Fraser Thomas
ENGINEERS • RESOURCE MANAGERS • SURVEYORS

22 February 2021 CH00676

Selwyn District Council
PO Box 90
Rolleston

Attention: Ms Jocelyn Lewes

Dear Madam,

PC200076: PRIVATE PLAN CHANGE REQUEST FROM DUNWEAVIN 2020 LTD- RESPONSE TO REQUEST FOR FURTHER INFORMATION

This letter has been prepared in response to a letter, sent by Selwyn District Council (SDC), dated 11 February 2021, requesting further information relating to a submission on the Proposed Selwyn District Plan, and a private plan change request to the Operative Selwyn District Plan, seeking rezoning of some East Maddisons Road properties from "General Rural" to "General Residential".

Fraser Thomas previously prepared a Geotechnical Investigation Report, dated 10 December 2020, for the subject site, in support of a submission on the Proposed Selwyn District Plan, for a private plan change.

The SDC letter has requested further clarification on two geotechnical matters, identified as Items 28 and 29. This letter addresses those items.

Item 28- Various matters

Item 28 of the SDC letter, requests:

> **"It is requested that, in order to provide a better basis for accepting the geotechnical suitability of the site for the purposes of the plan change, the following is required:**
> - **provide data of the well logs (the well reference number and location relative to the site) used to verify the shallow gravel found in the site is continuous for many metres.**
> - **confirmation that the equivalent Foundation Technical Category is TC1**
> - **An outline of whether any hazards identified in s106 of the RMA are present or not and, if they are, how they may be mitigated."**

FRASER THOMAS LIMITED
P.O. BOX 39 154,
HAREWOOD POST CENTRE,
CHRISTCHURCH 8545, NEW ZEALAND
PHONE: +64 3 358 5936
FAX: +64 3 358 5936
www.fraserthomas.co.nz

Sub-Item (a)- water bore logs

The logs of existing water bore logs, put down in the vicinity of the subject site, sourced from Environment Canterbury (ECan) records, used for the FTL geotechnical report, dated 10 December 2020 are identified as follows:

- M36/0038
- M36/4291
- M36/5041
- M36/5042
- M36/5268

The logs of the relevant existing water bore logs are appended to this letter.

The approximate inferred location and extent of the relevant water bores are shown on the appended Fraser Thomas Ltd drawing G00676-02.

Sub-Item (b)- TC1 confirmation

Section 8.3 of the December 2020 geotechnical report, states the following:

> *"...given the nature and consistency of the sediments underlying the subject site, i.e. unsaturated very dense sandy gravels, it is our opinion that the upper soils underlying the site are unlikely to be susceptible to liquefaction in response to a future large earthquake event and that the risk of any significant liquefaction induced ground deformation occurring at the site, in response to a large earthquake event, is considered to be low."*

The December 2020 report goes on to state the following:

> *"It is our opinion that an appropriate foundation solution for the site conditions would be a shallow foundation system designed in accordance with the requirements of NZS 3604: 2011 (as modified by B1/AS1), and in accordance with the recommendations presented in this report."*

Based on the foregoing, it is our opinion that the subject site, for the purposes of the submission on the Selwyn District Plan Review and the private plan change request, should be assumed to be within Foundation Technical Category 1 (TC1), as defined by the MBIE guidance document, and that it is unlikely that liquefaction induced ground deformation could occur within the area in response to a large earthquake event, and that the ground settlements within the area in response to seismic loading should be considered to be "within normally accepted tolerances" as defined by the MBIE December 2012 guidance document.

Sub-Item (c)- RMA Section106

It should be noted that the Fraser Thomas Ltd report, dated 10 December 2020, has been prepared in support of a submission on the Proposed Selwyn District Plan, for a private plan change, and has not been prepared in support of an application for subdivision consent.

It is our opinion that the "opinion statement" as to the suitability of the subject site for future residential development, is well summarised in Section 14.1(a) of our report, which states:

> *"In general terms and within the limits of the investigation as outlined and reported herein, no unusual problems, from a geotechnical perspective, are anticipated with residential development at the subject site.*
>
> *The site is, in general, considered suitable for its intended use, with satisfactory conditions for future residential building development, subject to the recommendations and qualifications reported herein, and provided the design and inspection of foundations are carried out as would be done under normal circumstances in accordance with the requirements of the relevant New Zealand Standard Codes of Practice."*

Nevertheless, in order to satisfy the peer reviewer's request, we confirm that the Fraser Thomas Ltd geotechnical report, dated 10 December 2020, includes recommendations which will appropriately avoid, remedy or mitigate potential geotechnical hazards on the land subject to the application, in accordance with the provisions of Section 106 of the Resource Management Act.

Item 29- Paragraph 56

Item 29 of the SDC letter, requests:

> **"At paragraph 56, please clarify which recommendations, from which report, are being referred to. Please advise if any recommendations requires specific measure to be incorporated into the District Plan to support those recommendations."**

The foregoing "paragraph 56" appears to be within a document prepared by Aston Consultants, titled *"Application for Private Plan Change"*, dated December 2020. Paragraph 56 appears to be referring to the Fraser Thomas geotechnical report, dated 10 December 2020, which is discussed in the preceding "paragraph 55".

Paragraphs 55 and 56 of the Aston Consultants document appear to, in general, state that the subject site, from a geotechnical perspective, is suitable for future residential development, provided that the various recommendations presented in the Fraser Thomas Ltd geotechnical investigation report are adopted.

The adoption of any of the site specific geotechnical recommendations, into the District Plan, is a planning matter, which is outside my expertise, however, it is my opinion that the recommendations provided in the Fraser Thomas geotechnical report (dated 10 December 2020) should be considered to be specific to the subject site, and should not be assumed to apply to neighbouring sites (without further site specific geotechnical investigation and appraisal works being undertaken).

I trust the foregoing satisfies the requirements of SDC.

Kind regards

MASON REED
Director
CPEng (Geotechnical Engineer)

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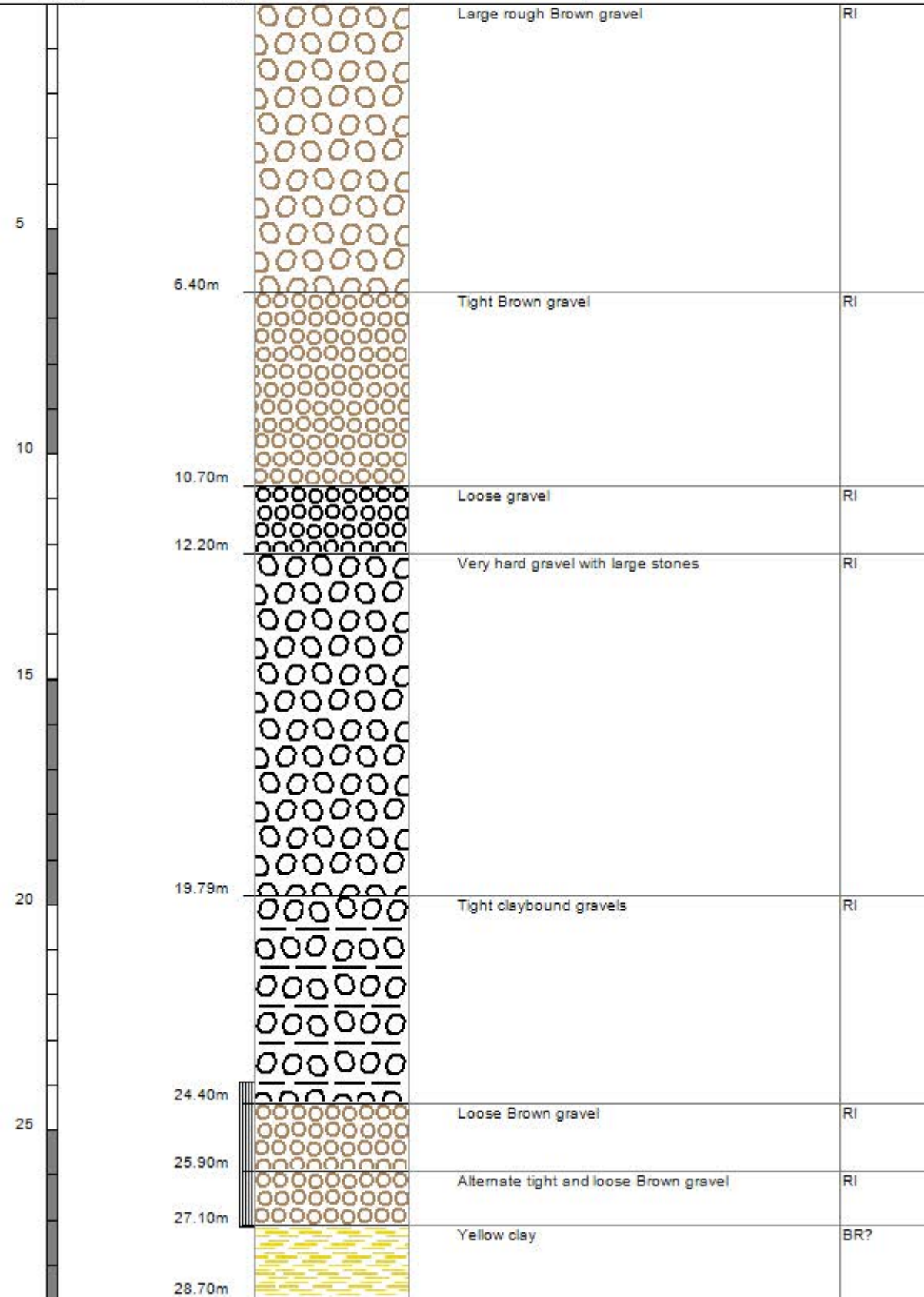
Water Bore Logs, sourced from Environment Canterbury records

Borelog for well M36/0038

Grid Reference (NZTM): 1549908 mE, 5170191 mN
Location Accuracy: 50 - 300m
Ground Level Altitude: 40.0 m +MSD Accuracy: < 2.5 m
Driller: J W Horne (& Co)
Drill Method: Unknown
Borelog Depth: 28.7 m Drill Date: 07-Jul-1975

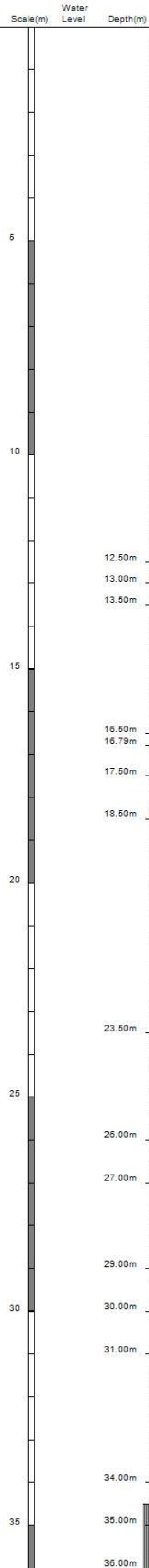
Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha



Borelog for well M36/4291

Grid Reference (NZTM): 1549798 mE, 5170371 mN
Location Accuracy: 50 - 300m
Ground Level Altitude: 41.5 m +MSD Accuracy: < 2.5 m
Driller: Canterbury Drilling Company
Drill Method: Cable Tool
Borelog Depth: 36.0 m Drill Date:

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha



Depth(m)	Full Drillers Description	Formation Code
	Medium to large gravels and sand	
12.50m		
13.00m	Smaller gravel and sand, some stone	
13.50m	Medium gravels and sand, water	
	Larger gravels and sand, water	
16.50m		
16.79m	Clay bands with larger gravels	
17.50m	Claybound gravels, water locked out, sealed	
18.50m	Claybound gravels	
	Loose gravels, medium to large, water	
23.50m		
26.00m	Hard claybound stones	
27.00m	Hard claybound stones, water locked out, sealed off	
29.00m	Hard claybound stones	
30.00m	Hard claybound stones, some sandy clays	
31.00m	Sand silts and clays, some small gravels	
34.00m	Large to medium gravels and sand, water	
35.00m	Pea to medium gravels and sand, water	
36.00m	Pea to medium gravels and sand, traces of clay, water	

Borelog for well M36/5041

Grid Reference (NZTM): 1549508 mE, 5169991 mN
Location Accuracy: 50 - 300m
Ground Level Altitude: 40.5 m +MSD Accuracy: < 2.5 m
Driller: Dynes Road Drilling
Drill Method: Cable Tool
Borelog Depth: 34.0 m Drill Date: 01-Feb-1997

Environment Canterbury Regional Council
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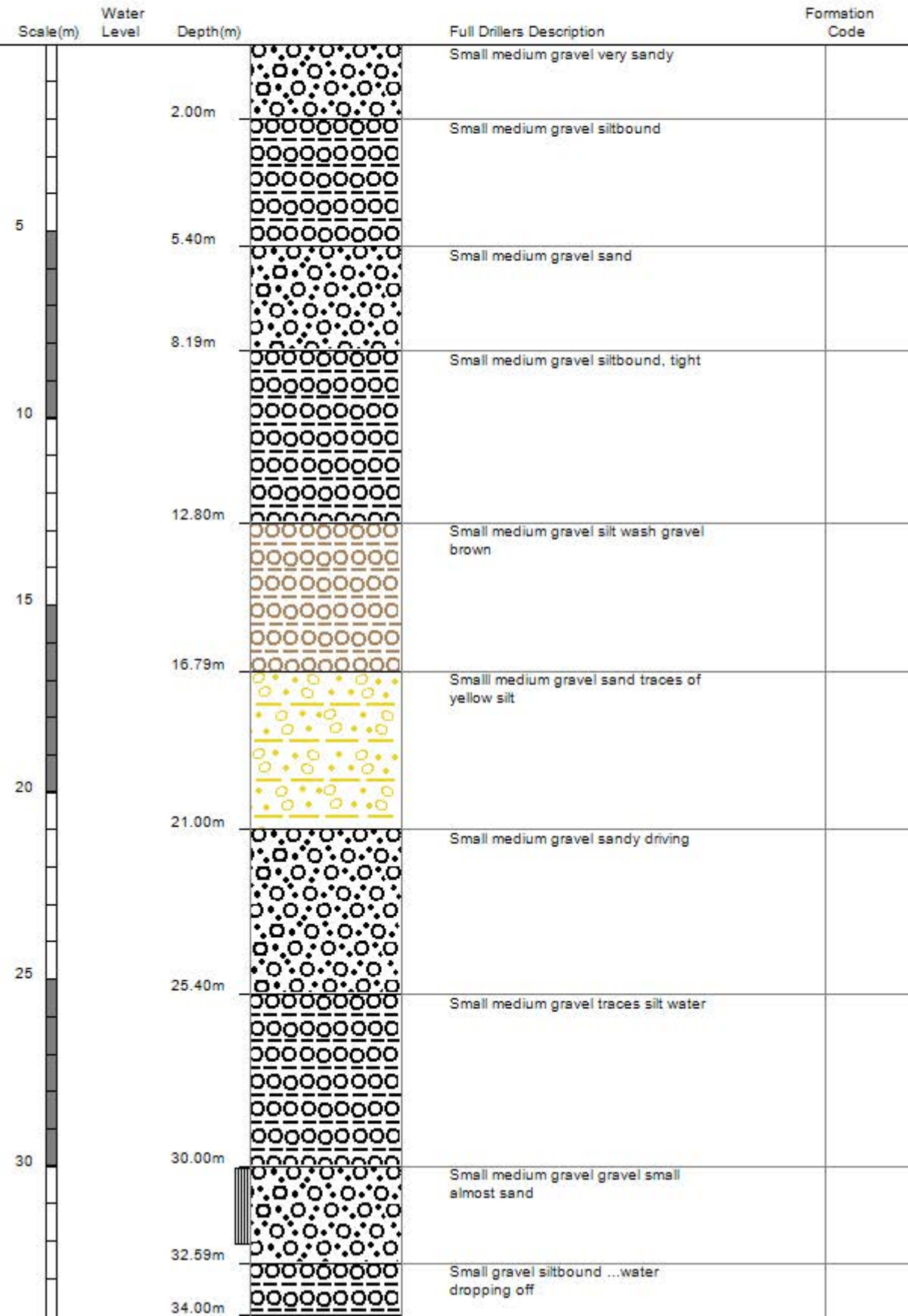

Borelog for well M36/5042

Grid Reference (NZTM): 1549378 mE, 5170191 mN
Location Accuracy: 50 - 300m
Ground Level Altitude: 42.0 m +MSD Accuracy: < 2.5 m
Driller: Dynes Road Drilling
Drill Method: Cable Tool
Borelog Depth: 32.5 m Drill Date: 01-Nov-1996

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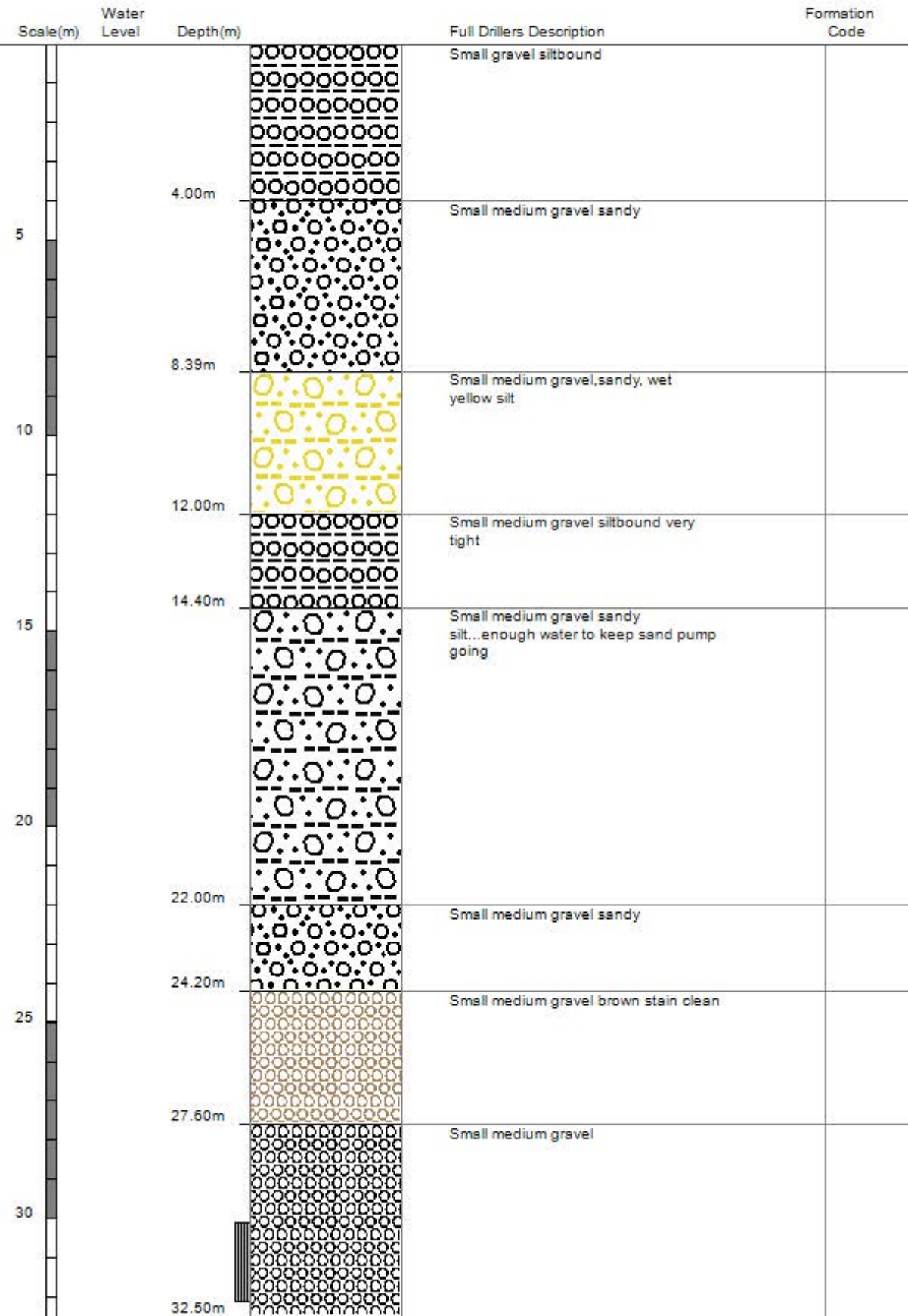

Borelog for well M36/5268

Grid Reference (NZTM): 1549878 mE, 5170291 mN
Location Accuracy: 50 - 300m
Ground Level Altitude: 40.8 m +MSD Accuracy: < 2.5 m
Driller: Canterbury Drilling Company
Drill Method: Cable Tool
Borelog Depth: 37.0 m Drill Date: 14-Feb-1997

Environment Canterbury Regional Council
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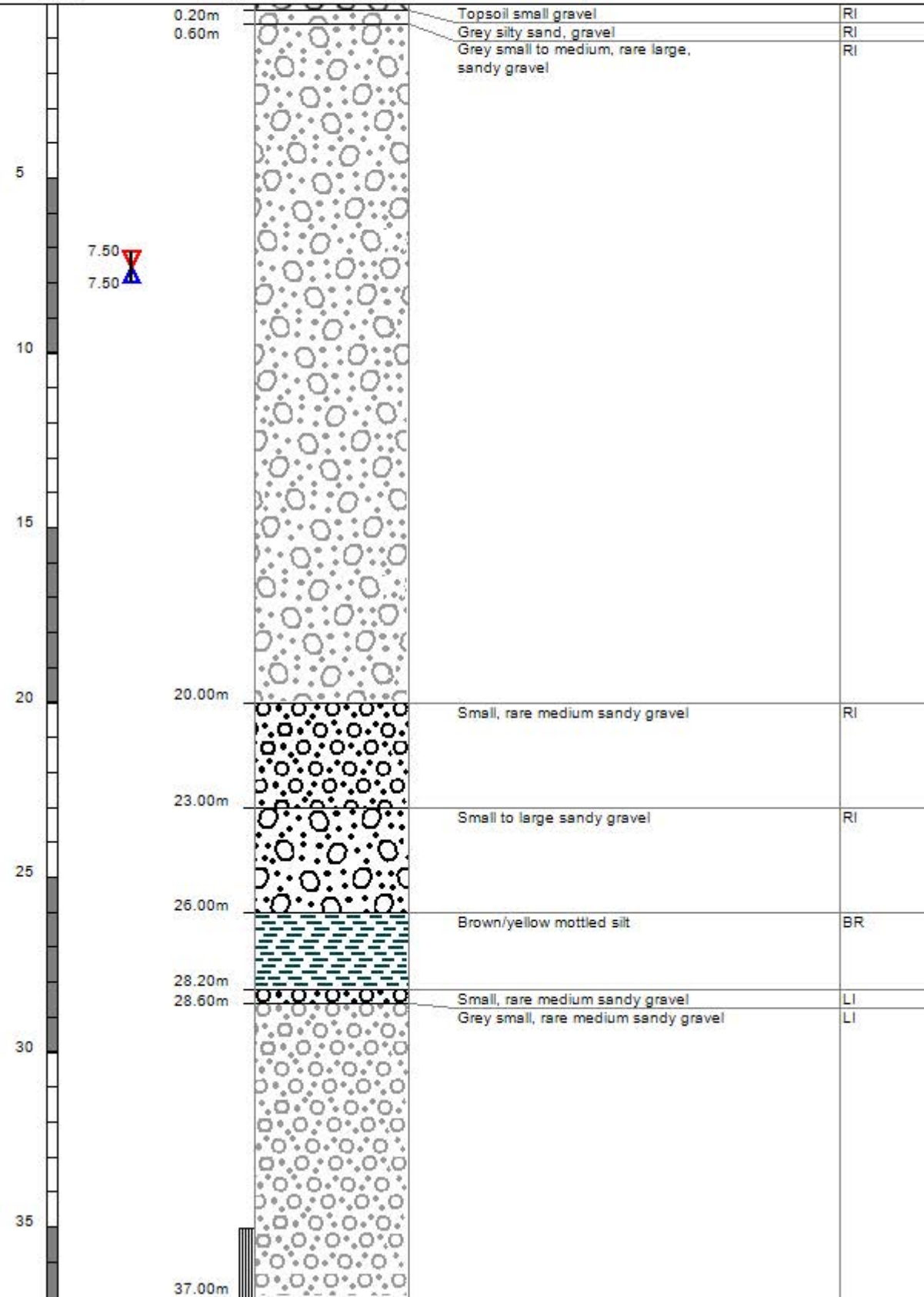
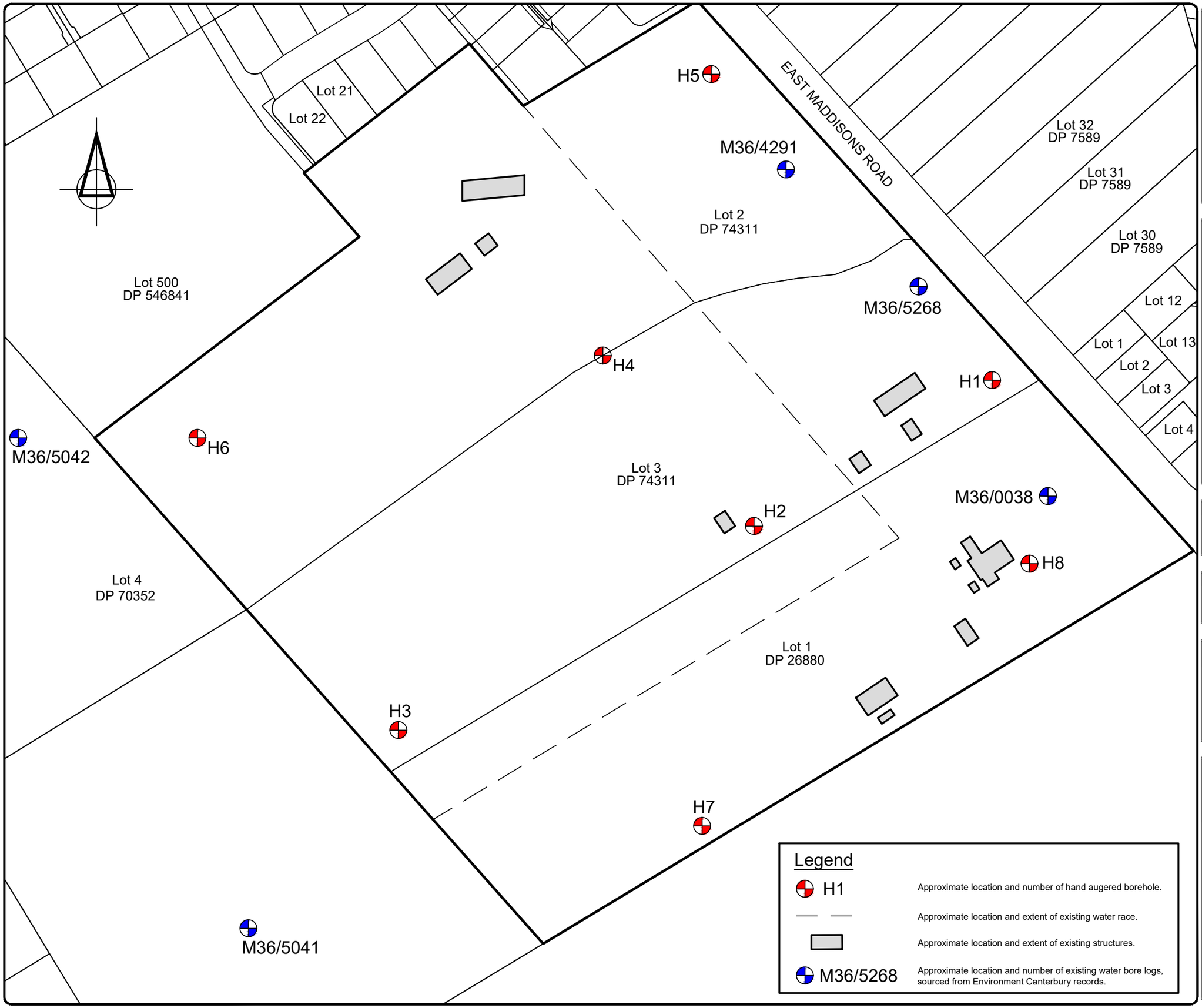


Drawing G00676-02



Legend

H1	Approximate location and number of hand augered borehole.
— —	Approximate location and extent of existing water race.
	Approximate location and extent of existing structures.
M36/5268	Approximate location and number of existing water bore logs, sourced from Environment Canterbury records.

SURVEYED			APPROVED DATE
DESIGNED			MVR
DRAWN	KT	22/02/2021	
CAD	GS	22/02/2021	
CHECKED			

REVISION	CHANGES	CHECKED	DATE

NOTES

1. This plan has been adopted from Quick map. The location and extent of the site boundaries and site features are therefore considered to be approximate only.

CLIENT

DUNWEAVIN 2020 LTD

PROJECT

EAST MADDISONS ROAD
ROLLESTON

TITLE

SITE PLAN

Fraser Thomas

ENGINEERS • RESOURCE MANAGERS • SURVEYORS

HIGHBROOK, AUCKLAND 2025
TEL+64-9-278 7078

TARADALE, NAPIER 4141
TEL+64-6-211 2766

RICCARTON, CHRISTCHURCH 8041
TEL+64-3-358 5936

CROMWELL 9342
TEL+64-3-428 3292

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SCALE 1:1750 (A3)

DRAWING No G00676-02

REVISION A

SHEET 1 of 1