Banyan Place Estate Stage 3

GITA Inspection Verification Report

Prepared For:	Lojac Civil Pty Ltd
Report Number	P23155A V1
Version Release Date	24 Aug 2023
Report Released By	C Caulfield
Title	Project Manager
Signature	

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Appendices

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 Banyan Place Estate Stage 3. This work was conducted over the period of 01/03/2023 to 14/03/2023.

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 301 to 324, bounded by streets Everlasting Road and Chivers Crescent. 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 Charlton Degg (Drawing Reference: 1470_3/R04) 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^2), the minimum testing frequency is 1 test per layer per material type per 2500m^2 or 1 test per 500m^3 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.

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 to have been conducted within the house allotment but may have been verified by testing conducted within up to a 2500m^2 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 (P23155D1, 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 20 density tests (Hilf method in accordance with 1289 5.7.1) were undertaken with 2 failed results. The contractor was notified of any failed tests and the failed areas were ripped, watered, compacted and then re-tested to confirm compliance with the specification. 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.

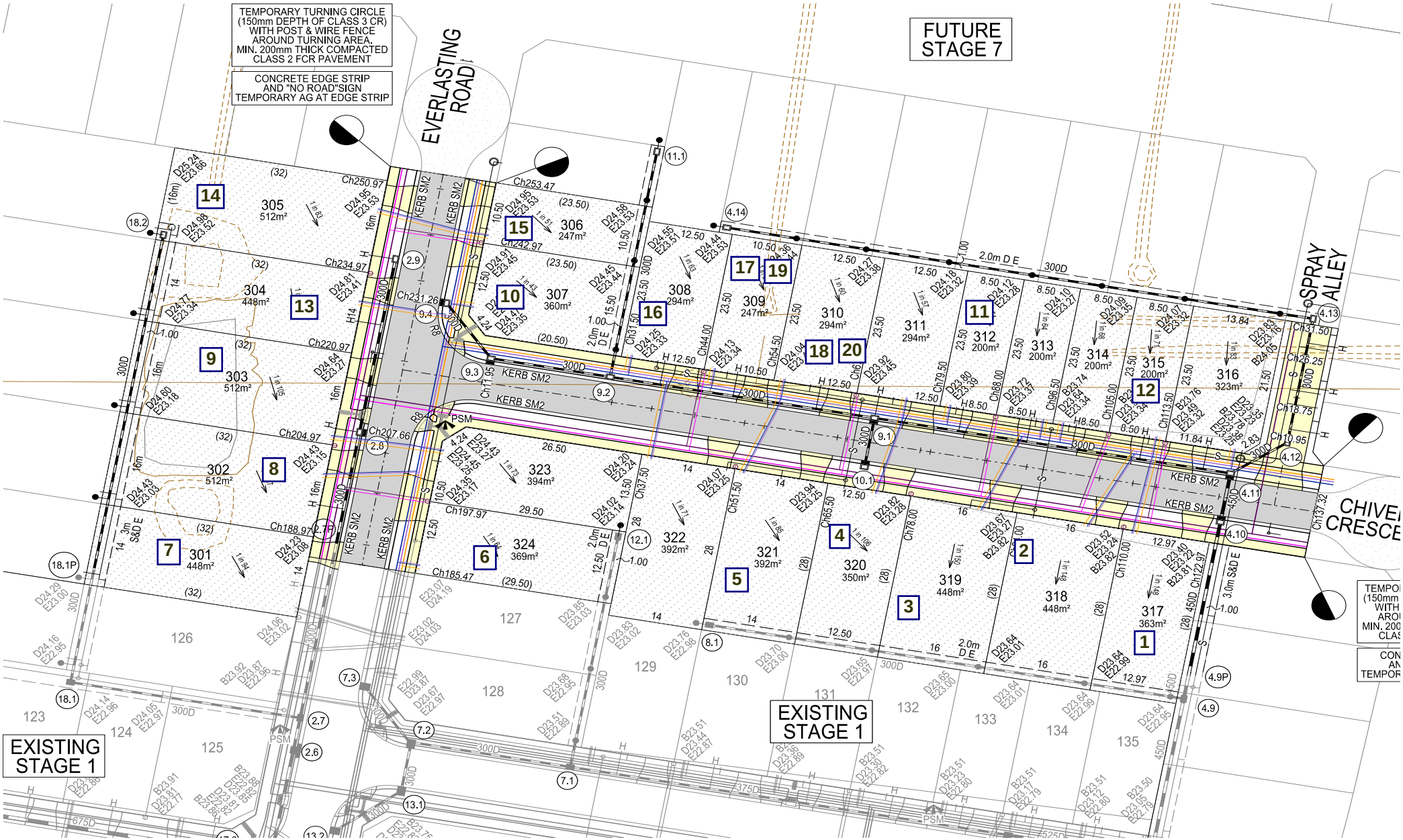
5 Statement of Compliance

The intention of this report is to provide a description of the earthworks construction for Stage 3 at Banyan Place Estate. For completed fill areas of greater than 300mm, and for works completed between 01/03/2023 and 14/03/2023, 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 3 of Banyan Place Estate was observed to be constructed in compliance with the requirements of the Technical Specification.

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



terra firma laboratories

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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: Banyan Place Estate, Stage 3

Reference: P23155 D1

Appendix 2: Compaction Test Register and Test Certificates

Compaction Test Register

Client: Lojac Civil Pty Ltd
Project No: P23155
Project: Banyan Place Estate Stage 3
Specification: 95%

Date:	Test No:	Layer:	Retest of:	Density:	Pass/Fail:	Lot No:	Report No:
1/03/2023	1	Layer 1		95.5%	Pass	Lot 317	P23155-1
1/03/2023	2	Layer 2		97.5%	Pass	Lot 318	P23155-1
1/03/2023	3	Layer 2		97.0%	Pass	Lot 319	P23155-1
1/03/2023	4	Layer 3		99.0%	Pass	Lot 320	P23155-1
1/03/2023	5	Layer 3		97.5%	Pass	Lot 321	P23155-1
1/03/2023	6	Layer 3		98.0%	Pass	Lot 324	P23155-1
2/03/2023	7	Layer 1		95.0%	Pass	Lot 301	P23155-2
2/03/2023	8	Layer 2		99.0%	Pass	Lot 302	P23155-2
2/03/2023	9	Layer 2		97.0%	Pass	Lot 303	P23155-2
3/03/2023	10	Layer 1		96.0%	Pass	Lot 307	P23155-3
3/03/2023	11	Layer 1		98.0%	Pass	Lot 312	P23155-3
3/03/2023	12	Layer 2		97.5%	Pass	Lot 315	P23155-3
7/03/2023	13	Layer 3		100.5%	Pass	Lot 304	P23155-4
7/03/2023	14	Layer 3		104.0%	Pass	Lot 305	P23155-4
7/03/2023	15	Layer 3		99.5%	Pass	Lot 306	P23155-4
9/03/2023	16	Layer 3		98.5%	Pass	Lot 308	P23155-5
9/03/2023	17	Layer 3		93.0%	Fail	Lot 309	P23155-5
9/03/2023	18	Layer 3		93.0%	Fail	Lot 310	P23155-5
14/03/2023	19	Layer 3	Test #17	110.5%	Pass	Lot 309	P231328-3A
14/03/2023	20	Layer 3	Test #18	97.5%	Pass	Lot 310	P231328-3A

Material Test Report

Report Number: **P231355-1**
Issue Number: 1
Date Issued: 27/03/2023
Client: Lojac Civil Pty Ltd
35/148 Chesterville Road, Moorabbin Vic 3189
Project Number: P231355
Project Name: Banyan Estate Stage 3 - Level One
Project Location: Officer
Work Request: 11754
Date Sampled: 01/03/2023
Dates Tested: 01/03/2023 - 02/03/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95%
Site Selection: Selected by Client
Location: Banyan Estate Stage 3 - Level One
Material: Sandy CLAY
Material Source: Imported

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NATA WORLD RECOGNISED ACCREDITATION
Accredited for compliance with ISO/IEC 17025 - Testing
Approved Signatory: Chris Caulfield
Project Manager
NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1						
Sample Number	P23-11754A	P23-11754B	P23-11754C	P23-11754D	P23-11754E	P23-11754F
Test Number	1	2	3	4	5	6
Date Tested	01/03/2023	01/03/2023	01/03/2023	01/03/2023	01/03/2023	01/03/2023
Time Tested	14:06	14:06	14:06	14:06	14:06	14:06
Test Request #/Location	Lot 317	Lot 318	Lot 319	Lot 320	Lot 321	Lot 324
Layer / Reduced Level	Layer 1	Layer 2	Layer 2	Layer 3	Layer 3	Layer 3
Thickness of Layer (mm)	300	300	300	300	300	300
Soil Description	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY	Sandy CLAY
Test Depth (mm)	275	275	275	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0	0	0
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	**	**	**	**
Field Wet Density (FWD) t/m^3	2.03	2.03	2.06	2.18	2.12	2.14
Field Moisture Content %	15.3	12.2	14.7	7.1	13.4	9.0
Field Dry Density (FDD) t/m^3	1.76	1.81	1.80	2.04	1.87	1.96
Peak Converted Wet Density t/m^3	2.14	2.08	2.13	2.21	2.18	2.19
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	**	**	**	**	**	**
Adj. Field Moisture Content % (AS1289.5.4.1)	15.3	12.2	14.7	7.1	13.4	9.0
Moisture Ratio % (AS1289.5.4.1)	102.0	95.5	112.0	81.5	123.0	94.0
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**	**	**	**
Moisture Variation (Wv) %	-0.5	0.5	-1.5	1.5	-2.5	0.5
Adjusted Moisture Variation %	**	**	**	**	**	**
Hilf Density Ratio (%)	**95.5**	**97.5**	**97.0**	**99.0**	**97.5**	**98.0**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**	**	**	**

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Report Number: P231355-2
Issue Number: 2 - *This version supersedes all previous issues*
Reissue Reason:
Date Issued: 24/08/2023
Client: Lojac Civil Pty Ltd
35/148 Chesterville Road, Moorabbin Vic 3189
Project Number: P231355
Project Name: Banyan Estate Stage 3 - Level One
Project Location: Officer
Work Request: 11766
Date Sampled: 02/03/2023
Dates Tested: 02/03/2023 - 03/03/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95%
Site Selection: Selected by Client
Location: Banyan Estate Stage 3 - Level One
Material: Sandy CLAY
Material Source: Imported

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Approved Signatory: Chris Caulfield
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NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	P23-11766A	P23-11766B	P23-11766C
Test Number	7	8	9
Date Tested	02/03/2023	02/03/2023	02/03/2023
Time Tested	14:58	14:58	14:58
Test Request #/Location	Lot 301	Lot 302	Lot 303
Layer / Reduced Level	Layer 1	Layer 2	Layer 2
Thickness of Layer (mm)	300	300	300
Soil Description	Sandy CLAY	Sandy CLAY	Sandy 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
Percentage of Dry Oversize (%) (AS1289.5.4.1)	0	0	0
Field Wet Density (FWD) t/m^3	1.94	2.09	2.03
Field Moisture Content %	12.4	8.4	17.5
Field Dry Density (FDD) t/m^3	1.73	1.93	1.73
Peak Converted Wet Density t/m^3	2.04	2.11	2.10
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	14.2	10.6	16.6
Adj. Field Moisture Content % (AS1289.5.4.1)	12.4	8.4	17.5
Moisture Ratio % (AS1289.5.4.1)	87.5	79.5	105.5
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**
Moisture Variation (Wv) %	1.5	2.0	-1.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**95.0**	**99.0**	**97.0**
Compaction Method	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Report Number: P231355-3
Issue Number: 2 - *This version supersedes all previous issues*
Reissue Reason:
Date Issued: 24/08/2023
Client: Lojac Civil Pty Ltd
35/148 Chesterville Road, Moorabbin Vic 3189
Project Number: P231355
Project Name: Banyan Estate Stage 3 - Level One
Project Location: Officer
Work Request: 11777
Date Sampled: 03/03/2023
Dates Tested: 03/03/2023 - 08/03/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95%
Site Selection: Selected by Client
Location: Banyan Estate Stage 3 - Level One
Material: Sandy CLAY
Material Source: Imported

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Project Manager
NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	P23-11777A	P23-11777B	P23-11777C
Test Number	10	11	12
Date Tested	03/03/2023	03/03/2023	03/03/2023
Time Tested	02:50	02:50	02:50
Test Request #/Location	Lot 307	Lot 312	Lot 315
Layer / Reduced Level	Layer 1	Layer 1	Layer 2
Thickness of Layer (mm)	300	300	300
Soil Description	Sandy CLAY	Sandy CLAY	Sandy CLAY
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	3	0	4
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	**
Field Wet Density (FWD) t/m^3	1.89	1.99	2.15
Field Moisture Content %	20.7	11.1	7.1
Field Dry Density (FDD) t/m^3	1.57	1.79	2.01
Peak Converted Wet Density t/m^3	**	2.03	**
Adjusted Peak Converted Wet Density t/m^3	1.97	**	2.21
Adj. Optimum Moisture Content % (AS1289.5.4.1)	24.4	**	11.0
Adj. Field Moisture Content % (AS1289.5.4.1)	20.1	11.1	6.8
Moisture Ratio % (AS1289.5.4.1)	**	73.0	**
Adjusted Moisture Ratio % (AS1289.5.4.1)	82.5	**	62.0
Moisture Variation (Wv) %	**	4.0	**
Adjusted Moisture Variation %	4.0	**	4.0
Hilf Density Ratio (%)	**96.0**	**98.0**	**97.5**
Compaction Method	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Report Number: **P231355-4**
Issue Number: 2 - *This version supersedes all previous issues*
Reissue Reason:
Date Issued: 24/08/2023
Client: Lojac Civil Pty Ltd
35/148 Chesterville Road, Moorabbin Vic 3189
Project Number: P231355
Project Name: Banyan Estate Stage 3 - Level One
Project Location: Officer
Work Request: 11818
Date Sampled: 07/03/2023
Dates Tested: 07/03/2023 - 08/03/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95%
Site Selection: Selected by Client
Location: Banyan Estate stage 03 - Level One
Material: Sandy silty CLAY
Material Source: Imported

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Project Manager
NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	P23-11818A	P23-11818B	P23-11818C
Test Number	13	14	15
Date Tested	07/03/2023	07/03/2023	07/03/2023
Time Tested	15:32	15:32	15:32
Test Request #/Location	Lot 304	Lot 305	Lot 306
Layer / Reduced Level	Layer 3	Layer 3	Layer 3
Thickness of Layer (mm)	300	300	300
Soil Description	Sandy silty CLAY	Sandy silty CLAY	Sandy 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
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	**
Field Wet Density (FWD) t/m^3	1.96	2.00	1.95
Field Moisture Content %	16.4	15.0	13.6
Field Dry Density (FDD) t/m^3	1.68	1.74	1.71
Peak Converted Wet Density t/m^3	1.95	1.92	1.96
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	**	**	**
Adj. Field Moisture Content % (AS1289.5.4.1)	16.4	15.0	13.6
Moisture Ratio % (AS1289.5.4.1)	81.0	77.5	77.0
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**
Moisture Variation (Wv) %	3.5	4.5	4.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**100.5**	**104.0**	**99.5**
Compaction Method	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Report Number: **P231355-5**
Issue Number: 2 - *This version supersedes all previous issues*
Reissue Reason:
Date Issued: 24/08/2023
Client: Lojac Civil Pty Ltd
35/148 Chesterville Road, Moorabbin Vic 3189
Project Number: P231355
Project Name: Banyan Estate Stage 3 - Level One
Project Location: Officer
Work Request: 11851
Date Sampled: 09/03/2023
Dates Tested: 09/03/2023 - 10/03/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95%
Site Selection: Selected by Client
Location: Banyan Estate Stage 3 - Level One
Material: Sandy silty CLAY
Material Source: Imported

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NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	P23-11851A	P23-11851B	P23-11851C
Test Number	16	17	18
Date Tested	09/03/2023	09/03/2023	09/03/2023
Time Tested	15:55	15:55	15:55
Test Request #/Location	Lot 308	Lot 309	Lot 310
Layer / Reduced Level	Layer 3	Layer 3	Layer 3
Thickness of Layer (mm)	300	300	300
Soil Description	Sandy silty CLAY	Sandy silty CLAY	Sandy 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	3
Percentage of Dry Oversize (%) (AS1289.5.4.1)	0	0	0
Field Wet Density (FWD) t/m^3	1.97	1.95	1.90
Field Moisture Content %	14.8	20.1	15.0
Field Dry Density (FDD) t/m^3	1.71	1.62	1.66
Peak Converted Wet Density t/m^3	2.00	2.09	**
Adjusted Peak Converted Wet Density t/m^3	**	**	2.04
Adj. Optimum Moisture Content % (AS1289.5.4.1)	17.8	17.9	12.5
Adj. Field Moisture Content % (AS1289.5.4.1)	14.8	20.1	14.7
Moisture Ratio % (AS1289.5.4.1)	83.0	112.5	**
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	117.0
Moisture Variation (Wv) %	3.0	-2.0	**
Adjusted Moisture Variation %	**	**	-2.5
Hilf Density Ratio (%)	**98.5**	**93.0**	**93.0**
Compaction Method	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

Material Test Report

Report Number: **P231328-3A**
Issue Number: 1
Date Issued: 24/08/2023
Client: Lojac Civil Pty Ltd
35/148 Chesterville Road, Moorabbin Vic 3189
Project Number: P231328
Project Name: Banyan Place Estate Stage 4 - Level One
Project Location: 70-100 Lecky Road, Officer
Work Request: 11880
Date Sampled: 14/03/2023
Dates Tested: 14/03/2023 - 16/03/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95%
Site Selection: Selected by Client
Location: Banyan Estate Stage 3 - Level One
Material: clay gravel
Material Source: Imported

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Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	P23-11880A	P23-11880B	
Test Number	19	20	
Date Tested	14/03/2023	14/03/2023	
Time Tested	**	**	
Test Request #/Location	Lot 309	Lot 310	
Layer / Reduced Level	Layer 2	Layer 2	
Thickness of Layer (mm)	300	300	
Soil Description	CLAY	CLAY	
Test Depth (mm)	275	275	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	0	0	
Percentage of Dry Oversize (%) (AS1289.5.4.1)	0	0	
Field Wet Density (FWD) t/m^3	2.02	2.01	
Field Moisture Content %	14.5	13.6	
Field Dry Density (FDD) t/m^3	1.76	1.77	
Peak Converted Wet Density t/m^3	1.82	2.06	
Adjusted Peak Converted Wet Density t/m^3	**	**	
Adj. Optimum Moisture Content % (AS1289.5.4.1)	19.8	15.4	
Adj. Field Moisture Content % (AS1289.5.4.1)	14.5	13.6	
Moisture Ratio % (AS1289.5.4.1)	73.5	88.0	
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	
Moisture Variation (Wv) %	5.5	2.0	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	**110.5**	**97.5**	
Compaction Method	**Standard**	**Standard**	
Report Remarks	**	**	

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC

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24 Aug 2023

TO WHOM IT MAY CONCERN

Re: Banyan Place Estate Stage 3
Officer
Lot 301

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 Banyan Place Estate, Stage 3, Officer in accordance with Australian Standard AS3798 *Guidelines for Earthworks for Commercial and Residential Development.*

Lot 301 as defined in drawing Ref 1470_3/R04 from *Charlton Degg,* 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 material is considered top soil and organic matter and not controlled fill.
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For and on behalf of
Terra Firma Laboratories

C Caulfield
Project Manager

terra firma laboratories

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24 Aug 2023

TO WHOM IT MAY CONCERN

Re: Banyan Place Estate Stage 3
Officer
Lot 302

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Lot 302 as defined in drawing Ref 1470_3/R04 from *Charlton Degg,* provided by the contractor, was included in the scope of works.

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For and on behalf of
Terra Firma Laboratories

C Caulfield
Project Manager

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24 Aug 2023

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Officer
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Terra Firma Laboratories

C Caulfield
Project Manager

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Officer
Lot 304

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Lot 304 as defined in drawing Ref 1470_3/R04 from *Charlton Degg,* provided by the contractor, was included in the scope of works.

With regard to any fill placement please consider the following:

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For and on behalf of
Terra Firma Laboratories

C Caulfield
Project Manager

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24 Aug 2023

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Officer
Lot 305

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Lot 305 as defined in drawing Ref 1470_3/R04 from *Charlton Degg,* provided by the contractor, was included in the scope of works.

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For and on behalf of
Terra Firma Laboratories

C Caulfield
Project Manager

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24 Aug 2023

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Officer
Lot 306

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C Caulfield
Project Manager

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Officer
Lot 307

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Lot 307 as defined in drawing Ref 1470_3/R04 from *Charlton Degg,* provided by the contractor, was included in the scope of works.

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For and on behalf of
Terra Firma Laboratories

C Caulfield
Project Manager

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24 Aug 2023

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Officer
Lot 308

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C Caulfield
Project Manager

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Officer
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C Caulfield
Project Manager

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24 Aug 2023

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Re: Banyan Place Estate Stage 3
Officer
Lot 310

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C Caulfield
Project Manager

terra firma laboratories

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24 Aug 2023

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Officer
Lot 311

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Project Manager

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Officer
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C Caulfield
Project Manager

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Officer
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Terra Firma Laboratories

C Caulfield
Project Manager

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24 Aug 2023

TO WHOM IT MAY CONCERN

Re: Banyan Place Estate Stage 3
Officer
Lot 314

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Terra Firma Laboratories

C Caulfield
Project Manager

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24 Aug 2023

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Re: Banyan Place Estate Stage 3
Officer
Lot 315

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Lot 315 as defined in drawing Ref 1470_3/R04 from *Charlton Degg,* provided by the contractor, was included in the scope of works.

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C Caulfield
Project Manager

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Officer
Lot 316

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Lot 316 as defined in drawing Ref 1470_3/R04 from *Charlton Degg,* provided by the contractor, was included in the scope of works.

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Terra Firma Laboratories

C Caulfield
Project Manager

terra firma laboratories

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24 Aug 2023

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Officer
Lot 317

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C Caulfield
Project Manager

terra firma laboratories

Your Worksite is Our Laboratory.

24 Aug 2023

TO WHOM IT MAY CONCERN

Re: Banyan Place Estate Stage 3
Officer
Lot 318

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 Banyan Place Estate, Stage 3, Officer in accordance with Australian Standard AS3798 *Guidelines for Earthworks for Commercial and Residential Development.*

Lot 318 as defined in drawing Ref 1470_3/R04 from *Charlton Degg,* 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 material 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^2 in area and across several house lots.

A GITA Inspection Verification report (Reference: P23155A) has been published on 24 Aug 2023 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

C Caulfield
Project Manager

terra firma laboratories

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24 Aug 2023

TO WHOM IT MAY CONCERN

Re: Banyan Place Estate Stage 3
Officer
Lot 319

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 Banyan Place Estate, Stage 3, Officer in accordance with Australian Standard AS3798 *Guidelines for Earthworks for Commercial and Residential Development.*

Lot 319 as defined in drawing Ref 1470_3/R04 from *Charlton Degg,* 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 material is considered top soil and organic matter and not controlled fill.
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Project Manager

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24 Aug 2023

TO WHOM IT MAY CONCERN

Re: Banyan Place Estate Stage 3
Officer
Lot 320

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Lot 320 as defined in drawing Ref 1470_3/R04 from *Charlton Degg,* provided by the contractor, was included in the scope of works.

With regard to any fill placement please consider the following:

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Re: Banyan Place Estate Stage 3
Officer
Lot 321

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Lot 321 as defined in drawing Ref 1470_3/R04 from *Charlton Degg,* 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 material is considered top soil and organic matter and not controlled fill.
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Project Manager

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24 Aug 2023

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Re: Banyan Place Estate Stage 3
Officer
Lot 322

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Lot 322 as defined in drawing Ref 1470_3/R04 from *Charlton Degg,* provided by the contractor, was included in the scope of works.

With regard to any fill placement please consider the following:

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Re: Banyan Place Estate Stage 3
Officer
Lot 323

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Lot 323 as defined in drawing Ref 1470_3/R04 from *Charlton Degg,* provided by the contractor, was included in the scope of works.

With regard to any fill placement please consider the following:

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Re: Banyan Place Estate Stage 3
Officer
Lot 324

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Lot 324 as defined in drawing Ref 1470_3/R04 from *Charlton Degg,* 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 material is considered top soil and organic matter and not controlled fill.
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