care (log 3073_001)
2/09/2022	KB22/0346	2	922	395827.08	612019.127	Stage 5	2320	Pit Run	Lift 2	Lot 965	98		YES	Previous lifts done on top half of lot and one 'final lift' by city care (log 3073_001)
12/10/2022	KB22/0429	5	1048	395810.052	612024.426	Stage 5	2320	Pit Run	Lift 2	Lot 965	97		YES	964 and 966 no record of other lifts to date. Lot 965 and 985 have had 3-4 other lifts (some half lots)
12/10/2022	KB22/0429	6	1049	395823.394	612032.861	Stage 5	2320	Pit Run	Lift 2	Lot 965	99		YES	964 and 966 no record of other lifts to date. Lot 965 and 985 have had 3-4 other lifts (some half lots)
24/08/2022	KB22/0329	3	845	395777.01	611968.185	Stage 5	2320	Pit Run	Final lift	Lot 959	100		YES	
24/08/2022	KB22/0329	4	846	395792.693	611984.386	Stage 5	2320	Pit Run	Final lift	Lot 959	99		YES	
24/08/2022	KB22/0329	1	843	395783.605	612011.951	Stage 5	2320	Pit Run	Final lift	Lot 960	99		YES	
24/08/2022	KB22/0329	2	844	395775.207	611996.386	Stage 5	2320	Pit Run	Final lift	Lot 960	97		YES	
24/02/2023	1482_001(0253/23)	1	1069	395845.919	611944.771	Stage 5	1640	Sand	Lift 1	Lot 1012	100		YES	
24/02/2023	1482_001(0253/23)	2	1070	395860.681	611936.76	Stage 5	1640	Sand	Lift 1	Lot 1012	99		YES	
2/03/2023	KB23/0099	1	1073	395844.405	611964.881	Stage 5	2360	Pit Run	Lift 1	Lot 1012	97		YES	
2/03/2023	KB23/0099	2	1074	395859.695	611957.561	Stage 5	2360	Pit Run	Lift 1	Lot 1012	97		YES	
3/03/2023	KB23/0105	3	1079	395855.388	611933.917	Stage 5	2360	Pit Run	Lift 2	Lot 1012	103		YES	
3/03/2023	KB23/0105	4	1080	395852.521	611964.711	Stage 5	2360	Pit Run	Lift 2	Lot 1012	99		YES	
27/02/2023	KB23/0099	5	1085	395814.413	612018.328	Stage 5	2360	Pit Run	Final Lift	Lot 965	98		YES	
27/02/2023	KB23/0099	6	1086	395824.691	612023.814	Stage 5	2360	Pit Run	Final Lift	Lot 965	98		YES	
18/08/2022	1815_001 (1341/22)	1	1107	395838.032	611966.995	Stage 5	1560	Sand	Lift 2 (Final	Lot 963	101		YES	
18/08/2022	1815_001 (1341/22)	2	1108	395845.199	611975.363	Stage 5	1560	Sand	Lift 2 (Final	Lot 965	99		YES	
12/05/2021	1713_001 (0937/21)	5	1113	395780.845	611984.78	Stage 5	1640	Sand	Lift 1	Lot 959	99		YES	
12/05/2021	1713_001 (0937/21)	6	1114	395776.038	611966.751	Stage 5	1640	Sand	Lift 1	Lot 959	97		YES	
12/05/2021	1713_001 (0937/21)	7	1115	395832.586	612000.898	Stage 5	1640	Sand	Lift 1	Lot 964	100		YES	
12/05/2021	1713_001 (0937/21)	8	1116	395819.56	612005.497	Stage 5	1640	Sand	Lift 1	Lot 964	98		YES	
12/05/2021	1713_001 (0937/21)	11	1118	395835.622	612010.161	Stage 5	1640	Sand	Lift 1	Lot 965	97		YES	
12/05/2021	1713_001 (0937/21)	12	1120	395815.555	612022.767	Stage 5	1640	Sand	Lift 1	Lot 965	91	YES	NO	

Project Prestons South Subdivision
Project No. 235361
Date 29-Nov-19

Title Summary of Compaction

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Test Date	Test ID#	Test #	Unique ID#	mE	mN	Stage	MDD	Type	Lift #		Lot ID	Compaction (%)	Retest	Pass (Yes/No)	Comments
14/10/2020	1651-20	11	201	395726.153	812073.092	Stage 5	1600	Sand	Lift 1		Lot 971	99		YES	amended 27th June (MDD changed from 1660 to 1600)
14/10/2020	1651-20	12	202	395738.881	812097.548	Stage 5	1600	Sand	Lift 1		Lot 971	99		YES	amended 27th June (MDD changed from 1660 to 1600)
7/03/2022	K822/0097	1	398	395734.511	812060.715	Stage 5	2360	Pitrun	Lift 1		Lot 971	101		YES	Duplicate of Lift 1 in Lot 971 by two different companies (See 1651-20)
7/03/2022	K822/0097	2	399	395733.174	812071.028	Stage 5	2360	Pitrun	Lift 1		Lot 971	102		YES	Duplicate of Lift 1 in Lot 971 by two different companies (See 1651-20)
8/03/2022	K822/0101	1	396	395734.511	812060.715	Stage 5	2360	Pitrun	Lift 1		Lot 971	102		YES	
8/03/2022	K822/0101	2	397	395733.174	812071.028	Stage 5	2360	Pitrun	Lift 2		Lot 971	102		YES	
9/03/2022	K822/0105	1	442	395734.511	812060.715	Stage 5	2360	Pitrun	Lift 5		Lot 971	95		YES	
9/03/2022	K822/0103	2	443	395733.174	812071.028	Stage 5	2360	Pitrun	Lift 3		Lot 971	96		YES	
10/03/2022	K822/0107	1	432	395734.511	812060.715	Stage 5	2360	Pitrun	Lift 4		Lot 971	98		YES	
10/03/2022	K822/0107	2	433	395733.174	812071.028	Stage 5	2360	Pitrun	Lift 4		Lot 971	97		YES	
14/10/2020	1651-20	9	199	395708.873	812050.628	Stage 5	1600	Sand	Lift 1		Lot 972	100		YES	amended 27th June (MDD changed from 1660 to 1600)
14/10/2020	1651-20	10	200	395718.473	812070.98	Stage 5	1600	Sand	Lift 1		Lot 972	99		YES	amended 27th June (MDD changed from 1660 to 1600)
28/10/2020	1774-20	7	209	395713.343	812069.226	Stage 5	1600	Sand	Lift 2		Lot 972	99		YES	amended 27th June (MDD changed from 1660 to 1600) TWO LIFT 2?
28/10/2020	1774-20	8	210	395714.795	812054.787	Stage 5	1600	Sand	Lift 2		Lot 972	99		YES	amended 27th June (MDD changed from 1660 to 1600) TWO LIFT 2?
22/10/2020	1738-20	7	221	395710.835	812053.041	Stage 5	1600	Sand	Lift 2		Lot 972	100		YES	amended 27th June (MDD changed from 1660 to 1600) TWO LIFT 2?
22/10/2020	1738-20	8	222	395715.689	812070.01	Stage 5	1600	Sand	Lift 2		Lot 972	97	Yes	YES	amended 27th June (MDD changed from 1660 to 1600) TWO LIFT 2?
3/11/2020	1838-20	3	157	395714.818	812067.178	Stage 5	1600	Sand	Lift 3 (Final)		Lot 972	101		YES	amended 27th June (Lift no. provided)
3/11/2020	1838-20	4	158	395714.618	812057.182	Stage 5	1600	Sand	Lift 3 (Final)		Lot 972	105		YES	amended 27th June (Lift no. provided)
14/10/2020	1651-20	7	197	395690.442	812066.18	Stage 5	1600	Sand	Lift 1		Lot 973	100		YES	amended 27th June (MDD changed from 1660 to 1600)
14/10/2020	1651-20	8	198	395702.946	812049.572	Stage 5	1600	Sand	Lift 1		Lot 973	99		YES	amended 27th June (MDD changed from 1660 to 1600)
28/10/2020	1774-20	9	211	395697.769	812050.817	Stage 5	1600	Sand	Lift 2		Lot 973	94	No	NO	amended 27th June (MDD changed from 1660 to 1600)
28/10/2020	1774-20	10	212	395699.809	812065.048	Stage 5	1600	Sand	Lift 2		Lot 973	103		YES	amended 27th June (MDD changed from 1660 to 1600)
22/10/2020	1738-20	5	219	395694.63	812067.186	Stage 5	1600	Sand	Lift 2		Lot 973	99		YES	amended 27th June (MDD changed from 1660 to 1600)
22/10/2020	1738-20	6	220	395697.81	812049.821	Stage 5	1600	Sand	Lift 2		Lot 973	98	Yes	YES	amended 27th June (MDD changed from 1660 to 1600)
24/08/2022	K822/0330	3	853	395759.334	812021.576	Stage 5	2320	Pit Run	Lift 2	Lot 961		96		YES	Says lift 2 but no data for lift one on lot 961 and 948. Typo??
24/08/2022	K822/0330	4	854	395775.755	812023.368	Stage 5	2320	Pit Run	Lift 2	Lot 961		99		YES	Says lift 2 but no data for lift one on lot 961 and 948. Typo??
26/08/2022	K822/0333	1	855	395775.755	812023.368	Stage 5	2320	Pit Run	Lift 3	Lot 961		99		YES	Issue related to above note
26/08/2022	K822/0333	2	856	395759.334	812021.576	Stage 5	2320	Pit Run	Lift 3	Lot 961		100		YES	Issue related to above note
19/10/2020	K820/0381	1	191	395702.023	812017.279	Stage 5	2320	Pitrun	Lift 1		Lot 947	98		YES	
19/10/2020	K820/0381	2	192	395707.23	812000.866	Stage 5	2320	Pitrun	Lift 1		Lot 947	99		YES	
19/10/2020	K820/0384	1	227	395701.527	812017.844	Stage 5	2320	Pitrun	Lift 2		Lot 947	100		YES	
19/10/2020	K820/0385	2	228	395706.891	812000.553	Stage 5	2320	Pitrun	Lift 2		Lot 947	99		YES	
3/11/2020	1838-20	5	159	395694.333	812051.155	Stage 5	1600	Sand	Lift 3 (Final)		Lot 973	100		YES	amended 27th June (Lift no. provided)
3/11/2020	1838-20	6	160	395690.001	812067.357	Stage 5	1600	Sand	Lift 3 (Final)		Lot 973	101		YES	amended 27th June (Lift no. provided)
3/07/2022	K820/0203	1	761	395668.248	812048.167	Stage 5	2320	Pit run	Lift 1		Lot 974	103		YES	
3/07/2022	K820/0203	4	764	395668.643	812061.631	Stage 5	2320	Pit run	Lift 1		Lot 974	96		YES	
28/10/2020	1774-20	11	213	395673.816	812063.52	Stage 5	1600	Sand	Lift 2		Lot 974	98		YES	amended 27th June (MDD changed from 1660 to 1600)
28/10/2020	1774-20	12	214	395674.904	812045.881	Stage 5	1600	Sand	Lift 2		Lot 974	94	No	NO	amended 27th June (MDD changed from 1660 to 1600)
7/07/2020	K820/0209	1	147	395672.641	812045.921	Stage 5	2320	Pitrun	Lift 5		Lot 974	97		YES	There s 2 Lift 3 of Lots 974 & 975 (K820/0209 & 1838-20) but 1 is on west half)
7/07/2020	K820/0209	2	148	395669.245	812063.239	Stage 5	2320	Pitrun	Lift 5		Lot 974	98		YES	There s 2 Lift 3 of Lots 974 & 975 (K820/0209 & 1838-20) but 1 is on west half)
20/10/2020	K820/0385	1	231	395702.111	812017.001	Stage 5	2320	Pitrun	Lift 3 (Final)		Lot 947	101		YES	
20/10/2020	K820/0385	2	232	395707.333	812000.443	Stage 5	2320	Pitrun	Lift 3 (Final)		Lot 947	101		YES	
3/11/2020	1838-20	11	165	395675.331	812061.787	Stage 5	1600	Sand	Lift 3		Lot 974	97		YES	There s 2 Lift 3 of Lots 974 & 975 (K820/0209 & 1838-20) but 1 is on west half)
3/11/2020	1838-20	12	166	395676.802	812048.899	Stage 5	1600	Sand	Lift 3		Lot 974	100		YES	There s 2 Lift 3 of Lots 974 & 975 (K820/0209 & 1838-20) but 1 is on west half)
24/08/2022	K822/0330	1	851	395744.604	812007.145	Stage 5	2320	Pit Run	Lift 2	Lot 948		99		YES	Says lift 2 but no data for lift one on lot 961 and 948. Typo??
24/08/2022	K822/0330	2	852	395740.922	812028.941	Stage 5	2320	Pit Run	Lift 2	Lot 948		100		YES	Says lift 2 but no data for lift one on lot 961 and 948. Typo??
26/08/2022	K822/0333	3	857	395740.922	812028.941	Stage 5	2320	Pit Run	Lift 3	Lot 948		98		YES	Issue related to above note
26/08/2022	K822/0333	4	858	395744.604	812007.145	Stage 5	2320	Pit Run	Lift 3	Lot 948		98		YES	Issue related to above note
12/08/2022	K022/0312	5	783	395791.622	812077.216	Stage 5	2320	Pit run	Lift 1		Lot 968	98		YES	
12/08/2022	K022/0312	6	784	395805.356	812070.12	Stage 5	2320	Pit run	Lift 1		Lot 968	98		YES	
22/08/2022	K822/0324	5	839	395791.622	812077.216	Stage 5	2320	Pit Run	Lift 2		Lot 968	95		YES	
22/08/2022	K822/0324	6	840	395805.356	812070.12	Stage 5	2320	Pit Run	Lift 2		Lot 968	98		YES	
12/10/2022	K822/0429	3	1046	395817.491	812043.442	Stage 5	2320	Pit Run	Lift 2		Lot 966	99		YES	984 and 966 no record of other lifts to date. Lot 965 and 985 have had 3-4 other lifts (some half lots)
12/10/2022	K822/0429	4	1047	395804.232	812037.091	Stage 5	2320	Pit Run	Lift 2		Lot 966	97		YES	984 and 966 no record of other lifts to date. Lot 965 and 985 have had 3-4 other lifts (some half lots)
15/09/2022	K822/0384	3	927	395805.327	812078.774	Stage 5	2320	Pit Run	Lift 3 (Final)		Lot 968	99		YES	
15/09/2022	K822/0384	4	928	395791.689	812067.106	Stage 5	2320	Pit Run	Lift 3 (Final)		Lot 968	98		YES	
12/08/2022	K022/0312	3	781	395773.309	812058.331	Stage 5	2320	Pit run	Lift 1		Lot 969	98		YES	
12/08/2022	K022/0312	4	782	395778.803	812069.776	Stage 5	2320	Pit run	Lift 1		Lot 969	96		YES	
22/08/2022	K822/0324	3	837	395773.309	812058.331	Stage 5	2320	Pit Run	Lift 2		Lot 969	96		YES	
22/08/2022	K822/0324	4	838	395778.803	812069.776	Stage 5	2320	Pit Run	Lift 2		Lot 969	95		YES	
15/09/2022	K822/0384	5	929	395782.393	812065.084	Stage 5	2320	Pit Run	Lift 3 (Final)		Lot 969	98		YES	
15/09/2022	K822/0384	6	930	395771.851	812076.883	Stage 5	2320	Pit Run	Lift 3 (Final)		Lot 969	98		YES	
12/08/2022	K022/0312	1	779	395753.394	812074.583	Stage 5	2320	Pit run	Lift 1		Lot 970	97		YES	
12/08/2022	K022/0312	2	780	395761.52	812065.567	Stage 5	2320	Pit run	Lift 1		Lot 970	98		YES	
22/08/2022	K822/0324	1	835	395753.394	812074.583	Stage 5	2320	Pit Run	Lift 2		Lot 970	95		YES	
22/08/2022	K822/0324	2	836	395761.52	812065.567	Stage 5	2320	Pit Run	Lift 2		Lot 970	97		YES	
15/09/2022	K822/0384	7	931	395753.394	812074.583	Stage 5	2320	Pit Run	Lift 3 (Final)		Lot 970	98		YES	

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Test Date	Test ID#	Test #	Unique ID#	mE	mN	Stage	MDD	Type	Lift #	Lot ID	Compaction (%)	Retest	Pass (Yes/No)	Comments
18/09/2023	KB22/0884	8	932	395754.529	812061.775	Stage 5	2320	Pit Run	Lift 5 (Final)	Lot 970	98		YES	
27/02/2023	KB23/0089	1	1081	395795.849	812052.657	Stage 5	2360	Pit Run	Final Lift	Lot 967	96		YES	
27/02/2023	KB23/0089	2	1082	395809.988	812058.11	Stage 5	2360	Pit Run	Final Lift	Lot 967	98		YES	
27/02/2023	KB23/0089	3	1083	395819.025	812041.403	Stage 5	2360	Pit Run	Final Lift	Lot 966	96		YES	
27/02/2023	KB23/0089	4	1084	395807.096	812035.037	Stage 5	2360	Pit Run	Final Lift	Lot 966	97		YES	
18/09/2022	KB22/0322	3	1123	395817.925	812037.776	Stage 5	2320	Pitrun	Lift 1	Lot 966	96		YES	
18/09/2022	KB22/0322	4	1124	395805.755	812058.251	Stage 5	2320	Pitrun	Lift 1	Lot 966	99		YES	
18/09/2022	KB22/0322	5	1125	395796.679	812048.408	Stage 5	2320	Pitrun	Lift 1	Lot 967	99		YES	
18/09/2022	KB22/0322	6	1126	395807.596	812060.238	Stage 5	2320	Pitrun	Lift 1	Lot 967	98		YES	
17/09/2022	KB22/0315	1	1127	395735.276	812024.434	Stage 5	2320	Pitrun	Lift 1	Lot 948	98		YES	
17/09/2022	KB22/0315	2	1128	395748.305	812011.292	Stage 5	2320	Pitrun	Lift 1	Lot 948	106		YES	
17/09/2022	KB22/0315	3	1129	395755.953	812023.074	Stage 5	2320	Pitrun	Lift 1	Lot 961	102		YES	
17/09/2022	KB22/0315	4	1130	395771.984	812026.87	Stage 5	2320	Pitrun	Lift 1	Lot 961	100		YES	
27/03/2023		1	1131	395793.313	812048.596	Stage 5	2360	Pitrun	Lift 2	Lot 967	96		YES	
27/03/2023		2	1132	395812.228	812058.217	Stage 5	2360	Pitrun	Lift 2	Lot 967	96		YES	

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COORDINATES LINKED TO TAB

Test Date	Test ID#	Test #	Unique ID#	mE	mN	Stage	MDD	Type	Lift #	Lot ID	Compaction (%)	Retest	Pass (Yes/No)	Comments
4/07/2022	1946_001 (1096/22)	9	702	395769.644	811854.413	Stage 5	1560	Sand	Lift 1 - final	Lot 940	103		YES	
4/07/2022	1946_001 (1096/22)	10	703	395776.46	811839.469	Stage 5	1560	Sand	Lift 1 - final	Lot 940	106		YES	
5/08/2022	2751_001 (1280/22)	5	769	395757.447	811881.052	Stage 5	1640	Sand	Lift 1 (Final)	Lot 941	107		YES	
5/08/2022	2751_001 (1280/22)	6	770	395748.986	811892.881	Stage 5	1640	Sand	Lift 1 (Final)	Lot 941	107		YES	
20/07/2022	2039_001 (1209/22)	7	799	395743.495	811914.879	Stage 5	1640	Sand	Lift 1	Lot 942	101		YES	
20/07/2022	2039_001 (1209/22)	8	800	395748.233	811902.901	Stage 5	1640	Sand	Lift 1	Lot 942	104		YES	
20/05/2021	0242_001 (0991/21)	11	358	395749.908	811978.851	Stage 5	1640	Sand (weste	Lift 2	Lot 950	95		YES	
20/05/2021	0242_001 (0991/21)	12	359	395768.109	811973.817	Stage 5	1640	Sand (weste	Lift 2	Lot 950	97		YES	
5/08/2022	2751_001 (1280/22)	7	771	395748.233	811902.901	Stage 5	1640	Sand	Lift 2 (Final)	Lot 942	105		YES	
5/08/2022	2751_001 (1280/22)	8	772	395743.495	811914.879	Stage 5	1640	Sand	Lift 2 (Final)	Lot 942	107		YES	
27/10/2020	KB20/0394	3	237	395736.77	811949.649	Stage 5	2320	Pitrun	Lift 1	Lot 943	97		YES	
27/10/2020	KB20/0394	4	238	395725.156	811942.011	Stage 5	2320	Pitrun	Lift 1	Lot 943	96		YES	
29/10/2020	KB20/0395	3	243	395736.423	811950.134	Stage 5	2320	Pitrun	Lift 2 (Final)	Lot 943	99		YES	
29/10/2020	KB20/0395	4	244	395724.827	811942.383	Stage 5	2320	Pitrun	Lift 2 (Final)	Lot 943	100		YES	
27/10/2020	KB20/0394	2	236	395727.317	811968.676	Stage 5	2320	Pitrun	Lift 1	Lot 944	99		YES	
27/10/2020	KB20/0394	5	239	395716.193	811963.093	Stage 5	2320	Pitrun	Lift 1	Lot 944	98		YES	
29/10/2020	KB20/0395	2	242	395727.732	811968.061	Stage 5	2320	Pitrun	Lift 2 (Final)	Lot 944	100		YES	
29/10/2020	KB20/0395	5	245	395715.897	811963.561	Stage 5	2320	Pitrun	Lift 2 (Final)	Lot 944	99		YES	
27/10/2020	KB20/0394	1	235	395718.645	811989.204	Stage 5	2320	Pitrun	Lift 1	Lot 945	96		YES	
27/10/2020	KB20/0394	6	240	395707.995	811984.042	Stage 5	2320	Pitrun	Lift 1	Lot 945	100		YES	
29/10/2020	KB20/0395	1	241	395718.903	811988.349	Stage 5	2320	Pitrun	Lift 2 (Final)	Lot 945	98		YES	
29/10/2020	KB20/0395	6	246	395707.523	811984.53	Stage 5	2320	Pitrun	Lift 2 (Final)	Lot 945	100		YES	
15/10/2020	KB20/0381	3	153	395710.739	811990.113	Stage 5	2320	Pitrun	Lift 1	Lot 946	98		YES	
15/10/2020	KB20/0381	4	154	395716.172	811981.171	Stage 5	2320	Pitrun	Lift 1	Lot 946	97		YES	
19/10/2020	KB20/0384	3	229	395711.362	811990.336	Stage 5	2320	Pitrun	Lift 2	Lot 946	98		YES	
19/10/2020	KB20/0384	4	230	395716.841	811981.006	Stage 5	2320	Pitrun	Lift 2	Lot 946	100		YES	
20/10/2020	KB20/0385	3	233	395711.33	811990.828	Stage 5	2320	Pitrun	Lift 3 (Final)	Lot 946	100		YES	
20/10/2020	KB20/0385	4	234	395716.629	811981.498	Stage 5	2320	Pitrun	Lift 3 (Final)	Lot 946	104		YES	
2/08/2022	KB22/0296	1	787	395761.835	811957.61	Stage 5	2320	Pit run	Final Lift	Lot 951	98		YES	
2/08/2022	KB22/0296	2	788	395773.641	811962.453	Stage 5	2320	Pit run	Final Lift	Lot 951	96		YES	
20/07/2022	039_001 (1209/22)	5	797	395761.835	811957.61	Stage 5	1640	Sand	Lift 1	Lot 951	118		YES	
20/07/2022	039_001 (1209/22)	6	798	395773.641	811962.453	Stage 5	1640	Sand	Lift 1	Lot 951	105		YES	
2/08/2022	KB22/0296	3	789	395779.393	811943.23	Stage 5	2320	Pit run	Final Lift	Lot 952	98		YES	
2/08/2022	KB22/0296	4	790	395768.192	811938.992	Stage 5	2320	Pit run	Final Lift	Lot 952	96		YES	
20/07/2022	039_001 (1209/22)	3	795	395779.393	811943.23	Stage 5	1640	Sand	Lift 1	Lot 952	108		YES	
20/07/2022	039_001 (1209/22)	4	796	395768.192	811938.992	Stage 5	1640	Sand	Lift 1	Lot 952	106		YES	
2/08/2022	KB22/0296	5	791	395774.701	811922.796	Stage 5	2320	Pit run	Final Lift	Lot 953	96		YES	
2/08/2022	KB22/0296	6	792	395787.567	811928.699	Stage 5	2320	Pit run	Final Lift	Lot 953	96		YES	
20/07/2022	039_001 (1209/22)	1	793	395774.701	811922.796	Stage 5	1640	Sand	Lift 1	Lot 953	103		YES	
20/07/2022	039_001 (1209/22)	2	794	395787.567	811928.699	Stage 5	1640	Sand	Lift 1	Lot 953	105		YES	
5/08/2022	2751_001 (1280/22)	1	765	395793.248	811914.615	Stage 5	1640	Sand	Lift 1 (Final)	Lot 954	103		YES	
5/08/2022	2751_001 (1280/22)	2	766	395787.983	811896.32	Stage 5	1640	Sand	Lift 1 (Final)	Lot 954	104		YES	
24/08/2022	KB22/0329	7	849	395762.494	811991.437	Stage 5	2320	Pit Run	Final lift	Lot 949	97		YES	
24/08/2022	KB22/0329	8	850	395744.584	811995.019	Stage 5	2320	Pit Run	Final lift	Lot 949	98		YES	
24/08/2022	KB22/0329	5	847	395768.109	811973.817	Stage 5	2320	Pit Run	Final lift	Lot 950	96		YES	
24/08/2022	KB22/0329	6	848	395749.908	811978.851	Stage 5	2320	Pit Run	Final lift	Lot 950	100		YES	
3/06/2021	0248_001 (1102/21)	1	362	395762.494	811991.437	Stage 5	1640	Sand (weste	Lift 1	Lot 949	97		YES	
3/06/2021	0248_001 (1102/21)	2	363	395744.584	811995.019	Stage 5	1640	Sand (weste	Lift 1	Lot 949	102		YES	
20/05/2021	0242_001 (0991/21)	9	356	395762.494	811991.437	Stage 5	1640	Sand (weste	Lift 2	Lot 949	95		YES	
20/05/2021	0242_001 (0991/21)	10	357	395744.584	811995.019	Stage 5	1640	Sand (weste	Lift 2	Lot 949	96		YES	
4/07/2022	1946_001 (1096/22)	3	696	395822.65	811864.483	Stage 5	1560	Sand	Lift 1 - final	Lot 937	102		YES	
4/07/2022	1946_001 (1096/22)	4	697	395815.753	811879.099	Stage 5	1560	Sand	Lift 1 - final	Lot 937	103		YES	
4/07/2022	1946_001 (1096/22)	5	698	395800.234	811870.313	Stage 5	1560	Sand	Lift 1 - final	Lot 938	103		YES	
4/07/2022	1946_001 (1096/22)	6	699	395808.938	811857.175	Stage 5	1560	Sand	Lift 1 - final	Lot 938	103		YES	
4/07/2022	1946_001 (1096/22)	7	700	395792.799	811847.27	Stage 5	1560	Sand	Lift 1 - final	Lot 939	102		YES	
4/07/2022	1946_001 (1096/22)	8	701	395784.671	811862.378	Stage 5	1560	Sand	Lift 1 - final	Lot 939	103		YES	

Project Prestons South Subdivision
Project No. 235361
Date 29-Nov-19

Title Summary of Compaction

COORDINATES LINKED TO TAB

Test Date	Test ID#	Test #	Unique ID#	mE	mN	Stage	MDD	Type	Lift #	Lot ID	Compaction (%)	Retest	Pass (Yes/No)	Comments
1/07/2022	KB22/0258	4	719	395910.009	811909.121	Stage 5	2320	Pit run	Lift 4	Embankment Lot 1011	101		YES	
30/06/2022	KB22/0251	4	643	395910.009	811909.121	Stage 5	2320	Pitrun	Lift 1	Gravel Embankment - Lot 1011	100		YES	
30/06/2022	KB22/0252	4	647	395910.009	811909.121	Stage 5	2320	Pitrun	Lift 2	Gravel Embankment - Lot 1011	100		YES	
30/06/2022	KB22/0253	4	651	395910.009	811909.121	Stage 5	2320	Pitrun	Lift 3	Gravel Embankment - Lot 1011	100		YES	

Appendix D
Gravel Embankment Design and As-Builts

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CLIENT: CDL LAND NEW ZEALAND LIMITED

REV	DATE	REVISION DETAILS	APPROVED
A	20/10/22	AS BUILT ISSUE	

DRAWN	DESIGNED
A. COLUMBUS	M. CROWE

CHECKED

APPROVED

DATE

PROJECT: PRESTONS PARK

TITLE: STAGE 5 GRAVEL EMBANKMENT AS BUILT PLAN

AS BUILT

PROJECT No. 235361

SCALE 1:1000(m)

SIZE A1

DRAWING No. LD-PS-S5-EW-12

REV A

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CLIENT: CDL LAND NEW ZEALAND LIMITED

REV	DATE	REVISION DETAILS	APPROVED
A	20/10/22	AS BUILT ISSUE	

DRAWN	DESIGNED
A. COLUMBUS	M. CROWE

CHECKED

APPROVED

DATE

PROJECT: PRESTONS PARK

TITLE: STAGE 5 GRAVEL EMBANKMENT AS BUILT CROSS SECTION SHEET 1 OF 2

AS BUILT

PROJECT No: 235361

SCALE: 1:200(m) | SIZE: A1

DRAWING No: LD-PS-S5-EW-13 | REV: A

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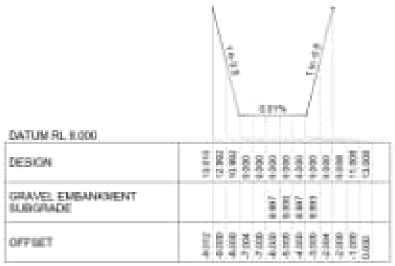
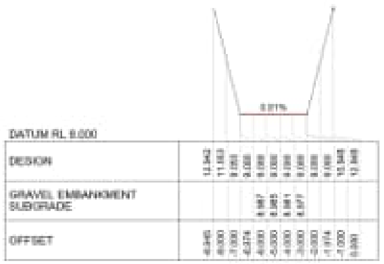


CHAINAGE 360



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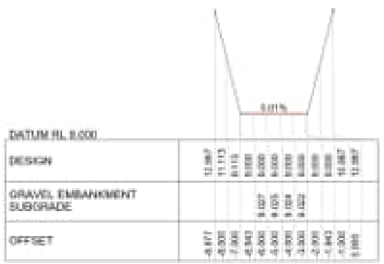

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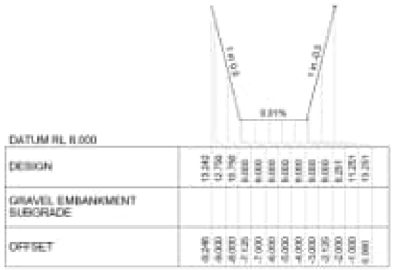

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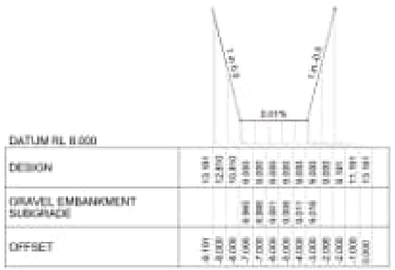

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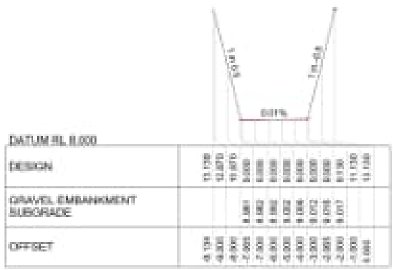

CHAINAGE 400

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CLIENT
CDL LAND
NEW ZEALAND LIMITED

REV	DATE	REVISION DETAILS	APPROVED
A	20/10/22	AS BUILT ISSUE	

DRAWN	DESIGNED
A. COLUMBUS	M. CROWE

CHECKED

APPROVED

DATE

PROJECT
PRESTONS PARK

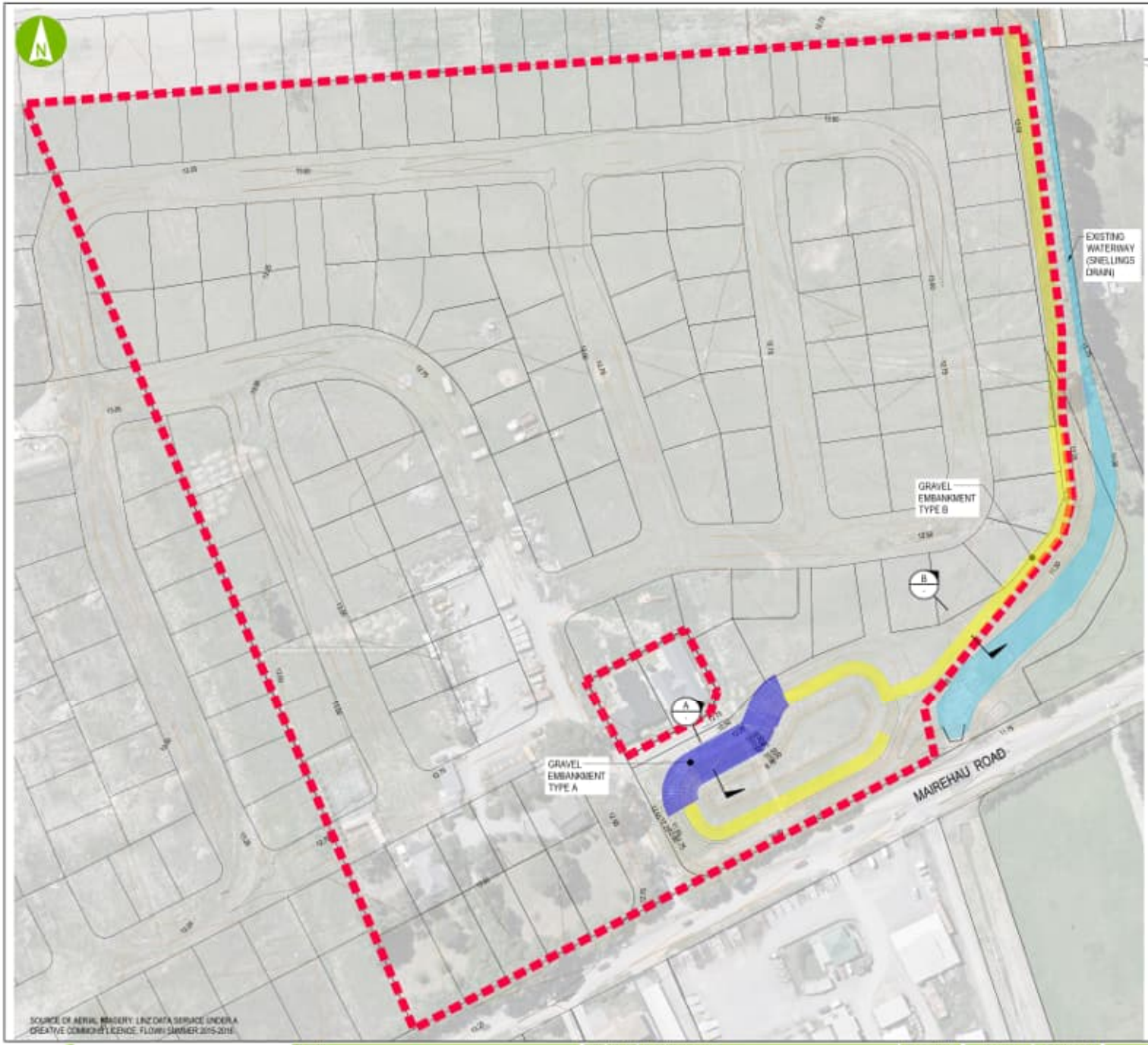
TITLE
STAGE 5 GRAVEL EMBANKMENT
AS BUILT CROSS SECTION
SHEET 2 OF 2

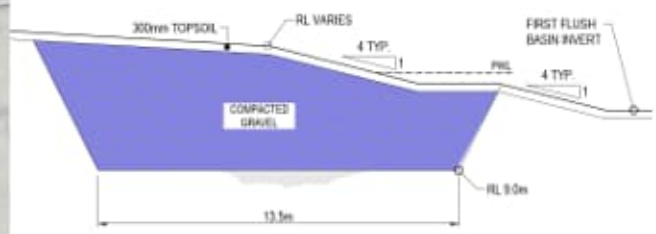
TENDER

PROJECT No.
235361

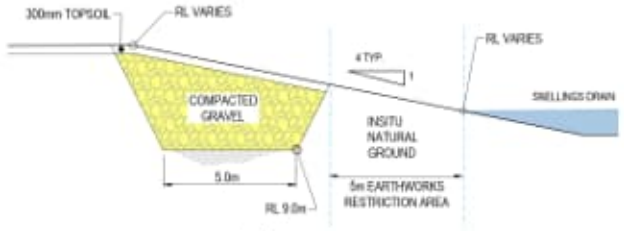
SCALE	SIZE
1:200(m)	A1

DRAWING No.	REV
LD-PS-S5-EW-14	A





SECTION A : EMBANKMENT TYPE A
1:100



SECTION B : EMBANKMENT TYPE B
1:100

NOTES

1. NO EARTHWORKS OR WORKS ASSOCIATED WITH EARTHWORKS ARE TO BE UNDERTAKEN IN CCC LAND OR WITHIN 5m OF SNELLINGS DRAIN.
2. COMPACTED EMBANKMENT GRAVEL TO BE CCC APPROVED AP65 OR PIT RUN. COMPACTION TO BE COMPLETED TO 98% OF THE MAXIMUM DRY DENSITY IN ACCORDANCE WITH NZS4402 TEST 4.1.3.
3. CUT SUBGRADE TO BE INSPECTED BY SUITABLY QUALIFIED GEOTECHNICAL ENGINEER.
4. ALL EXCAVATIONS TO BE CARRIED OUT IN ACCORDANCE WITH WORKSAFE AND CCC SAFE TRENCHING GUIDELINES.
5. INTERNAL BOUNDARIES ARE INDICATIVE ONLY AND ARE SUBJECT TO CHANGE. BOUNDARIES TO BE CONFIRMED AT TIME OF SUBDIVISION CONSENT.
6. FINAL TOPOGRAPHY OF THE DRAIN AND BASIN VARIES SIGNIFICANTLY ACROSS THE SITE. REFER TO CIVIL DESIGN MODEL FOR FINAL EARTHWORKS FINISHED LEVELS. THIS DRAWING IS TO BE USED FOR DIMENSIONS OF GRAVEL EMBANKMENT ONLY.

SCALE 1:100 SCALE 1:750

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CLIENT: CDL LAND NEW ZEALAND LIMITED

REV	DATE	REVISION DETAILS	APPROVED
1	06/09/19	ISSUE FOR CONSTRUCTION	K ASHBY
0	27/08/19	ISSUE FOR CONSTRUCTION	K ASHBY

DRAWN	DESIGNED
J W-K	K FOOTE
CHECKED	
R DAVIES	
APPROVED	
K ASHBY	DATE 2/09/19
K ASHBY	

PROJECT: PRESTONS PARK

TITLE: STAGE 5 EARTHWORKS GRAVEL EMBANKMENT DETAILS

CONSTRUCTION

PROJECT No.	
235361	
SCALE	SIZE
1:750	A1
DRAWING No.	REV
PS-S5-EW-05	1

Document prepared by

Aurecon New Zealand Limited
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93 Cambridge Terrace
Christchurch 8013
New Zealand

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aurecon

Bringing ideas to life

Aurecon offices are located in:
Angola, Australia, Botswana, China, Ghana, Hong Kong, Indonesia, Kenya, Lesotho, Macau, Mozambique, Namibia, New Zealand, Nigeria, Philippines, Qatar, Singapore, South Africa, Swaziland, Tanzania, Thailand, Uganda, United Arab Emirates, Vietnam

Statement of Professional Opinion on the Suitability of Land for Building Construction

ISSUED BY:	Aurecon New Zealand Limited
TO:	CDL Land New Zealand Limited
TO BE SUPPLIED TO:	Christchurch City Council
IN RESPECT OF:	Prestons Park Subdivision Stage H1, G1 and G2
AT:	Prestons Road, Christchurch

I, Ian McPherson, on behalf of Aurecon New Zealand Limited hereby confirm that:

1. I am a suitably qualified and experienced Geotechnical Engineer and my firm was retained by the developer to provide geotechnical engineering services on the above development.

2. The extent of my inspections, and the results of all tests carried out are as described in the geotechnical report *'Prestons Park Subdivision – Stage H1 G1 and G2 Geotechnical Completion Report Rev 0'* dated 28 April 2023.

3. In my professional opinion, not to be construed as a guarantee and based only on the extent of our inspections and tests in accordance with our scope of services, I consider that:

> (a) The completed works give due regard to land slope and foundation stability considerations.
>
> (b) The original ground not affected by filling and the filled ground are suitable for the construction of a development/subdivision and are not subject to erosion, subsidence or slippage in accordance with the provisions of Section 106 of the Resource Management Act 1991 provided that the recommendations made in the Aurecon Report '*Prestons Park Subdivision – Stage H1 G1 and G2 Geotechnical Completion Report Rev 0'* dated 28 April 2023 are followed.

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

5. This certificate shall be read in conjunction with my/the geotechnical report referred to in Clause 2 above, and shall not be copied or reproduced except in conjunction with the full geotechnical completion report.

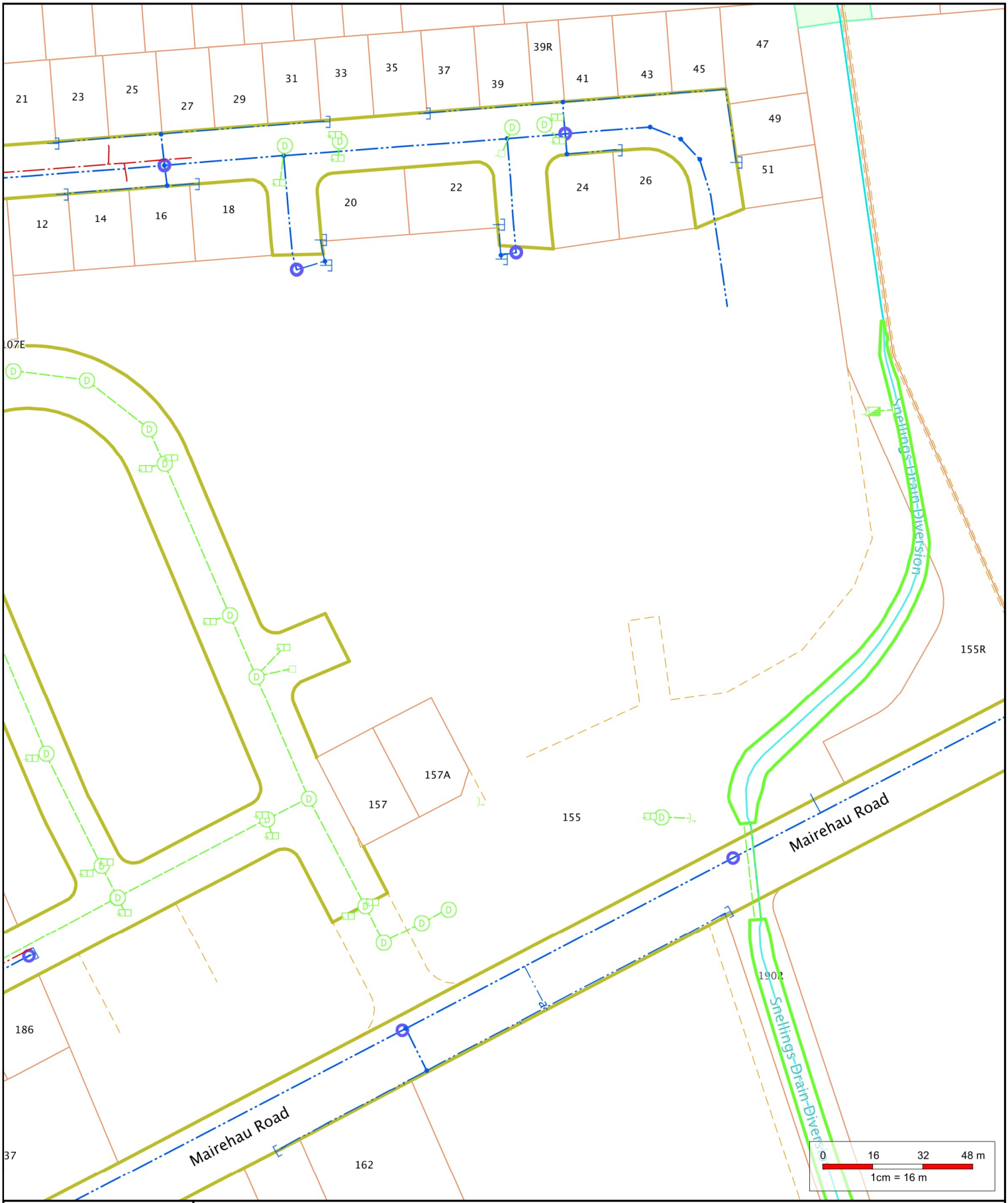
6. Liability under this statement accrues to the geotechnical firm only and no liability shall accrue to the individual completing this statement.

7. The geotechnical engineering firm issuing this statement holds a current policy of professional indemnity insurance of no less than $250,000. (Minimum amount of insurance shall be commensurate with the current amounts recommended by ENZ, ACENZ, TNZ, INGENIUM.)

28 April 2023

(Signature of Engineer) (Date)

Qualifications and experience:
BE, DBS, M.A.Sc, CPEng



1 : 1,600 on A4

31/10/2023 7:52:54 AM

Christchurch City Council

ph: 941-8300 fax: 941-8385

Accuracy not guaranteed. Onsite verification required. Display of data scale dependent, full detail available at 1:500.

Private Drainage

Standard Infrastructure
- Bio Gas
- Condensate Trap
- End Cap
- Inlet
- Outlet
- Valve
- Main
- Cable

Water Intake/Supply
- Connector
- Bellows
- Connector
- Hydrant

Water Intake/Supply
- Inlet
- Meter
- Outlet
- Pump
- Restrictor
- Valve
- Air Release
- Butterfly
- Flow restriction
- Gate
- Pressure Activated
- Sluice
- Valve
- Reservoir
- Structure
- Lateral
- Main
- Sub Main

Wastewater
- End Cap
- Valve
- Air Gap Separator
- Vent
- Eye
- Eye (Vertical)
- Outfall
- Pump
- Junction
- Access
- Flush Manhole
- Inspection Point
- Standard Manhole
- Trap
- Vented Manhole
- Lateral
- Main
- Pressure Main

Wastewater
- Lateral Fitting

Local Pressure
- Control Panel
- Boundary Kit
- Tank System
- Site
- Vacuum Chamber
- Vacuum Breather

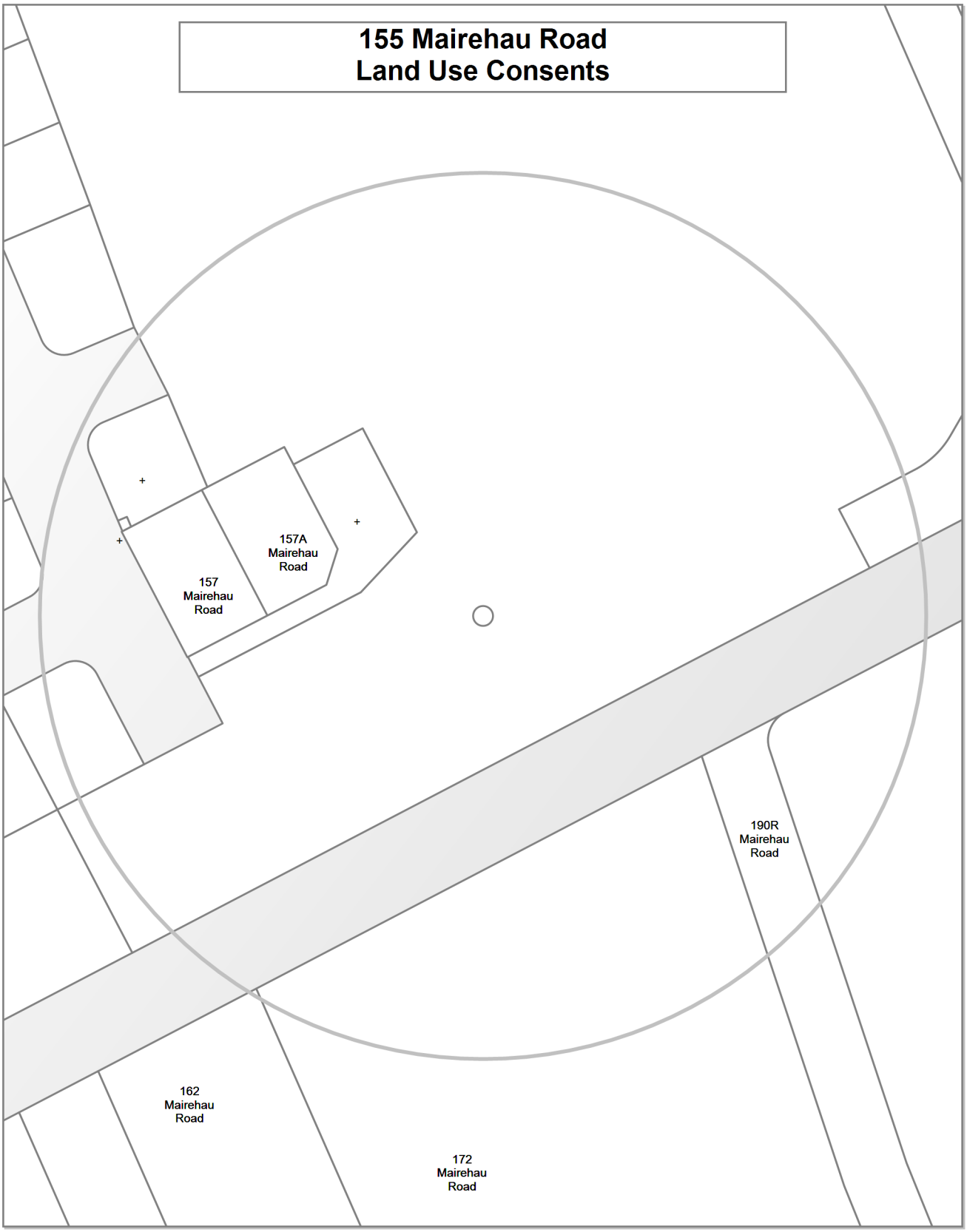
Stormwater
- Bend
- Change
- Eye
- Flow Restriction
- Inlet
- Dome Sump
- Double Sump
- Gross Debris Trap

Stormwater
- Inlet
- Inlet Headwall
- Pipe End
- Silt Trap
- Single Sump
- Soak Pit
- Triple Sump
- Junction
- Standard Manhole
- Outlet
- Pump
- Structure
- Basin
- Lateral
- Main
- Lateral Fitting
- Double Sump

Stormwater
- Lateral Fitting
- Single Sump
- Soak Pit
- Inspection point
- Manhole

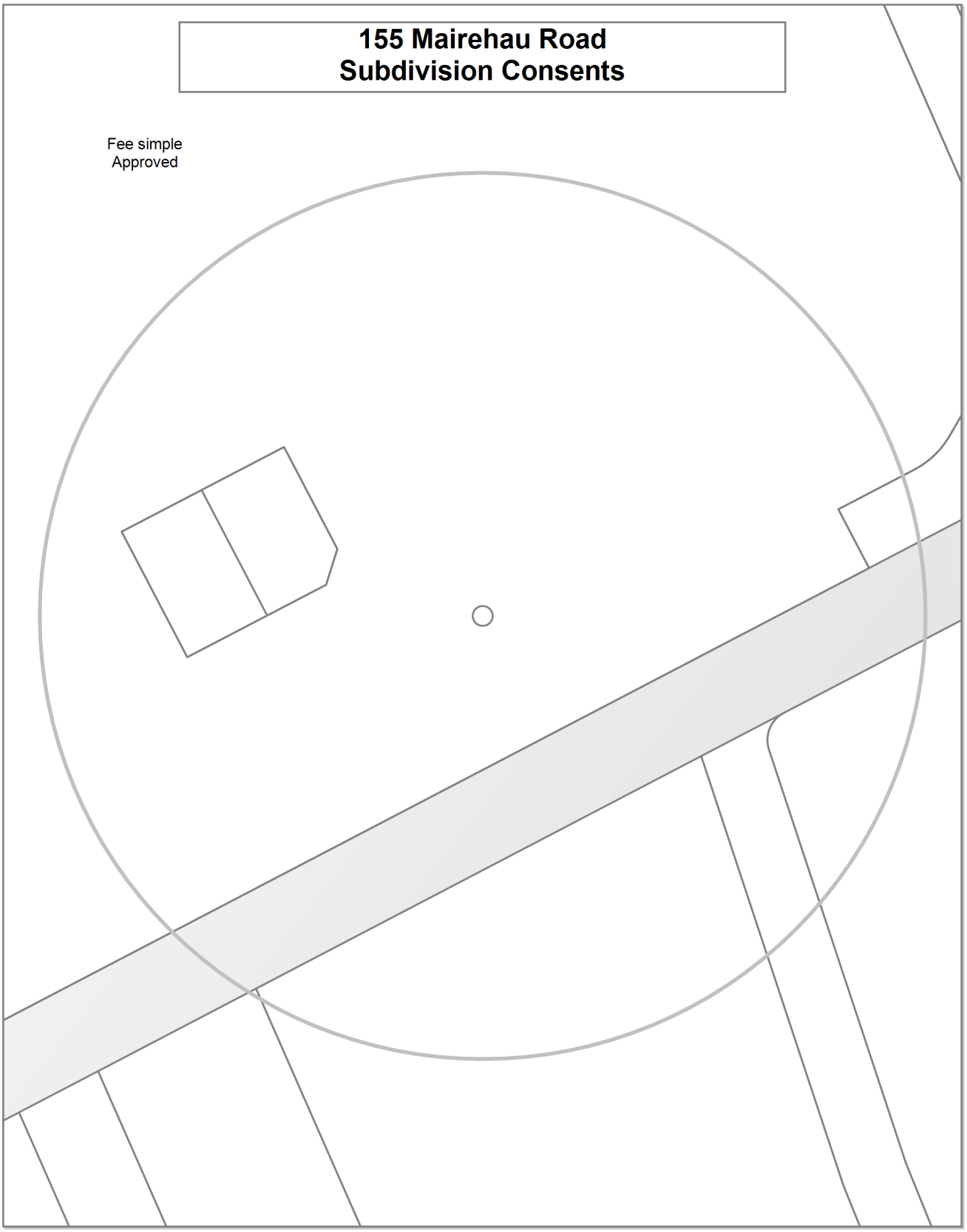
All services
- Pipe Protection
- *a* Abandoned
- *p* Proposed
- *os* Out of service

Landbase
- Easement


155 Mairehau Road
Land Use Consents
157A
Mairehau
Road
157
Mairehau
Road
190R
Mairehau
Road
162
Mairehau
Road
172
Mairehau
Road

155 Mairehau Road
Subdivision Consents

Fee simple
Approved



Land Use Resource Consents within 100 metres of 155 Mairehau Road

Note:This list does not include subdivision Consents and Certificates of Compliance issued under the Resource Management Act.

155R Mairehau Road

RMA/2020/170

Earthworks within setback from Snellings Drain associated with the installation of new stormwater outfall pipes, culvert and removal of existing bridge

Cancelled

Applied 30/01/2020

Cancelled - fee not paid 04/03/2020

RMA/2021/1436

Earthworks within 5m setback of a network waterway associated with the naturalisation of Snellings Drain

Processing complete

Applied 19/05/2021

Decision issued 25/06/2021

Granted 25/06/2021

157 Mairehau Road

RMA/2007/1246

Overseas Investment Certificate - Historical Reference RMA92008503

Processing complete

Applied 28/05/2007

Decision issued 29/05/2007

Granted 29/05/2007

RMA/2009/364

No Desc - Historical Reference RMA92013781

Processing complete

Applied 23/03/2009

Decision issued 23/03/2009

Granted 23/03/2009

RMA/2014/907
Two Dwellings - Historical Reference RMA92025543
Processing complete
Applied 16/04/2014
Decision issued 14/10/2014
Granted 14/10/2014

RMA/2015/794
Dwelling with attached garage - Lot 38 - Historical Reference RMA92029030
Processing complete
Applied 24/03/2015
Decision issued 30/04/2015
Granted 30/04/2015

RMA/2015/924
Earthworks - Historical Reference RMA92029162
Processing complete
Applied 07/04/2015
Decision issued 04/05/2015
Granted 01/05/2015

RMA/2015/93
Dwelling with attached garage - Historical Reference RMA92028251
Processing complete
Applied 14/01/2015
Decision issued 23/01/2015
Granted 22/01/2015

157A Mairehau Road

RMA/2007/1246
Overseas Investment Certificate - Historical Reference RMA92008503
Processing complete
Applied 28/05/2007
Decision issued 29/05/2007
Granted 29/05/2007

RMA/2009/364
No Desc - Historical Reference RMA92013781
Processing complete
Applied 23/03/2009
Decision issued 23/03/2009
Granted 23/03/2009

RMA/2014/907
Two Dwellings - Historical Reference RMA92025543
Processing complete
Applied 16/04/2014
Decision issued 14/10/2014
Granted 14/10/2014

RMA/2015/794
Dwelling with attached garage - Lot 38 - Historical Reference RMA92029030
Processing complete
Applied 24/03/2015
Decision issued 30/04/2015
Granted 30/04/2015

RMA/2015/924
Earthworks - Historical Reference RMA92029162
Processing complete
Applied 07/04/2015
Decision issued 04/05/2015
Granted 01/05/2015

RMA/2015/93
Dwelling with attached garage - Historical Reference RMA92028251
Processing complete
Applied 14/01/2015
Decision issued 23/01/2015
Granted 22/01/2015

162 Mairehau Road

RMA/1977/82

To extend an accessory building to 4.5m High in lieu of 3.6m - Historical Reference RES9204934

Processing complete

Applied 29/09/1977

Decision issued 08/12/1977

Granted 08/12/1977

RMA/1983/193

To extend glasshouse to 6m from road boundary (7.5m) - Historical Reference RES9204937

Processing complete

Applied 11/04/1983

Decision issued 03/05/1983

Granted 03/05/1983

RMA/1997/1747

To establish a road maintenance business on a site zoned rural G in the Transitional Plan and rural 3 in the Proposed Plan. non-complying under both plans. under the Proposed City Plan the buildings and impervious surfaces exceed maximum site - Historical Reference RES971958

Processing complete

Applied 22/07/1997

Decision issued 04/11/1997

Granted 04/11/1997

172 Mairehau Road

RMA/1979/123

To operate a roadside stall from an existing building 18m from the road boundary - Historical Reference RES9204938

Processing complete

Applied 20/08/1979

Decision issued 12/11/1979

Granted 12/11/1979

RMA/2005/2415

RIGHT OF WAY - Historical Reference RMA20021301

Lapsed

Applied 19/10/2005

Decision issued 08/11/2005

Granted 08/11/2005

RMA/2013/2813
RIGHT OF WAY council charge code - 304/3627 - Historical Reference RMA92024549
Processing complete
Applied 20/12/2013
Decision issued 25/01/2014
Granted 25/01/2014

RMA/2014/2639
Earthworks - Temporary Soil Stockpile - Historical Reference RMA92027329
Processing complete
Applied 08/10/2014
Decision issued 19/11/2014
Granted 18/11/2014

RMA/2015/560
Earthworks - Historical Reference RMA92028781
Processing complete
Applied 04/03/2015
Decision issued 21/04/2015
Granted 21/04/2015

190R Mairehau Road

RMA/2014/2639
Earthworks - Temporary Soil Stockpile - Historical Reference RMA92027329
Processing complete
Applied 08/10/2014
Decision issued 19/11/2014
Granted 18/11/2014

RMA/2015/924
Earthworks - Historical Reference RMA92029162
Processing complete
Applied 07/04/2015
Decision issued 04/05/2015
Granted 01/05/2015

194 Mairehau Road

RMA/2016/497

Earthworks - Historical Reference RMA92032576

Processing complete

Applied 01/03/2016

Decision issued 27/05/2016

Granted 27/05/2016

Data Quality Statement

Land Use Consents

All resource consents are shown for sites that have been labelled with an address. For sites that have been labelled with a cross (+) no resource consents have been found. Sites that have no label have not been checked for resource consents. This will be particularly noticeable on the margins of the search radius. If there are such sites and you would like them included in the check, please ask for the LIM spatial query to be rerun accordingly. This will be done free of charge although there may be a short delay. Resource consents which are on land occupied by roads, railways or rivers are not, and currently cannot be displayed, either on the map or in the list. Resource consents that relate to land that has since been subdivided, will be shown in the list, but not on the map. They will be under the address of the land as it was at the time the resource consent was applied for. Resource consents that are listed as Non-notified and are current, may in fact be notified resource consents that have not yet been through the notification process. If in doubt. Please phone (03)941 8999.

The term “resource consents” in this context means land use consents. Subdivision consents and certificates of compliance are excluded.

Subdivision Consents

All subdivision consents are shown for the sites that have been labelled with consent details. For Sites that have been labelled with a cross (+) no records have been found. Sites that have no label have not been checked for subdivision consents. This will be particularly noticeable on the margins of the search radius. If there are such sites and you would like them included in the check, please ask for the LIM spatial query to be rerun accordingly. This will be done free of charge although there may be a short delay.

The term “subdivision consents” in this context means a resource consent application to subdivide land. Non subdivision land use resource consents and certificates of compliance are excluded.

This report will only record those subdivision applications which have not been completed i.e once a subdivision has been given effect to and the new lots/properties have been established the application which created those lots will not be shown

All subdivision consent information is contained on the map and no separate list is supplied