

Allanvale Stage 4

GITA Inspection Verification Report

Prepared For: Streetworks Pty Ltd

Report Number P231474A V1

Version Release Date 13 Jul 2023

Report Released By C Caulfield

Title Project Manager

Signature



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1 Introduction

Terra Firma Laboratories was engaged by Streetworks Pty Ltd as the Geotechnical Inspection and Testing Authority (GITA) to provide Level 1 supervision and testing works on the earthworks component for Allanvale Stage 4. This work was conducted over the period of 09/06/2023 to 13/07/2023.

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 429, 440 to 446, 453, 454, 455, 457, 458, 459 462 to 466, 476 to 478 and Reserve #1, bounded by streets Stakes Street, Octagonal Street, Sweep Street and Patrobas Loop. 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 Colliers (Drawing Reference: 102704RD04 & 05) and provided by Streetworks 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 Streetworks 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 1500m²), the minimum testing frequency is 1 test per layer per material type per 2500m² or 1 test per 500m³ 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.

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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 2500m² 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 150mm of material 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 150mm of material 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

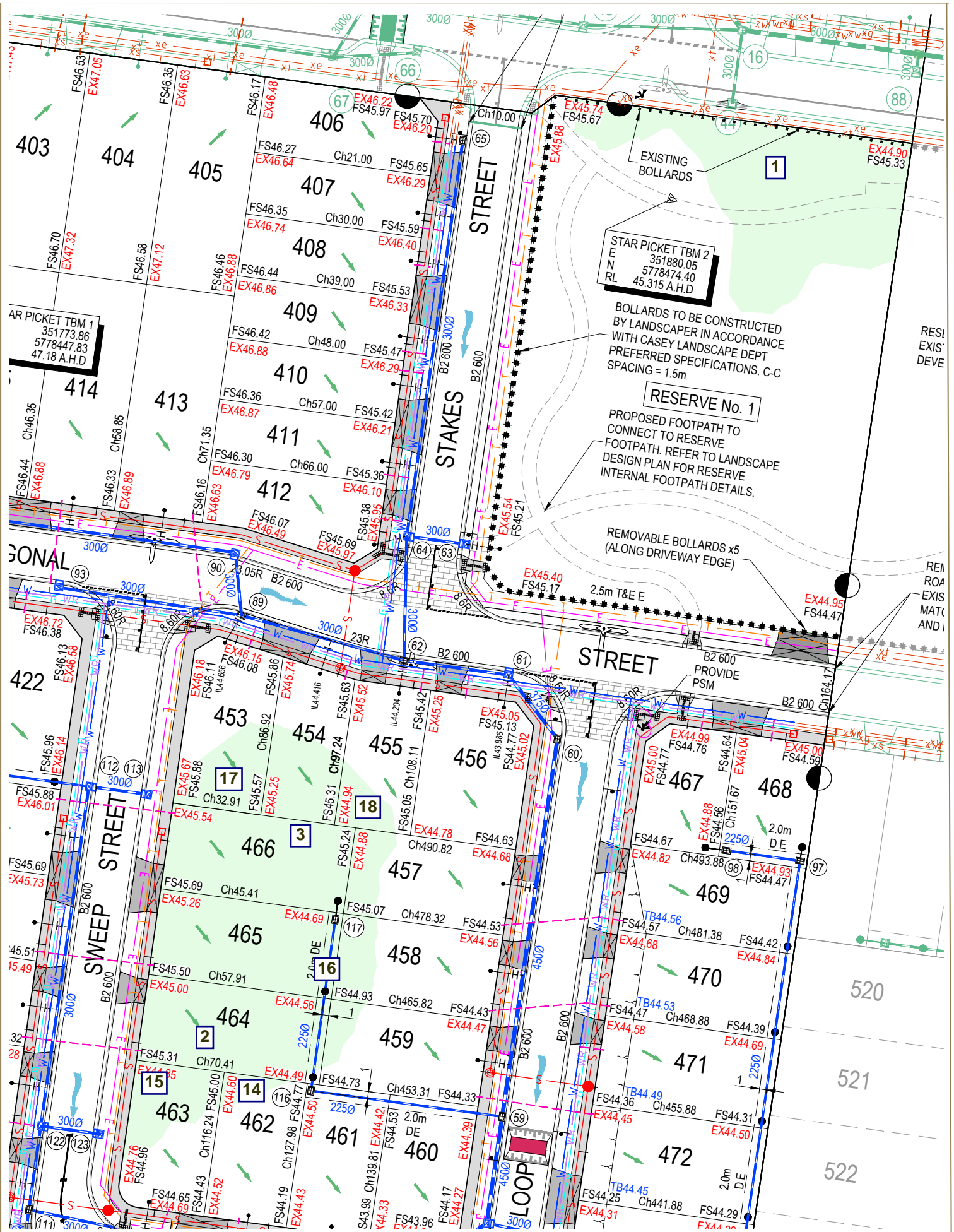
plan (P231474D1, Appendix 1) providing a schematic of test locations across the extent of scope of works for every placed layer of fill is also documented.

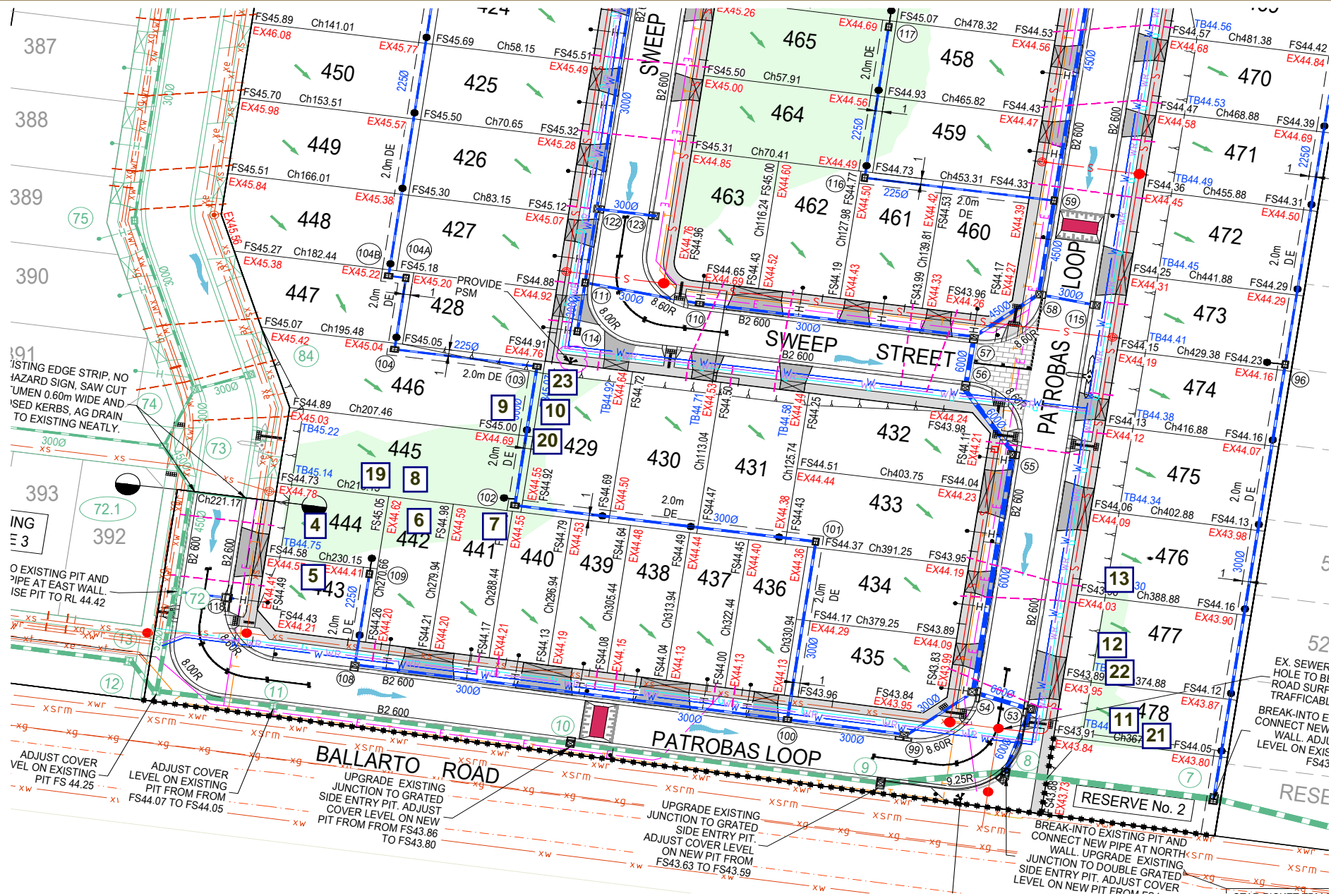
A total of 23 density tests (Hilf method in accordance with 1289 5.7.1) were undertaken with 5 failed results. The contractor was notified of any failed tests and the failed areas were ripped, watered, compacted and then re-tested to confirm compliance with the specification. The results summarised in 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 4 at Allanvale. For completed fill areas of greater than 300mm, and for works completed between 09/06/2023 and 13/07/2023, 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 4 of Allanvale 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

Test Location Plan

not to scale

Client: Streetworks Pty Ltd

Project: Allanvale, Stage 4

Reference: P231474 D1

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P231474 D1

Appendix 2: Compaction Test Register and Test Certificates



Compaction Test Register

Client: Streetworks Pty Ltd
Project: Allanvale Stage 4

Project No: P231474
Specification: 95%

Date:	Test No:	Layer:	Retest of:	Density:	Pass/Fail:	Lot No:	Report No:
9/06/2023	1	FSL		97.0%	Pass	Reserve	P231474-1
9/06/2023	2	FSL		96.0%	Pass	Lot 464	P231474-1
9/06/2023	3	FSL		97.0%	Pass	Lot 466	P231474-1
9/06/2023	4	FSL		96.5%	Pass	Lot 444	P231474-1
9/06/2023	5	FSL		98.0%	Pass	Lot 443	P231474-1
9/06/2023	6	FSL		98.5%	Pass	Lot 442	P231474-1
9/06/2023	7	FSL		100.5%	Pass	Lot 441	P231474-1
9/06/2023	8	FSL		94.0%	Fail	Lot 445	P231474-1
9/06/2023	9	FSL		102.0%	Pass	Lot 446	P231474-1
9/06/2023	10	FSL		94.0%	Fail	Lot 429	P231474-1
9/06/2023	11	FSL		92.0%	Fail	Lot 478	P231474-1
9/06/2023	12	FSL		92.5%	Fail	Lot 477	P231474-1
9/06/2023	13	FSL		95.0%	Pass	Lot 476	P231474-1
9/06/2023	14	FSL		96.5%	Pass	Lot 462	P231474-1
9/06/2023	15	FSL		101.5%	Pass	Lot 463	P231474-1
9/06/2023	16	FSL		97.5%	Pass	Lot 465	P231474-1
9/06/2023	17	FSL		99.0%	Pass	Lot 453	P231474-1
9/06/2023	18	FSL		98.0%	Pass	Lot 455	P231474-1
13/06/2023	19	FSL	Test #8	95.5%	Pass	Lot 445	P231474-2
13/06/2023	20	FSL	Test #10	93.0%	Fail	Lot 429	P231474-2
13/06/2023	21	FSL	Test #11	95.5%	Pass	Lot 478	P231474-2
13/06/2023	22	FSL	Test #12	95.5%	Pass	Lot 477	P231474-2
13/07/2023	23	FSL	Test #20	100.0%	Pass	Lot 429	P231474-3

Material Test Report

Report Number: P231474-1
Issue Number: 1
Date Issued: 13/07/2023
Client: Street Works Pty Ltd
 45 Commercial Drive, Pakenham Vic 3810
Project Number: P231474
Project Name: Allanvale Stage 4 Level One
Project Location: Cranbourne
Client Reference: S953
Work Request: 12590
Date Sampled: 09/06/2023
Dates Tested: 09/06/2023 - 13/06/2023
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: Allanvale Stage 4 Level One
Material: clay
Material Source: Onsite - Stockpile



Pakenham Laboratory
 47 National Avenue Pakenham VIC 3810
 Phone: (03) 9769 5799
 Email: ccaulfield@terrafirmalabs.com.au



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	P23-12590C	P23-12590G	P23-12590I
Test Number	3	7	9
Date Tested	13/06/2023	13/06/2023	13/06/2023
Time Tested	**	**	**
Test Request #/Location	3 Lot 466	7 Lot 441	9 Lot 446
Layer / Reduced Level	Final Layer	Final Layer	Final Layer
Thickness of Layer (mm)	300	200	200
Soil Description	CLAY	CLAY	CLAY
Test Depth (mm)	275	175	175
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	1.91	1.93	1.99
Field Moisture Content %	27.5	33.0	30.5
Field Dry Density (FDD) t/m ³	1.50	1.45	1.52
Peak Converted Wet Density t/m ³	1.96	1.93	1.94
Adjusted Peak Converted Wet Density t/m ³	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	24.3	29.0	27.3
Adj. Field Moisture Content % (AS1289.5.4.1)	27.5	33.0	30.5
Moisture Ratio % (AS1289.5.4.1)	113.0	114.0	112.0
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**
Moisture Variation (Wv) %	-3.0	-4.0	-3.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	97.0	100.5	102.0
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: P231474-1
Issue Number: 1
Date Issued: 13/07/2023
Client: Street Works Pty Ltd
 45 Commercial Drive, Pakenham Vic 3810
Project Number: P231474
Project Name: Allanvale Stage 4 Level One
Project Location: Cranbourne
Client Reference: S953
Work Request: 12590
Date Sampled: 09/06/2023
Dates Tested: 09/06/2023 - 13/06/2023
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: Allanvale Stage 4 Level One
Material: clay
Material Source: Onsite - Stockpile



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Approved Signatory: Chris Caulfield
 Project Manager

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.1.1 & 5.4.1 & 5.8.1 & 2.1.1						
Sample Number	P23-12590A	P23-12590B	P23-12590D	P23-12590E	P23-12590F	P23-12590H
Test Number	1	2	4	5	6	8
Date Tested	13/06/2023	13/06/2023	13/06/2023	13/06/2023	13/06/2023	13/06/2023
Time Tested	**	**	**	**	**	**
Test Request #/Location	1 Reserve	2 Lot 464	4 Lot 444	5 Lot 443	6 Lot 442	8 Lot 445
Layer / Reduced Level	Final Layer	Final Layer	Final Layer	Final Layer	Final Layer	Final Layer
Thickness of Layer (mm)	300	300	200	200	200	200
Soil Description	CLAY	CLAY	CLAY	CLAY	CLAY	CLAY
Test Depth (mm)	275	275	175	175	175	175
Fraction Tested (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Oversize (wet basis) %	0	0	0	0	0	0
Oversize (dry basis) %	0	0	0	0	0	0
Curing Hours	**	**	2.0	2.0	-10.0	2.0
Method used to Determine Plasticity	Visual Assessment	AS1289.3.1.2	Visual Assessment	Visual Assessment	Visual Assessment	Visual Assessment
Field Wet Density t/m ³	1.90	1.89	1.95	1.89	1.98	1.93
Field Moisture Content %	32.8	30.9	29.1	30.7	31.1	26.4
Field Dry Density t/m ³	1.43	1.44	1.51	1.45	1.51	1.53
Maximum Dry Density t/m ³	1.48	1.50	1.57	1.48	1.53	1.63
Adjusted Maximum Dry Density t/m ³	**	**	**	**	**	**
Optimum Moisture Content (OMC) %	25.5	24.5	23.0	28.5	25.0	21.5
Adjusted Optimum Moisture Content (OMC) %	**	**	**	**	**	**
Moisture Variation %	-7.5	-6.5	-6.0	-2.5	-6.0	-5.0
Moisture Ratio %	129.5	125.5	125.5	108.5	123.5	123.0
Density Ratio %	97.0	96.0	96.5	98.0	98.5	94.0
Compaction Method	Standard	Standard	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: P231474-1
Issue Number: 1
Date Issued: 13/07/2023
Client: Street Works Pty Ltd
 45 Commercial Drive, Pakenham Vic 3810
Project Number: P231474
Project Name: Allanvale Stage 4 Level One
Project Location: Cranbourne
Client Reference: S953
Work Request: 12590
Date Sampled: 09/06/2023
Dates Tested: 09/06/2023 - 13/06/2023
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: Allanvale Stage 4 Level One
Material: clay
Material Source: Onsite - Stockpile



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Approved Signatory: Chris Caulfield
 Project Manager

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.1.1 & 5.4.1 & 5.8.1 & 2.1.1

Sample Number	P23-12590J	P23-12590K	P23-12590L	P23-12590M	P23-12590N	P23-12590O
Test Number	10	11	12	13	14	15
Date Tested	13/06/2023	13/06/2023	13/06/2023	13/06/2023	13/06/2023	13/06/2023
Time Tested	**	**	**	**	**	**
Test Request #/Location	10 Lot 429	11 Lot 478	12 Lot 477	13 Lot 476	14 Lot 462	15 Lot 463
Layer / Reduced Level	Final Layer	Final Layer	Final Layer	Final Layer	Final Layer	Final Layer
Thickness of Layer (mm)	200	200	200	200	200	200
Soil Description	CLAY	CLAY	CLAY	CLAY	CLAY	CLAY
Test Depth (mm)	175	175	175	175	175	175
Fraction Tested (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Oversize (wet basis) %	0	0	0	0	0	0
Oversize (dry basis) %	0	0	0	0	0	0
Curing Hours	2.0	2.0	**	**	2.0	**
Method used to Determine Plasticity	Visual Assessment	Visual Assessment	Visual Assessment	Visual Assessment	Visual Assessment	Visual Assessment
Field Wet Density t/m ³	1.91	1.90	1.86	1.89	1.89	1.97
Field Moisture Content %	26.7	34.0	32.3	37.1	30.7	33.8
Field Dry Density t/m ³	1.50	1.42	1.40	1.38	1.45	1.47
Maximum Dry Density t/m ³	1.60	1.54	1.52	1.45	1.50	1.45
Adjusted Maximum Dry Density t/m ³	**	**	**	**	**	**
Optimum Moisture Content (OMC) %	22.5	22.5	22.0	25.0	25.5	26.5
Adjusted Optimum Moisture Content (OMC) %	**	**	**	**	**	**
Moisture Variation %	-4.5	-11.5	-10.5	-12.0	-5.5	-7.5
Moisture Ratio %	119.5	151.0	148.5	148.0	121.0	127.5
Density Ratio %	94.0	92.0	92.5	95.0	96.5	101.5
Compaction Method	Standard	Standard	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: P231474-1
Issue Number: 1
Date Issued: 13/07/2023
Client: Street Works Pty Ltd
 45 Commercial Drive, Pakenham Vic 3810
Project Number: P231474
Project Name: Allanvale Stage 4 Level One
Project Location: Cranbourne
Client Reference: S953
Work Request: 12590
Date Sampled: 09/06/2023
Dates Tested: 09/06/2023 - 14/06/2023
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: Allanvale Stage 4 Level One
Material: clay
Material Source: Onsite - Stockpile



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Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Chris Caulfield
 Project Manager

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.1.1 & 5.4.1 & 5.8.1 & 2.1.1

Sample Number	P23-12590P	P23-12590Q	P23-12590R			
Test Number	16	17	18			
Date Tested	13/06/2023	13/06/2023	13/06/2023			
Time Tested	**	**	**			
Test Request #/Location	16 Lot465	17 Lot 453	18 Lot 455			
Layer / Reduced Level	Final Layer	Final Layer	Final Layer			
Thickness of Layer (mm)	200	200	200			
Soil Description	CLAY	CLAY	CLAY			
Test Depth (mm)	175	175	175			
Fraction Tested (mm)	19.0	19.0	19.0			
Oversize (wet basis) %	0	0	0			
Oversize (dry basis) %	0	0	0			
Curing Hours	**	**	**			
Method used to Determine Plasticity	Visual Assessment	Visual Assessment	Visual Assessment			
Field Wet Density t/m ³	1.92	1.89	1.89			
Field Moisture Content %	28.0	37.1	35.1			
Field Dry Density t/m ³	1.50	1.38	1.40			
Maximum Dry Density t/m ³	1.53	1.39	1.43			
Adjusted Maximum Dry Density t/m ³	**	**	**			
Optimum Moisture Content (OMC) %	22.0	29.5	29.0			
Adjusted Optimum Moisture Content (OMC) %	**	**	**			
Moisture Variation %	-6.0	-7.5	-6.0			
Moisture Ratio %	126.0	125.0	120.0			
Density Ratio %	97.5	99.0	98.0			
Compaction Method	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: P231474-2
Issue Number: 2 - This version supersedes all previous issues
Reissue Reason: Retests Added
Date Issued: 13/07/2023
Client: Street Works Pty Ltd
 45 Commercial Drive, Pakenham Vic 3810
Project Number: P231474
Project Name: Allanvale Stage 4 Level One
Project Location: Cranbourne
Client Reference: S953 - 08966
Work Request: 12603
Date Sampled: 13/06/2023
Dates Tested: 13/06/2023 - 15/06/2023
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: Allanvale Stage 4 Level One (tests covering for level one 9/6/23)
Material: CLAY
Material Source: Onsite



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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	P23-12603A		
Test Number	19		
Date Tested	13/06/2023		
Time Tested	**		
Test Request #/Location	Lot 445 Retest #8		
Layer / Reduced Level	Final Layer		
Thickness of Layer (mm)	200		
Soil Description	CLAY		
Test Depth (mm)	175		
Sieve used to determine oversize (mm)	19.0		
Percentage of Wet Oversize (%)	0		
Percentage of Dry Oversize (%) (AS1289.5.4.1)	0		
Field Wet Density (FWD) t/m ³	1.89		
Field Moisture Content %	29.6		
Field Dry Density (FDD) t/m ³	1.46		
Peak Converted Wet Density t/m ³	1.98		
Adjusted Peak Converted Wet Density t/m ³	**		
Adj. Optimum Moisture Content % (AS1289.5.4.1)	26.6		
Adj. Field Moisture Content % (AS1289.5.4.1)	29.6		
Moisture Ratio % (AS1289.5.4.1)	111.5		
Adjusted Moisture Ratio % (AS1289.5.4.1)	**		
Moisture Variation (Wv) %	-3.0		
Adjusted Moisture Variation %	**		
Hilf Density Ratio (%)	95.5		
Compaction Method	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: P231474-2
Issue Number: 2 - This version supersedes all previous issues
Reissue Reason: Retests Added
Date Issued: 13/07/2023
Client: Street Works Pty Ltd
 45 Commercial Drive, Pakenham Vic 3810
Project Number: P231474
Project Name: Allanvale Stage 4 Level One
Project Location: Cranbourne
Client Reference: S953 - 08966
Work Request: 12603
Date Sampled: 13/06/2023
Dates Tested: 13/06/2023 - 15/06/2023
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: Allanvale Stage 4 Level One (tests covering for level one 9/6/23)
Material: CLAY
Material Source: Onsite



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Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Chris Caulfield
 Project Manager

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.1.1 & 5.4.1 & 5.8.1 & 2.1.1

Sample Number	P23-12603B	P23-12603C	P23-12603D
Test Number	20	21	22
Date Tested	13/06/2023	13/06/2023	13/06/2023
Time Tested	**	**	**
Test Request #/Location	Lot 429 Retest #10	Lot 478 Retest #11	Lot 477 Retest #12
Layer / Reduced Level	Final Layer	Final Layer	Final Layer
Thickness of Layer (mm)	200	200	200
Soil Description	CLAY	CLAY	CLAY
Test Depth (mm)	175	175	175
Fraction Tested (mm)	19.0	19.0	19.0
Oversize (wet basis) %	0	0	**
Oversize (dry basis) %	0	0	**
Curing Hours	2.0	-10.0	2.0
Method used to Determine Plasticity	Visual Assessment	Visual Assessment	Visual Assessment
Field Wet Density t/m ³	1.89	1.91	1.91
Field Moisture Content %	33.0	30.2	31.5
Field Dry Density t/m ³	1.42	1.46	1.45
Maximum Dry Density t/m ³	1.52	1.54	1.52
Adjusted Maximum Dry Density t/m ³	**	**	**
Optimum Moisture Content (OMC) %	27.0	25.5	27.0
Adjusted Optimum Moisture Content (OMC) %	**	**	**
Moisture Variation %	-6.0	-4.5	-4.5
Moisture Ratio %	121.5	118.0	116.5
Density Ratio %	93.0	95.5	95.5
Compaction Method	Standard	Standard	Standard
Binding Time (hrs)	62	59	59

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report

Report Number: P231474-3
Issue Number: 1
Date Issued: 13/07/2023
Client: Street Works Pty Ltd
 45 Commercial Drive, Pakenham Vic 3810
Project Number: P231474
Project Name: Allanvale Stage 4 Level One
Project Location: Cranbourne
Client Reference: S953
Work Request: 12815
Date Sampled: 13/07/2023 6:00
Dates Tested: 13/07/2023 - 13/07/2023
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: Allanvale Stage 4
Material: Silty Clay
Material Source: Onsite



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 47 National Avenue Pakenham VIC 3810
 Phone: (03) 9769 5799
 Email: ccaulfield@terrafirmalabs.com.au



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	P23-12815A		
Test Number	23		
Date Tested	13/07/2023		
Time Tested	**		
Test Request #/Location	Lot 429 Retest #20		
Layer / Reduced Level	FSL		
Thickness of Layer (mm)	300		
Soil Description	Silty Clay		
Test Depth (mm)	275		
Sieve used to determine oversize (mm)	19.0		
Percentage of Wet Oversize (%)	0		
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**		
Field Wet Density (FWD) t/m ³	1.98		
Field Moisture Content %	**		
Field Dry Density (FDD) t/m ³	**		
Peak Converted Wet Density t/m ³	1.98		
Adjusted Peak Converted Wet Density t/m ³	**		
Adj. Optimum Moisture Content % (AS1289.5.4.1)	**		
Adj. Field Moisture Content % (AS1289.5.4.1)	**		
Moisture Ratio % (AS1289.5.4.1)	**		
Adjusted Moisture Ratio % (AS1289.5.4.1)	**		
Moisture Variation (Wv) %	-3.5		
Adjusted Moisture Variation %	**		
Hilf Density Ratio (%)	100.0		
Compaction Method	Standard		
Report Remarks	**		

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC