

# Bridgefield Estate 8

## GITA Inspection Verification Report

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**Prepared For:** Lojac Civil Pty Ltd

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**Report Number** D20260A V1

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**Version Release Date** 22 Oct 2020

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**Report Released By** C Caulfield

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**Title** Project Manager

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**Signature**



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## 1 Introduction

*Terra Firma Laboratories* was engaged by Lojac Civil Pty Ltd as the Geotechnical Inspection and Testing Authority (GITA) to provide Level 1 supervision and testing works on the earthworks component for Bridgefield Estate 8. This work was conducted over the period of 04/02/2020 to 06/02/2020.

This report presents that the allotment earthworks was carried out in accordance with AS3798-2007 *Guidelines for Earthworks for Commercial and Residential Development* and in compliance with the compaction control specifications established by the contractor.

## 2 Scope of Work

### 2.1 Area of Work

The areas of work included lots 801-805,827,828,857-862. The site will be a Residential development.

The area on which fill was placed is shown on site plan (Appendix 1: *Test Location Plan*) based on drawings prepared by Reeds Consulting (Drawing Reference: 22236E/8) and provided by Lojac Civil Pty Ltd.

The supervision work by the GITA involved both inspection of sub grade preparation work and full time inspection and testing of fill placement.

### 2.2 Specification

The technical specification (Reference from Drawings) for compaction control requirements was provided by Lojac Civil Pty Ltd and established that:

Test Rolling is required for all layers of structural fill and materials within 150mm of permanent subgrade level so as to withstand test rolling without visible deformation or springing. Corrective action is required where unstable areas exceed 20% of the area being considered by test rolling.

Section 5.2 of AS3798-2007 (Section 5.2) establishes a specification requirement for a minimum density ratio of not less than 95% noting that soils containing more than 20% of particles coarser than 37.5mm cannot be tested for relative compaction using the procedures of AS1289 5.1.1 and AS1289 5.2.1.

In accordance with Table 8.1 (AS3798), for large scale operations, (greater than 1500m<sup>2</sup>), the minimum testing frequency is 1 test per layer per material type per 2500m<sup>2</sup> or 1 test per 500m<sup>3</sup> distributed reasonable evenly throughout full depth and area or 3 tests per lot. AS3798 defines a lot as “an area of work that is essentially homogenous in relation to material type and moisture condition, rolling response and compaction technique, and which has been used for the assessment of the relative compaction of an area of work”. All three of these test frequencies must be achieved and this is typically confirmed to have been achieved when 3 tests per visit (day) have been completed.

### 2.3 Limitations

Terra Firma Laboratories cannot verify any works completed by others outside of the time period specified in the introduction. Uncontrolled works may include, but are not limited to trenching for services, cut and fill works for slab preparation or subsequent removal of vegetation and back fill of holes unless specified in section 2.1 of this report.

Terra Firma Laboratories cannot verify that the material used as a filling medium is free from chemical or other contamination. The scope and the period of Terra Firma Laboratories as described in the introduction are subject to restrictions and limitations. Terra Firma Laboratories did not perform a complete assessment of all possible conditions and circumstances that may exist at the site. If a service is not expressly indicated, do not assume it has been provided. If a matter is not addressed, do not assume that any determination has been made by Terra Firma Laboratories.

Verification of finished surface level to design levels is outside of the scope of the GITA report.

Any drawings or marked locations presented in this report should be considered only as pictorial evidence of our work. Therefore, unless otherwise stated, any dimensions should not be used for accurate calculations or dimensioning.

Where data has been supplied by the client or a third party, it is assumed that the information is correct unless otherwise stated. No responsibility is accepted by Terra Firma Laboratories for incomplete or inaccurate data supplied by others.

This document is COPYRIGHT, all rights reserved to Terra Firma Laboratories and therefore no part of this document may be reproduced or copied in any form or by means without the written permission of Terra Firma Laboratories. This submission is for the use only of the party to whom it is addressed and for no other purpose. No responsibility is accepted to any third party who may use or rely on the whole or any part of the content of this submission. No responsibility will be taken for this report if it is altered in any way, or not reproduced in full.

### 3 Construction Method

#### 3.1 Subgrade Preparation

At the time of subgrade inspection the following was observed:

- Subgrade preparation involved stripping the site of topsoil, vegetation and organic matter to a depth of approximately 200mm below existing levels.
- The site was cleared of all trees and stumps to the extent necessary for the fill placement to proceed
- The roots of all trees and any debris was removed from site prior to any fill placement

The sub-grade area was then proof-rolled to confirm it was capable of withstanding test rolling without visible deformation or springing and any areas observed to be soft or otherwise unsuitable were rectified. The sub-grade was watered and scarified prior to fill placement to aid layer bonding.

#### 3.2 Fill Placement

The contractor was observed to have suitable construction equipment and plant available on-site during the construction period for use in the fill placement.

All fill was placed in layers of thicknesses not exceeding 300mm. At the completion of a placed layer, compaction testing was performed to confirm appropriate compaction had been achieved and supported the observations made. It should be noted that the compaction tests are representative samples of the fill placed and support the visual assessment of the works completed. Each house lot does not necessarily require a compaction test to have been conducted within the house allotment but may have been verified by testing conducted within up to a 2500m<sup>2</sup> area of the house lot.

Final fill placement levels were verified against design level by others. For the purposes of this report, it was observed that finished levels were in accordance with levels marked on site by survey markers.

The final 300mm of fill placed across the site was placed as a topsoil layer or growing medium and should be considered as non-structural, as it was placed in an uncontrolled manner, as allowed by specifications and placement of the final 300mm of fill was not observed by the GITA.

### 4 Construction Verification

Compaction Verification testing is summarized in a detailed test register with test certificates attached provided in Appendix 2: *Compaction Test Register and Test Certificates*. A test location

plan (D20260D1, Appendix 1) providing a schematic of test locations across the extent of scope of works for every placed layer of fill is also documented.

A total of 12 density tests (Hilf method in accordance with 1289 5.7.1) were undertaken with 0 failed results. The results summarised in the compaction test register (Appendix 2) confirm that for every layer of fill placed in a specific work area, satisfactory testing was completed.

## 5 Statement of Compliance

The intention of this report is to provide a description of the earthworks construction for Stage 8 at Bridgefield Estate. For completed fill areas of greater than 300mm, and for works completed between 04/02/2020 and 06/02/2020, earthworks construction activities were conducted under the full time supervision of the Geotechnical Inspection and Testing Authority. Inspections and testing of the fill areas at this site indicate that both sub grade preparation and fill placement have been conducted in accordance with the specification. The earthworks construction for Stage 8 of Bridgefield Estate was observed to be constructed in compliance with the requirements of the Technical Specification.

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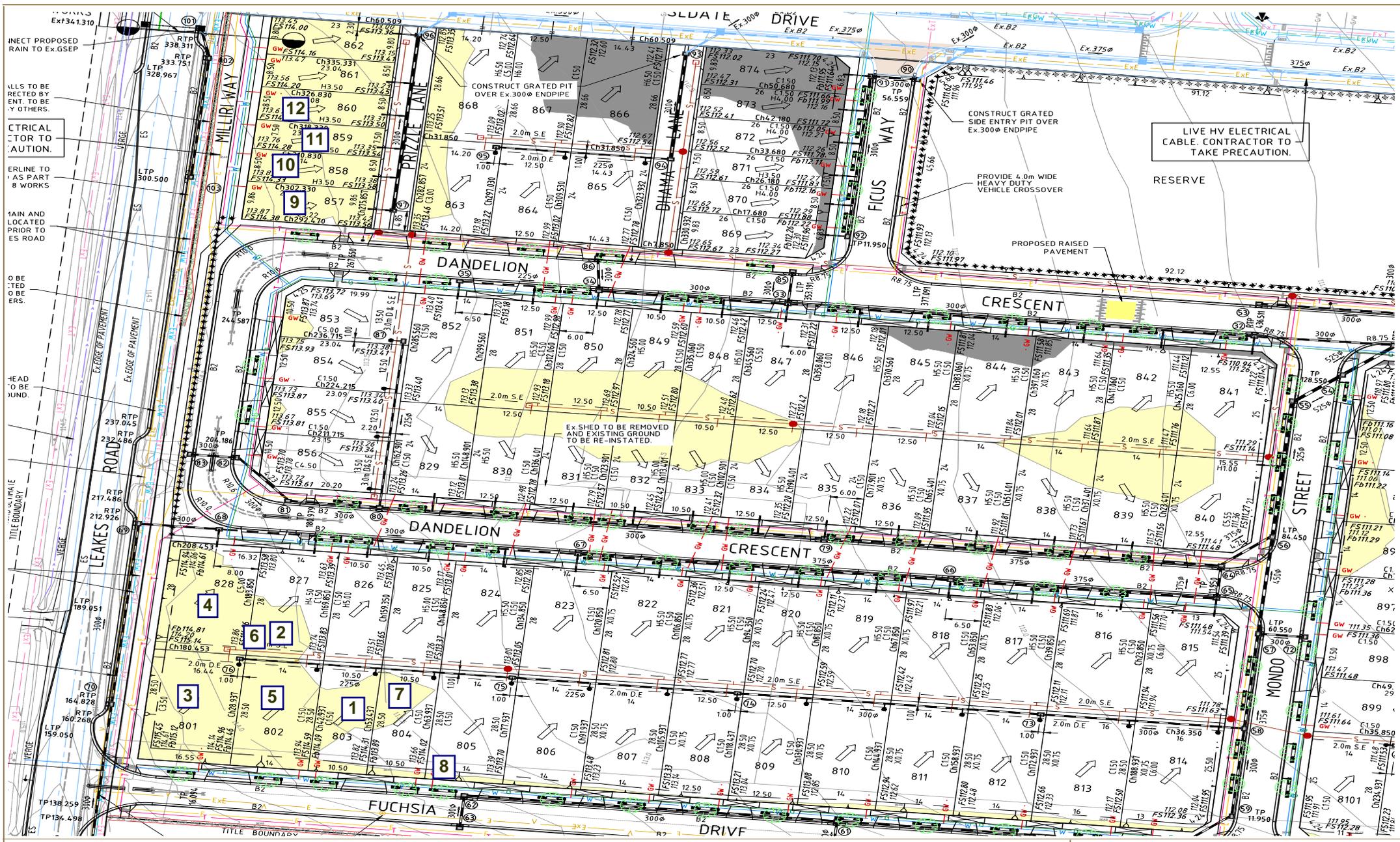
Your Worksite is Our Laboratory.

## Appendix 1: Test Location Plan

Our Head Office  
47 National Ave  
Pakenham, VIC 3810

Our Laboratories  
Pakenham 03 9769 5799  
Deer Park 03 8348 5596  
Bibra Lake 08 9395 7220

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Page 1 of 2



Our Head Office  
47 National Ave  
Pakenham, VIC 3810

Our Laboratories  
Pakenham 03 9769 5799  
Deer Park 03 8348 5596  
Bibra Lake 08 9395 7220

**Test Location Plan**  
not to scale

Client:	Lojac Civil Pty Ltd
Project:	Bridgefield Estate, Stage 8
Reference:	D20260 D1



**Your Worksite is Our Laboratory.**

## **Appendix 2: Compaction Test Register and Test Certificates**



## Compaction Test Register

**Client:** Lojac Civil Pty Ltd      **Project No:** D20260  
**Project:** Bridgefield Estate Stage 8      **Specification:** 95%

Date:	Test No:	Layer:	Retest of:	Density:	Pass/Fail:	Lot No:	Report No:
04/02/2020	1	Layer 1		101.5	Pass	LOT 803	D20260-1
04/02/2020	2	Layer 1		101.0	Pass	LOT 827	D20260-1
04/02/2020	3	Layer 2		99.5	Pass	LOT 801	D20260-1
04/02/2020	4	Layer 2		100.5	Pass	LOT 828	D20260-1
05/02/2020	5	Layer 2		101.0	Pass	LOT 802	D20260-2
05/02/2020	6	Layer 2		101.5	Pass	LOT 827	D20260-2
05/02/2020	7	Layer 1		102.0	Pass	LOT 804	D20260-2
05/02/2020	8	Layer 1		102.0	Pass	LOT 805	D20260-2
06/02/2020	9	Layer 1		98.5	Pass	LOT 857	D20260-3
06/02/2020	10	Layer 1		98.0	Pass	LOT 858	D20260-3
06/02/2020	11	Layer 1		99.5	Pass	LOT 859	D20260-3
06/02/2020	12	Layer 1		98.0	Pass	LOT 860	D20260-3

# Material Test Report



**Report Number:** D20260-1  
**Issue Number:** 1  
**Date Issued:** 07/02/2020  
**Client:** Lojac Civil Pty Ltd  
 35/148 Chesterville Road, Moorabbin Vic 3189  
**Project Number:** D20260  
**Project Name:** Bridgefield Estate Stage 8  
**Project Location:** Rockbank  
**Contractor:** Lojac Civil Pty Ltd  
**Work Request:** 1316  
**Date Sampled:** 04/02/2020 15:00  
**Dates Tested:** 04/02/2020 - 05/02/2020  
**Sampling Method:** AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% STD  
**Material:** Clay  
**Material Source:** On Site

Terra Firma Laboratories Pty Ltd  
 Deer Park Laboratory  
 Factory 1 80-82 Rebecca Drive Ravenhall VIC 3023  
 Phone: 0435 751 756  
 Email: jsomaradne@terrafirmalabs.com.au

Accredited for compliance with ISO/IEC 17025 - Testing



Approved Signatory: Janaka Somaratne  
 Lab Manager  
 NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1				
Sample Number	D20-1316A	D20-1316B	D20-1316C	D20-1316D
Test Number	1	2	3	4
Date Tested	04/02/2020	04/02/2020	04/02/2020	04/02/2020
Time Tested	15:00	15:00	15:00	15:00
Test Request #/Location	LOT 803	LOT 827	LOT 801	LOT 828
Chainage (m)	**	**	**	**
Location Offset (m)	**	**	**	**
Layer / Reduced Level	Layer 1	Layer 1	Layer 2	Layer 2
Thickness of Layer (mm)	300	300	300	300
Soil Description	Clay	Clay	Clay	Clay
Test Depth (mm)	275	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0.0	0.0	0.0	0.0
Field Wet Density (FWD) t/m <sup>3</sup>	1.85	1.84	1.82	1.84
Field Moisture Content %	26.2	25.2	26.2	22.7
Field Dry Density (FDD) t/m <sup>3</sup>	1.47	1.47	1.44	1.50
Peak Converted Wet Density t/m <sup>3</sup>	1.83	1.83	1.83	1.82
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	**	**	**
Moisture Ratio % (AS 1289.5.4.1)	90.0	90.5	90.5	92.5
Adjusted Moisture Ratio % (AS 1289.5.4.1)	**	**	**	**
Moisture Variation (Wv) %	3.0	2.5	2.5	2.0
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	101.5	101.0	99.5	100.5
Compaction Method	Standard	Standard	Standard	Standard

## Moisture Variation Note:

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

# Material Test Report



**Report Number:** D20260-2  
**Issue Number:** 1  
**Date Issued:** 10/02/2020  
**Client:** Lojac Civil Pty Ltd  
 35/148 Chesterville Road, Moorabbin Vic 3189  
**Project Number:** D20260  
**Project Name:** Bridgefield Estate Stage 8  
**Project Location:** Rockbank  
**Contractor:** Lojac Civil Pty Ltd  
**Work Request:** 1322  
**Date Sampled:** 05/02/2020 14:30  
**Dates Tested:** 05/02/2020 - 07/02/2020  
**Sampling Method:** AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% STD  
**Material:** Clay  
**Material Source:** On Site

Terra Firma Laboratories Pty Ltd  
 Deer Park Laboratory  
 Factory 1 80-82 Rebecca Drive Ravenhall VIC 3023  
 Phone: 0435 751 756  
 Email: jsomaradne@terrafirmalabs.com.au

Accredited for compliance with ISO/IEC 17025 - Testing



Approved Signatory: Janaka Somaratne  
 Lab Manager

NATA Accredited Laboratory Number: 15357

## Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1

Sample Number	D20-1322A	D20-1322B	D20-1322C	D20-1322D
Test Number	5	6	7	8
Date Tested	05/02/2020	05/02/2020	05/02/2020	05/02/2020
Time Tested	14:30	14:30	14:30	14:30
Test Request #/Location	LOT 802	LOT 827	LOT 804	LOT 805
Chainage (m)	**	**	**	**
Location Offset (m)	**	**	**	**
Layer / Reduced Level	Layer 2	Layer 2	Layer 1	Layer 1
Thickness of Layer (mm)	300	300	300	300
Soil Description	Clay	Clay	Clay	Clay
Test Depth (mm)	275	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0.0	0.0	0.0	0.0
Field Wet Density (FWD) t/m <sup>3</sup>	1.83	1.88	1.82	1.83
Field Moisture Content %	23.6	23.4	23.0	23.4
Field Dry Density (FDD) t/m <sup>3</sup>	1.48	1.52	1.48	1.49
Peak Converted Wet Density t/m <sup>3</sup>	1.81	1.85	1.79	1.80
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	**	**	**
Moisture Ratio % (AS 1289.5.4.1)	79.5	81.0	81.5	81.0
Adjusted Moisture Ratio % (AS 1289.5.4.1)	**	**	**	**
Moisture Variation (Wv) %	5.5	5.0	5.0	5.0
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	<b>101.0</b>	<b>101.5</b>	<b>102.0</b>	<b>102.0</b>
Compaction Method	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>

### Moisture Variation Note:

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

# Material Test Report



**Report Number:** D20260-3  
**Issue Number:** 1  
**Date Issued:** 11/02/2020  
**Client:** Lojac Civil Pty Ltd  
 35/148 Chesterville Road, Moorabbin Vic 3189  
**Project Number:** D20260  
**Project Name:** Bridgefield Estate Stage 8  
**Project Location:** Rockbank  
**Contractor:** Lojac Civil Pty Ltd  
**Work Request:** 1328  
**Date Sampled:** 06/02/2020  
**Dates Tested:** 06/02/2020 - 10/02/2020  
**Sampling Method:** AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% STD  
**Material:** Clay  
**Material Source:** On Site

Terra Firma Laboratories Pty Ltd  
 Deer Park Laboratory  
 Factory 1 80-82 Rebecca Drive Ravenhall VIC 3023  
 Phone: 0435 751 756  
 Email: jsomaradne@terrafirmalabs.com.au

Accredited for compliance with ISO/IEC 17025 - Testing



Approved Signatory: Janaka Somaratne  
 Lab Manager  
 NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1				
Sample Number	D20-1328A	D20-1328B	D20-1328C	D20-1328D
Test Number	9	10	11	12
Date Tested	06/02/2020	06/02/2020	06/02/2020	06/02/2020
Time Tested	14:00	14:00	14:00	14:00
Test Request #/Location	LOT 857	LOT 858	LOT 859	LOT 860
Chainage (m)	**	**	**	**
Location Offset (m)	**	**	**	**
Layer / Reduced Level	Layer 1	Layer 1	Layer 1	Layer 1
Thickness of Layer (mm)	300	300	300	300
Soil Description	Clay	Clay	Clay	Clay
Test Depth (mm)	275	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0.0	0.0	0.0	0.0
Field Wet Density (FWD) t/m <sup>3</sup>	1.83	1.84	1.84	1.82
Field Moisture Content %	17.5	16.6	21.6	21.9
Field Dry Density (FDD) t/m <sup>3</sup>	1.56	1.58	1.51	1.50
Peak Converted Wet Density t/m <sup>3</sup>	1.86	1.87	1.85	1.86
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	**	**	**
Moisture Ratio % (AS 1289.5.4.1)	79.0	77.0	83.5	81.5
Adjusted Moisture Ratio % (AS 1289.5.4.1)	**	**	**	**
Moisture Variation (Wv) %	4.5	5.0	4.0	4.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	98.5	98.0	99.5	98.0
Compaction Method	Standard	Standard	Standard	Standard

## Moisture Variation Note:

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

22 October 2020

TO WHOM IT MAY CONCERN

Re: Bridgefield Estate Stage 8  
Rockbank  
Lot 801

*Terra Firma Laboratories was engaged by Lojac Civil Pty Ltd as the Geotechnical and Inspection Testing Authority (GITA) to provide Level 1 supervision and testing on the earthworks component for Bridgefield Estate, Stage 8, Rockbank in accordance with Australian Standard AS3798 Guidelines for Earthworks for Commercial and Residential Development.*

Lot 801 as defined in drawing ref 22236E/8 from *Reeds Consulting*, provided by the contractor, was included in the scope of works.

With regard to any fill placement please consider the following:

- Controlled fill was placed up to 300mm below finished surface level. The final 300mm fill is considered top soil and organic matter and not controlled fill.
- Verification of finished surface level to design levels is outside of the scope of the GITA Inspection and Verification report.
- Compaction tests results documented in a level 1 GITA report verify the construction methods observed on site are satisfactory. Testing is conducted with random sampling across an area of work that is defined in the Australian Standard as a "lot" which is "an area of work that is essentially homogenous in relation to material type and moisture condition, rolling response and compaction technique, and which has been used for the assessment of the relative compaction of an area of work" (AS 3798-2007). As such, any test completed is representative of an area that may be up to 2500m<sup>2</sup> in area and across several house lots.

A GITA Inspection Verification report (Reference: D20260A) has been published on 22 October 2020 and documents that the allotment earthworks were carried out in accordance with AS3798 and in compliance with the project specification provided by the contractor.

For and on behalf of

**Terra Firma Laboratories**



Chris Caulfield  
Project Manager

22 October 2020

TO WHOM IT MAY CONCERN

Re: Bridgefield Estate Stage 8  
Rockbank  
Lot 802

*Terra Firma Laboratories was engaged by Lojac Civil Pty Ltd as the Geotechnical and Inspection Testing Authority (GITA) to provide Level 1 supervision and testing on the earthworks component for Bridgefield Estate, Stage 8, Rockbank in accordance with Australian Standard AS3798 Guidelines for Earthworks for Commercial and Residential Development.*

Lot 802 as defined in drawing ref 22236E/8 from *Reeds Consulting*, provided by the contractor, was included in the scope of works.

With regard to any fill placement please consider the following:

- Controlled fill was placed up to 300mm below finished surface level. The final 300mm fill is considered top soil and organic matter and not controlled fill.
- Verification of finished surface level to design levels is outside of the scope of the GITA Inspection and Verification report.
- Compaction tests results documented in a level 1 GITA report verify the construction methods observed on site are satisfactory. Testing is conducted with random sampling across an area of work that is defined in the Australian Standard as a "lot" which is "an area of work that is essentially homogenous in relation to material type and moisture condition, rolling response and compaction technique, and which has been used for the assessment of the relative compaction of an area of work" (AS 3798-2007). As such, any test completed is representative of an area that may be up to 2500m<sup>2</sup> in area and across several house lots.

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For and on behalf of

**Terra Firma Laboratories**



Chris Caulfield  
Project Manager

22 October 2020

TO WHOM IT MAY CONCERN

Re: Bridgefield Estate Stage 8  
Rockbank  
Lot 803

*Terra Firma Laboratories was engaged by Lojac Civil Pty Ltd as the Geotechnical and Inspection Testing Authority (GITA) to provide Level 1 supervision and testing on the earthworks component for Bridgefield Estate, Stage 8, Rockbank in accordance with Australian Standard AS3798 Guidelines for Earthworks for Commercial and Residential Development.*

Lot 803 as defined in drawing ref 22236E/8 from *Reeds Consulting*, provided by the contractor, was included in the scope of works.

With regard to any fill placement please consider the following:

- Controlled fill was placed up to 300mm below finished surface level. The final 300mm fill is considered top soil and organic matter and not controlled fill.
- Verification of finished surface level to design levels is outside of the scope of the GITA Inspection and Verification report.
- Compaction tests results documented in a level 1 GITA report verify the construction methods observed on site are satisfactory. Testing is conducted with random sampling across an area of work that is defined in the Australian Standard as a "lot" which is "an area of work that is essentially homogenous in relation to material type and moisture condition, rolling response and compaction technique, and which has been used for the assessment of the relative compaction of an area of work" (AS 3798-2007). As such, any test completed is representative of an area that may be up to 2500m<sup>2</sup> in area and across several house lots.

A GITA Inspection Verification report (Reference: D20260A) has been published on 22 October 2020 and documents that the allotment earthworks were carried out in accordance with AS3798 and in compliance with the project specification provided by the contractor.

For and on behalf of

**Terra Firma Laboratories**



Chris Caulfield  
Project Manager

22 October 2020

TO WHOM IT MAY CONCERN

Re: Bridgefield Estate Stage 8  
Rockbank  
Lot 804

*Terra Firma Laboratories was engaged by Lojac Civil Pty Ltd as the Geotechnical and Inspection Testing Authority (GITA) to provide Level 1 supervision and testing on the earthworks component for Bridgefield Estate, Stage 8, Rockbank in accordance with Australian Standard AS3798 Guidelines for Earthworks for Commercial and Residential Development.*

Lot 804 as defined in drawing ref 22236E/8 from *Reeds Consulting*, provided by the contractor, was included in the scope of works.

With regard to any fill placement please consider the following:

- Controlled fill was placed up to 300mm below finished surface level. The final 300mm fill is considered top soil and organic matter and not controlled fill.
- Verification of finished surface level to design levels is outside of the scope of the GITA Inspection and Verification report.
- Compaction tests results documented in a level 1 GITA report verify the construction methods observed on site are satisfactory. Testing is conducted with random sampling across an area of work that is defined in the Australian Standard as a "lot" which is "an area of work that is essentially homogenous in relation to material type and moisture condition, rolling response and compaction technique, and which has been used for the assessment of the relative compaction of an area of work" (AS 3798-2007). As such, any test completed is representative of an area that may be up to 2500m<sup>2</sup> in area and across several house lots.

A GITA Inspection Verification report (Reference: D20260A) has been published on 22 October 2020 and documents that the allotment earthworks were carried out in accordance with AS3798 and in compliance with the project specification provided by the contractor.

For and on behalf of

**Terra Firma Laboratories**



Chris Caulfield  
Project Manager

22 October 2020

TO WHOM IT MAY CONCERN

Re: Bridgefield Estate Stage 8  
Rockbank  
Lot 805

*Terra Firma Laboratories was engaged by Lojac Civil Pty Ltd as the Geotechnical and Inspection Testing Authority (GITA) to provide Level 1 supervision and testing on the earthworks component for Bridgefield Estate, Stage 8, Rockbank in accordance with Australian Standard AS3798 Guidelines for Earthworks for Commercial and Residential Development.*

Lot 805 as defined in drawing ref 22236E/8 from *Reeds Consulting*, provided by the contractor, was included in the scope of works.

With regard to any fill placement please consider the following:

- Controlled fill was placed up to 300mm below finished surface level. The final 300mm fill is considered top soil and organic matter and not controlled fill.
- Verification of finished surface level to design levels is outside of the scope of the GITA Inspection and Verification report.
- Compaction tests results documented in a level 1 GITA report verify the construction methods observed on site are satisfactory. Testing is conducted with random sampling across an area of work that is defined in the Australian Standard as a "lot" which is "an area of work that is essentially homogenous in relation to material type and moisture condition, rolling response and compaction technique, and which has been used for the assessment of the relative compaction of an area of work" (AS 3798-2007). As such, any test completed is representative of an area that may be up to 2500m<sup>2</sup> in area and across several house lots.

A GITA Inspection Verification report (Reference: D20260A) has been published on 22 October 2020 and documents that the allotment earthworks were carried out in accordance with AS3798 and in compliance with the project specification provided by the contractor.

For and on behalf of

**Terra Firma Laboratories**



Chris Caulfield  
Project Manager

22 October 2020

TO WHOM IT MAY CONCERN

Re: Bridgefield Estate Stage 8  
Rockbank  
Lot 827

*Terra Firma Laboratories was engaged by Lojac Civil Pty Ltd as the Geotechnical and Inspection Testing Authority (GITA) to provide Level 1 supervision and testing on the earthworks component for Bridgefield Estate, Stage 8, Rockbank in accordance with Australian Standard AS3798 Guidelines for Earthworks for Commercial and Residential Development.*

Lot 827 as defined in drawing ref 22236E/8 from *Reeds Consulting*, provided by the contractor, was included in the scope of works.

With regard to any fill placement please consider the following:

- Controlled fill was placed up to 300mm below finished surface level. The final 300mm fill is considered top soil and organic matter and not controlled fill.
- Verification of finished surface level to design levels is outside of the scope of the GITA Inspection and Verification report.
- Compaction tests results documented in a level 1 GITA report verify the construction methods observed on site are satisfactory. Testing is conducted with random sampling across an area of work that is defined in the Australian Standard as a "lot" which is "an area of work that is essentially homogenous in relation to material type and moisture condition, rolling response and compaction technique, and which has been used for the assessment of the relative compaction of an area of work" (AS 3798-2007). As such, any test completed is representative of an area that may be up to 2500m<sup>2</sup> in area and across several house lots.

A GITA Inspection Verification report (Reference: D20260A) has been published on 22 October 2020 and documents that the allotment earthworks were carried out in accordance with AS3798 and in compliance with the project specification provided by the contractor.

For and on behalf of

**Terra Firma Laboratories**



Chris Caulfield  
Project Manager

22 October 2020

TO WHOM IT MAY CONCERN

Re: Bridgefield Estate Stage 8  
Rockbank  
Lot 827

*Terra Firma Laboratories was engaged by Lojac Civil Pty Ltd as the Geotechnical and Inspection Testing Authority (GITA) to provide Level 1 supervision and testing on the earthworks component for Bridgefield Estate, Stage 8, Rockbank in accordance with Australian Standard AS3798 Guidelines for Earthworks for Commercial and Residential Development.*

Lot 827 as defined in drawing ref 22236E/8 from *Reeds Consulting*, provided by the contractor, was included in the scope of works.

With regard to any fill placement please consider the following:

- Controlled fill was placed up to 300mm below finished surface level. The final 300mm fill is considered top soil and organic matter and not controlled fill.
- Verification of finished surface level to design levels is outside of the scope of the GITA Inspection and Verification report.
- Compaction tests results documented in a level 1 GITA report verify the construction methods observed on site are satisfactory. Testing is conducted with random sampling across an area of work that is defined in the Australian Standard as a "lot" which is "an area of work that is essentially homogenous in relation to material type and moisture condition, rolling response and compaction technique, and which has been used for the assessment of the relative compaction of an area of work" (AS 3798-2007). As such, any test completed is representative of an area that may be up to 2500m<sup>2</sup> in area and across several house lots.

A GITA Inspection Verification report (Reference: D20260A) has been published on 22 October 2020 and documents that the allotment earthworks were carried out in accordance with AS3798 and in compliance with the project specification provided by the contractor.

For and on behalf of

**Terra Firma Laboratories**



Chris Caulfield  
Project Manager

22 October 2020

TO WHOM IT MAY CONCERN

Re: Bridgefield Estate Stage 8  
Rockbank  
Lot 857

*Terra Firma Laboratories was engaged by Lojac Civil Pty Ltd as the Geotechnical and Inspection Testing Authority (GITA) to provide Level 1 supervision and testing on the earthworks component for Bridgefield Estate, Stage 8, Rockbank in accordance with Australian Standard AS3798 Guidelines for Earthworks for Commercial and Residential Development.*

Lot 857 as defined in drawing ref 22236E/8 from *Reeds Consulting*, provided by the contractor, was included in the scope of works.

With regard to any fill placement please consider the following:

- Controlled fill was placed up to 300mm below finished surface level. The final 300mm fill is considered top soil and organic matter and not controlled fill.
- Verification of finished surface level to design levels is outside of the scope of the GITA Inspection and Verification report.
- Compaction tests results documented in a level 1 GITA report verify the construction methods observed on site are satisfactory. Testing is conducted with random sampling across an area of work that is defined in the Australian Standard as a "lot" which is "an area of work that is essentially homogenous in relation to material type and moisture condition, rolling response and compaction technique, and which has been used for the assessment of the relative compaction of an area of work" (AS 3798-2007). As such, any test completed is representative of an area that may be up to 2500m<sup>2</sup> in area and across several house lots.

A GITA Inspection Verification report (Reference: D20260A) has been published on 22 October 2020 and documents that the allotment earthworks were carried out in accordance with AS3798 and in compliance with the project specification provided by the contractor.

For and on behalf of

**Terra Firma Laboratories**



Chris Caulfield  
Project Manager

22 October 2020

TO WHOM IT MAY CONCERN

Re: Bridgefield Estate Stage 8  
Rockbank  
Lot 858

*Terra Firma Laboratories was engaged by Lojac Civil Pty Ltd as the Geotechnical and Inspection Testing Authority (GITA) to provide Level 1 supervision and testing on the earthworks component for Bridgefield Estate, Stage 8, Rockbank in accordance with Australian Standard AS3798 Guidelines for Earthworks for Commercial and Residential Development.*

Lot 858 as defined in drawing ref 22236E/8 from *Reeds Consulting*, provided by the contractor, was included in the scope of works.

With regard to any fill placement please consider the following:

- Controlled fill was placed up to 300mm below finished surface level. The final 300mm fill is considered top soil and organic matter and not controlled fill.
- Verification of finished surface level to design levels is outside of the scope of the GITA Inspection and Verification report.
- Compaction tests results documented in a level 1 GITA report verify the construction methods observed on site are satisfactory. Testing is conducted with random sampling across an area of work that is defined in the Australian Standard as a "lot" which is "an area of work that is essentially homogenous in relation to material type and moisture condition, rolling response and compaction technique, and which has been used for the assessment of the relative compaction of an area of work" (AS 3798-2007). As such, any test completed is representative of an area that may be up to 2500m<sup>2</sup> in area and across several house lots.

A GITA Inspection Verification report (Reference: D20260A) has been published on 22 October 2020 and documents that the allotment earthworks were carried out in accordance with AS3798 and in compliance with the project specification provided by the contractor.

For and on behalf of

**Terra Firma Laboratories**



Chris Caulfield  
Project Manager

22 October 2020

TO WHOM IT MAY CONCERN

Re: Bridgefield Estate Stage 8  
Rockbank  
Lot 859

*Terra Firma Laboratories was engaged by Lojac Civil Pty Ltd as the Geotechnical and Inspection Testing Authority (GITA) to provide Level 1 supervision and testing on the earthworks component for Bridgefield Estate, Stage 8, Rockbank in accordance with Australian Standard AS3798 Guidelines for Earthworks for Commercial and Residential Development.*

Lot 859 as defined in drawing ref 22236E/8 from *Reeds Consulting*, provided by the contractor, was included in the scope of works.

With regard to any fill placement please consider the following:

- Controlled fill was placed up to 300mm below finished surface level. The final 300mm fill is considered top soil and organic matter and not controlled fill.
- Verification of finished surface level to design levels is outside of the scope of the GITA Inspection and Verification report.
- Compaction tests results documented in a level 1 GITA report verify the construction methods observed on site are satisfactory. Testing is conducted with random sampling across an area of work that is defined in the Australian Standard as a "lot" which is "an area of work that is essentially homogenous in relation to material type and moisture condition, rolling response and compaction technique, and which has been used for the assessment of the relative compaction of an area of work" (AS 3798-2007). As such, any test completed is representative of an area that may be up to 2500m<sup>2</sup> in area and across several house lots.

A GITA Inspection Verification report (Reference: D20260A) has been published on 22 October 2020 and documents that the allotment earthworks were carried out in accordance with AS3798 and in compliance with the project specification provided by the contractor.

For and on behalf of

**Terra Firma Laboratories**



Chris Caulfield  
Project Manager

22 October 2020

TO WHOM IT MAY CONCERN

Re: Bridgefield Estate Stage 8  
Rockbank  
Lot 860

*Terra Firma Laboratories was engaged by Lojac Civil Pty Ltd as the Geotechnical and Inspection Testing Authority (GITA) to provide Level 1 supervision and testing on the earthworks component for Bridgefield Estate, Stage 8, Rockbank in accordance with Australian Standard AS3798 Guidelines for Earthworks for Commercial and Residential Development.*

Lot 860 as defined in drawing ref 22236E/8 from *Reeds Consulting*, provided by the contractor, was included in the scope of works.

With regard to any fill placement please consider the following:

- Controlled fill was placed up to 300mm below finished surface level. The final 300mm fill is considered top soil and organic matter and not controlled fill.
- Verification of finished surface level to design levels is outside of the scope of the GITA Inspection and Verification report.
- Compaction tests results documented in a level 1 GITA report verify the construction methods observed on site are satisfactory. Testing is conducted with random sampling across an area of work that is defined in the Australian Standard as a "lot" which is "an area of work that is essentially homogenous in relation to material type and moisture condition, rolling response and compaction technique, and which has been used for the assessment of the relative compaction of an area of work" (AS 3798-2007). As such, any test completed is representative of an area that may be up to 2500m<sup>2</sup> in area and across several house lots.

A GITA Inspection Verification report (Reference: D20260A) has been published on 22 October 2020 and documents that the allotment earthworks were carried out in accordance with AS3798 and in compliance with the project specification provided by the contractor.

For and on behalf of

**Terra Firma Laboratories**



Chris Caulfield  
Project Manager

22 October 2020

TO WHOM IT MAY CONCERN

Re: Bridgefield Estate Stage 8  
Rockbank  
Lot 861

*Terra Firma Laboratories was engaged by Lojac Civil Pty Ltd as the Geotechnical and Inspection Testing Authority (GITA) to provide Level 1 supervision and testing on the earthworks component for Bridgefield Estate, Stage 8, Rockbank in accordance with Australian Standard AS3798 Guidelines for Earthworks for Commercial and Residential Development.*

Lot 861 as defined in drawing ref 22236E/8 from *Reeds Consulting*, provided by the contractor, was included in the scope of works.

With regard to any fill placement please consider the following:

- Controlled fill was placed up to 300mm below finished surface level. The final 300mm fill is considered top soil and organic matter and not controlled fill.
- Verification of finished surface level to design levels is outside of the scope of the GITA Inspection and Verification report.
- Compaction tests results documented in a level 1 GITA report verify the construction methods observed on site are satisfactory. Testing is conducted with random sampling across an area of work that is defined in the Australian Standard as a "lot" which is "an area of work that is essentially homogenous in relation to material type and moisture condition, rolling response and compaction technique, and which has been used for the assessment of the relative compaction of an area of work" (AS 3798-2007). As such, any test completed is representative of an area that may be up to 2500m<sup>2</sup> in area and across several house lots.

A GITA Inspection Verification report (Reference: D20260A) has been published on 22 October 2020 and documents that the allotment earthworks were carried out in accordance with AS3798 and in compliance with the project specification provided by the contractor.

For and on behalf of

**Terra Firma Laboratories**



Chris Caulfield  
Project Manager

22 October 2020

TO WHOM IT MAY CONCERN

Re: Bridgefield Estate Stage 8  
Rockbank  
Lot 862

*Terra Firma Laboratories was engaged by Lojac Civil Pty Ltd as the Geotechnical and Inspection Testing Authority (GITA) to provide Level 1 supervision and testing on the earthworks component for Bridgefield Estate, Stage 8, Rockbank in accordance with Australian Standard AS3798 Guidelines for Earthworks for Commercial and Residential Development.*

Lot 862 as defined in drawing ref 22236E/8 from *Reeds Consulting*, provided by the contractor, was included in the scope of works.

With regard to any fill placement please consider the following:

- Controlled fill was placed up to 300mm below finished surface level. The final 300mm fill is considered top soil and organic matter and not controlled fill.
- Verification of finished surface level to design levels is outside of the scope of the GITA Inspection and Verification report.
- Compaction tests results documented in a level 1 GITA report verify the construction methods observed on site are satisfactory. Testing is conducted with random sampling across an area of work that is defined in the Australian Standard as a "lot" which is "an area of work that is essentially homogenous in relation to material type and moisture condition, rolling response and compaction technique, and which has been used for the assessment of the relative compaction of an area of work" (AS 3798-2007). As such, any test completed is representative of an area that may be up to 2500m<sup>2</sup> in area and across several house lots.

A GITA Inspection Verification report (Reference: D20260A) has been published on 22 October 2020 and documents that the allotment earthworks were carried out in accordance with AS3798 and in compliance with the project specification provided by the contractor.

For and on behalf of

**Terra Firma Laboratories**



Chris Caulfield  
Project Manager