

Riverwalk Estate Stage 39

GITA Inspection Verification Report

Prepared For: Excell Gray Bruni

Report Number D231062A V1

Version Release Date 20 Feb 2024

Report Released By Eranda Hippola

Title Laboratory Manager

Signature



Table of Contents

1 Introduction 3

2 Scope of Work 3

 2.1 Area of Work 3

 2.2 Specification 3

 2.3 Limitations 4

3 Construction Method 5

 3.1 Subgrade Preparation 5

 3.2 Fill Placement 5

4 Construction Verification 6

5 Statement of Compliance 6

Appendices

- Appendix 1 Test Location Plan
- Appendix 2 Compaction Test Register and Test Certificates

1 Introduction

Terra Firma Laboratories was engaged by Excell Gray Bruni as the Geotechnical Inspection and Testing Authority (GITA) to provide Level 1 supervision and testing works on the earthworks component for Riverwalk Estate Stage 39. This work was conducted over the period of 03/08/2023 to 17/10/2023.

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 3901 to 3947, bounded by streets Boomerang Street, Grampians Avenue, Bombardier Street and Aviator Street. 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 Dalton Consulting Engineers (Drawing Reference: 10870FP03) and provided by Excell Gray Bruni.

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 Excell Gray Bruni 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.

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

3 Construction Method

3.1 Subgrade Preparation

At the time of subgrade inspection the following was observed:

- Subgrade preparation involved stripping the site of topsoil, vegetation and organic matter to a depth of approximately 200mm below existing levels.
- The site was cleared of all trees and stumps to the extent necessary for the fill placement to proceed
- The roots of all trees and any debris was removed from site prior to any fill placement
- An old trench across lots 3909 to 3911 and 3935 to 3939 was cleaned out and a solid base found. Approved for fill.

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 (D231062D1, 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 83 density tests (Hilf method in accordance with 1289 5.7.1) were undertaken with 0 failed results. The results summarised in the compaction test register (Appendix 2) confirm that for every layer of fill placed in a specific work area, satisfactory testing was completed.

5 Statement of Compliance

The intention of this report is to provide a description of the earthworks construction for Stage 39 at Riverwalk Estate. For completed fill areas of greater than 300mm, and for works completed between 03/08/2023 and 17/10/2023, 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 39 of Riverwalk Estate was observed to be constructed in compliance with the requirements of the Technical Specification.



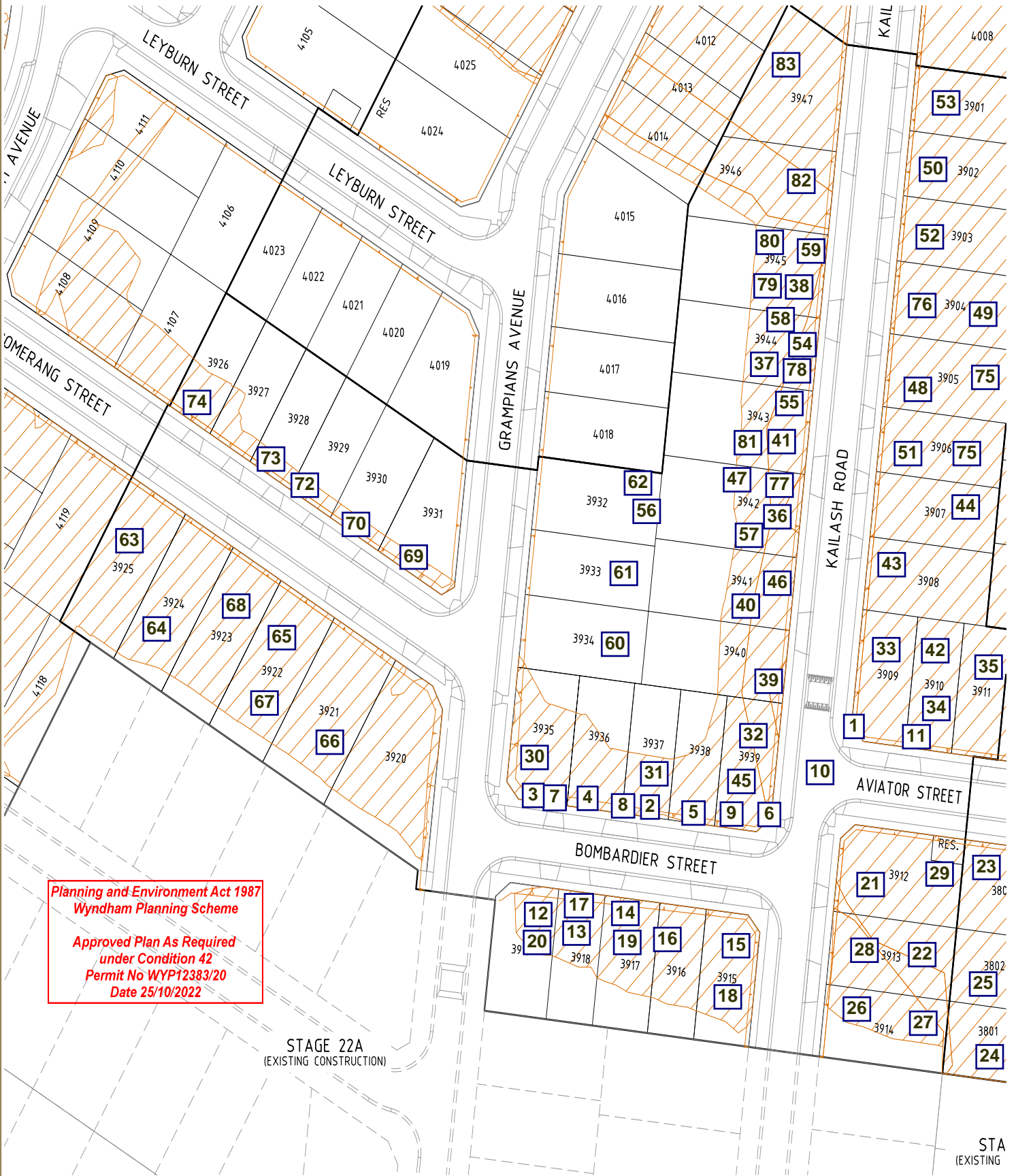
Your Worksite is Our Laboratory.

Appendix 1: Test Location Plan

Our Head Office
47 National Ave
Pakenham, VIC 3810

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

TERRAFIRMALABS.COM.AU
Page 1 of 2



Planning and Environment Act 1987
Wyndham Planning Scheme

Approved Plan As Required
under Condition 42
Permit No WYP12383/20
Date 25/10/2022

STAGE 22A
 (EXISTING CONSTRUCTION)

STA
 (EXISTING)



Our Head Office
 47 National Ave
 Pakenham, VIC 3860

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

Test Location Plan
not to scale

TERRAFIRMA.COM.AU
 TEST LOCATION PLAN 02/24

Client: Excell Gray Bruni

Project: Riverwalk Stage 39

Reference: D231062 D1



Your Worksite is Our Laboratory.

Appendix 2: Compaction Test Register and Test Certificates



Compaction Test Register

Client: Excell Gray Bruni **Project No:** D231062
Project: Riverwalk Estate Stage 39 **Specification:** 95%

Date:	Test No:	Layer:	Retest of:	Density:	Pass/Fail:	Lot No:	Report No:
3/08/2023	1	Layer 1		95.5%	Pass	Trench	D231062-2
3/08/2023	2	Layer 1		96.5%	Pass	Trench	D231062-2
3/08/2023	3	Layer 1		97.5%	Pass	Trench	D231062-2
4/08/2023	4	Layer 3		102.5%	Pass	Trench	D231062-1
4/08/2023	5	Layer 3		98.0%	Pass	Trench	D231062-1
4/08/2023	6	Layer 4		96.5%	Pass	Trench	D231062-1
9/08/2023	7	Layer 5		100.0%	Pass	Trench	D231062-3
9/08/2023	9	Layer 5		97.0%	Pass	Trench	D231062-3
9/08/2023	10	Layer 5		98.5%	Pass	Trench	D231062-3
9/08/2023	8	Layer 5		101.0%	Pass	Trench	D231062-3
9/08/2023	11	Layer 5		96.0%	Pass	Trench	D231062-3
10/08/2023	12	Layer 1		100.5%	Pass	Lot 3919	D231062-4
10/08/2023	13	Layer 1		102.5%	Pass	Lot 3918	D231062-4
10/08/2023	14	Layer 1		100.0%	Pass	Lot 3917	D231062-4
14/08/2023	15	Layer 2		100.5%	Pass	Lot 3915	D231062-5
14/08/2023	16	Layer 2		99.0%	Pass	Lot 3916	D231062-5
14/08/2023	17	Layer 3		99.5%	Pass	Lot 3918	D231062-5
16/08/2023	18	Layer 2		103.0%	Pass	Lot 3915	D231062-6
16/08/2023	19	Layer 2		97.0%	Pass	Lot 3917	D231062-6
16/08/2023	20	Layer 2		102.5%	Pass	Lot 3919	D231062-6
17/08/2023	21	Layer 2		100.5%	Pass	Lot 3912	D231062-7
17/08/2023	22	Layer 2		101.5%	Pass	Lot 3913	D231062-7
17/08/2023	23	Layer 3		100.5%	Pass	Lot 3803	D231062-7
18/08/2023	24	Layer 4		102.5%	Pass	Lot 3801	D231062-8
18/08/2023	25	Layer 4		102.5%	Pass	Lot 3802	D231062-8
18/08/2023	26	Layer 4		97.5%	Pass	Lot 3914	D231062-8
28/08/2023	27	Layer 5		98.0%	Pass	Lot 3914	D231062-9
28/08/2023	28	Layer 5		102.0%	Pass	Lot 3913	D231062-9
28/08/2023	29	Layer 5		98.5%	Pass	Lot 3912	D231062-9
31/08/2023	30	Layer 2		99.0%	Pass	Lot 3935	D231062-10
31/08/2023	31	Layer 2		98.0%	Pass	Lot 3937	D231062-10
31/08/2023	32	Layer 2		98.0%	Pass	Lot 3939	D231062-10
8/09/2023	33	Layer 5		95.0%	Pass	Lot 3909	D231062-11
8/09/2023	34	Layer 5		96.0%	Pass	Lot 3910	D231062-11
8/09/2023	35	Layer 5		95.5%	Pass	Lot 3911	D231062-11
12/09/2023	36	Layer 3		99.0%	Pass	Lot 3942	D231062-12
12/09/2023	37	Layer 3		100.0%	Pass	Lot 3944	D231062-12
12/09/2023	38	Layer 3		97.5%	Pass	Lot 3945	D231062-12
13/09/2023	39	Layer 4		102.0%	Pass	Lot 3940	D231062-13
13/09/2023	40	Layer 4		98.5%	Pass	Lot 3941	D231062-13
13/09/2023	41	Layer 4		99.0%	Pass	Lot 3943	D231062-13



Compaction Test Register

Client: Excell Gray Bruni
Project: Riverwalk Estate Stage 39

Project No: D231062
Specification: 95%

Date:	Test No:	Layer:	Retest of:	Density:	Pass/Fail:	Lot No:	Report No:
15/09/2023	42	LAYER 9		99.5%	Pass	Lot 3910	D231062-14
15/09/2023	43	LAYER 9		100.5%	Pass	Lot 3908	D231062-14
15/09/2023	44	LAYER 9		99.5%	Pass	Lot 3907	D231062-14
18/09/2023	45	LAYER 7		102.5%	Pass	Lot 3939	D231062-15
18/09/2023	46	LAYER 7		101.0%	Pass	Lot 3941	D231062-15
18/09/2023	47	LAYER 7		98.5%	Pass	Lot 3942	D231062-15
20/09/2023	48	Layer 4		100.5%	Pass	Lot 3905	D231062-16
20/09/2023	49	Layer 4		97.5%	Pass	Lot 3904	D231062-16
20/09/2023	50	Layer 4		99.5%	Pass	Lot 3902	D231062-16
21/09/2023	51	Layer 5		100.5%	Pass	Lot 3906	D231062-17
21/09/2023	52	Layer 5		98.5%	Pass	Lot 3903	D231062-17
21/09/2023	53	Layer 5		100.5%	Pass	Lot 3901	D231062-17
22/09/2023	54	Layer 2		100.5%	Pass	Lot 3944	D231062-18
22/09/2023	55	Layer 2		98.5%	Pass	Lot 3943	D231062-18
22/09/2023	56	Layer 2		97.0%	Pass	Lot 3932	D231062-18
25/09/2023	57	Layer 3		100.0%	Pass	Lot 3942	D231062-19
25/09/2023	58	Layer 3		97.0%	Pass	Lot 3944	D231062-19
25/09/2023	59	Layer 3		98.0%	Pass	Lot 3945	D231062-19
26/09/2023	60	LAYER 4		100.5%	Pass	Lot 3934	D231062-20
26/09/2023	61	LAYER 4		98.5%	Pass	Lot 3933	D231062-20
26/09/2023	62	LAYER 4		97.0%	Pass	Lot 3932	D231062-20
27/09/2023	63	Layer 2		97.0%	Pass	Lot 3925	D231062-21
27/09/2023	64	Layer 2		96.0%	Pass	Lot 3924	D231062-21
27/09/2023	65	Layer 2		96.0%	Pass	Lot 3922	D231062-21
28/09/2023	66	Layer 4		95.5%	Pass	Lot 3921	D231062-22
28/09/2023	67	Layer 4		97.0%	Pass	Lot 3922	D231062-22
28/09/2023	68	Layer 4		97.5%	Pass	Lot 3923	D231062-22
10/10/2023	69	Layer 2		98.0%	Pass	Lot 3931	D231062-23
10/10/2023	70	Layer 2		96.0%	Pass	Lot 3930	D231062-23
10/10/2023	71	Layer 2		96.0%	Pass	Lot 3929	D231062-23
10/10/2023	72	Layer 2		98.0%	Pass	Lot 3928	D231062-23
10/10/2023	73	Layer 2		101.0%	Pass	Lot 3927	D231062-23
10/10/2023	74	Layer 2		100.5%	Pass	Lot 3926	D231062-23
13/10/2023	75	Layer 7		95.5%	Pass	Lot 3906	D231062-24
13/10/2023	76	Layer 7		95.5%	Pass	Lot 3905	D231062-24
13/10/2023	77	Layer 7		99.5%	Pass	Lot 3904	D231062-24
16/10/2023	78	Layer 6		97.5%	Pass	Lot 3942	D231062-25
16/10/2023	79	Layer 6		104.5%	Pass	Lot 3944	D231062-25
16/10/2023	80	Layer 6		98.5%	Pass	Lot 3945	D231062-25
17/10/2023	81	Layer 7		102.5%	Pass	Lot 3943	D231062-26
17/10/2023	82	Layer 7		98.5%	Pass	Lot 3946	D231062-26



Compaction Test Register

Client: Excell Gray Bruni

Project No: D231062

Project: Riverwalk Estate Stage 39

Specification: 95%

Date:	Test No:	Layer:	Retest of:	Density:	Pass/Fail:	Lot No:	Report No:
17/10/2023	83	Layer 7		101.0%	Pass	Lot 3947	D231062-26

Material Test Report

Report Number: D231062-1
Issue Number: 1
Date Issued: 10/08/2023
Client: Excell Gray Bruni
 12 Allied Drive, Tullamarine Vic 3043
Project Number: D231062
Project Name: Riverwalk Estate Stage 39 - Level one
Project Location: Werribee
Work Request: 6248
Date Sampled: 04/08/2023
Dates Tested: 04/08/2023 - 07/08/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Riverwalk stage 39 - Level one
Material: Clay
Material Source: On Site



Deer Park Laboratory
 17 Walhalla Way Ravenhall VIC 3023
 Phone: 0435 751 756
 Email: ehippola@terrafirmalabs.com.au



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Eranda Hippola
 Laboratory Manager

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D23-6248A	D23-6248B	D23-6248C
Test Number	4	5	6
Date Tested	04/08/2023	04/08/2023	04/08/2023
Time Tested	10:45	10:45	15:00
Test Request #/Location	Trench Backfill	Trench Backfill	Trench Backfill
Layer / Reduced Level	Layer 3	Layer 3	Layer 4
Thickness of Layer (mm)	300	300	300
Soil Description	Clay	Clay	Clay
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Percentage of Dry Oversize (%) (AS1289.5.4.1)	0	0	0
Field Wet Density (FWD) t/m ³	2.11	1.99	1.97
Field Moisture Content %	12.2	12.4	11.9
Field Dry Density (FDD) t/m ³	1.88	1.77	1.76
Peak Converted Wet Density t/m ³	2.06	2.03	2.05
Adjusted Peak Converted Wet Density t/m ³	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	14.5	16.4	13.9
Adj. Field Moisture Content % (AS1289.5.4.1)	12.2	12.4	11.9
Moisture Ratio % (AS1289.5.4.1)	84.0	75.5	86.0
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**
Moisture Variation (Wv) %	2.5	4.0	2.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	102.5	98.0	96.5
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: D231062-2
Issue Number: 1
Date Issued: 10/08/2023
Client: Excell Gray Bruni
 12 Allied Drive, Tullamarine Vic 3043
Project Number: D231062
Project Name: Riverwalk Estate Stage 39 - Level one
Project Location: Werribee
Work Request: 6243
Date Sampled: 03/08/2023
Dates Tested: 03/08/2023 - 09/08/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Riverwalk stage 39 - Level One
Material: Clay
Material Source: On Site



Deer Park Laboratory
 17 Walhalla Way Ravenhall VIC 3023
 Phone: 0435 751 756
 Email: ehippola@terrafirmalabs.com.au



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Eranda Hippola
 Laboratory Manager

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D23-6243A	D23-6243B	D23-6243C
Test Number	1	2	3
Date Tested	03/08/2023	03/08/2023	03/08/2023
Time Tested	**	**	**
Test Request #/Location	Trench back fill	Trench back fill	Trench back fill
Easting	293260	293176	293190
Northing	5801419	5801426	5801432
Layer / Reduced Level	Layer 1	Layer 1	Layer 1
Thickness of Layer (mm)	300	300	300
Soil Description	Clay	Clay	Clay
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Percentage of Dry Oversize (%) (AS1289.5.4.1)	0	0	0
Field Wet Density (FWD) t/m ³	1.92	1.89	1.93
Field Moisture Content %	22.4	17.8	21.1
Field Dry Density (FDD) t/m ³	1.57	1.61	1.59
Peak Converted Wet Density t/m ³	2.00	1.97	1.98
Adjusted Peak Converted Wet Density t/m ³	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	22.0	17.5	20.8
Adj. Field Moisture Content % (AS1289.5.4.1)	22.4	17.8	21.1
Moisture Ratio % (AS1289.5.4.1)	102.0	101.5	101.5
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**
Moisture Variation (Wv) %	-0.5	-0.5	-0.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	95.5	96.5	97.5
Compaction Method	Standard	Standard	Standard
Report Remarks	**	**	**

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report


Report Number: D231062-3
Issue Number: 1
Date Issued: 11/08/2023
Client: Excell Gray Bruni
 12 Allied Drive, Tullamarine Vic 3043
Project Number: D231062
Project Name: Riverwalk Estate Stage 39 - Level one
Project Location: Werribee
Work Request: 6263
Date Sampled: 09/08/2023 13:10
Dates Tested: 09/08/2023 - 10/08/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Riverwalk stage 39 - Level one
Material: Clay
Material Source: On site



Deer Park Laboratory
 17 Walhalla Way Ravenhall VIC 3023
 Phone: 0435 751 756
 Email: ehippola@terrafirmalabs.com.au



Accredited for compliance with ISO/IEC 17025 - Testing


 Approved Signatory: Eranda Hippola
 Laboratory Manager
 NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1					
Sample Number	D23-6263A	D23-6263B	D23-6263C	D23-6263D	D23-6263E
Test Number	7	8	9	10	11
Date Tested	09/08/2023	09/08/2023	09/08/2023	09/08/2023	09/08/2023
Time Tested	13:10	13:42	13:22	13:22	14:22
Test Request #/Location	Trench backfill	Trench backfill	Trench backfill	Trench backfill	Trench backfill
Layer / Reduced Level	Layer 5	Layer 5	Layer 5	Layer 5	Layer 5
Thickness of Layer (mm)	300	300	300	300	300
Soil Description	Clay	Clay	Clay	Clay	Clay
Test Depth (mm)	275	275	275	275	275
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
Percentage of Dry Oversize (%) (AS1289.5.4.1)	0	0	0	0	0
Field Wet Density (FWD) t/m ³	2.03	2.06	1.84	1.86	1.94
Field Moisture Content %	15.1	18.9	11.7	14.2	12.8
Field Dry Density (FDD) t/m ³	1.76	1.73	1.64	1.62	1.72
Peak Converted Wet Density t/m ³	2.03	2.03	1.89	1.89	2.02
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	16.5	20.3	17.1	19.0	15.8
Adj. Field Moisture Content % (AS1289.5.4.1)	15.1	18.9	11.7	14.2	12.8
Moisture Ratio % (AS1289.5.4.1)	92.0	93.0	69.0	75.0	81.0
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**	**	**
Moisture Variation (Wv) %	1.5	1.5	5.5	5.0	3.0
Adjusted Moisture Variation %	**	**	**	**	**
Hilf Density Ratio (%)	100.0	101.0	97.0	98.5	96.0
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: D231062-4
Issue Number: 1
Date Issued: 15/08/2023
Client: Excell Gray Bruni
 12 Allied Drive, Tullamarine Vic 3043
Project Number: D231062
Project Name: Riverwalk Estate Stage 39 - Level one
Project Location: Werribee
Work Request: 6272
Date Sampled: 10/08/2023 13:00
Dates Tested: 10/08/2023 - 14/08/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Riverwalk Estate Stage 39 - Level one
Material: Clay
Material Source: On site



Deer Park Laboratory
 17 Walhalla Way Ravenhall VIC 3023
 Phone: 0435 751 756
 Email: ehippola@terrafirmalabs.com.au



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Eranda Hippola
 Laboratory Manager

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1

	D23-6272A	D23-6272B	D23-6272C
Sample Number			
Test Number	12	13	14
Date Tested	10/08/2023	10/08/2023	10/08/2023
Time Tested	14:03	14:23	14:33
Test Request #/Location	Lot 3919	Lot 3918	Lot 3917
Layer / Reduced Level	Layer 1	Layer 1	Layer 1
Thickness of Layer (mm)	300	300	300
Soil Description	Clay	Clay	Clay
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Percentage of Dry Oversize (%) (AS1289.5.4.1)	0	0	0
Field Wet Density (FWD) t/m ³	2.00	2.01	1.94
Field Moisture Content %	15.2	15.3	14.5
Field Dry Density (FDD) t/m ³	1.74	1.75	1.70
Peak Converted Wet Density t/m ³	2.00	1.96	1.94
Adjusted Peak Converted Wet Density t/m ³	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	17.8	18.0	17.7
Adj. Field Moisture Content % (AS1289.5.4.1)	15.2	15.3	14.5
Moisture Ratio % (AS1289.5.4.1)	85.0	85.5	82.0
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**
Moisture Variation (Wv) %	2.5	2.5	3.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	100.5	102.5	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: D231062-5
Issue Number: 1
Date Issued: 16/08/2023
Client: Excell Gray Bruni
 12 Allied Drive, Tullamarine Vic 3043
Project Number: D231062
Project Name: Riverwalk Estate Stage 39 - Level one
Project Location: Werribee
Work Request: 6284
Date Sampled: 14/08/2023
Dates Tested: 14/08/2023 - 15/08/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Riverwalk Estate Stage 39 - Level one
Material: Clay
Material Source: On site



Deer Park Laboratory
 17 Walhalla Way Ravenhall VIC 3023
 Phone: 0435 751 756
 Email: ehippola@terrafirmalabs.com.au



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Eranda Hippola
 Laboratory Manager

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D23-6284A	D23-6284B	D23-6284C
Test Number	15	16	17
Date Tested	14/08/2023	14/08/2023	14/08/2023
Time Tested	13:45	14:01	14:11
Test Request #/Location	Lot 3915	Lot 3916	Lot 3918
Layer / Reduced Level	Layer 2	Layer 2	Layer 3
Thickness of Layer (mm)	300	300	300
Soil Description	Clay	Clay	Clay
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Percentage of Dry Oversize (%) (AS1289.5.4.1)	0	0	0
Field Wet Density (FWD) t/m ³	1.95	1.94	1.93
Field Moisture Content %	12.8	15.0	11.0
Field Dry Density (FDD) t/m ³	1.73	1.69	1.74
Peak Converted Wet Density t/m ³	1.94	1.96	1.94
Adjusted Peak Converted Wet Density t/m ³	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	15.5	14.8	13.8
Adj. Field Moisture Content % (AS1289.5.4.1)	12.8	15.0	11.0
Moisture Ratio % (AS1289.5.4.1)	82.5	101.0	79.5
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**
Moisture Variation (Wv) %	2.5	0.0	3.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	100.5	99.0	99.5
Compaction Method	Standard	Standard	Standard
Report Remarks	**	**	**

Moisture Variation Note:

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

Material Test Report

Report Number: D231062-6
Issue Number: 1
Date Issued: 23/08/2023
Client: Excell Gray Bruni
 12 Allied Drive, Tullamarine Vic 3043
Project Number: D231062
Project Name: Riverwalk Estate Stage 39 - Level one
Project Location: Werribee
Work Request: 6293
Date Sampled: 16/08/2023 14:00
Dates Tested: 16/08/2023 - 22/08/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Riverwalk Estate Stage 39 - Level one
Lot Number: 3915,3917,3919
Material: Clay
Material Source: On Site



Deer Park Laboratory
 17 Walhalla Way Ravenhall VIC 3023
 Phone: 0435 751 756
 Email: ehippola@terrafirmalabs.com.au



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Eranda Hippola
 Laboratory Manager

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1

	D23-6293A	D23-6293B	D23-6293C
Sample Number	D23-6293A	D23-6293B	D23-6293C
Test Number	18	19	20
Date Tested	16/08/2023	16/08/2023	16/08/2023
Time Tested	14:16	14:26	14:36
Test Request #/Location	Lot 3915	Lot 3917	Lot 3919
Layer / Reduced Level	Layer 2	Layer 2	Layer 2
Thickness of Layer (mm)	300	300	300
Soil Description	Clay	Clay	Clay
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Percentage of Dry Oversize (%) (AS1289.5.4.1)	0	0	0
Field Wet Density (FWD) t/m ³	2.10	1.85	1.96
Field Moisture Content %	13.0	12.8	12.4
Field Dry Density (FDD) t/m ³	1.86	1.64	1.75
Peak Converted Wet Density t/m ³	2.05	1.91	1.91
Adjusted Peak Converted Wet Density t/m ³	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	18.0	17.7	17.9
Adj. Field Moisture Content % (AS1289.5.4.1)	13.0	12.8	12.4
Moisture Ratio % (AS1289.5.4.1)	72.0	72.0	69.0
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**
Moisture Variation (Wv) %	5.0	5.0	5.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	103.0	97.0	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: D231062-7
Issue Number: 1
Date Issued: 23/08/2023
Client: Excell Gray Bruni
 12 Allied Drive, Tullamarine Vic 3043
Project Number: D231062
Project Name: Riverwalk Estate Stage 39 - Level one
Project Location: Werribee
Work Request: 6303
Date Sampled: 17/08/2023 14:25
Dates Tested: 17/08/2023 - 22/08/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Riverwalk Estate Stage 39 - Level one
Material: Clay
Material Source: On site



Deer Park Laboratory
 17 Walhalla Way Ravenhall VIC 3023
 Phone: 0435 751 756
 Email: ehippola@terrafirmalabs.com.au



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Eranda Hippola
 Laboratory Manager

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D23-6303A	D23-6303B	D23-6303C
Test Number	21	22	23
Date Tested	17/08/2023	17/08/2023	17/08/2023
Time Tested	13:50	14:00	14:10
Test Request #/Location	Lot 3912	Lot 3913	Lot 3803
Layer / Reduced Level	Layer 2	Layer 2	Layer 3
Thickness of Layer (mm)	300	300	300
Soil Description	Clay	Clay	Clay
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Percentage of Dry Oversize (%) (AS1289.5.4.1)	0	0	0
Field Wet Density (FWD) t/m ³	2.04	1.97	1.97
Field Moisture Content %	12.0	12.0	14.8
Field Dry Density (FDD) t/m ³	1.82	1.76	1.72
Peak Converted Wet Density t/m ³	2.03	1.94	1.97
Adjusted Peak Converted Wet Density t/m ³	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	14.6	16.0	16.8
Adj. Field Moisture Content % (AS1289.5.4.1)	12.0	12.0	14.8
Moisture Ratio % (AS1289.5.4.1)	82.0	75.0	88.0
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**
Moisture Variation (Wv) %	2.5	4.0	2.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	100.5	101.5	100.5
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: D231062-8
Issue Number: 1
Date Issued: 23/08/2023
Client: Excell Gray Bruni
 12 Allied Drive, Tullamarine Vic 3043
Project Number: D231062
Project Name: Riverwalk Estate Stage 39 - Level one
Project Location: Werribee
Work Request: 6314
Date Sampled: 18/08/2023
Dates Tested: 18/08/2023 - 23/08/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Riverwalk Estate Stage 39 - Level one
Lot Number: 3801,3802,3914
Material: Silty Clay
Material Source: On Site



Deer Park Laboratory
 17 Walhalla Way Ravenhall VIC 3023
 Phone: 0435 751 756
 Email: ehippola@terrafirmalabs.com.au



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Eranda Hippola
 Laboratory Manager

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1

	D23-6314A	D23-6314B	D23-6314C
Sample Number	D23-6314A	D23-6314B	D23-6314C
Test Number	24	25	26
Date Tested	18/08/2023	18/08/2023	18/08/2023
Time Tested	12:33	12:43	12:53
Test Request #/Location	Lot 3801	Lot 3802	Lot 3914
Layer / Reduced Level	Layer 4	Layer 4	Layer 4
Thickness of Layer (mm)	300mm	300mm	300mm
Soil Description	Clay	Clay	Clay
Test Depth (mm)	275mm	275mm	275mm
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	2.03	1.96	1.88
Field Moisture Content %	11.3	10.8	9.8
Field Dry Density (FDD) t/m ³	1.83	1.77	1.71
Peak Converted Wet Density t/m ³	1.98	1.91	1.93
Adjusted Peak Converted Wet Density t/m ³	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	16.3	15.6	14.6
Adj. Field Moisture Content % (AS1289.5.4.1)	11.3	10.8	9.8
Moisture Ratio % (AS1289.5.4.1)	69.5	69.0	67.5
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**
Moisture Variation (Wv) %	5.0	5.0	5.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	102.5	102.5	97.5
Compaction Method	Standard	Standard	Standard
Report Remarks	**	**	**

Moisture Variation Note:

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

Material Test Report


Report Number: D231062-9
Issue Number: 1
Date Issued: 31/08/2023
Client: Excell Gray Bruni
 12 Allied Drive, Tullamarine Vic 3043
Project Number: D231062
Project Name: Riverwalk Estate Stage 39 - Level one
Project Location: Werribee
Work Request: 6356
Date Sampled: 28/08/2023
Dates Tested: 28/08/2023 - 30/08/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Riverwalk Estate Stage 39 - Level One
Material: Clay
Material Source: On Site



Deer Park Laboratory
 17 Walhalla Way Ravenhall VIC 3023
 Phone: 0435 751 756
 Email: ehippola@terrafirmalabs.com.au



Accredited for compliance with ISO/IEC 17025 - Testing


 Approved Signatory: Eranda Hippola
 Laboratory Manager
 NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D23-6356A	D23-6356B	D23-6356C
Test Number	27	28	29
Date Tested	28/08/2023	28/08/2023	28/08/2023
Time Tested	**	**	**
Test Request #/Location	Lot 3914	Lot 3913	Lot 3912
Layer / Reduced Level	Layer 5	Layer 5	Layer 5
Thickness of Layer (mm)	300	300	300
Soil Description	Clay	Clay	Clay
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	9	0
Percentage of Dry Oversize (%) (AS1289.5.4.1)	0	**	0
Field Wet Density (FWD) t/m ³	1.88	2.00	1.89
Field Moisture Content %	12.5	13.2	12.8
Field Dry Density (FDD) t/m ³	1.68	1.78	1.68
Peak Converted Wet Density t/m ³	1.92	**	1.92
Adjusted Peak Converted Wet Density t/m ³	**	1.95	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	17.9	14.5	17.6
Adj. Field Moisture Content % (AS1289.5.4.1)	12.5	12.0	12.8
Moisture Ratio % (AS1289.5.4.1)	69.5	**	72.5
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	83.0	**
Moisture Variation (Wv) %	5.5	**	5.0
Adjusted Moisture Variation %	**	2.5	**
Hilf Density Ratio (%)	98.0	102.0	98.5
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: D231062-10
Issue Number: 2 - This version supersedes all previous issues
Reissue Reason: incorrecet test numbers
Date Issued: 07/09/2023
Client: Excell Gray Bruni
 12 Allied Drive, Tullamarine Vic 3043
Project Number: D231062
Project Name: Riverwalk Estate Stage 39 - Level one
Project Location: Werribee
Work Request: 6387
Date Sampled: 31/08/2023
Dates Tested: 31/08/2023 - 04/09/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Riverwalk Estate Stage 39 - Level One
Material: Clay
Material Source: On Site



Deer Park Laboratory
 17 Walhalla Way Ravenhall VIC 3023
 Phone: 0435 751 756
 Email: ehippola@terrafirmalabs.com.au



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Eranda Hippola
 Laboratory Manager

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D23-6387A	D23-6387B	D23-6387C
Test Number	30	31	32
Date Tested	31/08/2023	31/08/2023	31/08/2023
Time Tested	**	**	**
Test Request #/Location	Lot 3935	Lot 3937	Lot 3939
Layer / Reduced Level	Layer 2	Layer 2	Layer 2
Thickness of Layer (mm)	300	300	300
Soil Description	Clay	Clay	Clay
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Percentage of Dry Oversize (%) (AS1289.5.4.1)	0	0	0
Field Wet Density (FWD) t/m ³	1.99	1.95	1.98
Field Moisture Content %	11.7	12.2	12.3
Field Dry Density (FDD) t/m ³	1.78	1.74	1.76
Peak Converted Wet Density t/m ³	2.01	1.99	2.02
Adjusted Peak Converted Wet Density t/m ³	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	17.1	17.7	15.9
Adj. Field Moisture Content % (AS1289.5.4.1)	11.7	12.2	12.3
Moisture Ratio % (AS1289.5.4.1)	68.5	69.0	77.0
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**
Moisture Variation (Wv) %	5.0	5.5	3.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	99.0	98.0	98.0
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: D231062-11
Issue Number: 1
Date Issued: 13/09/2023
Client: Excell Gray Bruni
 12 Allied Drive, Tullamarine Vic 3043
Project Number: D231062
Project Name: Riverwalk Estate Stage 39 - Level one
Project Location: Werribee
Work Request: 6445
Date Sampled: 08/09/2023
Dates Tested: 08/09/2023 - 12/09/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Riverwalk stage 39 - Level One
Material: Clay
Material Source: On Site



Deer Park Laboratory
 17 Walhalla Way Ravenhall VIC 3023
 Phone: 0435 751 756
 Email: ehippola@terrafirmalabs.com.au



Accredited for compliance with ISO/IEC 17025 - Testing


 Approved Signatory: Eranda Hippola
 Laboratory Manager
 NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D23-6445A	D23-6445B	D23-6445C
Test Number	33	34	35
Date Tested	08/09/2023	08/09/2023	08/09/2023
Time Tested	14:00	14:20	14:40
Test Request #/Location	33 Lot 3909	34 Lot 3910	35 Lot 3911
Layer / Reduced Level	Layer 5	Layer 5	Layer 5
Thickness of Layer (mm)	300	300	300
Soil Description	Clay	Clay	Clay
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Percentage of Dry Oversize (%) (AS1289.5.4.1)	0	0	0
Field Wet Density (FWD) t/m ³	1.85	1.88	1.86
Field Moisture Content %	13.5	18.4	10.5
Field Dry Density (FDD) t/m ³	1.63	1.58	1.68
Peak Converted Wet Density t/m ³	1.95	1.95	1.95
Adjusted Peak Converted Wet Density t/m ³	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	14.3	18.8	11.4
Adj. Field Moisture Content % (AS1289.5.4.1)	13.5	18.4	10.5
Moisture Ratio % (AS1289.5.4.1)	94.5	98.0	92.0
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**
Moisture Variation (Wv) %	1.0	0.5	1.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	95.0	96.0	95.5
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: D231062-12
Issue Number: 1
Date Issued: 15/09/2023
Client: Excell Gray Bruni
 12 Allied Drive, Tullamarine Vic 3043
Project Number: D231062
Project Name: Riverwalk Estate Stage 39 - Level one
Project Location: Werribee
Work Request: 6459
Date Sampled: 12/09/2023
Dates Tested: 12/09/2023 - 14/09/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Riverwalk Estate Stage 39 - Level One
Material: Clay
Material Source: On Site



Deer Park Laboratory
 17 Walhalla Way Ravenhall VIC 3023
 Phone: 0435 751 756
 Email: ehippola@terrafirmalabs.com.au



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Eranda Hippola
 Laboratory Manager

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D23-6459A	D23-6459B	D23-6459C
Test Number	36	37	38
Date Tested	12/09/2023	12/09/2023	12/09/2023
Time Tested	**	**	**
Test Request #/Location	LOT 3942	LOT 3944	LOT 3945
Layer / Reduced Level	Layer 3	Layer 3	Layer 3
Thickness of Layer (mm)	300	300	300
Soil Description	Silty Clay	Silty Clay	Silty Clay
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Percentage of Dry Oversize (%) (AS1289.5.4.1)	0	0	0
Field Wet Density (FWD) t/m ³	1.84	1.81	1.80
Field Moisture Content %	12.1	10.6	11.2
Field Dry Density (FDD) t/m ³	1.64	1.64	1.62
Peak Converted Wet Density t/m ³	1.85	1.81	1.85
Adjusted Peak Converted Wet Density t/m ³	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	17.3	15.2	16.1
Adj. Field Moisture Content % (AS1289.5.4.1)	12.1	10.6	11.2
Moisture Ratio % (AS1289.5.4.1)	70.0	69.5	70.0
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**
Moisture Variation (Wv) %	5.5	5.0	5.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	99.0	100.0	97.5
Compaction Method	Standard	Standard	Standard
Report Remarks	**	**	**

Moisture Variation Note:

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

Material Test Report


Report Number: D231062-13
Issue Number: 1
Date Issued: 18/09/2023
Client: Excell Gray Bruni
 12 Allied Drive, Tullamarine Vic 3043
Project Number: D231062
Project Name: Riverwalk Estate Stage 39 - Level one
Project Location: Werribee
Work Request: 6477
Date Sampled: 13/09/2023
Dates Tested: 13/09/2023 - 15/09/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Riverwalk Estate Stage 39 - Level one
Material: Clay
Material Source: On Site



Deer Park Laboratory
 17 Walhalla Way Ravenhall VIC 3023
 Phone: 0435 751 756
 Email: ehippola@terrafirmalabs.com.au



Accredited for compliance with ISO/IEC 17025 - Testing


 Approved Signatory: Eranda Hippola
 Laboratory Manager
 NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D23-6477A	D23-6477B	D23-6477C
Test Number	39	40	41
Date Tested	13/09/2023	13/09/2023	13/09/2023
Time Tested	**	**	**
Test Request #/Location	LOT 3940	LOT 3941	LOT 3943
Layer / Reduced Level	Layer 4	Layer 4	Layer 4
Thickness of Layer (mm)	300	300	300
Soil Description	Clay	Clay	Clay
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Percentage of Dry Oversize (%) (AS1289.5.4.1)	0	0	0
Field Wet Density (FWD) t/m ³	1.92	1.86	1.86
Field Moisture Content %	12.8	13.2	14.2
Field Dry Density (FDD) t/m ³	1.70	1.64	1.63
Peak Converted Wet Density t/m ³	1.88	1.89	1.88
Adjusted Peak Converted Wet Density t/m ³	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	18.2	18.5	19.5
Adj. Field Moisture Content % (AS1289.5.4.1)	12.8	13.2	14.2
Moisture Ratio % (AS1289.5.4.1)	70.5	71.5	73.0
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**
Moisture Variation (Wv) %	5.5	5.5	5.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	102.0	98.5	99.0
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: D231062-14
Issue Number: 1
Date Issued: 21/09/2023
Client: Excell Gray Bruni
 12 Allied Drive, Tullamarine Vic 3043
Project Number: D231062
Project Name: Riverwalk Estate Stage 39 - Level one
Project Location: Werribee
Work Request: 6500
Date Sampled: 15/09/2023
Dates Tested: 15/09/2023 - 20/09/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Riverwalk Estate Stage 39 - Level one
Material: Clay
Material Source: On Site



Deer Park Laboratory
 17 Walhalla Way Ravenhall VIC 3023
 Phone: 0435 751 756
 Email: ehippola@terrafirmalabs.com.au



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Eranda Hippola
 Laboratory Manager

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D23-6500A	D23-6500B	D23-6500C
Test Number	42	43	44
Date Tested	15/09/2023	15/09/2023	15/09/2023
Time Tested	**	**	**
Test Request #/Location	LOT 3910	LOT 3908	LOT 3907
Layer / Reduced Level	LAYER 9	LAYER 9	LAYER 9
Thickness of Layer (mm)	300	300	300
Soil Description	CLAY	CLAY	CLAY
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Percentage of Dry Oversize (%) (AS1289.5.4.1)	0	0	0
Field Wet Density (FWD) t/m ³	1.88	1.96	1.89
Field Moisture Content %	10.7	12.2	11.6
Field Dry Density (FDD) t/m ³	1.69	1.75	1.70
Peak Converted Wet Density t/m ³	1.88	1.95	1.91
Adjusted Peak Converted Wet Density t/m ³	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	14.9	16.8	15.9
Adj. Field Moisture Content % (AS1289.5.4.1)	10.7	12.2	11.6
Moisture Ratio % (AS1289.5.4.1)	72.0	72.5	73.0
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**
Moisture Variation (Wv) %	4.5	4.5	4.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	99.5	100.5	99.5
Compaction Method	Standard	Standard	Standard
Report Remarks	**	**	**

Moisture Variation Note:

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

Material Test Report

Report Number: D231062-15
Issue Number: 1
Date Issued: 21/09/2023
Client: Excell Gray Bruni
 12 Allied Drive, Tullamarine Vic 3043
Project Number: D231062
Project Name: Riverwalk Estate Stage 39 - Level one
Project Location: Werribee
Work Request: 6514
Date Sampled: 18/09/2023
Dates Tested: 18/09/2023 - 20/09/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Riverwalk Estate Stage 39
Material: Clay
Material Source: On Site



Deer Park Laboratory
 17 Walhalla Way Ravenhall VIC 3023
 Phone: 0435 751 756
 Email: ehippola@terrafirmalabs.com.au



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Eranda Hippola
 Laboratory Manager

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D23-6514A	D23-6514B	D23-6514C
Test Number	45	46	47
Date Tested	18/09/2023	18/09/2023	18/09/2023
Time Tested	**	**	**
Test Request #/Location	LOT 3939	LOT 3941	LOT 3942
Layer / Reduced Level	LAYER 7	LAYER 7	LAYER 7
Thickness of Layer (mm)	300	300	300
Soil Description	CLAY	CLAY	CLAY
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Percentage of Dry Oversize (%) (AS1289.5.4.1)	0	0	0
Field Wet Density (FWD) t/m ³	1.96	1.97	1.85
Field Moisture Content %	11.1	10.3	12.9
Field Dry Density (FDD) t/m ³	1.77	1.79	1.64
Peak Converted Wet Density t/m ³	1.91	1.95	1.88
Adjusted Peak Converted Wet Density t/m ³	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	16.1	14.8	17.8
Adj. Field Moisture Content % (AS1289.5.4.1)	11.1	10.3	12.9
Moisture Ratio % (AS1289.5.4.1)	69.0	69.5	73.0
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**
Moisture Variation (Wv) %	5.0	4.5	5.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	102.5	101.0	98.5
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: D231062-16
Issue Number: 1
Date Issued: 25/09/2023
Client: Excell Gray Bruni
 12 Allied Drive, Tullamarine Vic 3043
Project Number: D231062
Project Name: Riverwalk Estate Stage 39 - Level one
Project Location: Werribee
Work Request: 6538
Date Sampled: 20/09/2023
Dates Tested: 20/09/2023 - 22/09/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Riverwalk Estate Stage 39 - Level one
Material: Silty Clay
Material Source: On Site



Deer Park Laboratory
 17 Walhalla Way Ravenhall VIC 3023
 Phone: 0435 751 756
 Email: ehippola@terrafirmalabs.com.au



Accredited for compliance with ISO/IEC 17025 - Testing


 Approved Signatory: Eranda Hippola
 Laboratory Manager
 NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D23-6538A	D23-6538B	D23-6538C
Test Number	48	49	50
Date Tested	20/09/2023	20/09/2023	20/09/2023
Time Tested	14:00	14:15	14:30
Test Request #/Location	Lot 3905	Lot 3904	Lot 3902
Layer / Reduced Level	Layer 4	Layer 4	Layer 4
Thickness of Layer (mm)	300	300	300
Soil Description	Silty Clay	Silty Clay	Silty Clay
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Percentage of Dry Oversize (%) (AS1289.5.4.1)	0	0	0
Field Wet Density (FWD) t/m ³	2.03	1.95	2.02
Field Moisture Content %	8.9	12.7	11.6
Field Dry Density (FDD) t/m ³	1.86	1.73	1.81
Peak Converted Wet Density t/m ³	2.02	2.00	2.04
Adjusted Peak Converted Wet Density t/m ³	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	14.2	17.7	16.6
Adj. Field Moisture Content % (AS1289.5.4.1)	8.9	12.7	11.6
Moisture Ratio % (AS1289.5.4.1)	63.0	71.5	70.0
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**
Moisture Variation (Wv) %	5.5	5.0	5.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	100.5	97.5	99.5
Compaction Method	Standard	Standard	Standard
Report Remarks	**	**	**

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

Material Test Report

Report Number: D231062-17
Issue Number: 1
Date Issued: 25/09/2023
Client: Excell Gray Bruni
 12 Allied Drive, Tullamarine Vic 3043
Project Number: D231062
Project Name: Riverwalk Estate Stage 39 - Level one
Project Location: Werribee
Work Request: 6548
Date Sampled: 21/09/2023
Dates Tested: 21/09/2023 - 22/09/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Riverwalk Estate Stage 39 - Level one
Material: Clay
Material Source: On Site



Deer Park Laboratory
 17 Walhalla Way Ravenhall VIC 3023
 Phone: 0435 751 756
 Email: ehippola@terrafirmalabs.com.au



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Eranda Hippola
 Laboratory Manager

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1

Sample Number	D23-6548A	D23-6548B	D23-6548C
Test Number	51	52	53
Date Tested	21/09/2023	21/09/2023	21/09/2023
Time Tested	14:00	14:15	14:30
Test Request #/Location	LOT 3906	LOT 3903	LOT 3901
Layer / Reduced Level	Layer 5	Layer 5	Layer 5
Thickness of Layer (mm)	300	300	300
Soil Description	Silty Clay	Silty Clay	Silty Clay
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Percentage of Dry Oversize (%) (AS1289.5.4.1)	0	0	0
Field Wet Density (FWD) t/m ³	2.04	1.85	1.88
Field Moisture Content %	14.6	15.3	14.7
Field Dry Density (FDD) t/m ³	1.78	1.61	1.64
Peak Converted Wet Density t/m ³	2.03	1.88	1.87
Adjusted Peak Converted Wet Density t/m ³	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	19.8	20.4	17.8
Adj. Field Moisture Content % (AS1289.5.4.1)	14.6	15.3	14.7
Moisture Ratio % (AS1289.5.4.1)	73.5	75.0	82.5
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**
Moisture Variation (Wv) %	5.0	5.0	3.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	100.5	98.5	100.5
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: D231062-18
Issue Number: 1
Date Issued: 26/09/2023
Client: Excell Gray Bruni
 12 Allied Drive, Tullamarine Vic 3043
Project Number: D231062
Project Name: Riverwalk Estate Stage 39 - Level one
Project Location: Werribee
Work Request: 6560
Date Sampled: 22/09/2023
Dates Tested: 22/09/2023 - 25/09/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Riverwalk Estate Stage 39 - Level one
Material: Silty Clay
Material Source: On site



Deer Park Laboratory
 17 Walhalla Way Ravenhall VIC 3023
 Phone: 0435 751 756
 Email: ehippola@terrafirmalabs.com.au



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Eranda Hippola
 Laboratory Manager

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D23-6560A	D23-6560B	D23-6560C
Test Number	54	55	56
Date Tested	22/09/2023	22/09/2023	22/09/2023
Time Tested	14:30	14:45	15:00
Test Request #/Location	LOT 3944	LOT 3943	LOT 3932
Layer / Reduced Level	Layer 2	Layer 2	Layer 2
Thickness of Layer (mm)	300	300	300
Soil Description	Silty Clay	Silty Clay	Silty Clay
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Percentage of Dry Oversize (%) (AS1289.5.4.1)	0	0	0
Field Wet Density (FWD) t/m ³	2.02	2.06	1.95
Field Moisture Content %	12.6	12.3	13.2
Field Dry Density (FDD) t/m ³	1.79	1.83	1.73
Peak Converted Wet Density t/m ³	2.01	2.08	2.01
Adjusted Peak Converted Wet Density t/m ³	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	17.1	17.1	15.8
Adj. Field Moisture Content % (AS1289.5.4.1)	12.6	12.3	13.2
Moisture Ratio % (AS1289.5.4.1)	74.0	72.0	83.5
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**
Moisture Variation (Wv) %	4.5	4.5	2.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	100.5	98.5	97.0
Compaction Method	Standard	Standard	Standard
Report Remarks	**	**	**

Moisture Variation Note:

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

Material Test Report

Report Number: D231062-19
Issue Number: 1
Date Issued: 27/09/2023
Client: Excell Gray Bruni
 12 Allied Drive, Tullamarine Vic 3043
Project Number: D231062
Project Name: Riverwalk Estate Stage 39 - Level one
Project Location: Werribee
Work Request: 6571
Date Sampled: 25/09/2023
Dates Tested: 25/09/2023 - 26/09/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Riverwalk Estate Stage 39 - Level one
Material: Silty Clay
Material Source: On Site



Deer Park Laboratory
 17 Walhalla Way Ravenhall VIC 3023
 Phone: 0435 751 756
 Email: ehippola@terrafirmalabs.com.au



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Eranda Hippola
 Laboratory Manager

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D23-6571A	D23-6571B	D23-6571C
Test Number	57	58	59
Date Tested	25/09/2023	25/09/2023	25/09/2023
Time Tested	14:30	14:45	15:00
Test Request #/Location	LOT 3942	LOT 3944	LOT 3945
Layer / Reduced Level	Layer 3	Layer 3	Layer 3
Thickness of Layer (mm)	300	300	300
Soil Description	Silty Clay	Silty Clay	Silty Clay
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Percentage of Dry Oversize (%) (AS1289.5.4.1)	0	0	0
Field Wet Density (FWD) t/m ³	1.91	1.92	1.92
Field Moisture Content %	12.3	12.6	12.3
Field Dry Density (FDD) t/m ³	1.70	1.70	1.71
Peak Converted Wet Density t/m ³	1.91	1.97	1.96
Adjusted Peak Converted Wet Density t/m ³	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	16.7	17.4	16.7
Adj. Field Moisture Content % (AS1289.5.4.1)	12.3	12.6	12.3
Moisture Ratio % (AS1289.5.4.1)	73.5	72.5	73.5
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**
Moisture Variation (Wv) %	4.5	4.5	4.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	100.0	97.0	98.0
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: D231062-20
Issue Number: 1
Date Issued: 28/09/2023
Client: Excell Gray Bruni
 12 Allied Drive, Tullamarine Vic 3043
Project Number: D231062
Project Name: Riverwalk Estate Stage 39 - Level one
Project Location: Werribee
Work Request: 6580
Date Sampled: 26/09/2023
Dates Tested: 26/09/2023 - 27/09/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Riverwalk Estate Stage 39 - Level one
Material: Clay
Material Source: On Site



Deer Park Laboratory
 17 Walhalla Way Ravenhall VIC 3023
 Phone: 0435 751 756
 Email: ehippola@terrafirmalabs.com.au



Accredited for compliance with ISO/IEC 17025 - Testing


 Approved Signatory: Eranda Hippola
 Laboratory Manager
 NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1

	D23-6580A	D23-6580B	D23-6580C
Sample Number	D23-6580A	D23-6580B	D23-6580C
Test Number	60	61	62
Date Tested	26/09/2023	26/09/2023	26/09/2023
Time Tested	**	**	**
Test Request #/Location	LOT 3934	LOT 3933	LOT 3932
Layer / Reduced Level	LAYER 4	LAYER 4	LAYER 4
Thickness of Layer (mm)	300	300	300
Soil Description	CLAY	CLAY	CLAY
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Percentage of Dry Oversize (%) (AS1289.5.4.1)	0	0	0
Field Wet Density (FWD) t/m ³	2.00	1.98	1.93
Field Moisture Content %	10.0	15.7	10.6
Field Dry Density (FDD) t/m ³	1.82	1.71	1.74
Peak Converted Wet Density t/m ³	1.99	2.01	1.98
Adjusted Peak Converted Wet Density t/m ³	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	14.6	19.6	14.8
Adj. Field Moisture Content % (AS1289.5.4.1)	10.0	15.7	10.6
Moisture Ratio % (AS1289.5.4.1)	68.5	80.5	72.0
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**
Moisture Variation (Wv) %	4.5	3.5	4.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	100.5	98.5	97.0
Compaction Method	Standard	Standard	Standard
Report Remarks	**	**	**

Moisture Variation Note:

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

Material Test Report

Report Number: D231062-21
Issue Number: 1
Date Issued: 02/10/2023
Client: Excell Gray Bruni
 12 Allied Drive, Tullamarine Vic 3043
Project Number: D231062
Project Name: Riverwalk Estate Stage 39 - Level one
Project Location: Werribee
Work Request: 6591
Date Sampled: 27/09/2023
Dates Tested: 27/09/2023 - 28/09/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Riverwalk Estate Stage 39 - Level one
Material: Silty Clay
Material Source: On Site



Deer Park Laboratory
 17 Walhalla Way Ravenhall VIC 3023
 Phone: 0435 751 756
 Email: ehippola@terrafirmalabs.com.au



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Eranda Hippola
 Laboratory Manager

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1

Sample Number	D23-6591A	D23-6591B	D23-6591C
Test Number	63	64	65
Date Tested	27/09/2023	27/09/2023	27/09/2023
Time Tested	14:30	14:45	15:00
Test Request #/Location	LOT 3925	LOT 3924	LOT 3922
Layer / Reduced Level	Layer 2	Layer 2	Layer 2
Thickness of Layer (mm)	300	300	300
Soil Description	Silty Clay	Silty Clay	Silty Clay
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Percentage of Dry Oversize (%) (AS1289.5.4.1)	0	0	0
Field Wet Density (FWD) t/m ³	1.88	1.85	1.87
Field Moisture Content %	12.2	13.1	13.2
Field Dry Density (FDD) t/m ³	1.68	1.64	1.65
Peak Converted Wet Density t/m ³	1.94	1.93	1.95
Adjusted Peak Converted Wet Density t/m ³	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	14.8	15.7	15.9
Adj. Field Moisture Content % (AS1289.5.4.1)	12.2	13.1	13.2
Moisture Ratio % (AS1289.5.4.1)	82.5	83.5	83.5
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**
Moisture Variation (Wv) %	2.5	2.5	2.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	97.0	96.0	96.0
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: D231062-22
Issue Number: 1
Date Issued: 02/10/2023
Client: Excell Gray Bruni
 12 Allied Drive, Tullamarine Vic 3043
Project Number: D231062
Project Name: Riverwalk Estate Stage 39 - Level one
Project Location: Werribee
Work Request: 6601
Date Sampled: 28/09/2023
Dates Tested: 28/09/2023 - 28/09/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Riverwalk Estate Stage 39 - Level one
Material: Silty Clay
Material Source: On Site



Deer Park Laboratory
 17 Walhalla Way Ravenhall VIC 3023
 Phone: 0435 751 756
 Email: ehippola@terrafirmalabs.com.au



Accredited for compliance with ISO/IEC 17025 - Testing


 Approved Signatory: Eranda Hippola
 Laboratory Manager
 NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D23-6601A	D23-6601B	D23-6601C
Test Number	66	67	68
Date Tested	28/09/2023	28/09/2023	28/09/2023
Time Tested	13:00	13:15	13:30
Test Request #/Location	LOT 3921	LOT 3922	LOT 3923
Layer / Reduced Level	Layer 4	Layer 4	Layer 4
Thickness of Layer (mm)	300	300	300
Soil Description	Silty Clay	Silty Clay	Silty Clay
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Percentage of Dry Oversize (%) (AS1289.5.4.1)	0	0	0
Field Wet Density (FWD) t/m ³	1.84	1.85	1.87
Field Moisture Content %	19.9	11.9	15.4
Field Dry Density (FDD) t/m ³	1.53	1.66	1.62
Peak Converted Wet Density t/m ³	1.92	1.91	1.92
Adjusted Peak Converted Wet Density t/m ³	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	22.5	13.9	17.1
Adj. Field Moisture Content % (AS1289.5.4.1)	19.9	11.9	15.4
Moisture Ratio % (AS1289.5.4.1)	88.5	86.0	90.0
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**
Moisture Variation (Wv) %	2.5	2.0	2.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	95.5	97.0	97.5
Compaction Method	Standard	Standard	Standard
Report Remarks	**	**	**

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

Material Test Report


Report Number: D231062-23
Issue Number: 1
Date Issued: 11/10/2023
Client: Excell Gray Bruni
 12 Allied Drive, Tullamarine Vic 3043
Project Number: D231062
Project Name: Riverwalk Estate Stage 39 - Level one
Project Location: Werribee
Work Request: 6625
Date Sampled: 10/10/2023
Dates Tested: 10/10/2023 - 10/10/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Riverwalk Estate Stage 39 - Level one
Material: Clay
Material Source: On Site



Deer Park Laboratory
 17 Walhalla Way Ravenhall VIC 3023
 Phone: 0435 751 756
 Email: ehippola@terrafirmalabs.com.au



Accredited for compliance with ISO/IEC 17025 - Testing


 Approved Signatory: Eranda Hippola
 Laboratory Manager
 NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1						
Sample Number	D23-6625A	D23-6625B	D23-6625C	D23-6625D	D23-6625E	D23-6625F
Test Number	69	70	71	72	73	74
Date Tested	10/10/2023	10/10/2023	10/10/2023	10/10/2023	10/10/2023	10/10/2023
Time Tested	**	**	**	**	**	**
Test Request #/Location	Lot 3931	Lot 3930	Lot 3929	Lot 3928	Lot 3927	Lot 3926
Layer / Reduced Level	Layer 2	Layer 2	Layer 2	Layer 2	Layer 2	Layer 2
Thickness of Layer (mm)	300	300	300	300	300	300
Soil Description	Clay	Clay	Clay	Clay	Clay	Clay
Test Depth (mm)	275	275	275	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0	0	0	0
Percentage of Dry Oversize (%) (AS1289.5.4.1)	0	0	0	0	0	0
Field Wet Density (FWD) t/m ³	2.05	1.93	2.03	2.08	2.16	2.13
Field Moisture Content %	14.1	12.1	14.1	14.0	14.6	13.8
Field Dry Density (FDD) t/m ³	1.79	1.73	1.78	1.82	1.88	1.88
Peak Converted Wet Density t/m ³	2.08	2.01	2.11	2.12	2.14	2.13
Adjusted Peak Converted Wet Density t/m ³	**	**	**	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	15.6	11.7	14.7	13.9	14.0	15.0
Adj. Field Moisture Content % (AS1289.5.4.1)	14.1	12.1	14.1	14.0	14.6	13.8
Moisture Ratio % (AS1289.5.4.1)	90.5	104.0	95.5	101.0	104.0	92.0
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**	**	**	**
Moisture Variation (Wv) %	1.5	-0.5	0.5	0.0	-0.5	1.0
Adjusted Moisture Variation %	**	**	**	**	**	**
Hilf Density Ratio (%)	98.0	96.0	96.0	98.0	101.0	100.5
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: D231062-24
Issue Number: 1
Date Issued: 19/10/2023
Client: Excell Gray Bruni
 12 Allied Drive, Tullamarine Vic 3043
Project Number: D231062
Project Name: Riverwalk Estate Stage 39 - Level one
Project Location: Werribee
Work Request: 6659
Date Sampled: 13/10/2023 14:00
Dates Tested: 13/10/2023 - 18/10/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Riverwalk Estate Stage 39 - Level one
Material: Silty Clay
Material Source: On Site



Deer Park Laboratory
 17 Walhalla Way Ravenhall VIC 3023
 Phone: 0435 751 756
 Email: ehippola@terrafirmalabs.com.au



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Eranda Hippola
 Laboratory Manager

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D23-6659A	D23-6659B	D23-6659C
Test Number	75	76	77
Date Tested	13/10/2023	13/10/2023	13/10/2023
Time Tested	13:45	13:55	14:05
Test Request #/Location	LOT 3906	LOT 3905	LOT 3904
Layer / Reduced Level	Layer 7	Layer 7	Layer 7
Thickness of Layer (mm)	300	300	300
Soil Description	Silty Clay	Silty Clay	Silty Clay
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Percentage of Dry Oversize (%) (AS1289.5.4.1)	0	0	0
Field Wet Density (FWD) t/m ³	1.99	2.02	2.10
Field Moisture Content %	16.3	14.1	14.4
Field Dry Density (FDD) t/m ³	1.71	1.77	1.83
Peak Converted Wet Density t/m ³	2.08	2.11	2.10
Adjusted Peak Converted Wet Density t/m ³	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	15.3	14.6	14.4
Adj. Field Moisture Content % (AS1289.5.4.1)	16.3	14.1	14.4
Moisture Ratio % (AS1289.5.4.1)	106.0	97.0	100.0
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**
Moisture Variation (Wv) %	-1.0	0.5	0.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	95.5	95.5	99.5
Compaction Method	Standard	Standard	Standard
Report Remarks	**	**	**

Moisture Variation Note:

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

Material Test Report


Report Number: D231062-25
Issue Number: 1
Date Issued: 19/10/2023
Client: Excell Gray Bruni
 12 Allied Drive, Tullamarine Vic 3043
Project Number: D231062
Project Name: Riverwalk Estate Stage 39 - Level one
Project Location: Werribee
Work Request: 6664
Date Sampled: 16/10/2023 14:45
Dates Tested: 16/10/2023 - 18/10/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Riverwalk Estate Stage 39 - Level one
Material: Silty Clay
Material Source: On Site



Deer Park Laboratory
 17 Walhalla Way Ravenhall VIC 3023
 Phone: 0435 751 756
 Email: ehippola@terrafirmalabs.com.au



Accredited for compliance with ISO/IEC 17025 - Testing


 Approved Signatory: Eranda Hippola
 Laboratory Manager
 NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D23-6664A	D23-6664B	D23-6664C
Test Number	78	79	80
Date Tested	16/10/2023	16/10/2023	16/10/2023
Time Tested	14:45	14:55	15:10
Test Request #/Location	LOT 3942	LOT 3944	LOT 3945
Layer / Reduced Level	Layer 6	Layer 6	Layer 6
Thickness of Layer (mm)	300	300	300
Soil Description	Silty Clay	Silty Clay	Silty Clay
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	0
Percentage of Dry Oversize (%) (AS1289.5.4.1)	0	0	0
Field Wet Density (FWD) t/m ³	2.02	2.17	2.02
Field Moisture Content %	13.6	14.5	13.9
Field Dry Density (FDD) t/m ³	1.78	1.89	1.78
Peak Converted Wet Density t/m ³	2.08	2.07	2.06
Adjusted Peak Converted Wet Density t/m ³	**	**	**
Adj. Optimum Moisture Content % (AS1289.5.4.1)	13.8	16.3	16.1
Adj. Field Moisture Content % (AS1289.5.4.1)	13.6	14.5	13.9
Moisture Ratio % (AS1289.5.4.1)	98.5	89.5	86.5
Adjusted Moisture Ratio % (AS1289.5.4.1)	**	**	**
Moisture Variation (Wv) %	0.0	1.5	2.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	97.5	104.5	98.5
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: D231062-26
Issue Number: 1
Date Issued: 20/10/2023
Client: Excell Gray Bruni
 12 Allied Drive, Tullamarine Vic 3043
Project Number: D231062
Project Name: Riverwalk Estate Stage 39 - Level one
Project Location: Werribee
Work Request: 6670
Date Sampled: 17/10/2023 14:45
Dates Tested: 17/10/2023 - 20/10/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% STD
Location: Riverwalk Estate Stage 39 - Level one
Material: Silty Clay
Material Source: On Site



Deer Park Laboratory
 17 Walhalla Way Ravenhall VIC 3023
 Phone: 0435 751 756
 Email: ehippola@terrafirmalabs.com.au



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Eranda Hippola
 Laboratory Manager

NATA Accredited Laboratory Number: 15357

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	D23-6670A	D23-6670B	D23-6670C
Test Number	81	82	83
Date Tested	17/10/2023	17/10/2023	17/10/2023
Time Tested	14:45	14:55	15:10
Test Request #/Location	LOT 3943	LOT 3946	LOT 3947
Layer / Reduced Level	Layer 7	Layer 7	Layer 7
Thickness of Layer (mm)	300	300	300
Soil Description	Silty Clay	Silty Clay	Silty Clay
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	7	4	6
Percentage of Dry Oversize (%) (AS1289.5.4.1)	**	**	**
Field Wet Density (FWD) t/m ³	2.06	2.02	2.09
Field Moisture Content %	13.1	13.0	13.1
Field Dry Density (FDD) t/m ³	1.84	1.80	1.86
Peak Converted Wet Density t/m ³	**	**	**
Adjusted Peak Converted Wet Density t/m ³	2.01	2.05	2.07
Adj. Optimum Moisture Content % (AS1289.5.4.1)	16.0	13.9	14.1
Adj. Field Moisture Content % (AS1289.5.4.1)	12.2	12.5	12.3
Moisture Ratio % (AS1289.5.4.1)	**	**	**
Adjusted Moisture Ratio % (AS1289.5.4.1)	76.0	90.0	86.5
Moisture Variation (Wv) %	**	**	**
Adjusted Moisture Variation %	4.0	1.5	2.0
Hilf Density Ratio (%)	102.5	98.5	101.0
Compaction Method	Standard	Standard	Standard
Report Remarks	**	**	**

Moisture Variation Note:

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