

Shadforth Civil Pty Ltd
99 Sandalwood Lane
Forest Glen QLD 4556

Project 219370.00
14 March 2023
R.001.REV0
CW:gm

Attention: Nick Gentle

Email: nick.gentle@shadcivil.com.au

Report on Earthworks Inspection and Testing
Proposed Residential Development
Stage 4A, "Riverton Estate", Cusack Lane, Jimboomba

1. Introduction

This report presents the results of the 'Level 1' inspection and testing of bulk earthworks fill placement for the proposed residential development at "Riverton Estate", Cusack Lane, Jimboomba. The fill was placed and tested from 20 May 2022 to 17 February 2023.

The scope of testing and inspections provided by Douglas Partners Pty Ltd (DP) comprised 'Level 1' geotechnical inspection and testing as defined in (AS 3798, 2007), and as required by the earthwork's requirements shown on the project drawings as described below. No other earthworks specification was provided for the work.

This report must be read in conjunction with the attached notes entitled '*About This Inspection Report*' and any other attached information and should be kept in its entirety without separation of individual pages or sections.

2. Scope of Works

This report only addresses the fill placed at the development within the extents of the test locations (including elevation) noted on the results and as shown on the attached test location plans. Any other part of the site is not addressed by this report unless stated otherwise.

Earthworks General Notes 5544-ENG-BE-S04A-100 prepared by Gassman Development Perspectives and supplied by Shadforth Civil Pty Ltd does not provide any comment on the density requirements for the fill. With reference to Table 5.1 of AS3798:2007 Guidelines on Earthworks for Commercial and Residential Developments, the minimum density ratio for residential developments is 95% relative to standard compaction (AS 3798, 2007). No moisture specification was noted on the supplied drawings, therefore a moisture specification of +/- 2.5% of optimum moisture content was agreed with the client considering the nature of the site won material.

In general, the bulk earthworks operations comprised stripping and grubbing of the existing surface, removal of pockets of unsuitable soils within areas of proposed fill (if any), then placement and compaction of site won cut to fill to bring the ground level up to the design surface level for the required works.

The stripped subgrade was inspected by DP prior to the placement of bulk fill. The subgrade was test rolled and was considered suitable to accept the placement of fill.

The fill materials predominantly comprised gravelly sandy clay with some gravelly silty sand won from onsite cuts.

Fill materials were placed by Moxi loads and spread by an D6 dozer. Compaction was achieved using a padfoot roller with loose layer thickness typically ranging from approximately 200 mm to 300 mm. Moisture was controlled by an onsite water cart.

Inspections were made by a technician from DP, who was present during the placement of fill. Following the compaction of each layer, where possible, the layer was tested to assess if the specified minimum dry density ratio had been achieved. All layers, including where density testing was not carried out, were test rolled with a fully loaded water cart under the observation of the DP technician.

Testing was carried using the nuclear gauge method outlined in test method (AS 1289.5.8.1, 2007). The relative compaction was determined using the Hilf Density Ratio method outlined in test method (AS 1289.5.7.1, 2006). A total of 130 density tests were carried out during the earthworks at the approximate locations listed on the attached Test Location Plans – Drawings 1 to 5. Test coordinates were determined using a hand held GPS accurate to approximately 5 m in position while surface levels were provided by Shadforth Civil Pty Ltd using a GPS/GNSS. A summary of the test results is represented in Table 1.

Table 1: Summary of Density Testing

Item	Compaction	Moisture Variation
Specification	95% standard	+/-2.5% of OMC
No. of tests	130	130
Range	95.0 to 113.0% standard	1.5% wet to 4.5% dry of OMC
No of tests outside specification	0	8
Mean	102.4% standard	1.0% dry of OMC

Note: OMC – Optimum Moisture Content for standard compaction

3. Comments

With respect to the eight results outside of the moisture specification (12728A-12728H), the layer in which the failures were recorded was rerolled. The eight failed areas were retested near to the location of the failures. The eight retests (12810A-12810H) subsequently passed the moisture specification.

It is considered that the compaction of the fill placed by Shadforth Civil Pty Ltd from 20 May 2022 to 17 February 2023, within the extents of the test locations (including elevation) noted on the results, and as shown on the attached test location plans, has been carried out in general accordance with the requirements of the specification. DP does not undertake to guarantee the work of the Contractor nor relieve their responsibility to produce a complete product conforming to the requirements of the specification.

For building on the controlled filled areas, consideration should be given by the user to the following:

- Possible disruption of the compacted fill by the installation of services;
- The possibility that additional fill has been placed before and after the dates of field density tests or at times when DP has not been notified that filling operations are in progress;
- Adequate containment of the filled areas;
- The suitability of the filled land to support structure of various types without excessive deflection, in particular, the shrink-swell properties of the filling and natural soils must be considered in foundation/footing slab design in detailing future structure; and
- Variation in fill depth.

Based on the inspection and testing, it is considered that the fill referenced in this report may be considered as “controlled fill” as defined in (AS 2870, 2011) for site classification purposes.

4. References

AS 1289.5.7.1. (2006). *Methods for testing soils for engineering purposes - Soil compaction and density tests - Compaction control test - Hilf density ratio and Hilf moisture variation (rapid method)*. Standards Australia.

AS 1289.5.8.1. (2007). *Methods for testing soils for engineering purposes - Soil compaction and density tests - Determination of field density and field moisture content of a soil using a nuclear surface moisture-density gauge - Direct transmission mode*. Standards Australia.

AS 2870. (2011). *Residential Slabs and Footings*. Standards Australia.

AS 3798. (2007). *Guidelines on Earthworks for Commercial and Residential Developments*. Standards Australia.

5. Limitations

Douglas Partners Pty Ltd (DP) has prepared this "Level 1" inspection and test report for this project at "Riverton Estate", Stage 4A, Cusack Lane, Jimboomba in accordance with DP's proposal. The work was carried out under DP's Conditions of Engagement. This report is provided for the exclusive use of Shadforth Civil Pty Ltd for this project only and for the purposes as described in the report. It should not be used by or relied upon for other projects or purposes on the same or other site or by a third party. Any party so relying upon this report beyond its exclusive use and purpose as stated above, and without the express written consent of DP, does so entirely at its own risk and without recourse to DP for any loss or damage. In preparing this report DP has necessarily relied upon information provided by the client and/or their agents.


The results provided in the report are indicative of the subsurface conditions on the site only at the specific sampling and/or testing locations, and then only to the depths investigated and at the time the work was carried out. Subsurface conditions can change abruptly due to variable geological processes and also as a result of human influences. Such changes may occur after DP's field testing has been completed.

This report is based upon the conditions encountered during this investigation. The accuracy of this report provided by DP may be affected by undetected variations in ground conditions across the site between and beyond the sampling and/or testing locations. The advice may also be limited by budget constraints imposed by others or by site accessibility.

This report must be read in conjunction with all of the attached and should be kept in its entirety without separation of individual pages or sections. DP cannot be held responsible for interpretations or conclusions made by others unless they are supported by an expressed statement, interpretation, outcome or conclusion stated in this report.

Please contact the undersigned if you have any questions on this matter.

Yours faithfully
Douglas Partners Pty Ltd


Chad Whatley
Laboratory Manager

Reviewed by


Chris Bell
Principal

Attachments: About this Inspection Report
 Compaction Control Test Reports
 Test Location Plans – Drawings 1 to 5

About this Inspection Report

Douglas Partners



Introduction

These notes are provided to amplify DP's inspection report in regard to the limitations of carrying out inspection work. Not all notes are necessarily relevant to this report.

Standards

This inspection report has been prepared by qualified personnel to current engineering standards of interpretation and analysis.

Copyright and Limits of Use

This inspection report is the property of DP and is provided for the exclusive use of the client for the specific project and purpose as described in the report. It should not be used by a third party for any purpose other than to confirm that the construction works addressed in the report have been inspected as described. Use of the inspection report is limited in accordance with the Conditions of Engagement for the commission.

DP does not undertake to guarantee the works of the contractors or relieve them of their responsibility to produce a completed product conforming to the design.

Reports

This inspection report may include advice or opinion that is based on engineering and/or geological interpretation, information provided by the client or the client's agent, and information gained from:

- an investigation report for the project (if available to DP);
- inspection of the work, exposed ground conditions, excavation spoil and performance of excavating equipment while DP was on site;
- investigation and testing that was carried out during the site inspection;
- anecdotal information provided by authoritative site personnel; and

- DP's experience and knowledge of local geology.

Such information may be limited by the frequency of any inspection or testing that was able to be practically carried out, including possible site or cost constraints imposed by the client/contractor(s). For these reasons, the reliability of this inspection report is limited by the scope of information on which it relies.

Every care is taken with the inspection report as it relates to interpretation of subsurface conditions and any recommendations or suggestions for construction or design. However, DP cannot anticipate or assume responsibility for:

- unexpected variations in subsurface conditions that are not evident from the inspection; and
- the actions of contractors responding to commercial pressures.

Should these issues occur, then additional advice should be sought from DP and, if required, amendments made.

This inspection report must be read in conjunction with any attached information. This inspection report should be kept in its entirety without separation of individual pages or sections. DP cannot be held responsible for interpretations or conclusions from review by others of this inspection report or test data, which are not otherwise supported by an expressed statement, interpretation, outcome or conclusion stated in this inspection report.

Material Test Report



Geotechnics | Environment | Groundwater

Douglas Partners Pty Ltd

Gold Coast Laboratory

Unit 2/3 Distribution Avenue Molendinar QLD 4214

Phone: (07) 5568 8900

Email: chad.whatley@douglaspartners.com.au

Report Number: 212518.00-5
Issue Number: 1
Date Issued: 24/05/2022
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 212518.00
Project Name: Stages 3 & 4, Riverton Estate
Project Location: Cusack Lane, Jimboomba QLD
Work Request: 10761
Dates Tested: 20/05/2022 - 24/05/2022
Location: Allotment Fill Area



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Chad Whatley

Lab Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	GL-10761A	GL-10761B	
Date Tested	20/05/2022	20/05/2022	
Time Tested	01:45	02:00	
Test Request #/Location	Allotment Fill Area	Allotment Fill Area	
Easting	500837	500849	
Northing	6922888	6922928	
Layer / Reduced Level	**	**	
Thickness of Layer (mm)	175	175	
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	
Test Depth (mm)	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	**	**	
Field Wet Density (FWD) t/m ³	2.05	2.04	
Field Dry Density (FDD) t/m ³	**	**	
Peak Converted Wet Density t/m ³	2.15	2.14	
Adjusted Peak Converted Wet Density t/m ³	**	**	
Moisture Variation (Wv) %	-0.5	-0.5	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	95.5	95.5	
Compaction Method	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: 212518.00-6
Issue Number: 1
Date Issued: 06/06/2022
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 212518.00
Project Name: Stages 3 & 4, Riverton Estate
Project Location: Cusack Lane, Jimboomba QLD
Work Request: 10805
Date Sampled: 30/05/2022
Dates Tested: 30/05/2022 - 02/06/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Allotment Fill Area
Material: Gravelly Sandy Clay
Material Source: Site



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Joel Alford

Assistant Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1						
Sample Number	GL-10805A	GL-10805B	GL-10805C	GL-10805D	GL-10805E	GL-10805F
Test Number	1	2	3	4	5	6
Date Tested	30/05/2022	30/05/2022	30/05/2022	30/05/2022	30/05/2022	30/05/2022
Time Tested	12:50	01:00	01:10	01:15	01:25	01:35
Test Request #/Location	Allotment Fill Area	Allotment Fill Area	Allotment Fill Area	Allotment Fill Area	Allotment Fill Area	Allotment Fill Area
Easting	500881	500858	500829	500825	500895	500928
Northing	6922975	6923012	6923018	6922989	6922928	6922906
Elevation (m)	31.3	31.3	31.5	31.4	31.1	31.2
Thickness of Layer (mm)	175	175	175	175	175	175
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay
Test Depth (mm)	150	150	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	**	**	**	**	3	**
Field Wet Density (FWD) t/m ³	2.08	2.09	2.09	2.06	2.14	2.08
Field Dry Density (FDD) t/m ³	**	**	**	**	**	**
Peak Converted Wet Density t/m ³	2.14	2.02	2.04	2.05	**	2.05
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**	2.14	**
Moisture Variation (Wv) %	0.5	0.0	-1.0	2.0	**	2.0
Adjusted Moisture Variation %	**	**	**	**	2.5	**
Hilf Density Ratio (%)	97.0	103.0	102.5	100.5	100.0	101.5
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



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Douglas Partners Pty Ltd

Gold Coast Laboratory

Unit 2/3 Distribution Avenue Molendinar QLD 4214

Phone: (07) 5568 8900

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Report Number: 212518.00-7
Issue Number: 1
Date Issued: 07/06/2022
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 212518.00
Project Name: Stages 3 & 4, Riverton Estate
Project Location: Cusack Lane, Jimboomba QLD
Work Request: 10820
Dates Tested: 31/05/2022 - 07/06/2022
Location: Allotment Fill Area



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Chad Whatley
 Lab Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1						
Sample Number	GL-10820A	GL-10820B	GL-10820C	GL-10820D	GL-10820E	GL-10820F
Test Number	**	**	**	**	**	**
Date Tested	31/05/2022	31/05/2022	31/05/2022	31/05/2022	31/05/2022	31/05/2022
Time Tested	12:10	12:20	12:30	12:40	12:50	01:00
Test Request #/Location	Allotment Fill Area	Allotment Fill Area	Allotment Fill Area	Allotment Fill Area	Allotment Fill Area	Allotment Fill Area
Easting	500731	500694	500662	500645	500702	500738
Northing	6922833	6922820	6922801	6922786	6922796	6922813
Elevation (m)	31.2	31.2	31.1	31.3	31.2	31.3
Thickness of Layer (mm)	175	175	175	175	175	175
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay
Test Depth (mm)	150	150	150	150	150	150
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
Field Wet Density (FWD) t/m ³	2.08	2.09	2.10	2.08	2.13	2.13
Field Dry Density (FDD) t/m ³	**	**	**	**	**	**
Peak Converted Wet Density t/m ³	2.10	2.20	2.16	2.14	2.15	2.14
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**	**	**
Moisture Variation (Wv) %	-0.5	-0.5	0.5	0.5	-1.5	0.0
Adjusted Moisture Variation %	**	**	**	**	**	**
Hilf Density Ratio (%)	99.0	95.0	97.5	97.5	99.0	99.5
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



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Douglas Partners Pty Ltd

Gold Coast Laboratory

Unit 2/3 Distribution Avenue Molendinar QLD 4214

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Report Number: 212518.00-10
Issue Number: 1
Date Issued: 16/06/2022
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 212518.00
Project Name: Stages 3 & 4, Riverton Estate
Project Location: Cusack Lane, Jimboomba QLD
Work Request: 10866
Dates Tested: 03/06/2022 - 16/06/2022
Location: Allotment Fill Area



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Chad Whatley

Lab Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1						
Sample Number	GL-10866A	GL-10866B	GL-10866C	GL-10866D	GL-10866E	GL-10866F
Test Number	**	**	**	**	**	**
Date Tested	03/06/2022	03/06/2022	03/06/2022	03/06/2022	03/06/2022	03/06/2022
Time Tested	10:45	10:50	11:00	11:05	11:15	11:20
Test Request #/Location	Allotment Fill Area	Allotment Fill Area	Allotment Fill Area	Allotment Fill Area	Allotment Fill Area	Allotment Fill Area
Easting	500728	500749	500711	500675	500635	500660
Northing	6922841	6922819	6922808	6922818	6922804	6922781
Elevation (m)	30.7	31.1	30.6	30.3	30.3	30.1
Thickness of Layer (mm)	175	175	175	175	175	175
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay
Test Depth (mm)	150	150	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	3	7	**	5	**
Field Wet Density (FWD) t/m ³	2.12	2.13	2.09	2.12	2.08	2.12
Field Dry Density (FDD) t/m ³	**	**	**	**	**	**
Peak Converted Wet Density t/m ³	2.13	**	**	2.10	**	2.14
Adjusted Peak Converted Wet Density t/m ³	**	2.15	2.14	**	2.17	**
Moisture Variation (Wv) %	1.5	**	**	1.0	**	1.5
Adjusted Moisture Variation %	**	1.0	1.5	**	0.5	**
Hilf Density Ratio (%)	99.5	99.0	98.0	100.5	96.0	99.0
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



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Douglas Partners Pty Ltd

Gold Coast Laboratory

Unit 2/3 Distribution Avenue Molendinar QLD 4214

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Report Number: 212518.00-17
Issue Number: 1
Date Issued: 24/06/2022
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 212518.00
Project Name: Stages 3 & 4, Riverton Estate
Project Location: Cusack Lane, Jimboomba QLD
Work Request: 11033
Dates Tested: 21/06/2022 - 24/06/2022
Location: Allotment Fill Area



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Chad Whatley
 Lab Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1					
Sample Number	GL-11033A	GL-11033B	GL-11033C	GL-11033D	GL-11033E
Test Number	52	53	54	55	56
Date Tested	21/06/2022	21/06/2022	21/06/2022	21/06/2022	21/06/2022
Time Tested	09:00	09:10	09:15	09:25	09:35
Test Request #/Location	Dam hole	dam hole	dam hole	Pad 2	Pad 2
Easting	500869	500869	500869	500710	500776
Northing	6923086	6923085	6923084	6923054	6923061
Elevation (m)	30.0	30.4	30.8	31.4	31.2
Thickness of Layer (mm)	175	175	175	175	175
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay
Test Depth (mm)	150	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	7	8	14	4	5
Field Wet Density (FWD) t/m ³	2.08	2.03	2.05	2.10	2.14
Field Dry Density (FDD) t/m ³	**	**	**	**	**
Peak Converted Wet Density t/m ³	**	**	**	**	**
Adjusted Peak Converted Wet Density t/m ³	2.12	2.12	2.13	2.13	2.11
Moisture Variation (Wv) %	**	**	**	**	**
Adjusted Moisture Variation %	1.5	1.0	1.0	0.5	1.0
Hilf Density Ratio (%)	98.0	96.0	96.0	99.0	101.5
Compaction Method	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



Geotechnics | Environment | Groundwater

Douglas Partners Pty Ltd

Gold Coast Laboratory

Unit 2/3 Distribution Avenue Molendinar QLD 4214

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Report Number: 212518.00-17
Issue Number: 1
Date Issued: 24/06/2022
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 212518.00
Project Name: Stages 3 & 4, Riverton Estate
Project Location: Cusack Lane, Jimboomba QLD
Work Request: 11033
Dates Tested: 21/06/2022 - 24/06/2022
Location: Allotment Fill Area



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Chad Whatley
 Lab Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1					
Sample Number	GL-11033F	GL-11033G	GL-11033H	GL-11033I	GL-11033J
Test Number	57	58	59	60	61
Date Tested	21/06/2022	21/06/2022	21/06/2022	21/06/2022	21/06/2022
Time Tested	09:40	09:45	09:55	10:05	10:10
Test Request #/Location	Pad 1	Pad 3	Pad 3	Behind Pad 3	Behind Pad 3
Easting	500657	500659	500746	500840	500787
Northing	6922899	6922843	6922861	6922839	6922835
Elevation (m)	29.8	31.8	31.5	30.8	31.0
Thickness of Layer (mm)	175	175	175	175	175
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay
Test Depth (mm)	150	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	4	0	5	7	8
Field Wet Density (FWD) t/m ³	2.03	2.11	2.14	2.13	2.08
Field Dry Density (FDD) t/m ³	**	**	**	**	**
Peak Converted Wet Density t/m ³	**	2.11	**	**	**
Adjusted Peak Converted Wet Density t/m ³	2.11	**	2.16	2.17	2.14
Moisture Variation (Wv) %	**	0.5	**	**	**
Adjusted Moisture Variation %	2.0	**	0.0	0.0	0.5
Hilf Density Ratio (%)	96.0	100.0	99.0	98.0	97.0
Compaction Method	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: 219370.00-2
Issue Number: 1
Date Issued: 22/12/2022
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 219370.00
Project Name: Stage 4A, Riverton Estate, Level 1
Project Location: "Riverton Estate" Cusack Lane, Jimboomba QLD
Work Request: 12473
Dates Tested: 15/12/2022 - 20/12/2022
Location: Level 1 Monitoring



Accredited for compliance with ISO/IEC 17025 - Testing

 Approved Signatory: Chad Whatley
 Lab Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1

Sample Number	GL-12473A	GL-12473B	GL-12473C	GL-12473D	GL-12473E	GL-12473F
Date Tested	15/12/2022	15/12/2022	15/12/2022	15/12/2022	15/12/2022	15/12/2022
Time Tested	10:00	10:05	10:09	10:16	10:22	10:30
Test Request #/Location	Area 1	Area 1	Area 1	Area 1	Area 1	Area 1
Easting	500831.1	500802.2	500769	500739.4	500703	500679.6
Northing	6922842.4	6922836.2	6922829.6	6922824.8	6922811.2	6922795.9
Elevation (m)	30.9	30.9	30.9	30.9	30.9	30.9
Thickness of Layer (mm)	225	225	225	225	225	225
Soil Description	Gravelly Silty Sand	Gravelly Silty Sand	Gravelly Silty Sand	Gravelly Silty Sand	Gravelly Silty Sand	Gravelly Silty Sand
Test Depth (mm)	200	200	200	200	200	200
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	7	3	1	6	0	0
Field Wet Density (FWD) t/m ³	2.18	2.16	2.18	2.12	2.12	2.14
Field Dry Density (FDD) t/m ³	**	**	**	**	**	**
Peak Converted Wet Density t/m ³	**	**	**	**	2.01	2.11
Adjusted Peak Converted Wet Density t/m ³	2.13	2.09	2.08	2.10	**	**
Moisture Variation (Wv) %	**	**	**	**	2.5	1.5
Adjusted Moisture Variation %	2.5	2.5	2.0	2.5	**	**
Hilf Density Ratio (%)	102.5	103.5	105.0	101.0	105.5	101.5
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: 219370.00-3
Issue Number: 1
Date Issued: 09/01/2023
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 219370.00
Project Name: Stage 4A, Riverton Estate, Level 1
Project Location: "Riverton Estate" Cusack Lane, Jimboomba QLD
Work Request: 12498
Date Sampled: 19/12/2022
Dates Tested: 19/12/2022 - 09/01/2023
Specification: 95% STD
Location: Level 1 Monitoring
Material: Gravelly Sandy Clay
Material Source: Cut and fill from site.



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 Approved Signatory: Chad Whatley
 Lab Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1

Sample Number	GL-12498A	GL-12498B	GL-12498C	GL-12498D	GL-12498E
Date Tested	19/12/2022	19/12/2022	19/12/2022	19/12/2022	19/12/2022
Time Tested	10:56	11:00	11:05	11:12	11:17
Test Request #/Location	Area 1	Area 1	Area 1	Area 1	Area 1
Easting	500674	500721	500764	500792	500828
Northing	6922815	6922819	6922821	6922821	6922829
Elevation (m)	31.2	31.2	31.1	31.2	31.2
Thickness of Layer (mm)	250	250	250	250	250
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay
Test Depth (mm)	225	225	225	225	225
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0	0
Field Wet Density (FWD) t/m ³	2.14	2.16	2.16	2.20	2.19
Field Dry Density (FDD) t/m ³	**	**	**	**	**
Peak Converted Wet Density t/m ³	2.12	2.12	2.14	2.15	2.12
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**	**
Moisture Variation (Wv) %	0.5	2.0	2.0	0.0	0.5
Adjusted Moisture Variation %	**	**	**	**	**
Hilf Density Ratio (%)	101.5	102.0	101.5	102.0	103.0
Compaction Method	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: 219370.00-4
Issue Number: 1
Date Issued: 10/01/2023
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 219370.00
Project Name: Stage 4A, Riverton Estate, Level 1
Project Location: "Riverton Estate" Cusack Lane, Jimboomba QLD
Work Request: 12508
Dates Tested: 20/12/2022 - 10/01/2023
Specification: 95% STD
Location: Level 1 Monitoring
Material: Gravelly Sandy Clay
Material Source: Cut and fill on site

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 Gold Coast Laboratory
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 Phone: (07) 5568 8900
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Approved Signatory: Chad Whatley
 Lab Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	GL-12508A	GL-12508B	GL-12508C	GL-12508D
Date Tested	20/12/2022	20/12/2022	20/12/2022	20/12/2022
Time Tested	11:00	11:06	11:11	11:21
Test Request #/Location	Area 1	Area 1	Area 1	Area 1
Easting	500766	500733	500699	500643
Northing	6922806	6922802	6922791	6922776
Elevation (m)	31.2	31.2	31.1	31.2
Thickness of Layer (mm)	250	250	250	250
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay
Test Depth (mm)	225	225	225	225
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	15	8	19	6
Field Wet Density (FWD) t/m ³	2.17	2.12	2.13	2.19
Field Dry Density (FDD) t/m ³	**	**	**	**
Peak Converted Wet Density t/m ³	**	**	**	**
Adjusted Peak Converted Wet Density t/m ³	2.14	2.15	2.16	2.11
Moisture Variation (Wv) %	**	**	**	**
Adjusted Moisture Variation %	1.0	2.0	0.0	2.0
Hilf Density Ratio (%)	101.5	99.0	99.0	103.5
Compaction Method	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: 219370.00-5
Issue Number: 1
Date Issued: 21/01/2023
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 219370.00
Project Name: Stage 4A, Riverton Estate, Level 1
Project Location: "Riverton Estate" Cusack Lane, Jimboomba QLD
Work Request: 12512
Date Sampled: 21/12/2022
Dates Tested: 21/12/2022 - 12/01/2023
Specification: 95% STD
Location: Level 1 Monitoring
Material: Gravelly Sandy Clay
Material Source: Cut and fill on site



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 Approved Signatory: Chad Whatley
 Lab Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1

Sample Number	GL-12512A	GL-12512B	GL-12512C	GL-12512D	GL-12512E	GL-12512F
Date Tested	21/12/2022	21/12/2022	21/12/2022	21/12/2022	21/12/2022	21/12/2022
Time Tested	10:11	10:18	10:26	10:31	10:37	10:42
Test Request #/Location	Area 1	Area 1	Area 1	Area 1	Area 1	Area 1
Easting	500804	500784	500761	500733	500705	500674
Northing	6922821	6922816	6922810	6922803	6922796	6922788
Elevation (m)	31.2	31.1	31.2	31.3	31.2	31.2
Thickness of Layer (mm)	250	250	250	250	250	250
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay
Test Depth (mm)	225	225	225	225	225	225
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
Field Wet Density (FWD) t/m ³	2.15	2.17	2.12	2.13	2.17	2.16
Field Dry Density (FDD) t/m ³	**	**	**	**	**	**
Peak Converted Wet Density t/m ³	2.10	2.16	2.10	2.11	2.14	2.13
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**	**	**
Moisture Variation (Wv) %	0.0	0.0	1.5	2.0	2.0	2.0
Adjusted Moisture Variation %	**	**	**	**	**	**
Hilf Density Ratio (%)	102.5	100.0	101.0	101.0	101.5	101.0
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: 219370.00-6
Issue Number: 1
Date Issued: 12/01/2023
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 219370.00
Project Name: Stage 4A, Riverton Estate, Level 1
Project Location: "Riverton Estate" Cusack Lane, Jimboomba QLD
Work Request: 12543
Dates Tested: 10/01/2023 - 11/01/2023
Location: Allotment Fill



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Approved Signatory: Chad Whatley

Lab Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1

Sample Number	GL-12543A	GL-12543B	GL-12543C	GL-12543D
Date Tested	10/01/2023	10/01/2023	10/01/2023	10/01/2023
Time Tested	10:03	10:09	10:17	10:23
Test Request #/Location	Area 1	Area 1	Area 1	Area 1
Easting	500670	500719	500694	500745
Northing	6922798	6922812	6922857	6922867
Elevation (m)	31.90	31.97	32.83	32.65
Thickness of Layer (mm)	225	225	225	225
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay
Test Depth (mm)	200	200	200	200
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0
Field Wet Density (FWD) t/m ³	2.20	2.23	2.11	2.13
Field Dry Density (FDD) t/m ³	**	**	**	**
Peak Converted Wet Density t/m ³	2.08	2.09	2.08	2.10
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**
Moisture Variation (Wv) %	1.5	1.5	2.0	0.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	105.5	107.0	101.5	101.0
Compaction Method	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: 219370.00-6
Issue Number: 1
Date Issued: 12/01/2023
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 219370.00
Project Name: Stage 4A, Riverton Estate, Level 1
Project Location: "Riverton Estate" Cusack Lane, Jimboomba QLD
Work Request: 12543
Dates Tested: 10/01/2023 - 11/01/2023
Location: Allotment Fill

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Approved Signatory: Chad Whatley
 Lab Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	GL-12543E	GL-12543F	GL-12543G	
Date Tested	10/01/2023	10/01/2023	10/01/2023	
Time Tested	10:28	10:34	10:41	
Test Request #/Location	Area 1	Area 1	Area 1	
Easting	500791	500832	500871	
Northing	6922882	6922890	6922898	
Elevation (m)	32.41	32.0	31.83	
Thickness of Layer (mm)	225	225	225	
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	
Test Depth (mm)	200	200	200	
Sieve used to determine oversize (mm)	19.0	19.0	19.0	
Percentage of Wet Oversize (%)	0	0	0	
Field Wet Density (FWD) t/m ³	2.30	2.29	2.16	
Field Dry Density (FDD) t/m ³	**	**	**	
Peak Converted Wet Density t/m ³	2.22	2.22	2.10	
Adjusted Peak Converted Wet Density t/m ³	**	**	**	
Moisture Variation (Wv) %	0.5	0.0	0.0	
Adjusted Moisture Variation %	**	**	**	
Hilf Density Ratio (%)	103.5	103.0	102.5	
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: 219370.00-7
Issue Number: 1
Date Issued: 20/01/2023
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 219370.00
Project Name: Stage 4A, Riverton Estate, Level 1
Project Location: "Riverton Estate" Cusack Lane, Jimboomba QLD
Work Request: 12590
Dates Tested: 17/01/2023 - 19/01/2023
Location: Level 1 Monitoring



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Approved Signatory: Chad Whatley

Lab Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	GL-12590A	GL-12590B	GL-12590C	GL-12590D
Date Tested	17/01/2023	17/01/2023	17/01/2023	17/01/2023
Time Tested	10:05	10:11	10:18	10:23
Test Request #/Location	Area 2	Area 2	Area 2	Area 2
Easting	500834	500756	500705	500661
Northing	6922940	6922940	6922925	6922924
Elevation (m)	31.531	31.529	31.518	31.538
Thickness of Layer (mm)	225	225	225	225
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay
Test Depth (mm)	200	200	200	200
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	11	4
Field Wet Density (FWD) t/m ³	2.14	2.11	2.04	2.14
Field Dry Density (FDD) t/m ³	**	**	**	**
Peak Converted Wet Density t/m ³	2.11	2.05	**	**
Adjusted Peak Converted Wet Density t/m ³	**	**	2.07	2.02
Moisture Variation (Wv) %	0.5	0.0	**	**
Adjusted Moisture Variation %	**	**	1.0	2.0
Hilf Density Ratio (%)	102.0	103.0	99.0	106.0
Compaction Method	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: 219370.00-8
Issue Number: 1
Date Issued: 20/01/2023
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 219370.00
Project Name: Stage 4A, Riverton Estate, Level 1
Project Location: "Riverton Estate" Cusack Lane, Jimboomba QLD
Work Request: 12573
Dates Tested: 13/01/2023 - 19/01/2023
Location: Inspection and Densities

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Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Chad Whatley
 Lab Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	GL-12573A	GL-12573B	GL-12573C
Date Tested	13/01/2023	13/01/2023	13/01/2023
Time Tested	10:21	10:29	12:23
Test Request #/Location	Area 1	Area 1	Area 1
Easting	500712	500656	500883
Northing	6922776	6922762	6922882
Elevation (m)	31.185	31.182	32.80
Thickness of Layer (mm)	250	250	250
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay
Test Depth (mm)	225	225	225
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Field Wet Density (FWD) t/m ³	2.12	2.14	2.10
Field Dry Density (FDD) t/m ³	**	**	**
Peak Converted Wet Density t/m ³	2.06	2.11	2.10
Adjusted Peak Converted Wet Density t/m ³	**	**	**
Moisture Variation (Wv) %	0.0	0.0	0.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	103.0	101.5	100.0
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: 219370.00-9
Issue Number: 1
Date Issued: 20/01/2023
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 219370.00
Project Name: Stage 4A, Riverton Estate, Level 1
Project Location: "Riverton Estate" Cusack Lane, Jimboomba QLD
Work Request: 12558
Dates Tested: 12/01/2023 - 18/01/2023
Location: Inspection and Densities

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Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Chad Whatley
 Lab Manager
 Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	GL-12558A	GL-12558B	
Date Tested	12/01/2023	12/01/2023	
Time Tested	12:11	12:19	
Test Request #/Location	Area 1	Area 1	
Easting	500726	500683	
Northing	6922765	6922748	
Elevation (m)	31.49	31.42	
Thickness of Layer (mm)	300	300	
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	
Test Depth (mm)	275	275	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	0	0	
Field Wet Density (FWD) t/m ³	2.18	2.22	
Field Dry Density (FDD) t/m ³	**	**	
Peak Converted Wet Density t/m ³	2.13	2.10	
Adjusted Peak Converted Wet Density t/m ³	**	**	
Moisture Variation (Wv) %	0.5	1.0	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	102.5	106.0	
Compaction Method	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: 219370.00-10
Issue Number: 1
Date Issued: 25/01/2023
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 219370.00
Project Name: Stage 4A, Riverton Estate, Level 1
Project Location: "Riverton Estate" Cusack Lane, Jimboomba QLD
Work Request: 12620
Dates Tested: 20/01/2023 - 25/01/2023
Location: Level 1 Monitoring



Accredited for compliance with ISO/IEC 17025 - Testing

 Approved Signatory: Chad Whatley
 Lab Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1					
Sample Number	GL-12620A	GL-12620B	GL-12620C	GL-12620D	GL-12620E
Date Tested	20/01/2023	20/01/2023	20/01/2023	20/01/2023	20/01/2023
Time Tested	10:03	10:08	10:15	10:20	10:24
Test Request #/Location	Area 2	Area 2	Area 2	Area 2	Area 2
Easting	500829	500814	500797	500776	500752
Northing	6922902	6922899	6922893	6922889	6922885
Elevation (m)	32.02	32.02	32.03	32.02	32.02
Thickness of Layer (mm)	275	275	275	275	275
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay
Test Depth (mm)	250	250	250	250	250
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0	0
Field Wet Density (FWD) t/m ³	2.20	2.30	2.29	2.28	2.18
Field Dry Density (FDD) t/m ³	**	**	**	**	**
Peak Converted Wet Density t/m ³	2.09	2.06	2.10	2.10	2.08
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**	**
Moisture Variation (Wv) %	2.0	2.0	0.0	0.5	0.5
Adjusted Moisture Variation %	**	**	**	**	**
Hilf Density Ratio (%)	105.5	112.0	109.0	108.5	105.0
Compaction Method	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: 219370.00-10
Issue Number: 1
Date Issued: 25/01/2023
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 219370.00
Project Name: Stage 4A, Riverton Estate, Level 1
Project Location: "Riverton Estate" Cusack Lane, Jimboomba QLD
Work Request: 12620
Dates Tested: 20/01/2023 - 25/01/2023
Location: Level 1 Monitoring



Accredited for compliance with ISO/IEC 17025 - Testing

 Approved Signatory: Chad Whatley
 Lab Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1					
Sample Number	GL-12620F	GL-12620G	GL-12620H	GL-12620I	GL-12620J
Date Tested	20/01/2023	20/01/2023	20/01/2023	20/01/2023	20/01/2023
Time Tested	10:29	10:36	10:42	10:48	10:52
Test Request #/Location	Area 2	Area 2	Area 2	Area 2	Area 2
Easting	500752	500779	500802	500824	500850
Northing	6922914	6922913	6922911	6922909	6922906
Elevation (m)	31.98	31.98	31.97	31.99	31.99
Thickness of Layer (mm)	275	275	275	275	275
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay
Test Depth (mm)	250	250	250	250	250
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0	0
Field Wet Density (FWD) t/m ³	2.17	2.21	2.19	2.14	2.16
Field Dry Density (FDD) t/m ³	**	**	**	**	**
Peak Converted Wet Density t/m ³	1.92	2.11	2.13	2.11	2.10
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**	**
Moisture Variation (Wv) %	0.5	0.5	1.0	0.5	0.5
Adjusted Moisture Variation %	**	**	**	**	**
Hilf Density Ratio (%)	113.0	104.5	103.0	101.5	103.5
Compaction Method	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: 219370.00-11
Issue Number: 1
Date Issued: 25/01/2023
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 219370.00
Project Name: Stage 4A, Riverton Estate, Level 1
Project Location: "Riverton Estate" Cusack Lane, Jimboomba QLD
Work Request: 12600
Dates Tested: 18/01/2023 - 24/01/2023
Location: Level 1 Monitoring



Accredited for compliance with ISO/IEC 17025 - Testing

 Approved Signatory: Chad Whatley
 Lab Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1						
Sample Number	GL-12600A	GL-12600B	GL-12600C	GL-12600D	GL-12600E	GL-12600F
Date Tested	18/01/2023	18/01/2023	18/01/2023	18/01/2023	18/01/2023	18/01/2023
Time Tested	10:02	10:08	10:13	10:18	10:24	10:31
Test Request #/Location	Area 2	Area 2	Area 2	Area 2	Area 2	Area 1
Easting	500819	500782	500739	500699	500645	500848
Northing	6922936	6922922	6922912	6922922	6922938	6922856
Elevation (m)	32.06	32.05	32.06	32.07	32.07	32.31
Thickness of Layer (mm)	225	225	225	225	225	225
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay
Test Depth (mm)	200	200	200	200	200	200
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
Field Wet Density (FWD) t/m ³	2.23	2.23	2.18	2.18	2.23	2.22
Field Dry Density (FDD) t/m ³	**	**	**	**	**	**
Peak Converted Wet Density t/m ³	2.12	2.11	2.08	2.09	2.14	2.09
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**	**	**
Moisture Variation (Wv) %	0.5	1.5	1.0	2.0	0.0	1.0
Adjusted Moisture Variation %	**	**	**	**	**	**
Hilf Density Ratio (%)	105.0	105.5	105.0	104.0	104.0	106.5
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: 219370.00-11
Issue Number: 1
Date Issued: 25/01/2023
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 219370.00
Project Name: Stage 4A, Riverton Estate, Level 1
Project Location: "Riverton Estate" Cusack Lane, Jimboomba QLD
Work Request: 12600
Dates Tested: 18/01/2023 - 24/01/2023
Location: Level 1 Monitoring



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Chad Whatley

Lab Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1

Sample Number	GL-12600G	GL-12600H	GL-12600I	GL-12600J	GL-12600K	GL-12600L
Date Tested	18/01/2023	18/01/2023	18/01/2023	18/01/2023	18/01/2023	18/01/2023
Time Tested	10:36	10:40	10:46	10:53	10:58	11:04
Test Request #/Location	Area 1	Area 1	Area 1	Area 1	Area 1	Area 1
Easting	500808	500772	500740	500710	500834	500805
Northing	6922863	6922868	6922872	6922875	6922828	6922829
Elevation (m)	32.32	32.31	32.31	32.33	32.31	32.33
Thickness of Layer (mm)	225	225	225	225	225	225
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay
Test Depth (mm)	200	200	200	200	200	200
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
Field Wet Density (FWD) t/m ³	2.15	2.14	2.23	2.16	2.10	2.10
Field Dry Density (FDD) t/m ³	**	**	**	**	**	**
Peak Converted Wet Density t/m ³	2.17	2.09	2.11	2.11	2.16	2.14
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**	**	**
Moisture Variation (Wv) %	1.0	1.5	2.0	2.0	0.5	0.0
Adjusted Moisture Variation %	**	**	**	**	**	**
Hilf Density Ratio (%)	99.0	102.5	105.5	102.0	97.0	98.5
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: 219370.00-11
Issue Number: 1
Date Issued: 25/01/2023
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 219370.00
Project Name: Stage 4A, Riverton Estate, Level 1
Project Location: "Riverton Estate" Cusack Lane, Jimboomba QLD
Work Request: 12600
Dates Tested: 18/01/2023 - 24/01/2023
Location: Level 1 Monitoring

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Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Chad Whatley
 Lab Manager
 Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1						
Sample Number	GL-12600M	GL-12600N	GL-12600O			
Date Tested	18/01/2023	18/01/2023	18/01/2023			
Time Tested	11:12	11:16	11:21			
Test Request #/Location	Area 1	Area 1	Area 1			
Easting	500780	500749	500716			
Northing	6922827	6922836	6922844			
Elevation (m)	32.31	32.32	32.32			
Thickness of Layer (mm)	225	225	225			
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay			
Test Depth (mm)	200	200	200			
Sieve used to determine oversize (mm)	19.0	19.0	19.0			
Percentage of Wet Oversize (%)	0	0	0			
Field Wet Density (FWD) t/m ³	2.24	2.22	2.24			
Field Dry Density (FDD) t/m ³	**	**	**			
Peak Converted Wet Density t/m ³	2.09	2.10	2.09			
Adjusted Peak Converted Wet Density t/m ³	**	**	**			
Moisture Variation (Wv) %	0.0	1.0	2.0			
Adjusted Moisture Variation %	**	**	**			
Hilf Density Ratio (%)	106.5	106.0	107.0			
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: 219370.00-12
Issue Number: 1
Date Issued: 30/01/2023
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 219370.00
Project Name: Stage 4A, Riverton Estate, Level 1
Project Location: "Riverton Estate" Cusack Lane, Jimboomba QLD
Work Request: 12642
Dates Tested: 24/01/2023 - 25/01/2023
Location: Level 1 Monitoring



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Chad Whatley
 Lab Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1

Sample Number	GL-12642A	GL-12642B	GL-12642C	GL-12642D	GL-12642E	GL-12642F
Date Tested	24/01/2023	24/01/2023	24/01/2023	24/01/2023	24/01/2023	24/01/2023
Time Tested	08:55	09:01	09:05	09:10	10:00	10:06
Test Request #/Location	Area 1	Area 1	Area 1	Area 1	Area 2	Area 2
Easting	500760	500727	500691	500650	500739	500766
Northing	6922787	6922789	6922783	6922781	6922873	6922873
Elevation (m)	32.04	32.04	32.03	32.04	31.63	31.63
Thickness of Layer (mm)	275	275	275	275	275	275
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay
Test Depth (mm)	250	250	250	250	250	250
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
Field Wet Density (FWD) t/m ³	2.11	2.12	2.11	2.10	2.10	2.14
Field Dry Density (FDD) t/m ³	**	**	**	**	**	**
Peak Converted Wet Density t/m ³	2.09	2.10	2.08	2.10	2.09	2.11
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**	**	**
Moisture Variation (Wv) %	0.5	0.5	0.5	0.5	0.5	0.5
Adjusted Moisture Variation %	**	**	**	**	**	**
Hilf Density Ratio (%)	101.0	101.0	101.5	100.0	100.5	101.5
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: 219370.00-13
Issue Number: 1
Date Issued: 30/01/2023
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 219370.00
Project Name: Stage 4A, Riverton Estate, Level 1
Project Location: "Riverton Estate" Cusack Lane, Jimboomba QLD
Work Request: 12609
Dates Tested: 19/01/2023 - 26/01/2023
Location: Level 1 Monitoring



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Approved Signatory: Chad Whatley

Lab Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1

Sample Number	GL-12609A	GL-12609B	GL-12609C	GL-12609D	GL-12609E	GL-12609F
Date Tested	19/01/2023	19/01/2023	19/01/2023	19/01/2023	19/01/2023	19/01/2023
Time Tested	10:01	10:05	10:11	10:15	10:19	10:24
Test Request #/Location	Area 2	Area 2	Area 2	Area 2	Area 2	Area 2
Easting	500834	500888	500778	500734	500696	500658
Northing	6922932	6922938	6922921	6922910	6922932	6922953
Elevation (m)	32.62	32.62	32.61	32.62	32.64	32.62
Thickness of Layer (mm)	275	275	275	275	275	275
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay
Test Depth (mm)	250	250	250	250	250	250
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
Field Wet Density (FWD) t/m ³	2.11	2.13	2.12	2.14	2.13	2.16
Field Dry Density (FDD) t/m ³	**	**	**	**	**	**
Peak Converted Wet Density t/m ³	2.15	2.16	2.12	2.09	2.16	2.14
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**	**	**
Moisture Variation (Wv) %	0.0	-0.5	1.0	2.5	0.5	0.5
Adjusted Moisture Variation %	**	**	**	**	**	**
Hilf Density Ratio (%)	98.0	98.5	100.0	102.0	99.0	101.5
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: 219370.00-13
Issue Number: 1
Date Issued: 30/01/2023
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 219370.00
Project Name: Stage 4A, Riverton Estate, Level 1
Project Location: "Riverton Estate" Cusack Lane, Jimboomba QLD
Work Request: 12609
Dates Tested: 19/01/2023 - 26/01/2023
Location: Level 1 Monitoring

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Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Chad Whatley
 Lab Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1						
Sample Number	GL-12609G	GL-12609H	GL-12609I	GL-12609J	GL-12609K	GL-12609L
Date Tested	19/01/2023	19/01/2023	19/01/2023	19/01/2023	19/01/2023	19/01/2023
Time Tested	10:30	10:34	10:39	10:44	10:48	10:53
Test Request #/Location	Area 2	Area 2	Area 2	Area 2	Area 2	Area 2
Easting	500659	500714	500763	500811	500853	500900
Northing	6923013	6923013	6923006	6922981	6922970	6922962
Elevation (m)	32.61	32.61	32.61	32.62	32.62	32.63
Thickness of Layer (mm)	275	275	275	275	275	275
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay
Test Depth (mm)	250	250	250	250	250	250
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
Field Wet Density (FWD) t/m ³	2.11	2.16	2.17	2.18	2.17	2.28
Field Dry Density (FDD) t/m ³	**	**	**	**	**	**
Peak Converted Wet Density t/m ³	2.13	2.19	2.15	2.14	2.16	2.15
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**	**	**
Moisture Variation (Wv) %	2.0	-0.5	0.5	2.0	0.0	2.0
Adjusted Moisture Variation %	**	**	**	**	**	**
Hilf Density Ratio (%)	99.0	99.0	101.0	101.5	100.5	106.0
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: 219370.00-13
Issue Number: 1
Date Issued: 30/01/2023
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 219370.00
Project Name: Stage 4A, Riverton Estate, Level 1
Project Location: "Riverton Estate" Cusack Lane, Jimboomba QLD
Work Request: 12609
Dates Tested: 19/01/2023 - 26/01/2023
Location: Level 1 Monitoring

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Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Chad Whatley
 Lab Manager
 Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1

Sample Number	GL-12609M	GL-12609N	GL-12609O		
Date Tested	19/01/2023	19/01/2023	19/01/2023		
Time Tested	10:59	11:03	11:10		
Test Request #/Location	Area 2	Area 2	Area 2		
Easting	500953	500667	500701		
Northing	6922947	6922932	6922986		
Elevation (m)	32.61	32.62	32.61		
Thickness of Layer (mm)	275	275	275		
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay		
Test Depth (mm)	250	250	250		
Sieve used to determine oversize (mm)	19.0	19.0	19.0		
Percentage of Wet Oversize (%)	0	0	0		
Field Wet Density (FWD) t/m ³	2.30	2.29	2.19		
Field Dry Density (FDD) t/m ³	**	**	**		
Peak Converted Wet Density t/m ³	2.16	2.15	2.14		
Adjusted Peak Converted Wet Density t/m ³	**	**	**		
Moisture Variation (Wv) %	2.5	0.0	2.0		
Adjusted Moisture Variation %	**	**	**		
Hilf Density Ratio (%)	106.5	106.5	102.5		
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: 219370.00-14
Issue Number: 1
Date Issued: 06/02/2023
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 219370.00
Project Name: Stage 4A, Riverton Estate, Level 1
Project Location: "Riverton Estate" Cusack Lane, Jimboomba QLD
Work Request: 12698
Dates Tested: 02/02/2023 - 03/02/2023
Location: Level 1 Monitoring



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Chad Whatley

Lab Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1						
Sample Number	GL-12698A	GL-12698B	GL-12698C	GL-12698D	GL-12698E	GL-12698F
Date Tested	02/02/2023	02/02/2023	02/02/2023	02/02/2023	02/02/2023	02/02/2023
Time Tested	11:12	11:17	11:25	11:30	12:41	12:48
Test Request #/Location	Area 2	Area 2	Area 2	Area 2	Area 2	Area 2
Easting	500822	500791	500756	500715	500734	500690
Northing	6922897	6922901	6922909	6922915	6922941	6922952
Elevation (m)	31.89	31.53	31.14	29.65	31.96	31.39
Thickness of Layer (mm)	275	275	275	275	275	275
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay
Test Depth (mm)	250	250	250	250	250	250
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
Field Wet Density (FWD) t/m ³	2.21	2.22	2.13	2.13	2.22	2.22
Field Dry Density (FDD) t/m ³	**	**	**	**	**	**
Peak Converted Wet Density t/m ³	2.14	2.16	2.11	2.08	2.09	2.12
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**	**	**
Moisture Variation (Wv) %	-0.5	-0.5	2.0	2.5	2.5	2.0
Adjusted Moisture Variation %	**	**	**	**	**	**
Hilf Density Ratio (%)	103.5	102.5	101.0	102.5	106.0	105.0
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: 219370.00-15
Issue Number: 1
Date Issued: 08/02/2023
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 219370.00
Project Name: Stage 4A, Riverton Estate, Level 1
Project Location: "Riverton Estate" Cusack Lane, Jimboomba QLD
Work Request: 12710
Dates Tested: 03/02/2023 - 07/02/2023
Location: Level 1 Monitoring

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Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Chad Whatley
 Lab Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	GL-12710A	GL-12710B	GL-12710C	GL-12710D
Date Tested	03/02/2023	03/02/2023	03/02/2023	03/02/2023
Time Tested	10:05	10:11	10:16	10:23
Test Request #/Location	Area 2	Area 2	Area 1	Area 1
Easting	500658	500638	500677	500638
Northing	6922881	6922878	6922769	6922759
Elevation (m)	31.77	31.75	29.70	29.55
Thickness of Layer (mm)	275	275	275	275
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay
Test Depth (mm)	250	250	250	250
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0
Field Wet Density (FWD) t/m ³	2.10	2.17	2.12	2.10
Field Dry Density (FDD) t/m ³	**	**	**	**
Peak Converted Wet Density t/m ³	2.04	2.04	2.11	2.10
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**
Moisture Variation (Wv) %	2.0	2.0	0.5	1.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	103.0	106.5	100.5	100.0
Compaction Method	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: 219370.00-16
Issue Number: 1
Date Issued: 13/02/2023
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 219370.00
Project Name: Stage 4A, Riverton Estate, Level 1
Project Location: "Riverton Estate" Cusack Lane, Jimboomba QLD
Work Request: 12734
Dates Tested: 08/02/2023 - 10/02/2023
Location: Level 1 Monitoring

Douglas Partners Pty Ltd
 Gold Coast Laboratory
 Unit 2/3 Distribution Avenue Molendinar QLD 4214
 Phone: (07) 5568 8900
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Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Chad Whatley
 Lab Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	GL-12734A	GL-12734B	
Date Tested	08/02/2023	08/02/2023	
Time Tested	10:03	10:11	
Test Request #/Location	Area 4	Area 4	
Easting	500886	500868	
Northing	6922820	6922801	
Elevation (m)	31.68	31.67	
Thickness of Layer (mm)	275	275	
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	
Test Depth (mm)	250	250	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	0	0	
Field Wet Density (FWD) t/m ³	2.14	2.16	
Field Dry Density (FDD) t/m ³	**	**	
Peak Converted Wet Density t/m ³	2.02	2.06	
Adjusted Peak Converted Wet Density t/m ³	**	**	
Moisture Variation (Wv) %	-1.5	1.0	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	106.0	104.5	
Compaction Method	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: 219370.00-17
Issue Number: 1
Date Issued: 15/02/2023
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 219370.00
Project Name: Stage 4A, Riverton Estate, Level 1
Project Location: "Riverton Estate" Cusack Lane, Jimboomba QLD
Work Request: 12748
Dates Tested: 09/02/2023 - 14/02/2023
Location: Level 1 Monitoring



Accredited for compliance with ISO/IEC 17025 - Testing

 Approved Signatory: Chad Whatley
 Lab Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1					
Sample Number	GL-12748A	GL-12748B	GL-12748C	GL-12748D	GL-12748E
Date Tested	09/02/2023	09/02/2023	09/02/2023	09/02/2023	09/02/2023
Time Tested	09:16	09:22	09:27	10:32	10:37
Test Request #/Location	Area 2	Area 2	Area 2	Area 2	Area 2
Easting	500650	500624	500635	500903	500628
Northing	6922908	6922913	6922890	6922906	6922910
Elevation (m)	31.15	31.13	31.14	31.46	31.45
Thickness of Layer (mm)	275	275	275	275	275
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay
Test Depth (mm)	250	250	250	250	250
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0	0
Field Wet Density (FWD) t/m ³	2.12	2.12	2.17	2.12	2.12
Field Dry Density (FDD) t/m ³	**	**	**	**	**
Peak Converted Wet Density t/m ³	2.09	2.10	2.03	2.05	2.05
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**	**
Moisture Variation (Wv) %	2.0	2.0	-1.0	1.0	0.0
Adjusted Moisture Variation %	**	**	**	**	**
Hilf Density Ratio (%)	101.5	101.0	107.0	103.0	103.5
Compaction Method	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: 219370.00-17
Issue Number: 1
Date Issued: 15/02/2023
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 219370.00
Project Name: Stage 4A, Riverton Estate, Level 1
Project Location: "Riverton Estate" Cusack Lane, Jimboomba QLD
Work Request: 12748
Dates Tested: 09/02/2023 - 14/02/2023
Location: Level 1 Monitoring

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 Gold Coast Laboratory
 Unit 2/3 Distribution Avenue Molendinar QLD 4214
 Phone: (07) 5568 8900
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Approved Signatory: Chad Whatley
 Lab Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1					
Sample Number	GL-12748F	GL-12748G	GL-12748H	GL-12748I	GL-12748J
Date Tested	09/02/2023	09/02/2023	09/02/2023	09/02/2023	09/02/2023
Time Tested	10:44	01:41	01:47	02:12	02:17
Test Request #/Location	Area 2	Area 3	Area 3	Area 1	Area 1
Easting	500635	500892	500903	500635	500903
Northing	6922884	6922936	6922904	6922890	6922884
Elevation (m)	31.45	33.05	33.05	30.58	30.56
Thickness of Layer (mm)	275	275	275	275	275
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay
Test Depth (mm)	250	250	250	250	250
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0	0
Field Wet Density (FWD) t/m ³	2.18	2.12	2.12	2.13	2.11
Field Dry Density (FDD) t/m ³	**	**	**	**	**
Peak Converted Wet Density t/m ³	2.03	2.11	2.07	2.05	2.06
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**	**
Moisture Variation (Wv) %	2.0	0.5	0.0	1.0	0.5
Adjusted Moisture Variation %	**	**	**	**	**
Hilf Density Ratio (%)	107.5	100.5	102.5	104.0	103.0
Compaction Method	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: 219370.00-18
Issue Number: 1
Date Issued: 15/02/2023
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 219370.00
Project Name: Stage 4A, Riverton Estate, Level 1
Project Location: "Riverton Estate" Cusack Lane, Jimboomba QLD
Work Request: 12579
Dates Tested: 16/01/2023 - 19/01/2023
Location: Inspection and Densities



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Chad Whatley

Lab Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	GL-12579A	GL-12579B	GL-12579C	GL-12579D
Date Tested	16/01/2023	16/01/2023	16/01/2023	16/01/2023
Time Tested	11:31	11:36	11:42	11:48
Test Request #/Location	Area 2	Area 2	Area 2	Area 2
Easting	500687	500737	500780	500834
Northing	6922910	6922926	6922940	6922958
Elevation (m)	31.226	31.221	31.228	31.224
Thickness of Layer (mm)	275	275	275	275
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay
Test Depth (mm)	250	250	250	250
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	6	0	0	0
Field Wet Density (FWD) t/m ³	2.16	2.23	2.22	2.09
Field Dry Density (FDD) t/m ³	**	**	**	**
Peak Converted Wet Density t/m ³	**	2.09	2.10	1.99
Adjusted Peak Converted Wet Density t/m ³	2.07	**	**	**
Moisture Variation (Wv) %	**	2.0	1.0	2.5
Adjusted Moisture Variation %	2.0	**	**	**
Hiif Density Ratio (%)	104.0	107.0	106.0	105.0
Compaction Method	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: 219370.00-19
Issue Number: 1
Date Issued: 15/02/2023
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 219370.00
Project Name: Stage 4A, Riverton Estate, Level 1
Project Location: "Riverton Estate" Cusack Lane, Jimboomba QLD
Work Request: 12728
Dates Tested: 07/02/2023 - 15/02/2023
Location: Level 1 Monitoring



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Approved Signatory: Chad Whatley

Lab Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	GL-12728A	GL-12728B	GL-12728C	GL-12728D
Date Tested	07/02/2023	07/02/2023	07/02/2023	07/02/2023
Time Tested	14:01	14:06	14:12	14:17
Test Request #/Location	Area 3	Area 3	Area 3	Area 3
Easting	500894	500903	500914	500923
Northing	6922931	6922892	6922865	6922919
Elevation (m)	32.75	32.71	32.73	32.77
Thickness of Layer (mm)	275	275	275	275
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay
Test Depth (mm)	250	250	250	250
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0
Field Wet Density (FWD) t/m ³	2.14	2.15	2.13	2.14
Field Dry Density (FDD) t/m ³	**	**	**	**
Peak Converted Wet Density t/m ³	2.04	2.04	1.99	2.06
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**
Moisture Variation (Wv) %	3.0	2.5	2.5	4.0
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	104.5	106.0	107.5	103.5
Compaction Method	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: 219370.00-19
Issue Number: 1
Date Issued: 15/02/2023
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 219370.00
Project Name: Stage 4A, Riverton Estate, Level 1
Project Location: "Riverton Estate" Cusack Lane, Jimboomba QLD
Work Request: 12728
Dates Tested: 07/02/2023 - 15/02/2023
Location: Level 1 Monitoring

Douglas Partners Pty Ltd
 Gold Coast Laboratory
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 Phone: (07) 5568 8900
 Email: chad.whatley@douglaspartners.com.au



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Chad Whatley
 Lab Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	GL-12728E	GL-12728F	GL-12728G	GL-12728H
Date Tested	07/02/2023	07/02/2023	07/02/2023	07/02/2023
Time Tested	14:24	14:29	14:33	14:38
Test Request #/Location	Area 3	Area 3	Area 3	Area 3
Easting	500935	500898	500907	500908
Northing	6922923	6922917	6922885	6922859
Elevation (m)	33.05	33.06	33.02	33.05
Thickness of Layer (mm)	275	275	275	275
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay
Test Depth (mm)	250	250	250	250
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0
Field Wet Density (FWD) t/m ³	2.15	2.14	2.11	2.14
Field Dry Density (FDD) t/m ³	**	**	**	**
Peak Converted Wet Density t/m ³	2.07	1.98	2.03	2.00
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**
Moisture Variation (Wv) %	3.0	4.5	2.5	3.0
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	104.0	108.5	104.0	106.5
Compaction Method	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: 219370.00-20
Issue Number: 1
Date Issued: 20/02/2023
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 219370.00
Project Name: Stage 4A, Riverton Estate, Level 1
Project Location: "Riverton Estate" Cusack Lane, Jimboomba QLD
Work Request: 12766
Dates Tested: 11/02/2023 - 18/02/2023
Location: Level 1 Monitoring

Douglas Partners Pty Ltd
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 Unit 2/3 Distribution Avenue Molendinar QLD 4214
 Phone: (07) 5568 8900
 Email: chad.whatley@douglaspartners.com.au



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Chad Whatley
 Lab Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	GL-12766A	GL-12766B	GL-12766C	GL-12766D
Date Tested	11/02/2023	11/02/2023	11/02/2023	11/02/2023
Time Tested	11:30	11:36	11:41	11:46
Test Request #/Location	Area 4	Area 4	Area 4	Area 4
Easting	500898	500875	500887	500866
Northing	6922834	6922822	6922807	6922797
Elevation (m)	32.39	32.42	32.38	32.38
Thickness of Layer (mm)	275	275	275	275
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay
Test Depth (mm)	250	250	250	250
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	6	10	1	0
Field Wet Density (FWD) t/m ³	2.12	2.11	2.12	2.16
Field Dry Density (FDD) t/m ³	**	**	**	**
Peak Converted Wet Density t/m ³	**	**	**	2.14
Adjusted Peak Converted Wet Density t/m ³	2.08	2.15	2.15	**
Moisture Variation (Wv) %	**	**	**	0.5
Adjusted Moisture Variation %	1.0	0.0	0.0	**
Hilf Density Ratio (%)	102.0	98.5	98.5	101.0
Compaction Method	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: 219370.00-21
Issue Number: 1
Date Issued: 20/02/2023
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 219370.00
Project Name: Stage 4A, Riverton Estate, Level 1
Project Location: "Riverton Estate" Cusack Lane, Jimboomba QLD
Work Request: 12810
Dates Tested: 17/02/2023 - 20/02/2023
Location: Allotment Fill



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Chad Whatley

Lab Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1

Sample Number	GL-12810A	GL-12810B	GL-12810C	GL-12810D
Date Tested	17/02/2023	17/02/2023	17/02/2023	17/02/2023
Time Tested	09:42	09:49	09:55	10:02
Test Request #/Location	4048-4051	4048-4051	4048-4051	4048-4051
Easting	500918	500915	500902	500917
Northing	6922880	6922860	6922890	6922907
Elevation (m)	32.60	32.58	32.61	32.61
Thickness of Layer (mm)	275	275	275	275
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay
Test Depth (mm)	250	250	250	250
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	1	3	0	3
Field Wet Density (FWD) t/m ³	2.15	2.24	2.12	2.22
Field Dry Density (FDD) t/m ³	**	**	**	**
Peak Converted Wet Density t/m ³	**	**	2.08	**
Adjusted Peak Converted Wet Density t/m ³	2.09	2.09	**	2.10
Moisture Variation (Wv) %	**	**	0.0	**
Adjusted Moisture Variation %	0.0	-1.0	**	2.0
Hit Density Ratio (%)	103.0	107.0	102.0	106.0
Compaction Method	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: 219370.00-21
Issue Number: 1
Date Issued: 20/02/2023
Client: Shadforth Civil Pty Ltd
 99 Sandalwood Lane, Forest Glen QLD 4556
Contact: Nick Gentle
Project Number: 219370.00
Project Name: Stage 4A, Riverton Estate, Level 1
Project Location: "Riverton Estate" Cusack Lane, Jimboomba QLD
Work Request: 12810
Dates Tested: 17/02/2023 - 20/02/2023
Location: Allotment Fill

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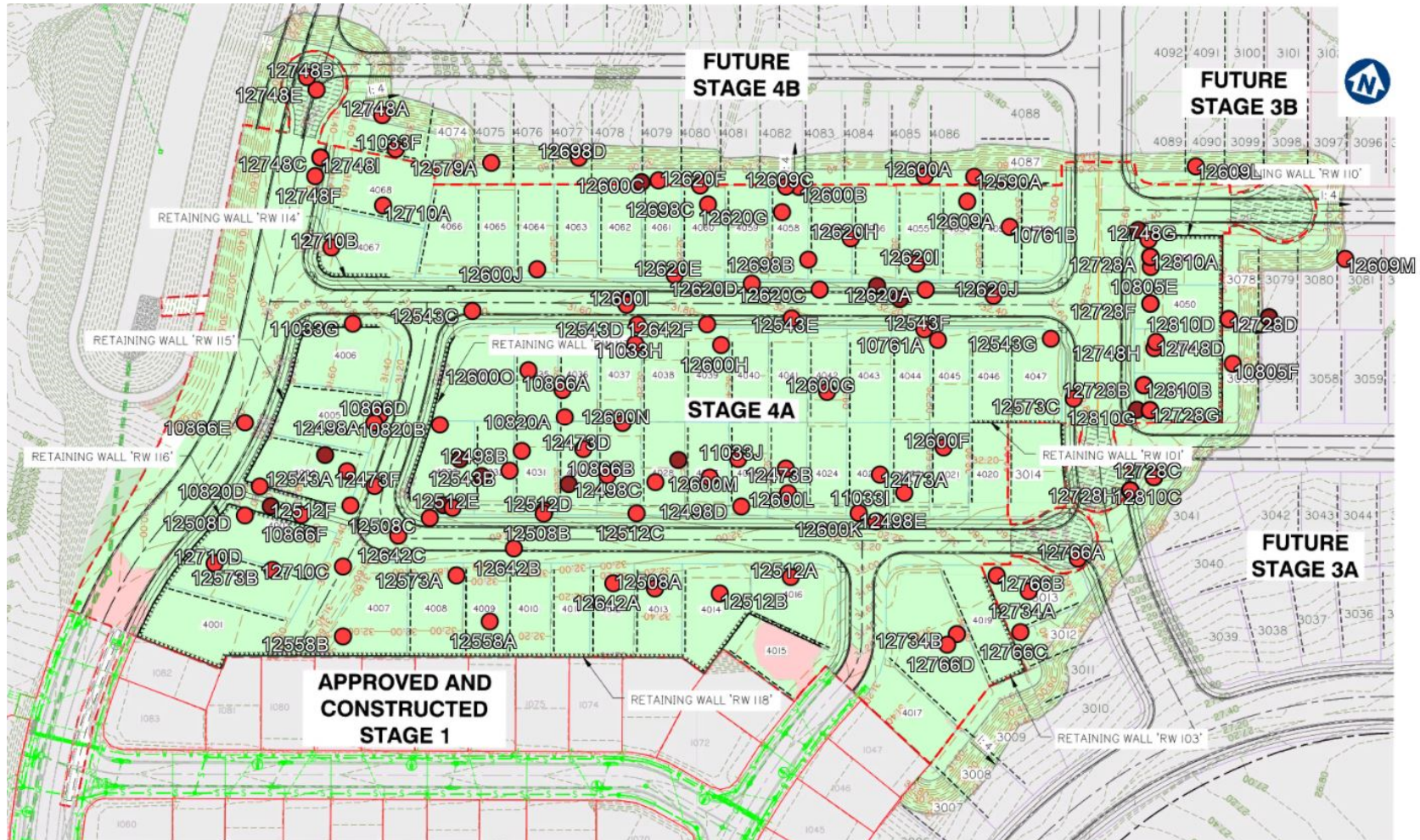
Approved Signatory: Chad Whatley
 Lab Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1				
Sample Number	GL-12810E	GL-12810F	GL-12810G	GL-12810H
Date Tested	17/02/2023	17/02/2023	17/02/2023	17/02/2023
Time Tested	10:10	10:16	10:21	10:27
Test Request #/Location	4048-4051	4048-4051	4048-4051	4048-4051
Easting	500914	500907	500892	500893
Northing	6922925	6922941	6922937	6922913
Elevation (m)	32.60	32.57	32.60	32.59
Thickness of Layer (mm)	275	275	275	275
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay	Gravelly Sandy Clay
Test Depth (mm)	250	250	250	250
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	3	0	0	0
Field Wet Density (FWD) t/m ³	2.18	2.17	2.17	2.12
Field Dry Density (FDD) t/m ³	**	**	**	**
Peak Converted Wet Density t/m ³	**	2.07	2.09	2.07
Adjusted Peak Converted Wet Density t/m ³	2.09	**	**	**
Moisture Variation (Wv) %	**	1.5	0.0	2.0
Adjusted Moisture Variation %	1.5	**	**	**
Hilf Density Ratio (%)	104.0	104.5	103.5	102.5
Compaction Method	Standard	Standard	Standard	Standard
Report Remarks	**	**	**	**

Moisture Variation Note:

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



Notes:

1. Test locations are approximate only and are shown with reference to existing site features.
2. Drawing Not To Scale.
3. Image adapted from client supplied Earthworks General Notes 5544-ENG-BE-S04A-100 prepared by Gassman Development Perspectives.

Legend:

- Field Density Test Location and Number



CLIENT: Shadforth Civil Pty Ltd

OFFICE: Gold Coast

DATE: March 2023

Test Location Plan

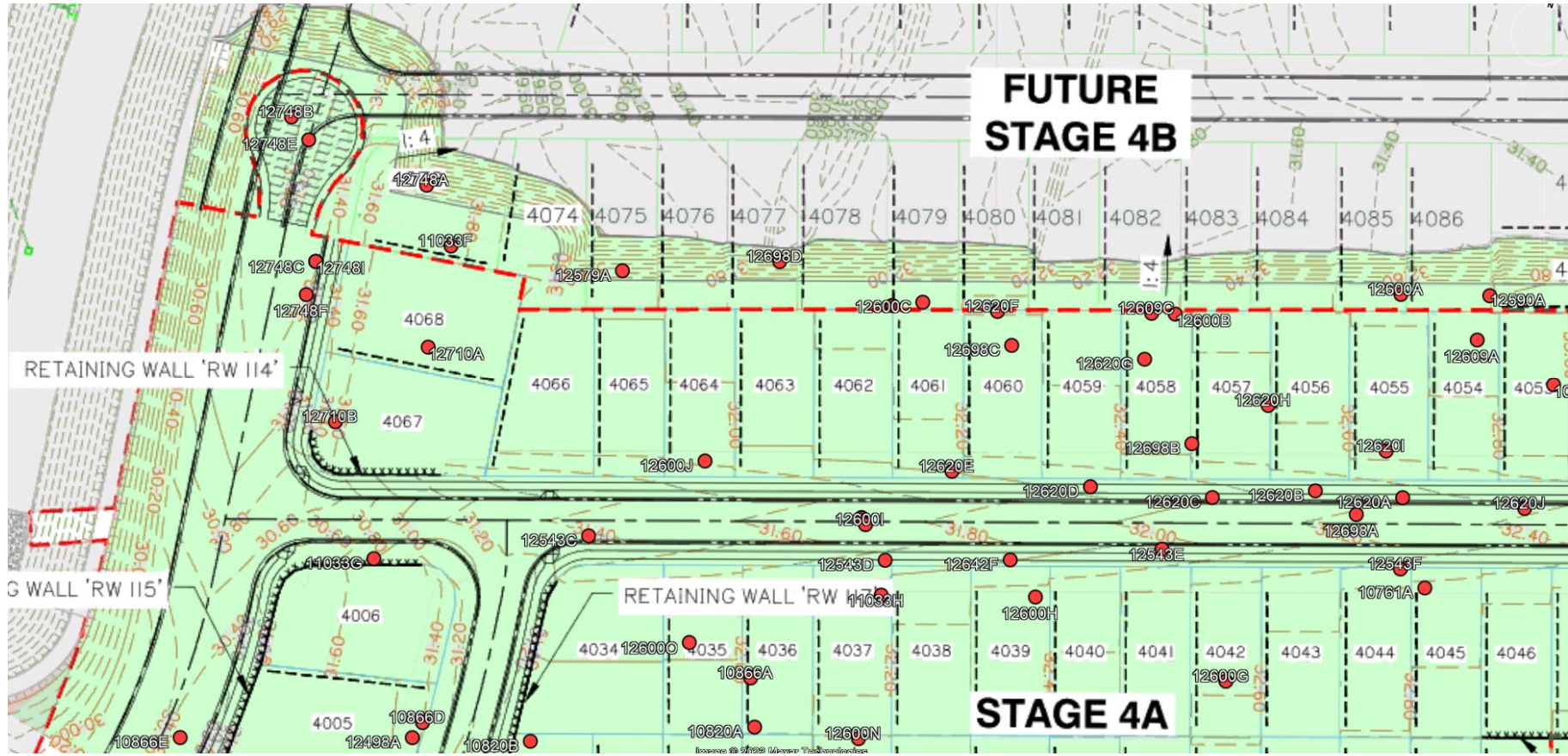
Proposed Residential Development

Stage 4A, "Riverton Estate", Cusack Lane, Jimboomba

PROJECT No: 219370.00

DRAWING No: 1

REVISION: 0




**FUTURE
STAGE 4B**

STAGE 4A


RETAINING WALL 'RW I14'

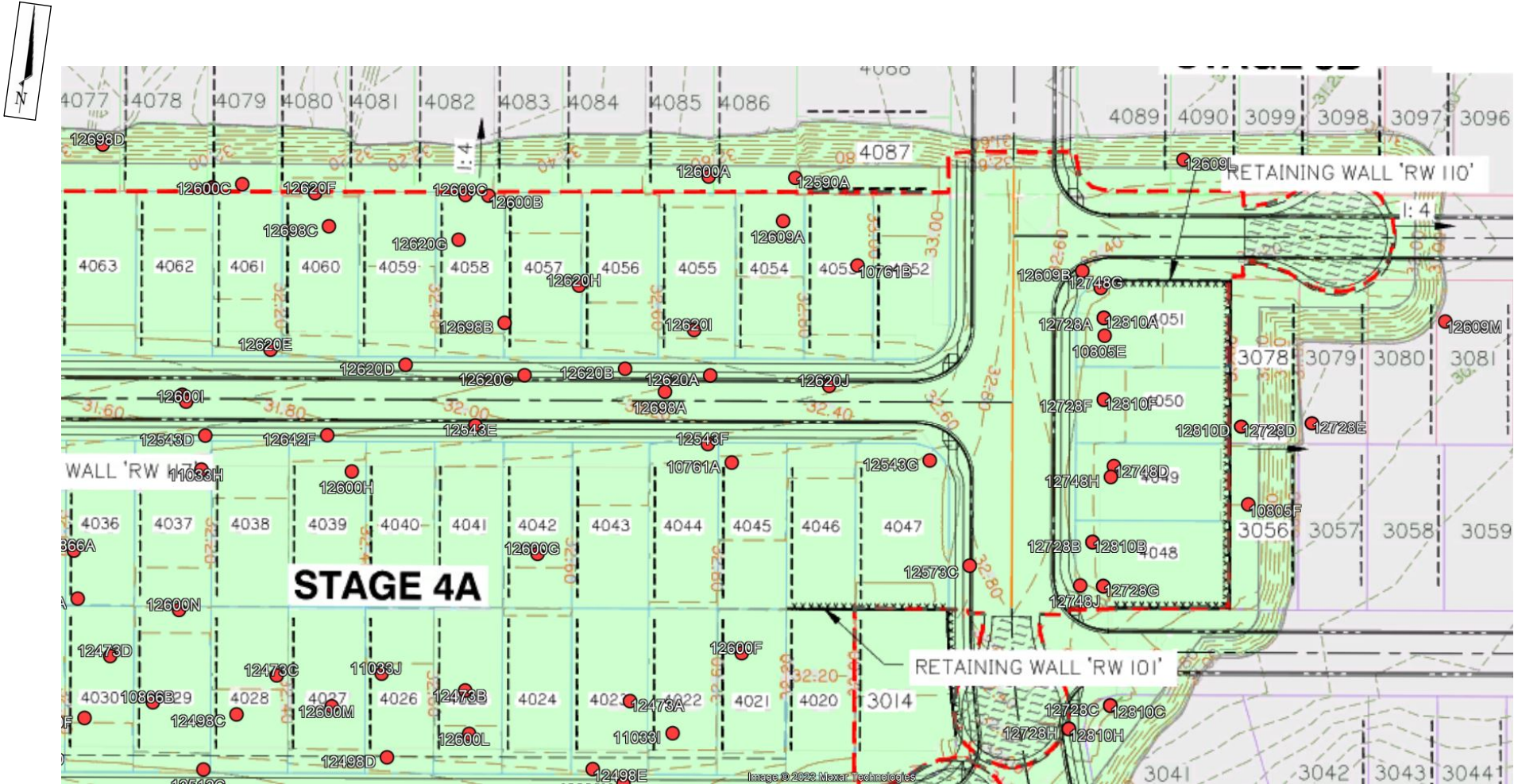
RETAINING WALL 'RW I15'

RETAINING WALL 'RW I16'

Legend:
 Field Density Test Location and Number

- Notes:
1. Test locations are approximate only and are shown with reference to existing site features.
 2. Drawing Not To Scale.
 3. Image adapted from client supplied Earthworks General Notes 5544-ENG-BE-S04A-100 prepared by Gassman Development Perspectives.

	CLIENT: Shadforth Civil Pty Ltd	Test Location Plan Proposed Residential Development Stage 4A, "Riverton Estate", Cusack Lane, Jimboomba	PROJECT No: 219370.00
	OFFICE: Gold Coast		DRAWING No: 2
	DATE: March 2023		REVISION: 0



Notes:

1. Test locations are approximate only and are shown with reference to existing site features.
2. Drawing Not To Scale.
3. Image adapted from client supplied Earthworks General Notes 5544-ENG-BE-S04A-100 prepared by Gassman Development Perspectives.

Legend:

- Field Density Test Location and Number



CLIENT: Shadforth Civil Pty Ltd

OFFICE: Gold Coast

DATE: March 2023

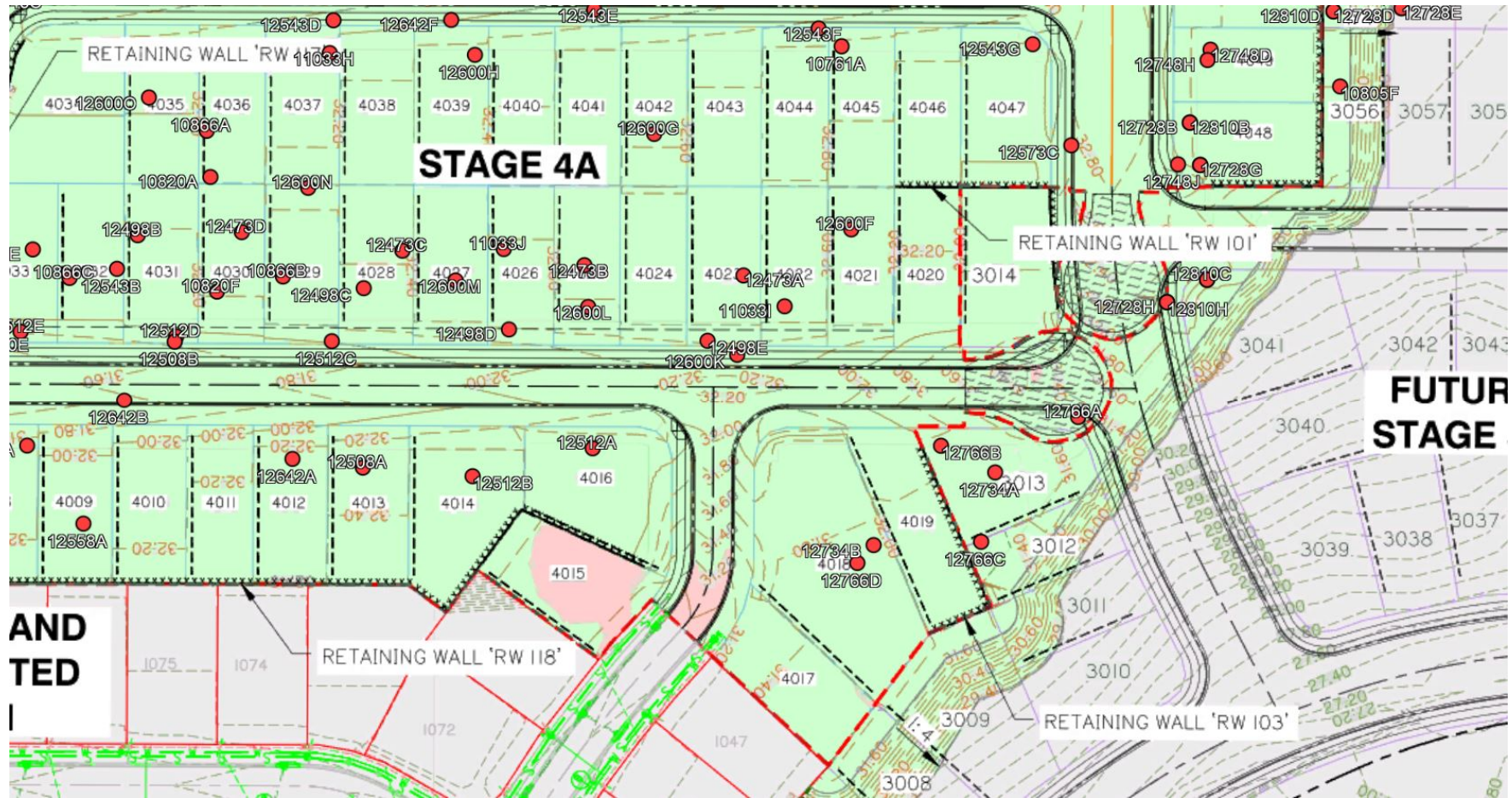
Test Location Plan

**Proposed Residential Development
Stage 4A, "Riverton Estate", Cusack
Lane, Jimboomba**

PROJECT No: 219370.00

DRAWING No: 3

REVISION: 0



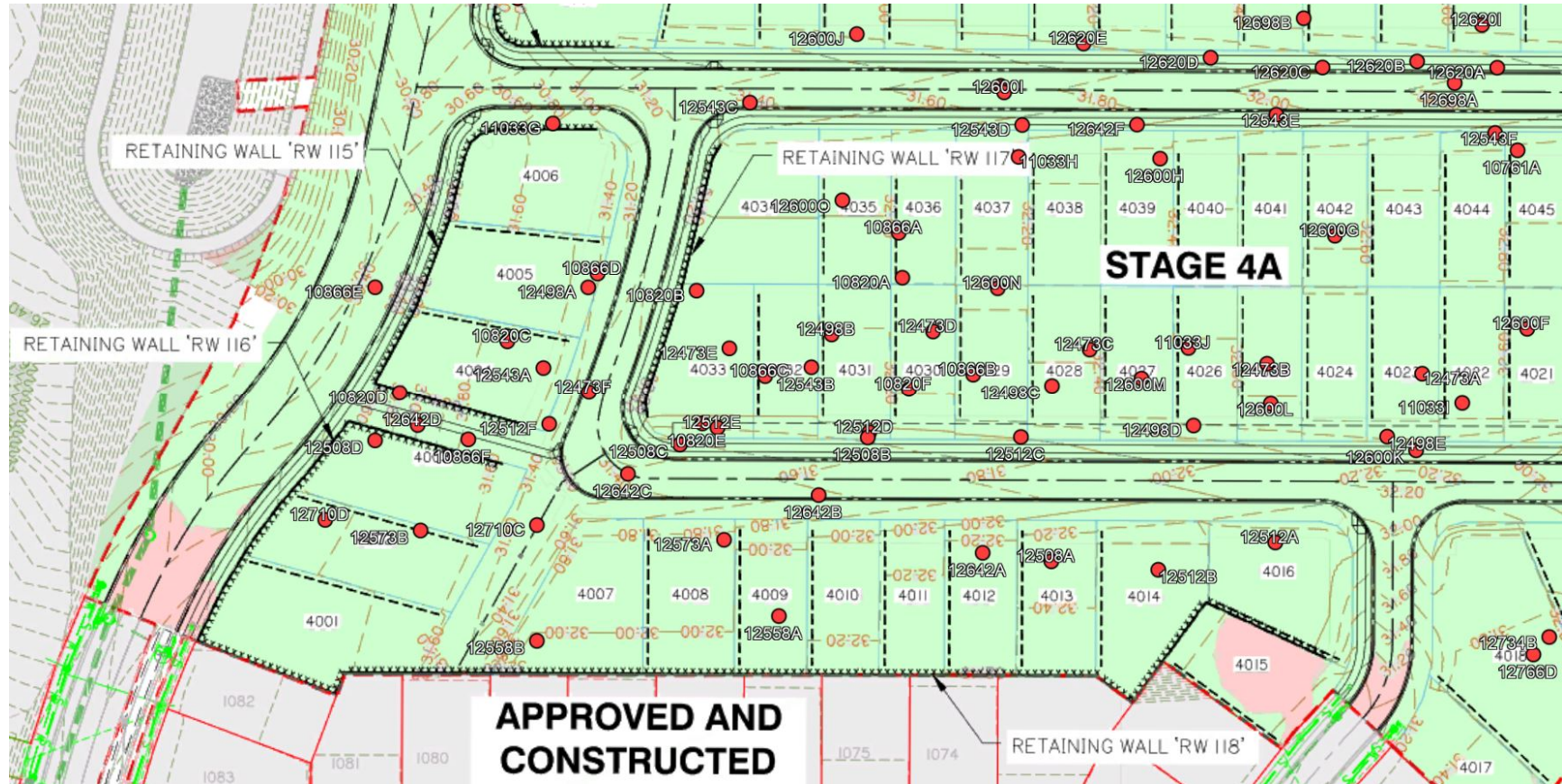
Notes:

1. Test locations are approximate only and are shown with reference to existing site features.
2. Drawing Not To Scale.
3. Image adapted from client supplied Earthworks General Notes 5544-ENG-BE-S04A-100 prepared by Gassman Development Perspectives.

Legend:

- Field Density Test Location and Number

	CLIENT: Shadforth Civil Pty Ltd	Test Location Plan Proposed Residential Development Stage 4A, "Riverton Estate", Cusack Lane, Jimboomba	PROJECT No: 219370.00
	OFFICE: Gold Coast		DRAWING No: 4
	DATE: March 2023		REVISION: 0



- Notes:**
1. Test locations are approximate only and are shown with reference to existing site features.
 2. Drawing Not To Scale.
 3. Image adapted from client supplied Earthworks General Notes 5544-ENG-BE-S04A-100 prepared by Gassman Development Perspectives.

Legend:

● Field Density Test Location and Number

	CLIENT: Shadforth Civil Pty Ltd	Test Location Plan Proposed Residential Development Stage 4A, "Riverton Estate", Cusack Lane, Jimboomba	PROJECT No: 219370.00
	OFFICE: Gold Coast		DRAWING No: 5
	DATE: March 2023		REVISION: 0