CONSULTING ENGINEERS
ABN 91 686 494 280

Level 1 Inspection and Testing Report

Alamora Estate, Stage 18 & Active Open Space

Tarneit

Winslow Constructors

16 August 2025

CTCE Ref: 25063.0R_V1

CONSULTING ENGINEERS
ABN 91 686 494 280

16 August 2025

Winslow Constructors

50 Barry Road

Campbellfield, VIC, 3061

Attention: Ryan Spicer

Level 1 Inspection and Testing

Alamora Estate, Stage 18 & Active Open Space, Tarneit

C&T Consulting Engineers has prepared this report to summarise the Level 1 Inspection and Testing activities conducted for the Alamora Estate Stage 18 and Active Open Space bulk earthworks, located in Tarneit.

Distribution

Original held by	C&T Consulting Engineers
1 electronic copy	C&T Geotechnical (Melbourne)
1 electronic copy	Winslow Constructors

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For an on behalf of C&T Consulting Engineers

Gee Singh, RPEng

Director

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1. Introduction

This report presents the results of the Level 1 inspection activities, compaction control services and laboratory testing services for the Alamora Estate, Stage 18 and Active Open Space project, located in Tarneit (the site).

2. Project Background

C&T Geotechnical was engaged to provide Level 1 Inspection and testing services for the bulk earthworks component of the project. Authorisation to proceed was provided by Winslow Constructors (the 'Client') who were the nominated earthworks contractors.

Level 1 Inspection & Testing, as defined in AS3798 (2007) Guidelines on Earthworks for Commercial and Residential Developments provides for full time inspection of the construction of controlled fill and compaction testing in accordance with AS1289 Methods of Testing Soils for Engineering Purposes and AS1726 (2017) Geotechnical Site Investigations. C&T performed the role of the project Geotechnical Inspection & Testing Authority (GITA) with all Level 1 Inspection and Testing services described in this report undertaken by an experienced GITA site representative.

3. Scope of Works

3.1 Areas & Duration of Works

This report presents the Level 1 Inspection & Testing results which commenced on 15 May 2025 to 24 July 2025. The filling works took place on Lots 1801 – 1811 as well as the western portion of the Active Open Space (AOS), shown on Figure 1 below:

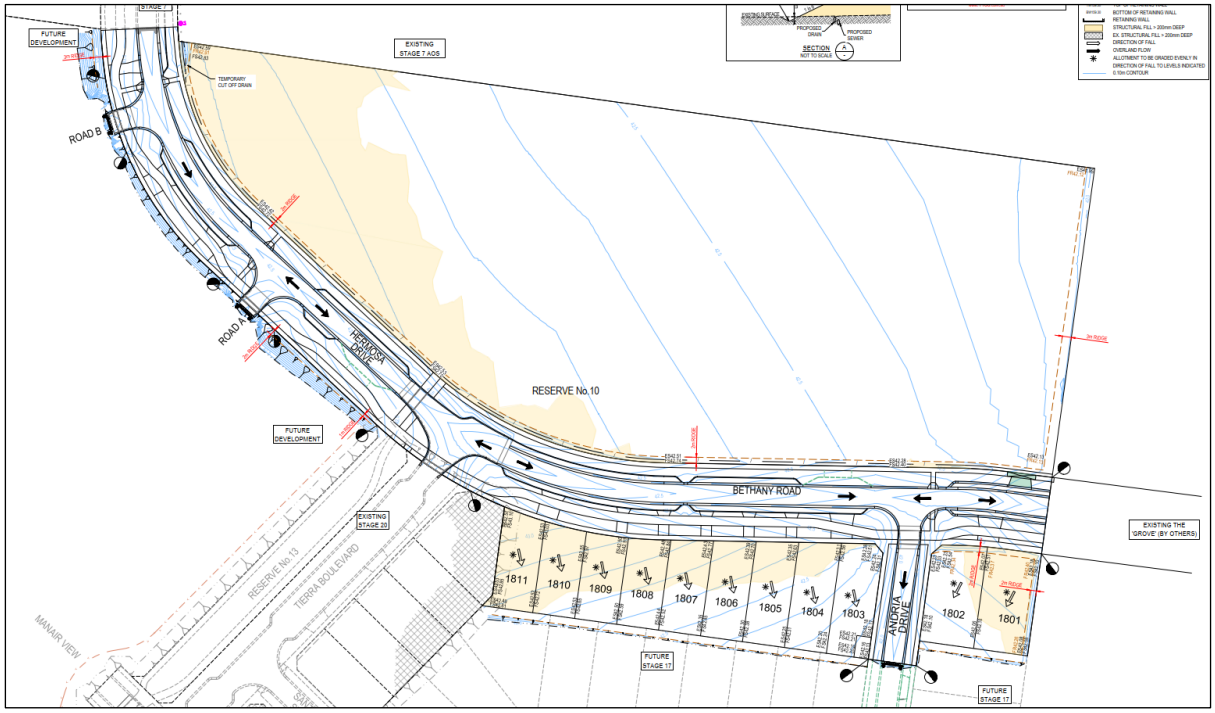


Figure 1: Site Overview & Bulk Earthworks Zone (Source: Creo 200282.18 R204 Rev 0)

3.2 Placement Methodology

A geotechnical bulk earthworks specification was not available for the project. The placement of the controlled fill on the above-mentioned areas was carried out in general accordance with the guidelines

presented in AS3798 (2007) Guidelines on Earthworks for Commercial & Residential Developments. The fill placement methodology adopted for the works generally involved the following:

1. the site surface to be adequately stripped of all topsoil and organic matter, with the subgrade approved by the Geotechnical Inspection and Testing Authority (GITA) prior to fill placement
2. fill material, whether imported or site-won, to consist of naturally occurring, clean material free from deleterious substances. The fill is to comply with Section 4.4 of AS 3798 (2007), with:
    - a maximum particle size not exceeding two-thirds of the compacted layer thickness
    - no more than 20 % of the material comprising particles exceeding 37.5 mm in diameter
3. fill is to be placed at a moisture content within + / - 3 % of optimum moisture content (OMC)
4. fill is to be placed in horizontal layers not exceeding 150 mm
5. fill beneath proposed building footprints is to be compacted to a dry density ratio of at least 95 % Standard Compaction in accordance with AS 1289.5.1.1
6. completing field density testing at a frequency for large scale developments (Type 1 AS3798) which nominates a frequency of:
    - one test per layer or 200 mm per 2500 m^2
    - one test per 500 m^3 distributed reasonably evenly throughout the full depth and area, or
    - three tests per site visit; whichever requires the most tests.

4. Level 1 Inspection & Testing Results

4.1 Subgrade Preparation

The fill placement zones generally required stripping of topsoil, vegetation and organics. Scrapers were used to carry out the site stripping until a base comprising residual Newer Volcanic Group Silty CLAY / CLAY (CH), high plasticity, brown to dark brown was achieved. The subgrade was scarified using an onsite grader, moisture conditioned and compacted, followed by a proof roll using a fully loaded water cart which showed no deflections, springing or rutting. The subgrade was deemed suitable for subsequent fill placement.

Figure 1: Moisture Conditioning of the Subgrade (Source: C&T)

4.2 Fill Source Materials

Fill source materials were nominated by the project contractors and sourced from onsite stockpiles as well as cut to fill works in other parts of the estate.

4.3 Inspection of Fill Source Materials

C&T performed an assessment of the fill source materials for the following:

1. identifying fill material suitability (engineering properties) including cohesion and composition
2. observing building debris and vegetative matter
3. observing oversize rock particles
4. examining the fill moisture.

4.3.1. Material Suitability

The fill materials were noted to be compliant with AS3798 Section 4.0 for the intent and purpose of general filling. The materials typically comprised CLAY, Silty CLAY or Gravelly CLAY (CH), high plasticity, brown to dark brown / grey to brown / red, trace fine to medium grained sand, with fine to coarse gravel.

4.3.2. Building Debris & Vegetative Matter

Building debris and vegetative matter were not observed in the nominated fill material.

4.3.3. Oversize Particles

Oversize particles were encountered in the locally sourced fill and were removed during placement by side casting during placement.

4.3.4. Fill Moisture

The fill was assessed to be generally dry of the inferred OMC. Water carts were used to moisture condition the fill materials during placement.

4.4 Fill Construction

The contractor had the following plant available for the construction of the engineered fill platform:

1. excavators
2. water carts
3. dump trucks & trailers
4. 815 compactors
5. grader / scrapers.

4.4.1 Climate

Weather conditions ranged from dry / sunny conditions to overcast / wet conditions as the works progressed.

4.4.2 Filling Process

The filling process was generally consistent throughout the project. The process typically involved the fill materials carted to the site by dump trucks and trailers and stockpiled adjacent to the fill placement zones.

The fill materials were spread into loose layers averaging around 50 mm to 100 mm thick. Each layer was compacted using the 815 compactor, applying a minimum of 5 to 15 passes per layer observed. A water cart was used to moisture condition the fill material during placement. Field density testing was carried out on each composite 150 mm thick layer.

Figure 2: Fill Being Moisture Conditioned During Placement (Source: C&T)

Figure 3: Fill Spread and Compacted (Source: C&T)

4.5 Compaction Control & Moisture Testing Results

Throughout the filling process and/or at the completion of the day's production, compaction control testing was performed to assess the achieved density ratio of each layer. The onsite GITA nominated the location and performed each test. Testing comprised field density tests using a nuclear moisture-density gauge and rapid HILF compaction tests in C&T Geotechnical's NATA accredited testing laboratory (AS1289 5.8.1 and AS1289 5.7.1).

A summary of the field density tests performed for the project is presented in **Appendix A**. Field density and compaction control testing report sheets are presented in **Appendix B** which also includes test location plans. It should be noted that the tests are a representation of the fill placed and support the visual assessment of the works completed.

In general, all tests achieved the minimum target density ratio of 95 % Standard Compaction and moisture variation within + / - 3 % of OMC.

5. Compliance Statement

C&T Geotechnical (Melbourne) has undertaken Level 1 Inspection and Testing services for the construction of the controlled fill for the Alamora Estate Stage 18 and Active Open Space. It has also been observed that the prepared subgrade provided an adequate base for the subsequent placement of controlled fill.

Based on observations made and the results of density tests (including all re-tests), it is considered that the controlled fill placed has been constructed in accordance with the guidelines provided by AS3798 (2007).

6. Post-Earthworks Maintenance & Operational Considerations

6.1 Post-Filling Condition Monitoring & Maintenance

Upon completion of earthworks and issuance of this Level 1 Inspection & Testing report, the following considerations must be observed by the built form team to ensure the long-term performance of the fill platform:

1. soft spot development: localised softening or disturbances may occur due to:
    - climatic influences
    - temporary water ponding (e.g. in footings, road boxing or similar)
    - construction traffic
    - inadequate surface drainage.

These are not indicative of fill performance failure but are typically the result of environmental or construction operational factors. The remediation of soft spots caused by insufficient maintenance is to be managed by the site operator/owner in accordance with their geotechnical engineer's guidance.

2. maintenance responsibility: any softening or surface degradation observed after completion of the works is considered a maintenance element
    - it is the responsibility of the site operator/owner and/or subsequent contractors to manage and rectify maintenance issues
3. drainage management: it is strongly advised that surface drainage be established and maintained effectively to prevent water ingress into the fill materials
    - proper grading and runoff management are essential to preserve the integrity of the fill
    - the engineered fill pad does not have any drainage provisions incorporated into the final as-constructed pad
    - the incoming site operator will need to manage site drainage based on the proposed site layout
4. intrusive investigations: any post-completion intrusive geotechnical investigations (e.g. trial pits or boreholes completed by other consultants) may compromise the compaction and integrity of the fill
    - such activities must be carefully planned and documented, particularly if undertaken by third parties
    - the integrity of fill material performance is null and void where intrusive fill investigations are completed and the engineered fill is compromised.

6.2 As Built Survey Requirements

1. an as-built survey of engineered fill levels is a critical component of the handover documentation
2. this survey must be provided by the contractor, as it falls outside the scope of the Level 1 Inspection & Testing report.

7. Statement of Limitations

This report has been prepared by C&T Consulting Engineers exclusively for the commissioning client and the project described. The scope of work was limited to the services outlined herein and does not include investigation of all possible site conditions or risks.

Findings, opinions, and recommendations are based on conditions observed during limited sampling, testing, and fieldwork at the time of investigation. Subsurface conditions may vary across the site, and changes can occur after the investigation. No warranty is given that conditions described are representative of the entire site or future conditions.

If site conditions encountered during works differ from those described, C&T Consulting Engineers must be contacted promptly for reassessment and advice. Reliance on this report without such consultation is at the user's risk.

Where information has been provided by the client or third parties, it is assumed to be correct unless otherwise stated. C&T Consulting Engineers accepts no liability for errors, omissions, or misinterpretations arising from such information.

The advice in this report is based on information available at the time of preparation. C&T Consulting Engineers has no ongoing obligation to update or revise this document unless separately engaged.

Plans, diagrams, and sketches included are for illustrative purposes only and should not be used for construction or detailed design without independent verification.

This report is intended for the commissioning client's use for the stated project only. No responsibility is accepted for use by other parties or for other purposes. This report must not be altered or reproduced except in full without written approval.

8. REFERENCES

- AS3798 (2007) Guidelines on Earthworks for Residential and Commercial Developments.
- AS1289 Methods of Testing Soils for Engineering Purposes.
- AS1726 (2017): Geotechnical Site Investigations
- Ground Science, G5208.3 AA (20 March 2025) Geotechnical Specification: Bulk Earthworks, East Werribee Precinct, School Site Bulk Earthworks, Hacketts Road, Point Cook.

APPENDIX A

Field Density Test Summary

Project Summary Report

Report Date: 30/07/2025
Client: WINSLOW CONSTRUCTORS (CAMPBELLFIELD, VIC)
50 Barry Road, Campbellfield Victoria 3061
Contact: Ryan Spicer
Project Number: CTG0046
Project Name: ALAMORA STAGE 18 & ACTIVE OPEN SPACE (LEVEL 1)
Project Location: TARNEIT
Specification: 95% Standard Compaction & +/- 3% Moisture Variation
Test Methods: AS 1289 5.7.1 STD & 5.8.1 & 2.1.1

GEOTECHNICAL
C & T Geotechnical (Melbourne) Pty Ltd
47A Assembly Drive Tullamarine VIC 3043
Phone: 0410 530 191
Email: Tim@ctgeotech.com.au

Lot #	Sample #	Date Sampled	Location	Easting	Northing	Elevation (m)	Layer	Relative Compaction (%)	Moisture Variation (%)	Moisture Content (%)	Field Wet Density (t/m3)
**	0046-S1	20/05/2025	Lot 1805	292319	5807977	**	Layer 1	102.0	0.0	27.5	1.87
**	0046-S2	20/05/2025	Lot 1807	292295	5807977	**	Layer 1	103.0	0.5	28.7	1.89
**	0046-S3	20/05/2025	Lot 1809	292267	5807978	**	Layer 1	104.5	2.0	22.9	1.91
**	0046-S4	21/05/2025	Lot 1811	292239	5807981	**	1	103.0	-2.0	24.5	1.88
**	0046-S5	21/05/2025	Lot 1810	292255	5807980	**	1	104.0	-2.0	15.4	1.90
**	0046-S6	21/05/2025	Lot 1808	292281	5807977	**	1	100.5	-1.5	19.2	1.88
**	0046-S7	21/05/2025	Lot 1806	292308	5807977	**	FSL	101.5	2.5	20.1	1.87
**	0046-S8	21/05/2025	Lot 1804	292329	5807977	**	FSL	100.5	2.0	18.6	1.88
**	0046-S9	21/05/2025	Lot 1803	292337	5807977	**	FSL	101.0	3.0	21.4	1.89
**	0046-S10	21/05/2025	Lot 1811	292240	5807978	**	FSL	100.0	3.0	23.3	1.88
**	0046-S11	21/05/2025	Lot 1802	292377	5807977	**	FSL	101.5	1.5	23.1	1.88
**	0046-S12	21/05/2025	Lot 1801	292387	5807976	**	FSL	101.0	2.5	23.4	1.87
**	0046-S13	17/07/2025	Active Open Space	292228	5808075	**	1	103.0	1.5	21.0	1.94
**	0046-S14	17/07/2025	Active Open Space	292230	5808046	**	1	104.5	1.0	19.4	1.95
**	0046-S15	17/07/2025	Active Open Space	292202	5808065	**	1	103.5	2.5	17.7	1.95
**	0046-S16	17/07/2025	Active Open Space	292207	5808099	**	1	102.5	2.0	17.3	1.94
**	0046-S17	17/07/2025	Active Open Space	292177	5808113	**	1	104.0	2.5	21.3	1.94
**	0046-S18	17/07/2025	Active Open Space	292161	5808129	**	1	102.0	2.5	21.7	1.93
**	0046-S19	18/07/2025	Active Open Space	292159	5808088	**	FSL	100.5	1.5	23.6	1.91
**	0046-S20	18/07/2025	Active Open Space	292140	5808116	**	FSL	100.5	0.0	27.2	1.90
**	0046-S21	18/07/2025	Active Open Space	292161	5808128	**	FSL	102.0	1.5	20.4	1.92
**	0046-S22	21/07/2025	Active Open Space	292142	5808163	**	FSL	101.0	2.5	18.0	1.92
**	0046-S23	21/07/2025	Active Open Space	292227	5808043	**	FSL	98.0	2.5	20.7	1.89
**	0046-S24	21/07/2025	Active Open Space	292251	5808036	**	FSL	99.5	2.5	21.8	1.91
**	0046-S25	22/07/2025	Active Open Space	292193	5808193	**	1	100.5	2.0	22.7	1.90
**	0046-S26	22/07/2025	Active Open Space	292183	5808169	**	1	101.0	1.0	22.9	1.91
**	0046-S27	22/07/2025	Active Open Space	292209	5808169	**	1	106.0	2.5	20.5	2.02
**	0046-S28	23/07/2025	Active Open Space	292162	5808220	**	1	101.5	2.5	21.0	1.88
**	0046-S29	23/07/2025	Active Open Space	292156	5808243	**	1	99.0	2.5	20.5	1.86
**	0046-S30	23/07/2025	Active Open Space	292174	5808259	**	1	101.0	2.5	20.5	1.89
**	0046-S31	24/07/2025	Active Open Space	292232	5808175	**	1	108.0	2.5	21.8	1.99
**	0046-S32	24/07/2025	Active Open Space	292241	5808199	**	1	105.5	3.0	22.2	1.97
**	0046-S33	24/07/2025	Active Open Space	292251	5808220	**	1	105.0	2.5	22.6	1.97

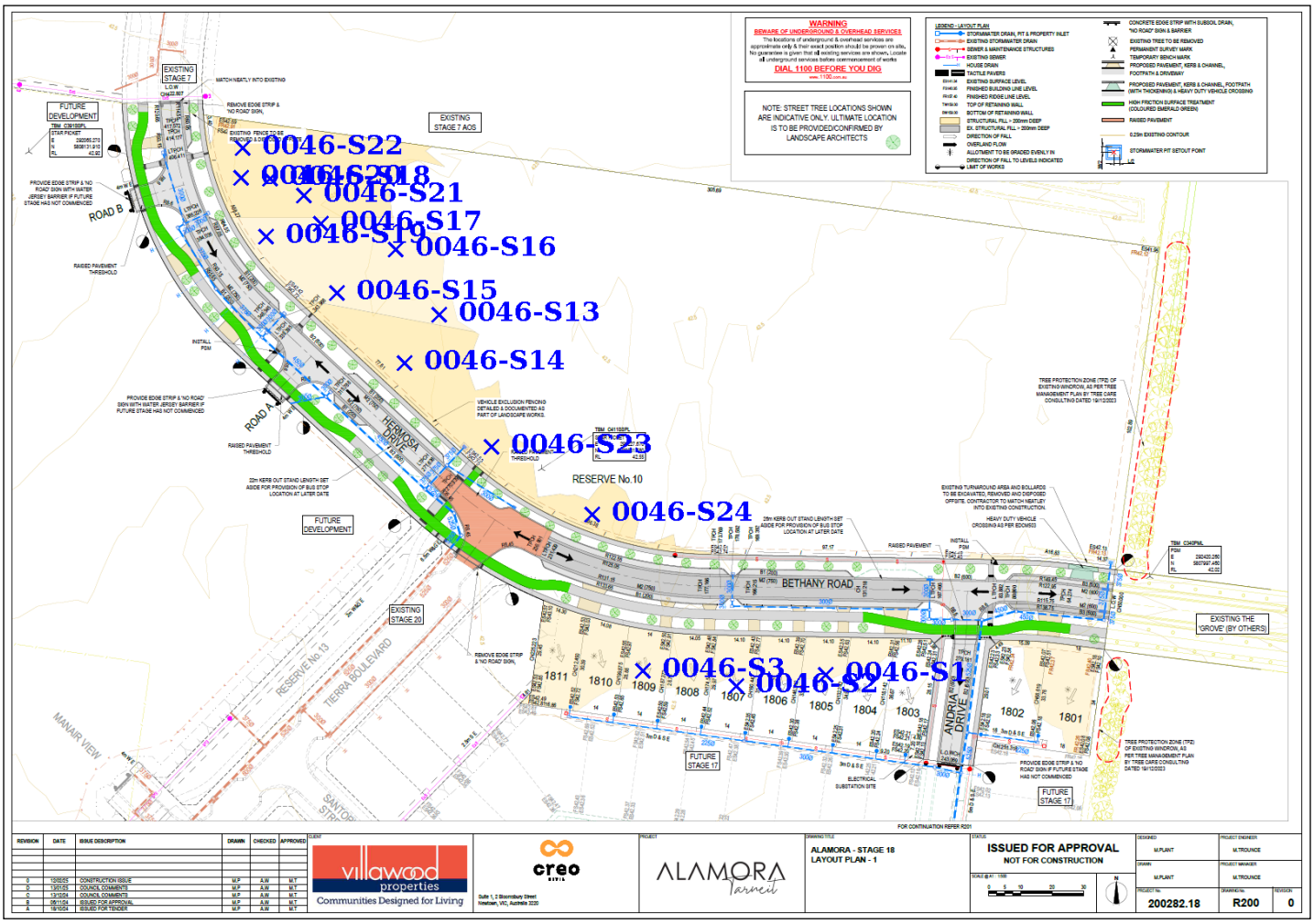
Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Sample Locations Plan

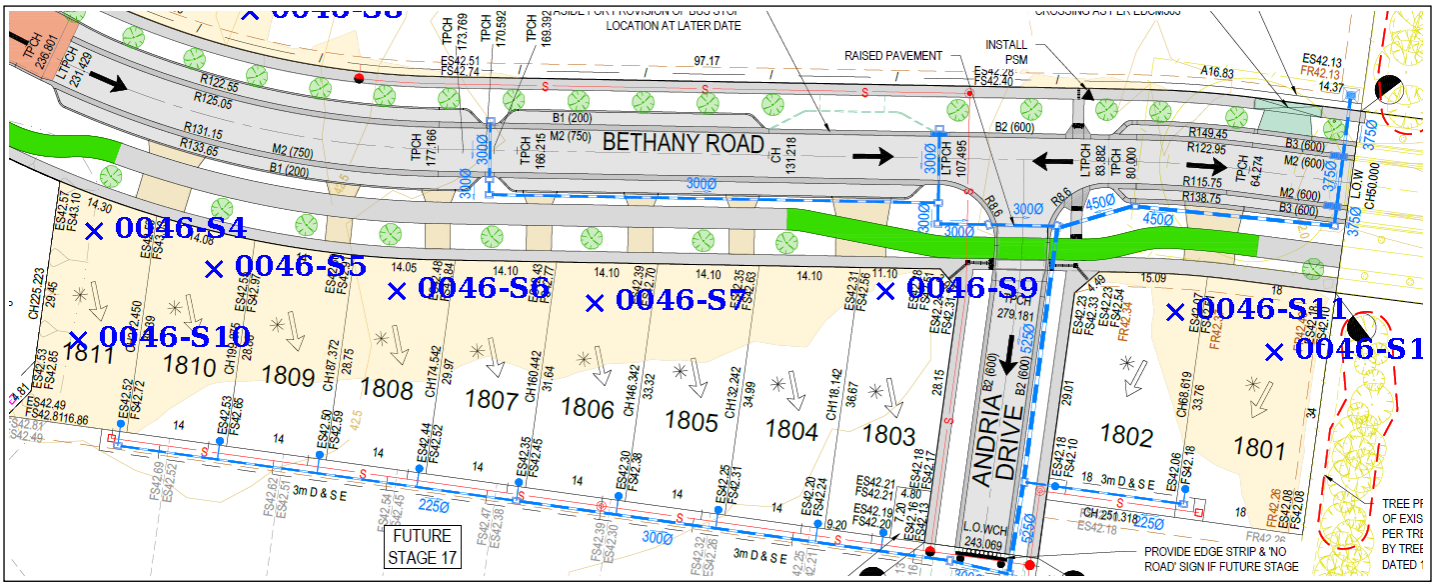
x - approximate test location



Sample Locations Plan

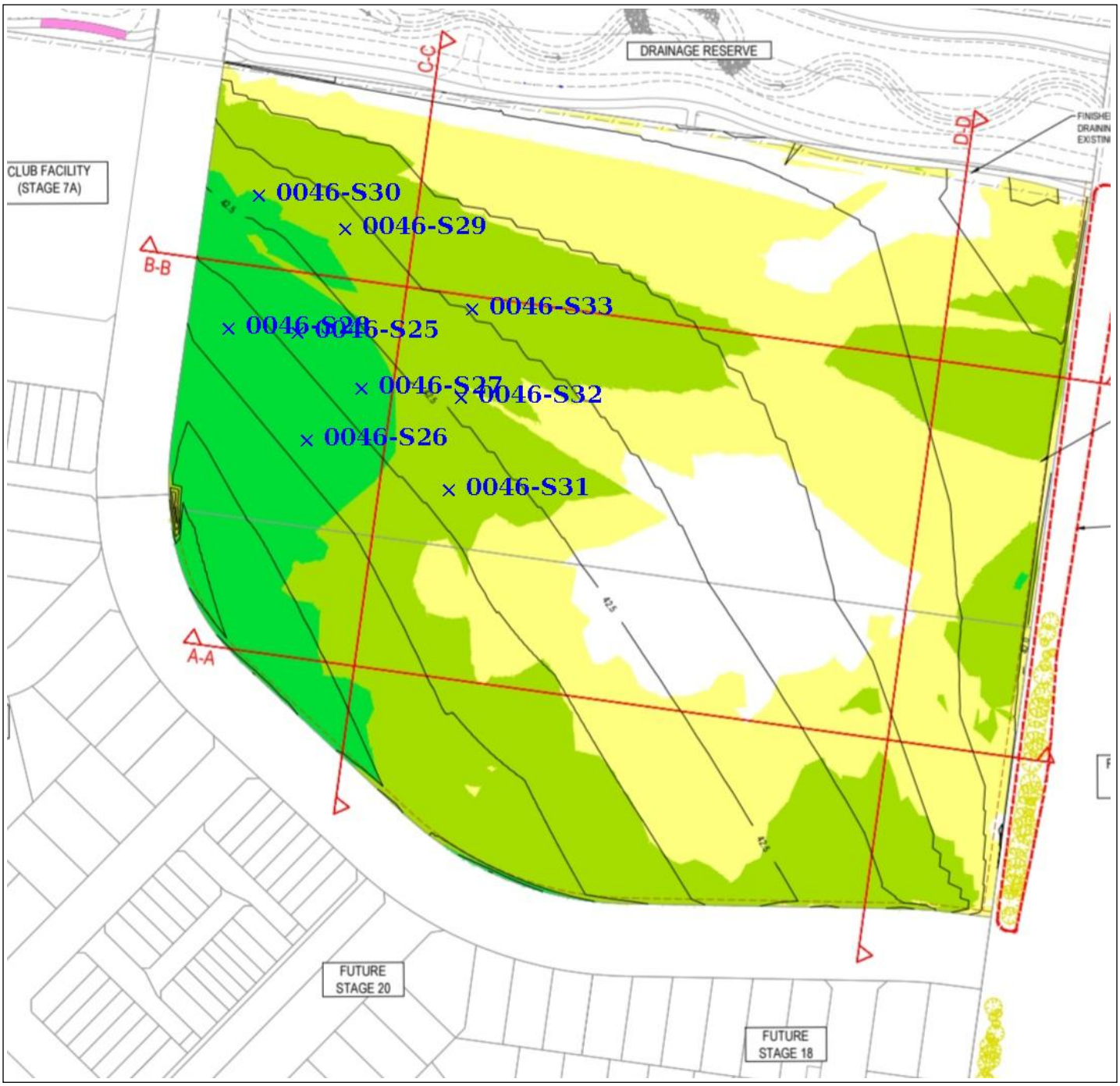
x - approximate test location

GEOTECHNICAL



Sample Locations Plan

x - approximate test location



APPENDIX B

Field Density Test Reports

Material Test Report

C & T Geotechnical (Melbourne) Pty Ltd
47A Assembly Drive Tullamarine VIC 3043
Phone: 0410 530 191
Email: Tim@ctgeotech.com.au

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Tim Senserrick
Managing Director
NATA Accredited Laboratory Number: 21552

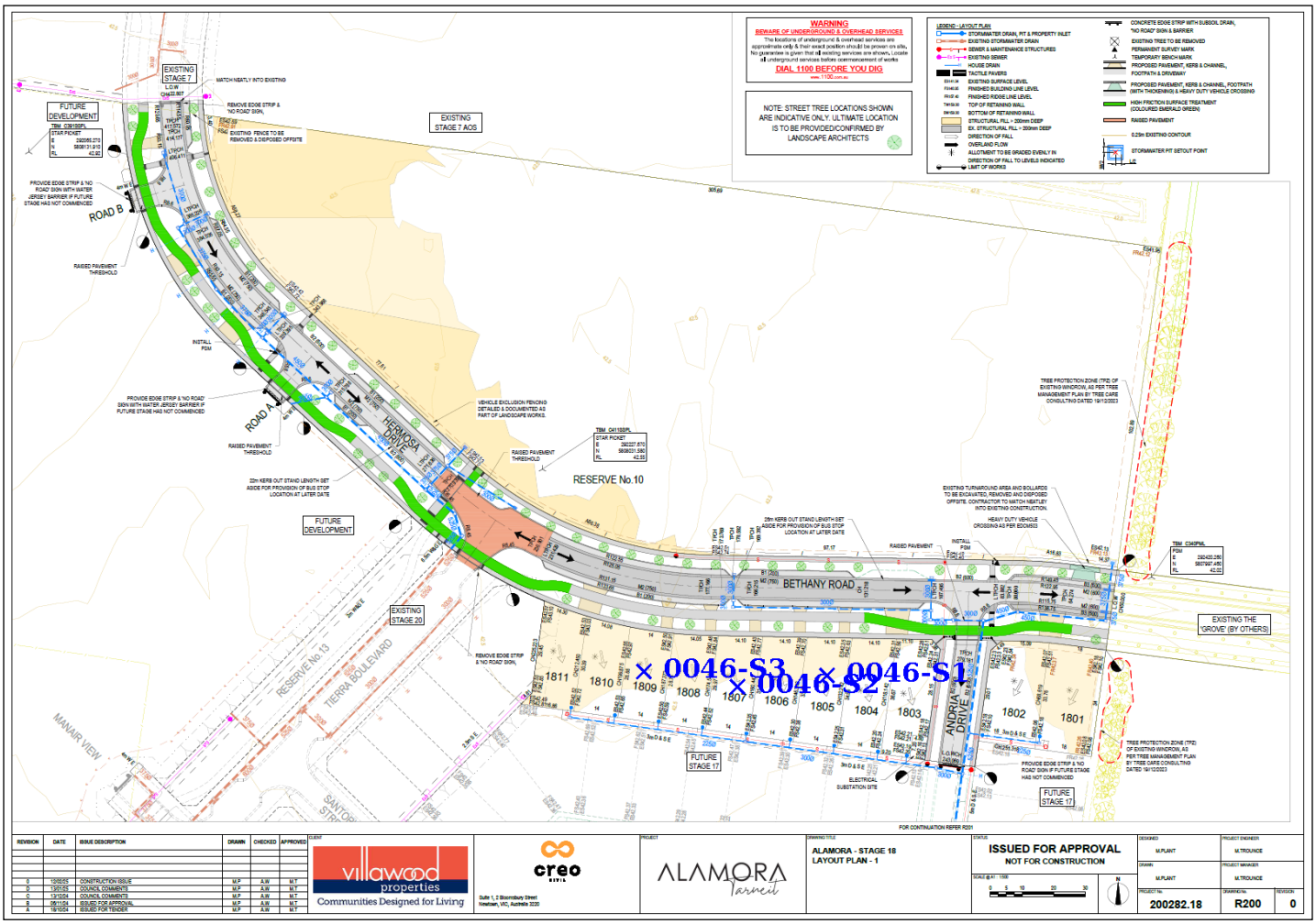
Report Number: **CTG0046-1**
Issue Number: 1
Date Issued: 22/05/2025
Client: WINSLOW CONSTRUCTORS (CAMPBELLFIELD, VIC)
50 Barry Road, Campbellfield Victoria 3061
Contact: Ryan Spicer
Project Number: CTG0046
Project Name: ALAMORA STAGE 18 & ACTIVE OPEN SPACE (LEVEL 1)
Project Location: TARNEIT
Work Request: 87
Date Sampled: 20/05/2025 08:00
Dates Tested: 20/05/2025 - 21/05/2025
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% Standard Compaction & +/- 3% Moisture Variation
Site Selection: Selected by Client
Location: Stage 18
Material: gravelly CLAY, med-high plasticity, red/brown
Material Source: On site cut to fill

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	0046-S1	0046-S2	0046-S3
Date Tested	20/05/2025	20/05/2025	20/05/2025
Time Tested	14:00	14:10	14:20
Test Request #/Location	Lot 1805	Lot 1807	Lot 1809
Easting	292319	292295	292267
Northing	5807977	5807977	5807978
Layer / Reduced Level	Layer 1	Layer 1	Layer 1
Thickness of Layer (mm)	150	150	150
Soil Description	gravelly CLAY, med-high plast, red/brown	gravelly CLAY, med-high plast, red/brown	gravelly CLAY, med-high plast, red/brown
Test Depth (mm)	125	125	125
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	0	**
Field Wet Density (FWD) t/m^3	1.87	1.89	1.91
Field Moisture Content %	27.5	28.7	22.9
Field Dry Density (FDD) t/m^3	1.47	1.47	1.55
Peak Converted Wet Density t/m^3	1.83	1.84	1.82
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	0.0	0.5	2.0
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**102.0**	**103.0**	**104.5**
Compaction Method	**Standard**	**Standard**	**Standard**
Remarks	**	**	**

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

Sample Locations Plan

x - approximate test location



Material Test Report

C & T Geotechnical (Melbourne) Pty Ltd
47A Assembly Drive Tullamarine VIC 3043
Phone: 0410 530 191
Email: Tim@ctgeotech.com.au

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Tim Senserrick
Managing Director
NATA Accredited Laboratory Number: 21552

Report Number: **CTG0046-2**
Issue Number: 1
Date Issued: 26/05/2025
Client: WINSLOW CONSTRUCTORS (CAMPBELLFIELD, VIC)
50 Barry Road, Campbellfield Victoria 3061
Contact: Ryan Spicer
Project Number: CTG0046
Project Name: ALAMORA STAGE 18 & ACTIVE OPEN SPACE (LEVEL 1)
Project Location: TARNEIT
Work Request: 96
Date Sampled: 21/05/2025 08:30
Dates Tested: 21/05/2025 - 23/05/2025
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% Standard Compaction & +/- 3% Moisture Variation
Site Selection: Selected by Client
Location: Stage 18
Material: gravelly CLAY, med-high plasticity, red/brown
Material Source: On site cut to fill

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1					
Sample Number	0046-S4	0046-S5	0046-S6	0046-S7	0046-S8
Date Tested	21/05/2025	21/05/2025	21/05/2025	21/05/2025	21/05/2025
Time Tested	10:20	10:30	10:40	12:30	12:40
Test Request #/Location	Lot 1811	Lot 1810	Lot 1808	Lot 1806	Lot 1804
Easting	292239	292255	292281	292308	292329
Northing	5807981	5807980	5807977	5807977	5807977
Layer / Reduced Level	1	1	1	FSL	FSL
Thickness of Layer (mm)	150	150	150	150	150
Soil Description	gravelly CLAY, med-high plast, red/brown	gravelly CLAY, med-high plast, red/brown	gravelly CLAY, med-high plast, red/brown	gravelly CLAY, med-high plast, red/brown	gravelly CLAY, med-high plast, red/brown
Test Depth (mm)	125	125	125	125	125
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	**	**	**	0	5
Field Wet Density (FWD) t/m^3	1.88	1.90	1.88	1.87	1.88
Field Moisture Content %	24.5	15.4	19.2	20.1	18.6
Field Dry Density (FDD) t/m^3	1.51	1.64	1.58	1.56	1.58
Peak Converted Wet Density t/m^3	1.82	1.83	1.87	**	**
Adjusted Peak Converted Wet Density t/m^3	**	**	**	1.84	1.87
Moisture Variation (Wv) %	-2.0	-2.0	-1.5	**	**
Adjusted Moisture Variation %	**	**	**	2.5	2.0
Hilf Density Ratio (%)	**103.0**	**104.0**	**100.5**	**101.5**	**100.5**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**
Remarks	**	**	**	**	**

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

Material Test Report

Report Number: **CTG0046-2**
Issue Number: 1
Date Issued: 26/05/2025
Client: WINSLOW CONSTRUCTORS (CAMPBELLFIELD, VIC)
50 Barry Road, Campbellfield Victoria 3061
Contact: Ryan Spicer
Project Number: CTG0046
Project Name: ALAMORA STAGE 18 & ACTIVE OPEN SPACE (LEVEL 1)
Project Location: TARNEIT
Work Request: 96
Date Sampled: 21/05/2025 08:30
Dates Tested: 21/05/2025 - 23/05/2025
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% Standard Compaction & +/- 3% Moisture Variation
Site Selection: Selected by Client
Location: Stage 18
Material: gravelly CLAY, med-high plasticity, red/brown
Material Source: On site cut to fill

GEOTECHNICAL
C & T Geotechnical (Melbourne) Pty Ltd
47A Assembly Drive Tullamarine VIC 3043
Phone: 0410 530 191
Email: Tim@ctgeotech.com.au

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NATA
WORLD RECOGNISED ACCREDITATION

Approved Signatory: Tim Senserrick
Managing Director
NATA Accredited Laboratory Number: 21552

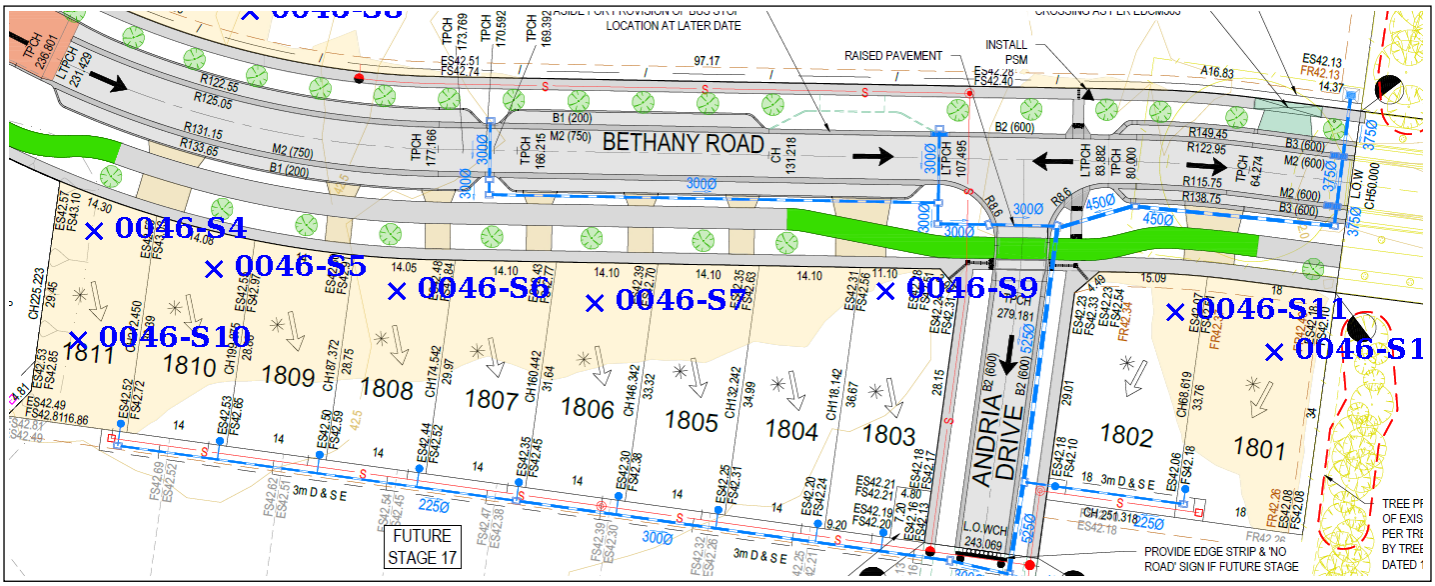
Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1					
Sample Number	0046-S9	0046-S10	0046-S11	0046-S12	
Date Tested	21/05/2025	21/05/2025	21/05/2025	21/05/2025	
Time Tested	12:50	13:00	14:00	14:10	
Test Request #/Location	Lot 1803	Lot 1811	Lot 1802	Lot 1801	
Easting	292337	292240	292377	292387	
Northing	5807977	5807978	5807977	5807976	
Layer / Reduced Level	FSL	FSL	FSL	FSL	
Thickness of Layer (mm)	150	150	150	150	
Soil Description	gravelly CLAY, med-high plast, red/brown	gravelly CLAY, med-high plast, red/brown	gravelly CLAY, med-high plast, red/brown	gravelly CLAY, med-high plast, red/brown	
Test Depth (mm)	125	125	125	125	
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	
Percentage of Wet Oversize (%)	2	2	0	0	
Field Wet Density (FWD) t/m^3	1.89	1.88	1.88	1.87	
Field Moisture Content %	21.4	23.3	23.1	23.4	
Field Dry Density (FDD) t/m^3	1.56	1.52	1.53	1.52	
Peak Converted Wet Density t/m^3	**	**	1.85	1.85	
Adjusted Peak Converted Wet Density t/m^3	1.87	1.87	**	**	
Moisture Variation (Wv) %	**	**	1.5	2.5	
Adjusted Moisture Variation %	3.0	3.0	**	**	
Hilf Density Ratio (%)	**101.0**	**100.0**	**101.5**	**101.0**	
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**	
Remarks	**	**	**	**	

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

Sample Locations Plan

x - approximate test location

GEOTECHNICAL



Material Test Report

Report Number: **CTG0046-3**
Issue Number: 1
Date Issued: 23/07/2025
Client: WINSLOW CONSTRUCTORS (CAMPBELLFIELD, VIC)
50 Barry Road, Campbellfield Victoria 3061
Contact: Ryan Spicer
Project Number: CTG0046
Project Name: ALAMORA STAGE 18 & ACTIVE OPEN SPACE (LEVEL 1)
Project Location: TARNEIT
Work Request: 370
Date Sampled: 17/07/2025 08:00
Dates Tested: 17/07/2025 - 22/07/2025
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% Standard Compaction & +/- 3% Moisture Variation
Location: Tarneit
Material: gravelly CLAY, med-high plasticity, brown
Material Source: On site cut to fill

C & T Geotechnical (Melbourne) Pty Ltd
47A Assembly Drive Tullamarine VIC 3043
Phone: 0410 530 191
Email: Tim@ctgeotech.com.au

Accredited for compliance with ISO/IEC 17025 - Testing

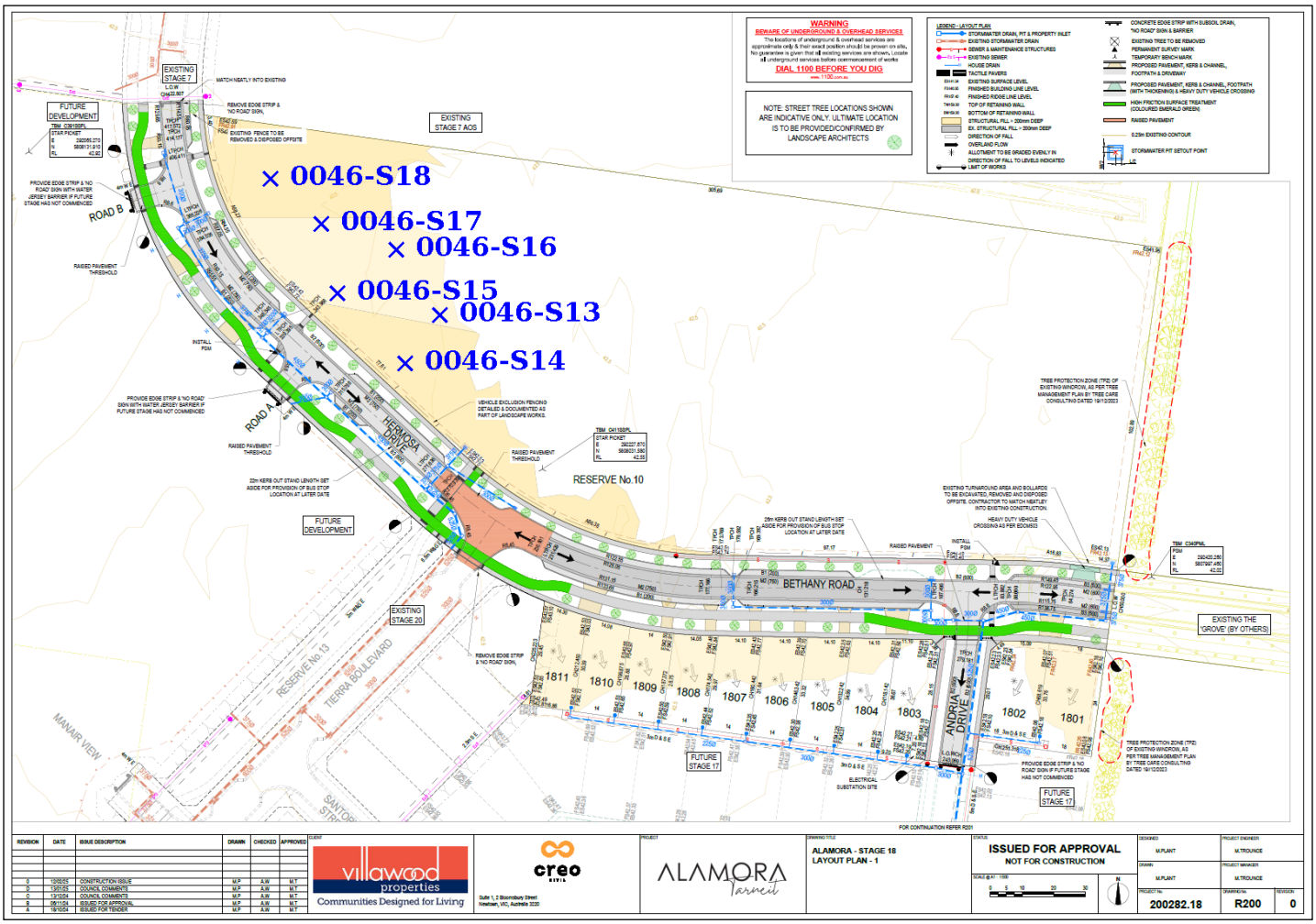
Approved Signatory: Tim Senserrick
Managing Director
NATA Accredited Laboratory Number: 21552

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1						
Sample Number	0046-S13	0046-S14	0046-S15	0046-S16	0046-S17	0046-S18
Date Tested	17/07/2025	17/07/2025	17/07/2025	17/07/2025	17/07/2025	17/07/2025
Time Tested	09:30	09:40	09:50	10:00	10:10	10:20
Test Request #/Location	Active Open Space	Active Open Space	Active Open Space	Active Open Space	Active Open Space	Active Open Space
Easting	292228	292230	292202	292207	292177	292161
Northing	5808075	5808046	5808065	5808099	5808113	5808129
Layer / Reduced Level	1	1	1	1	1	1
Thickness of Layer (mm)	200	200	200	200	200	200
Soil Description	gravelly CLAY, med-high plasticity, brown	gravelly CLAY, med-high plasticity, brown	gravelly CLAY, med-high plasticity, brown	gravelly CLAY, med-high plasticity, brown	gravelly CLAY, med-high plasticity, brown	gravelly CLAY, med-high plasticity, brown
Test Depth (mm)	175	175	175	175	175	175
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	1.94	1.95	1.95	1.94	1.94	1.93
Field Moisture Content %	21.0	19.4	17.7	17.3	21.3	21.7
Field Dry Density (FDD) t/m^3	1.60	1.63	1.66	1.65	1.60	1.59
Peak Converted Wet Density t/m^3	1.88	1.86	1.89	1.89	1.87	1.89
Adjusted Peak Converted Wet Density t/m^3	**	**	**	**	**	**
Moisture Variation (Wv) %	1.5	1.0	2.5	2.0	2.5	2.5
Adjusted Moisture Variation %	**	**	**	**	**	**
Hilf Density Ratio (%)	**103.0**	**104.5**	**103.5**	**102.5**	**104.0**	**102.0**
Compaction Method	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**	**Standard**
Remarks	**	**	**	**	**	**

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

Sample Locations Plan

x - approximate test location



Material Test Report

Report Number: **CTG0046-4**
Issue Number: 1
Date Issued: 23/07/2025
Client: WINSLOW CONSTRUCTORS (CAMPBELLFIELD, VIC)
50 Barry Road, Campbellfield Victoria 3061
Contact: Ryan Spicer
Project Number: CTG0046
Project Name: ALAMORA STAGE 18 & ACTIVE OPEN SPACE (LEVEL 1)
Project Location: TARNEIT
Work Request: 377
Date Sampled: 18/07/2025 08:00
Dates Tested: 18/07/2025 - 22/07/2025
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% Standard Compaction & +/- 3% Moisture Variation
Location: Tarneit
Material: gravelly CLAY, med-high plasticity, brown
Material Source: On site cut to fill

GEOTECHNICAL
C & T Geotechnical (Melbourne) Pty Ltd
47A Assembly Drive Tullamarine VIC 3043
Phone: 0410 530 191
Email: Tim@ctgeotech.com.au

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NATA
WORLD RECOGNISED ACCREDITATION

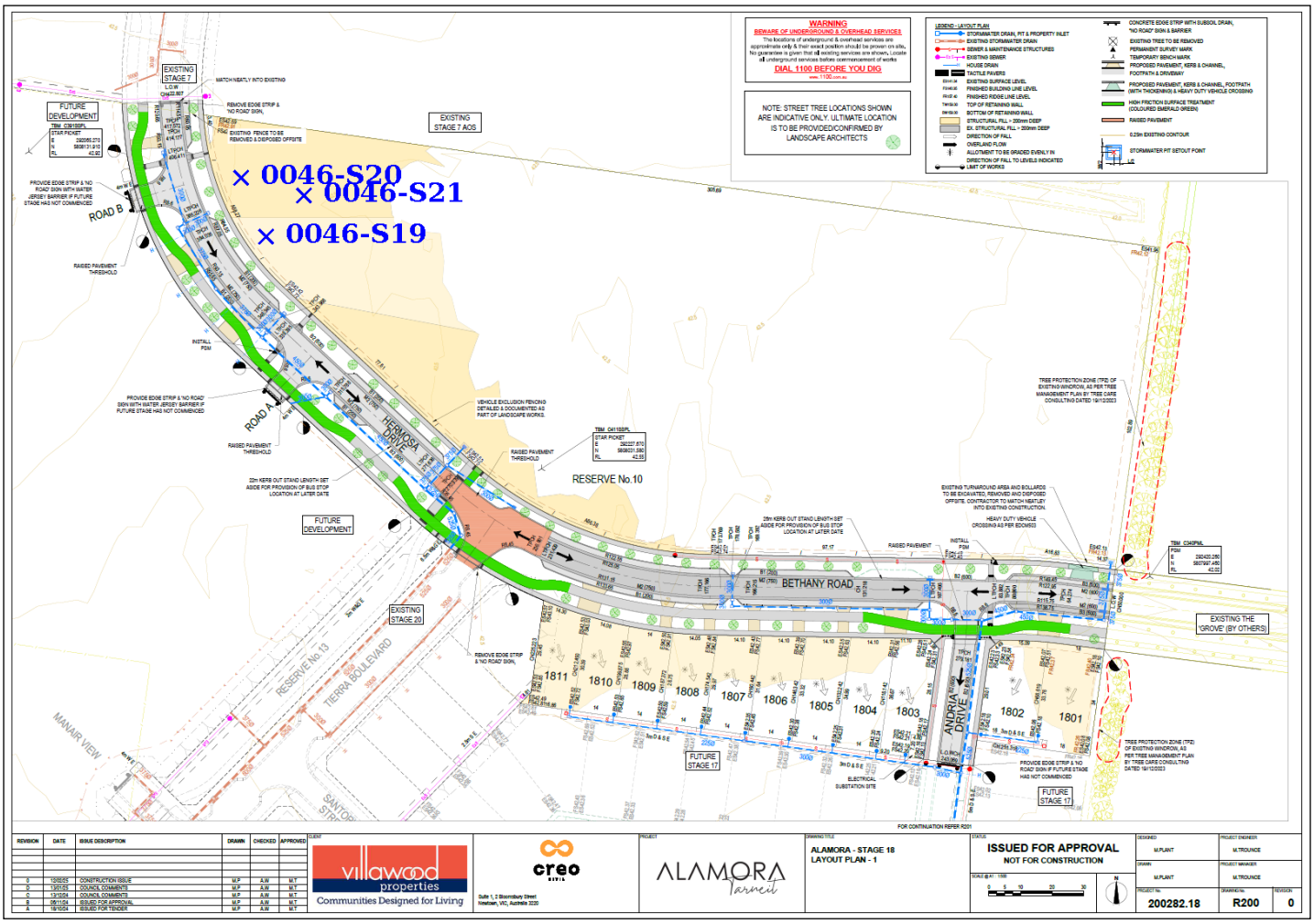
Approved Signatory: Tim Senserrick
Managing Director
NATA Accredited Laboratory Number: 21552

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	0046-S19	0046-S20	0046-S21
Date Tested	18/07/2025	18/07/2025	18/07/2025
Time Tested	12:00	12:10	12:20
Test Request #/Location	Active Open Space	Active Open Space	Active Open Space
Easting	292159	292140	292161
Northing	5808088	5808116	5808128
Layer / Reduced Level	FSL	FSL	FSL
Thickness of Layer (mm)	200	200	200
Soil Description	gravelly CLAY, med-high plasticity, brown	gravelly CLAY, med-high plasticity, brown	gravelly CLAY, med-high plasticity, brown
Test Depth (mm)	175	175	175
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	1.91	1.90	1.92
Field Moisture Content %	23.6	27.2	20.4
Field Dry Density (FDD) t/m^3	1.55	1.49	1.59
Peak Converted Wet Density t/m^3	1.90	1.89	1.88
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	1.5	0.0	1.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**100.5**	**100.5**	**102.0**
Compaction Method	**Standard**	**Standard**	**Standard**
Remarks	**	**	**

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

Sample Locations Plan

x - approximate test location



Material Test Report

Report Number: **CTG0046-6**
Issue Number: 1
Date Issued: 24/07/2025
Client: WINSLOW CONSTRUCTORS (CAMPBELLFIELD, VIC)
50 Barry Road, Campbellfield Victoria 3061
Contact: Ryan Spicer
Project Number: CTG0046
Project Name: ALAMORA STAGE 18 & ACTIVE OPEN SPACE (LEVEL 1)
Project Location: TARNEIT
Work Request: 388
Date Sampled: 21/07/2025 08:00
Dates Tested: 21/07/2025 - 23/07/2025
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% Standard Compaction & +/- 3% Moisture Variation
Location: Tarneit
Material: gravelly CLAY, med-high plasticity, brown
Material Source: On site cut to fill

GEOTECHNICAL
C & T Geotechnical (Melbourne) Pty Ltd
47A Assembly Drive Tullamarine VIC 3043
Phone: 0410 530 191
Email: Tim@ctgeotech.com.au

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NATA
WORLD RECOGNISED ACCREDITATION

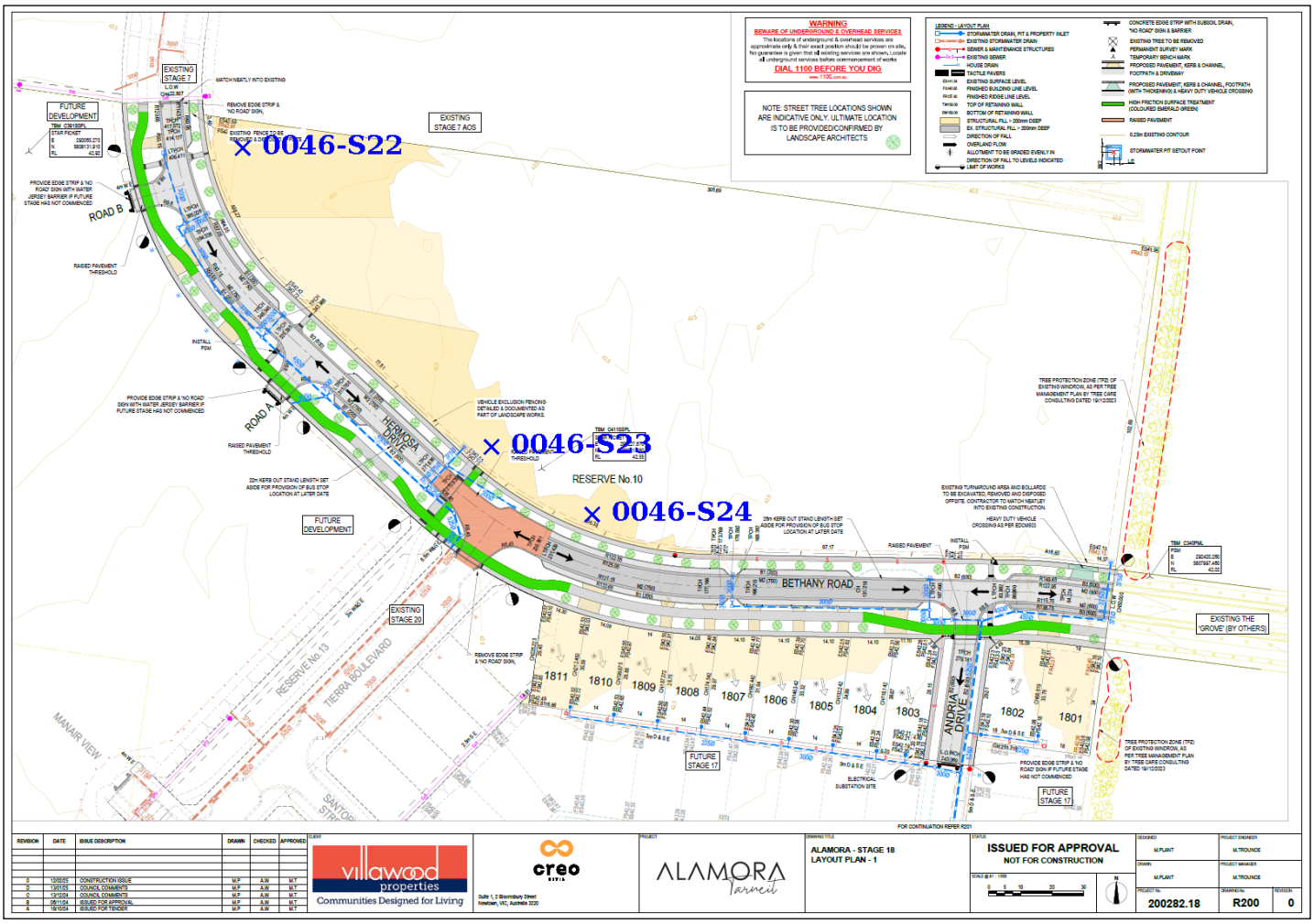
Approved Signatory: Tim Senserrick
Managing Director
NATA Accredited Laboratory Number: 21552

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	0046-S22	0046-S23	0046-S24
Date Tested	21/07/2025	21/07/2025	21/07/2025
Time Tested	13:50	14:00	14:10
Test Request #/Location	Active Open Space	Active Open Space	Active Open Space
Easting	292142	292227	292251
Northing	5808163	5808043	5808036
Layer / Reduced Level	FSL	FSL	FSL
Thickness of Layer (mm)	200	200	200
Soil Description	gravelly CLAY, med-high plasticity, brown	gravelly CLAY, med-high plasticity, brown	gravelly CLAY, med-high plasticity, brown
Test Depth (mm)	175	175	175
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	1.92	1.89	1.91
Field Moisture Content %	18.0	20.7	21.8
Field Dry Density (FDD) t/m^3	1.62	1.57	1.56
Peak Converted Wet Density t/m^3	1.90	1.93	1.91
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	2.5	2.5	2.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**101.0**	**98.0**	**99.5**
Compaction Method	**Standard**	**Standard**	**Standard**
Remarks	**	**	**

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

Sample Locations Plan

x - approximate test location



Material Test Report

Report Number: **CTG0046-7**
Issue Number: 1
Date Issued: 24/07/2025
Client: WINSLOW CONSTRUCTORS (CAMPBELLFIELD, VIC)
50 Barry Road, Campbellfield Victoria 3061
Contact: Ryan Spicer
Project Number: CTG0046
Project Name: ALAMORA STAGE 18 & ACTIVE OPEN SPACE (LEVEL 1)
Project Location: TARNEIT
Work Request: 396
Date Sampled: 22/07/2025 08:00
Dates Tested: 22/07/2025 - 23/07/2025
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% Standard Compaction & +/- 3% Moisture Variation
Location: Tarneit
Material: gravelly CLAY, med-high plasticity, brown
Material Source: On site cut to fill

GEOTECHNICAL
C & T Geotechnical (Melbourne) Pty Ltd
47A Assembly Drive Tullamarine VIC 3043
Phone: 0410 530 191
Email: Tim@ctgeotech.com.au

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NATA
WORLD RECOGNISED ACCREDITATION

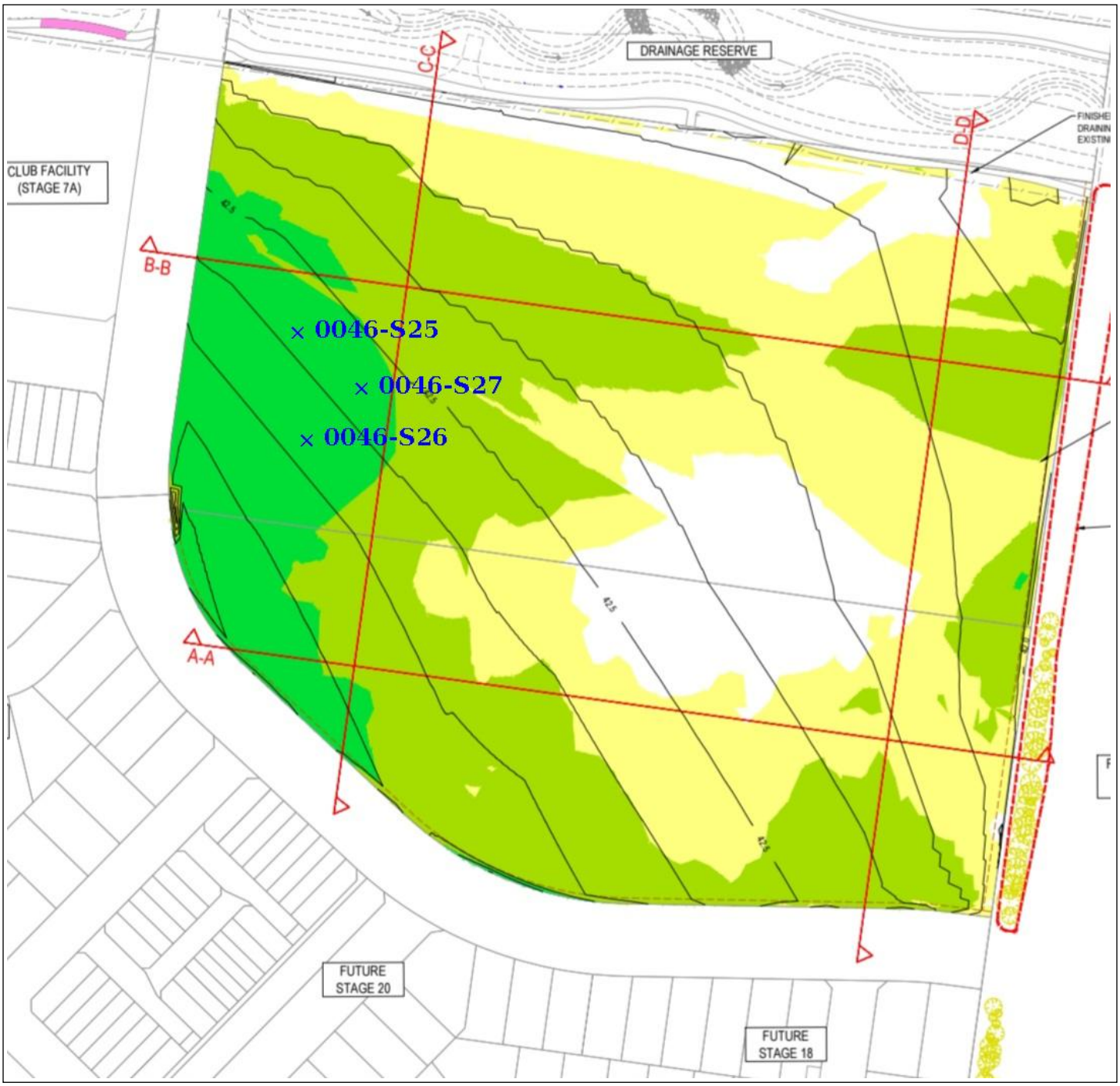
Approved Signatory: Tim Senserrick
Managing Director
NATA Accredited Laboratory Number: 21552

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	0046-S25	0046-S26	0046-S27
Date Tested	22/07/2025	22/07/2025	22/07/2025
Time Tested	11:30	11:40	11:50
Test Request #/Location	Active Open Space	Active Open Space	Active Open Space
Easting	292193	292183	292209
Northing	5808193	5808169	5808169
Layer / Reduced Level	1	1	1
Thickness of Layer (mm)	200	200	200
Soil Description	gravelly CLAY, med-high plasticity, brown	gravelly CLAY, med-high plasticity, brown	gravelly CLAY, med-high plasticity, brown
Test Depth (mm)	175	175	175
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	1.90	1.91	2.02
Field Moisture Content %	22.7	22.9	20.5
Field Dry Density (FDD) t/m^3	1.55	1.56	1.68
Peak Converted Wet Density t/m^3	1.90	1.89	1.91
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	2.0	1.0	2.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**100.5**	**101.0**	**106.0**
Compaction Method	**Standard**	**Standard**	**Standard**
Remarks	**	**	**

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

Sample Locations Plan

x - approximate test location



Material Test Report

Report Number: **CTG0046-8**
Issue Number: 1
Date Issued: 29/07/2025
Client: WINSLOW CONSTRUCTORS (CAMPBELLFIELD, VIC)
50 Barry Road, Campbellfield Victoria 3061
Contact: Ryan Spicer
Project Number: CTG0046
Project Name: ALAMORA STAGE 18 & ACTIVE OPEN SPACE (LEVEL 1)
Project Location: TARNEIT
Work Request: 412
Date Sampled: 23/07/2025 08:00
Dates Tested: 23/07/2025 - 28/07/2025
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% Standard Compaction & +/- 3% Moisture Variation
Location: Tarneit
Material: gravelly CLAY, med-high plasticity, brown
Material Source: On site cut to fill

GEOTECHNICAL
C & T Geotechnical (Melbourne) Pty Ltd
47A Assembly Drive Tullamarine VIC 3043
Phone: 0410 530 191
Email: Tim@ctgeotech.com.au

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NATA
WORLD RECOGNISED ACCREDITATION

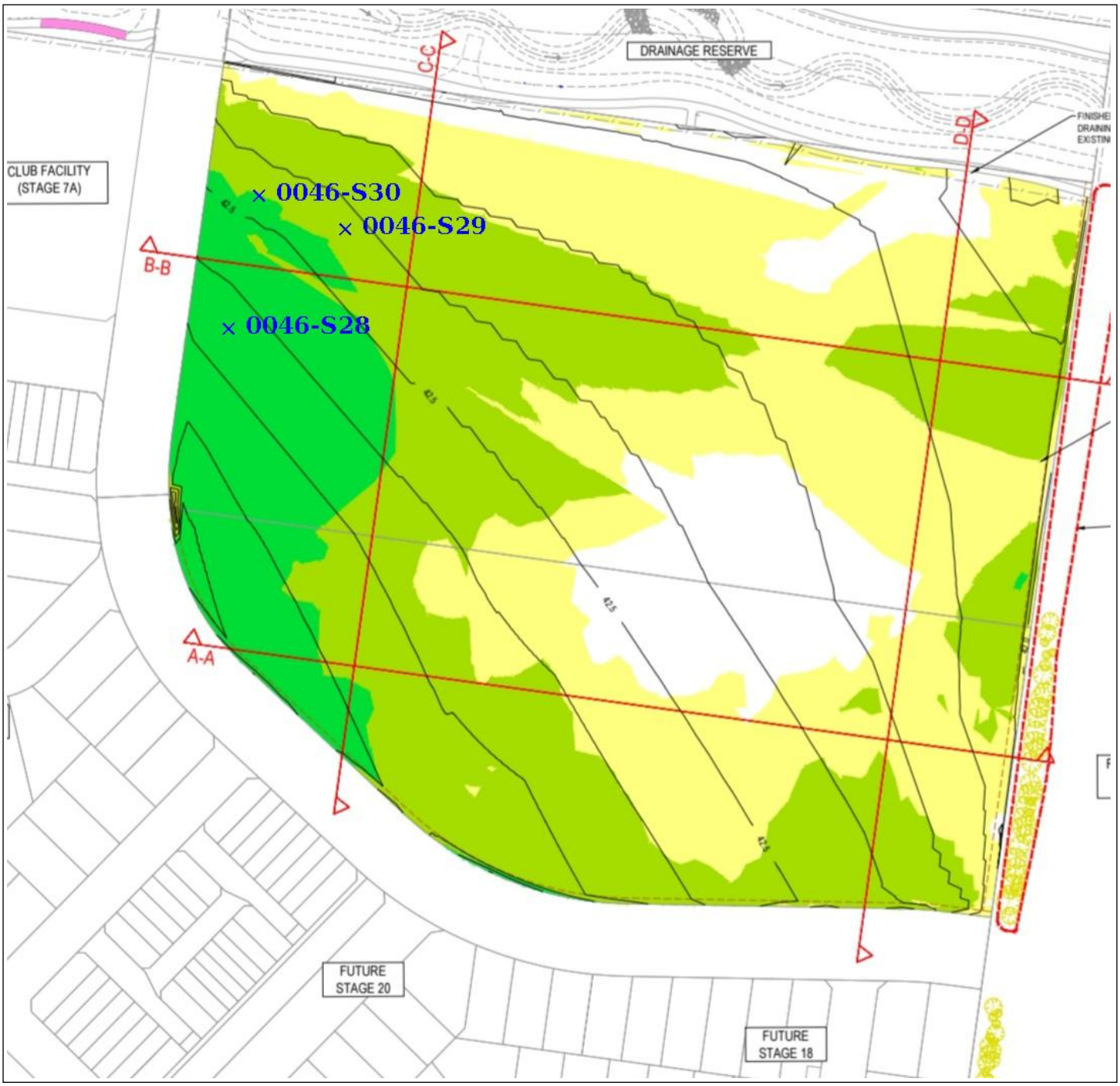
Approved Signatory: Tim Senserrick
Managing Director
NATA Accredited Laboratory Number: 21552

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	0046-S28	0046-S29	0046-S30
Date Tested	23/07/2025	23/07/2025	23/07/2025
Time Tested	12:30	12:40	12:50
Test Request #/Location	Active Open Space	Active Open Space	Active Open Space
Easting	292162	292156	292174
Northing	5808220	5808243	5808259
Layer / Reduced Level	1	1	1
Thickness of Layer (mm)	200	200	200
Soil Description	gravelly CLAY, med-high plasticity, brown	gravelly CLAY, med-high plasticity, brown	gravelly CLAY, med-high plasticity, brown
Test Depth (mm)	175	175	175
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	3	0
Field Wet Density (FWD) t/m^3	1.88	1.86	1.89
Field Moisture Content %	21.0	20.5	20.5
Field Dry Density (FDD) t/m^3	1.56	1.55	1.57
Peak Converted Wet Density t/m^3	1.85	**	1.87
Adjusted Peak Converted Wet Density t/m^3	**	1.89	**
Moisture Variation (Wv) %	2.5	**	2.5
Adjusted Moisture Variation %	**	2.5	**
Hilf Density Ratio (%)	**101.5**	**99.0**	**101.0**
Compaction Method	**Standard**	**Standard**	**Standard**
Remarks	**	**	**

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

Sample Locations Plan

x - approximate test location



Material Test Report

Report Number: **CTG0046-9**
Issue Number: 1
Date Issued: 29/07/2025
Client: WINSLOW CONSTRUCTORS (CAMPBELLFIELD, VIC)
50 Barry Road, Campbellfield Victoria 3061
Contact: Ryan Spicer
Project Number: CTG0046
Project Name: ALAMORA STAGE 18 & ACTIVE OPEN SPACE (LEVEL 1)
Project Location: TARNEIT
Work Request: 416
Date Sampled: 24/07/2025 08:00
Dates Tested: 24/07/2025 - 28/07/2025
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: 95% Standard Compaction & +/- 3% Moisture Variation
Location: Tarneit
Material: gravelly CLAY, med-high plasticity, brown
Material Source: On site cut to fill

GEOTECHNICAL
C & T Geotechnical (Melbourne) Pty Ltd
47A Assembly Drive Tullamarine VIC 3043
Phone: 0410 530 191
Email: Tim@ctgeotech.com.au

Accredited for compliance with ISO/IEC 17025 - Testing

NATA
WORLD RECOGNISED ACCREDITATION

Approved Signatory: Tim Senserrick
Managing Director
NATA Accredited Laboratory Number: 21552

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1			
Sample Number	0046-S31	0046-S32	0046-S33
Date Tested	24/07/2025	24/07/2025	24/07/2025
Time Tested	12:00	12:10	12:20
Test Request #/Location	Active Open Space	Active Open Space	Active Open Space
Easting	292232	292241	292251
Northing	5808175	5808199	5808220
Layer / Reduced Level	1	1	1
Thickness of Layer (mm)	200	200	200
Soil Description	gravelly CLAY, med-high plasticity, brown	gravelly CLAY, med-high plasticity, brown	gravelly CLAY, med-high plasticity, brown
Test Depth (mm)	175	175	175
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	1.99	1.97	1.97
Field Moisture Content %	21.8	22.2	22.6
Field Dry Density (FDD) t/m^3	1.63	1.61	1.61
Peak Converted Wet Density t/m^3	1.84	1.87	1.88
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	2.5	3.0	2.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**108.0**	**105.5**	**105.0**
Compaction Method	**Standard**	**Standard**	**Standard**
Remarks	**	**	**

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

Sample Locations Plan

x - approximate test location