

Lucas Grange Stage 1F Alfredton

Earthworks Supervision Report for Madica

Report 21C 0585-2
September 2021

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Revision

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1 INTRODUCTION

Madica commissioned Geotechnical Testing Services (GTS) to undertake Level 1 Supervision and testing (*AS3798-2007*) for the earthworks at Lucas Grange Stage 1F, Alfredton.

Level 1 testing was generally performed in line with *AS3798-2007 Guidelines on Earthworks for Commercial and Residential Development* and provides inspection of the construction of controlled fill and compaction testing in accordance with *AS1289 Methods of Testing Soils for Engineering Purposes*. The Level 1 testing was undertaken by geotechnicians with supervision provided by a geotechnical engineer from GTS.

2 SCOPE OF WORKS

2.1 Area of Work

GTS provided Level 1 inspection and testing of the engineered fill placed to raise the surface of Lots 111 & 112 in Stage 1F.

The total depth of engineered fill across the sites varied from none to 0.80 metres, with approximate locations shown on the attached site plan. It is noted that the client may subsequently place up to 0.2 metres of uncontrolled fill (topsoil) over the engineered fill.

It is noted that areas with less than 0.4 metres total fill depth were not included in the controlled fill.

2.2 Placement Specification

The placement of the fill and associated works generally followed the recommendations outlined in *AS3798-2007 Guidelines for Earthworks for Commercial and Residential Developments* and the construction specification.

In summary, the earthworks comply with the following:

- The layers for residential lots are to be compacted to at least 95% of the density ratio in accordance with *AS1289 5.1.1* (or *5.7.1*), based on Standard compaction.

In accordance with Table 8.1 of *AS3798-2007*, the sites would be considered small scale operations (between 500m² and 1500m²). Therefore, a minimum of 1 test per layer per 1000m², 1 test per 200m³ or 1 test per Lot per layer is required. The testing conducted meets the minimum requirement.

3 INSPECTION AND TESTING

Inspection of the excavated base was conducted by a geotechnical engineer and it was observed that the unsuitable material (vegetation, topsoil/silt) had been removed with the base consisting of a stiff silty clay material of good strength.

Level 1 supervision, inspection and testing was undertaken by a geotechnician from GTS who nominated the timing and location of the in-situ density tests. The approximate location of each test is recorded on the test reports and attached fill plan.

Laboratory compaction testing was undertaken on a one-to-one basis at our Ballarat laboratory. A summary of the results of the compaction control testing is presented in a table below with the full NATA endorsed test reports included in the Appendix.

4 SUMMARY OF TEST RESULTS

A summary of the test results is included in the following table with the full NATA accredited reports included in the Appendix.

Project No.	Sample No.	Test Date	Location	Reduced Level* (mm)	Moisture Variation % O.M.C.	Hilf Density Ratio %
1	D21-2396A	16/09/2021	Lot 111	-500	0.5 dry	103.0
2	D21-2396B	16/09/2021	Lot 111	-200	0.5 dry	103.5
3	D21-2396C	16/09/2021	Lot 112	FSL	1.0 wet	104.0

5 STATEMENT OF COMPLIANCE

GTS personnel have provided Level 1 inspection and testing services during the placement of material for the filling of Lots 111 & 112. The placement of fill and construction techniques adopted was observed throughout the project.

Based on observations made by GTS personnel and the results of field and laboratory tests, we consider that the fill has been placed and compacted and is considered to be engineered or controlled fill. It is noted that up to an additional 200mm of topsoil may subsequently be placed over the engineered fill. This topsoil layer is not considered to be controlled fill.

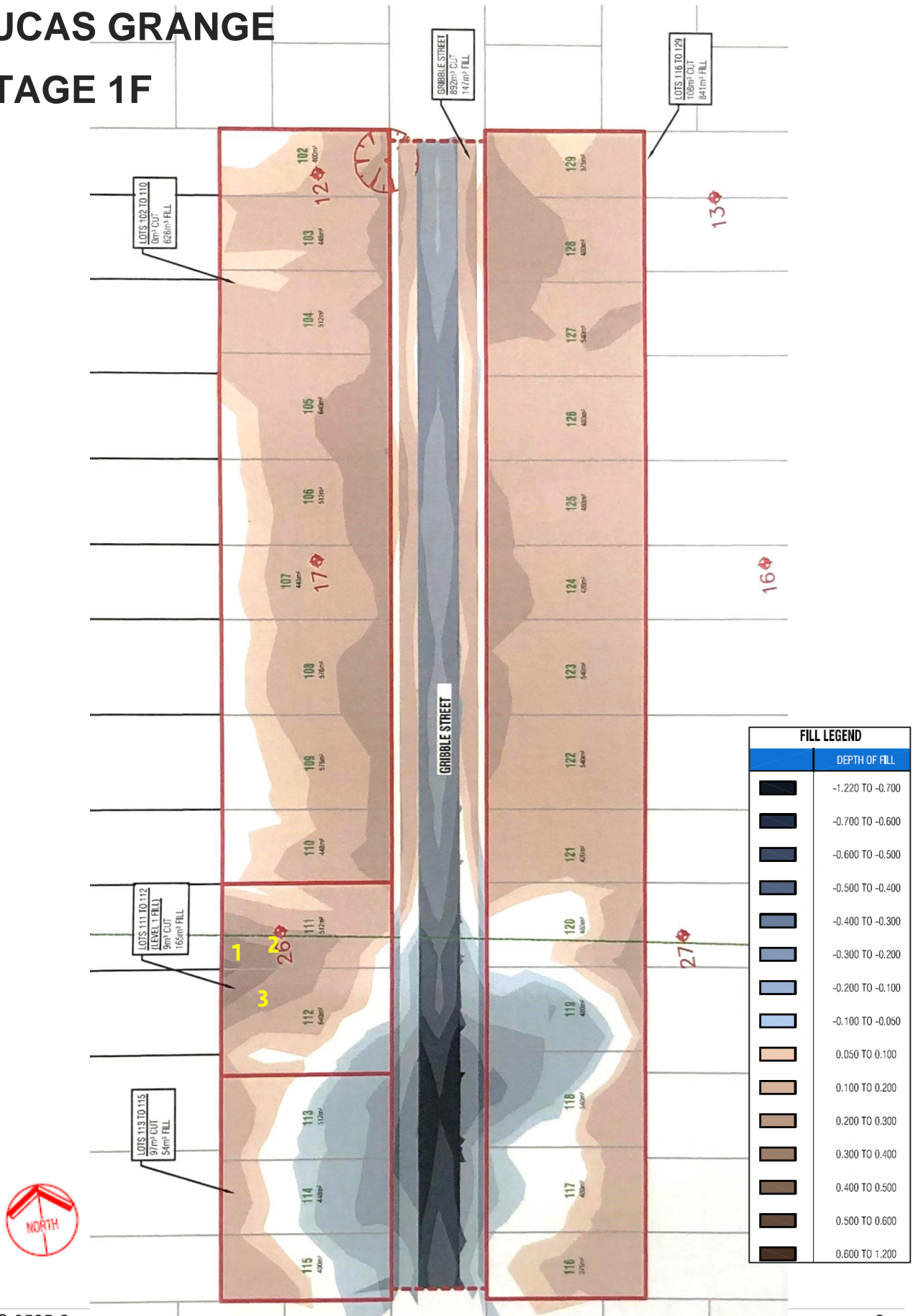
Subject to residential site classifications, the controlled fill material is deemed a suitable founding medium for future residential buildings.



Benj Beatty BA/BSc (Hons), MPA, MAusIMM
Senior Engineering Geologist

APPENDIX

LUCAS GRANGE STAGE 1F



Material Test Report



Report Number: P21398-15
Issue Number: 1
Date Issued: 20/09/2021
Client: Madica Pty Ltd
 PO Box 173, Buninyong Victoria 3357
Contact: Wayne Sheridan
Project Number: P21398
Project Name: Lucas Grange
Project Location: Lucas Grange - Stage 1F- Level 1
Work Request: 2396
Date Sampled: 16/09/2021
Dates Tested: 16/09/2021 - 16/09/2021
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Site Selection: Selected By Tester
Material Source: Test Location

Geotechnical Testing Services (Southern)
 Ballarat Soil and Concrete Testing Laboratory
 Unit 6, 33 Laidlaw Drive Delacombe VIC 3356
 Phone: (03) 5335 6494
 Email: joshl@gts.com.au

Accredited for compliance with ISO/IEC 17025 - Testing



Approved Signatory: Josh Lagodzki
 NATA Accredited Laboratory Number: 19506

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D21-2396A	D21-2396B	D21-2396C
Date Tested	16/09/2021	16/09/2021	16/09/2021
Time Tested	08:34	08:35	08:37
Test Request #/Location	House Lot 111	House Lot 111	House Lot 112
Easting	54h 745764	54h 745767	54h 745763
Northing	5839993	5839995	5839992
Layer / Reduced Level	-500	-200	FSL
Thickness of Layer (mm)	300	300	300
Soil Description	Brown Silty Clay	Brown Silty Clay	Brown Silty Clay
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m ³	2.08	2.10	2.09
Field Moisture Content %	23.6	24.1	23.2
Field Dry Density (FDD) t/m ³	1.68	1.69	1.70
Peak Converted Wet Density t/m ³	2.02	2.03	2.01
Adjusted Peak Converted Wet Density t/m ³	**	**	**
Moisture Variation (Wv) %	0.5	0.5	-1.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	103.0	103.5	104.0
Compaction Method	Standard	Standard	Standard
Report Remarks	**	**	**

Moisture Variation Note:

Positive values = test is dry of OMC
 Negative values = test is wet of OMC