

Reference
No.: 9024-114

LEVEL ONE

SURVEILLANCE

AND INSPECTION REPORT

*Carried Out
By*



PREPARED FOR: -

SYMON BROS. CONSTRUCTIONS PTY LTD



Table of Contents

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Appendices

Appendix A Construction Drawings

Appendix B Daily Field Compaction Summary Results



Client Name: Symon Bros. Constructions Pty Ltd

Project Name: Mambourin Estate Stage 17

Date: 8th of June 2023

Author: Mr. Sam Loza

Reference No.: 9024-114

Revision: 0

Project Manager: Mr. George Dimopoulos

1. Introduction & Scope

At the request of Symon Bros. Constructions Pty Ltd, Geotechnical Laboratories has carried out inspection and testing of the above-mentioned site from the 3rd of August 2022 to the 5th of June 2023 where a residential development is being constructed. Inspection and testing of stripping, material quality and compaction control tests were carried out to comply with the requirements of AS 3798 Appendix B, Level 1.

The following documentation was submitted to Geotechnical Laboratories by Symon Bros. Constructions Pty Ltd and was used to determine compliance of earthworks in conjunction with the requirements of AS 3798 – 2007.

- (1). Bulk Earthworks Plan Drawing No. 309504CG01 Rev. 0
- (2). Bulk Earthworks Plan Drawing No. 309504CG02 Rev. 0

General site works involved the placement of fill, using on-site derived clay, to bring the fill region to the required finished levels as indicated on the faceplan drawings.

2. Site Preparation

Initial site inspections were undertaken on the 25th of July 2022 confirming that selected areas to be filled were completely stripped of topsoil prior to filling. The brown silty topsoils had been stockpiled around the site for later removal off-site.

Proof roll inspections were performed throughout the project duration to ensure no significant soft areas were present prior to filling.

3. Fill Material

It is understood that the fill material used was sourced from on-site excavations, mainly drainage trenches and road boxing. The material had been screened to remove any boulders.



The fill material is best described as a basaltic CLAY, brown, red brown, slightly moist to moist, slightly silty, medium to high plasticity with basalt gravels and cobbles.

The fill material is consistent with the naturally occurring soils for this region.

Source material was deemed a **Suitable Material** in accordance with guidelines set out in AS 3798 - 2007 Section 4.4.

4. Fill Construction Procedure

The following plant (but not always limited to) were engaged in the fill placement process:

- Highway trucks
- Dump trucks
- A watercart
- A sheepsfoot compactor (815)
- Scrapers

The sheepsfoot compactor placed material in horizontal loose layers of approximately 250-300mm. The sheepsfoot compactor also performed compaction of the clay fill operating in a criss-cross pattern.

The moisture condition of the fill was closely monitored, and moisture conditioning procedures were applied to bring the material closer to its Standard Optimum Moisture Content (AS 1289 5.7.1).

5. Compaction Control Testing

Compaction control testing was performed on-site using a Nuclear Densometer in accordance with AS 1289 5.8.1. Laboratory reference densities were determined from material sampled at each test site location using the Hilf Rapid Compaction Method in accordance with AS 1289 5.7.1.

A total of sixty compaction tests were performed on the fill construction. Results are presented in Appendix B of this report.

6. Testing Frequency

Testing frequencies were in accordance with **AS 3798 - 2007 Table 8.1** for **Large Scale Operations**.

Acceptance of fill layers for compaction was based on the requirements of **AS 3798 - 2007 Table 5.1 Item 1. Residential**.

As a result, the compliance criteria adopted by Geotechnical Laboratories was a hilf density ratio not less than 95 percent of the maximum hilf density value as determined by the Standard Hilf Rapid Compaction Method in accordance with AS 1289 5.7.1.



Test results indicate that the above-mentioned requirements have been successfully achieved.

No moisture criteria was specified.

7. Statement of Compliance

So far as can be determined, Symon Bros. Constructions Pty Ltd has satisfactorily complied with the compaction and construction processes required for the structural filling of this site. As such, structural filling placed on this site by Symon Bros. Constructions Pty Ltd from the 3rd of August 2022 to the 5th of June 2023 can be categorised as CONTROLLED FILL in accordance with AS 2870-2011.

8. Limitations and Liability of this Report

This report has been produced for and remains the property of Symon Bros. Constructions Pty Ltd.

The release of this report to a third party will only occur if Geotechnical Laboratories Pty Ltd has received, in writing, the authority to do so by our client.

Geotechnical Laboratories Pty Ltd will not engage in any third-party communication regarding this report.

Where information has been supplied by the client or third party, the assumption is made that this is correct. Geotechnical Laboratories Pty Ltd will not be held responsible for any inaccuracies supplied.

Test results and controlled fill compliance relates only to fill placed by Symon Bros. Constructions Pty Ltd and for earthworks completed at the time of inspection and testing. Any previous or subsequent earthworks will require a separate evaluation.

For & on behalf of
Geotechnical Laboratories Pty Ltd.

Sam Loza
Laboratory Manager.



LEVEL ONE
SURVEILLANCE
AND INSPECTION REPORT

APPENDIX A

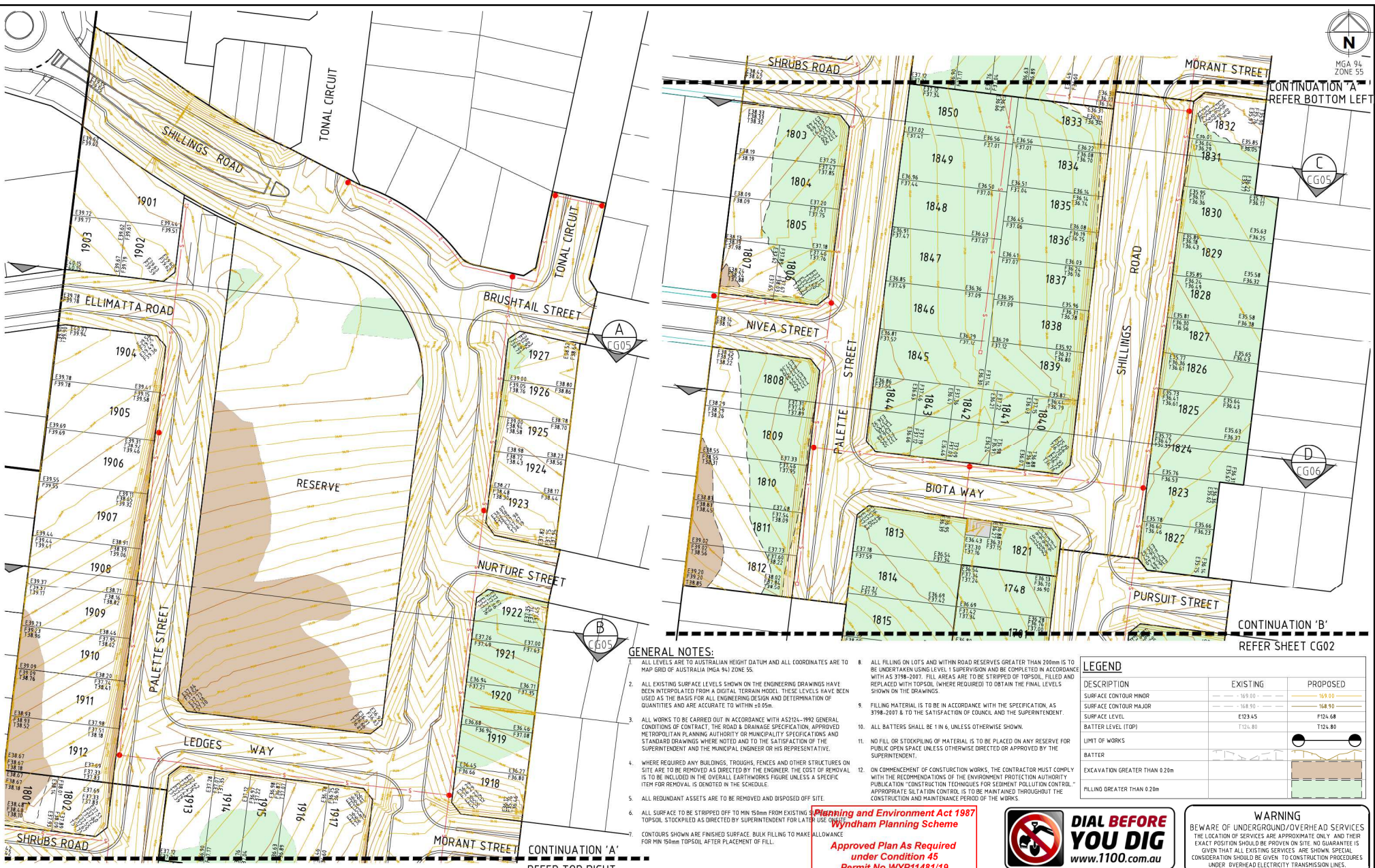


MGA 94
ZONE 55

CONTINUATION 'A'
REFER BOTTOM LEFT



CONTINUATION 'B'
REFER SHEET CG02



GENERAL NOTES:

- ALL LEVELS ARE TO AUSTRALIAN HEIGHT DATUM AND ALL COORDINATES ARE TO MAP GRID OF AUSTRALIA (MGA 94) ZONE 55.
- ALL EXISTING SURFACE LEVELS SHOWN ON THE ENGINEERING DRAWINGS HAVE BEEN INTERPOLATED FROM A DIGITAL TERRAIN MODEL. THESE LEVELS HAVE BEEN USED AS THE BASIS FOR ALL ENGINEERING DESIGN AND DETERMINATION OF QUANTITIES AND ARE ACCURATE TO WITHIN ±0.05M.
- ALL WORKS TO BE CARRIED OUT IN ACCORDANCE WITH AS2124-1992 GENERAL CONDITIONS OF CONTRACT, THE ROAD & DRAINAGE SPECIFICATION, APPROVED METROPOLITAN PLANNING AUTHORITY OR MUNICIPALITY SPECIFICATIONS AND STANDARD DRAWINGS WHERE NOTED AND TO THE SATISFACTION OF THE SUPERINTENDENT AND THE MUNICIPAL ENGINEER OR HIS REPRESENTATIVE.
- WHERE REQUIRED ANY BUILDINGS, TRENCHES, FENCES AND OTHER STRUCTURES ON SITE ARE TO BE REMOVED AS DIRECTED BY THE ENGINEER. THE COST OF REMOVAL IS TO BE INCLUDED IN THE OVERALL EARTHWORKS FIGURE UNLESS A SPECIFIC ITEM FOR REMOVAL IS DETECTED IN THE SCHEDULE.
- ALL REDUNDANT ASSETS ARE TO BE REMOVED AND DISPOSED OFF SITE.
- ALL SURFACE TO BE STRIPPED OFF TO MIN 150mm FROM EXISTING SURFACE TOPOSOIL. STOCKPILED AS DIRECTED BY SUPERINTENDENT FOR LATER USE.
- CONTOURS SHOWN ARE FINISHED SURFACE. BULK FILLING TO MAKE ALLOWANCE FOR MIN 150mm TOPOSOIL AFTER PLACEMENT OF FILL.
- ALL FILLING ON LOTS AND WITHIN ROAD RESERVES GREATER THAN 200mm IS TO BE UNDERTAKEN USING LEVEL 1 SUPERVISION AND BE COMPLETED IN ACCORDANCE WITH AS 3798-2007. FILL AREAS ARE TO BE STRIPPED OF TOPOSOIL, FILLED AND REPLACED WITH TOPOSOIL (WHERE REQUIRED) TO OBTAIN THE FINAL LEVELS SHOWN ON THE DRAWINGS.
- FILLING MATERIAL IS TO BE IN ACCORDANCE WITH THE SPECIFICATION, AS 3798-2007 & TO THE SATISFACTION OF COUNCIL AND THE SUPERINTENDENT.
- ALL BATTERS SHALL BE 1 IN 6 UNLESS OTHERWISE SHOWN.
- NO FILL OR STOCKPIILING OF MATERIAL IS TO BE PLACED ON ANY RESERVE FOR PUBLIC OPEN SPACE UNLESS OTHERWISE DIRECTED OR APPROVED BY THE SUPERINTENDENT.
- ON COMMENCEMENT OF CONSTRUCTION WORKS, THE CONTRACTOR MUST COMPLY WITH THE RECOMMENDATIONS OF THE ENVIRONMENT PROTECTION AUTHORITY PUBLICATION "CONSTRUCTION TECHNIQUES FOR SEDIMENT POLLUTION CONTROL" APPROPRIATE SALTA TION CONTROL IS TO BE MAINTAINED THROUGHOUT THE CONSTRUCTION AND MAINTENANCE PERIOD OF THE WORKS.

Planning and Environment Act 1987
Wyndham Planning Scheme
Approved Plan As Required
under Condition 45
Permit No WYP11481/19
Date 27/06/2022

LEGEND

DESCRIPTION	EXISTING	PROPOSED
SURFACE CONTOUR MINOR	- 105.00 -	105.00
SURFACE CONTOUR MAJOR	- 108.00 -	108.00
SURFACE LEVEL	1123.45	1124.68
BATTER LEVEL (TOP)	1124.80	1124.80
LIMIT OF WORKS		
BATTER		
EXCAVATION GREATER THAN 0.20m		
FILLING GREATER THAN 0.20m		



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WARNING
BEWARE OF UNDERGROUND/OVERHEAD SERVICES
THE LOCATION OF SERVICES ARE APPROXIMATE ONLY, AND THEIR EXACT POSITION SHOULD BE PROVIDED ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN. SPECIAL CONSIDERATION SHOULD BE GIVEN TO CONSTRUCTION PROCEDURES UNDER OVERHEAD ELECTRICITY TRANSMISSION LINES.

Rev	Amendments	Approved	Date
D	ISSUED FOR CONSTRUCTION	Mi R	24/05/22
A	PRELIMINARY ISSUE	Mi R	04/04/22



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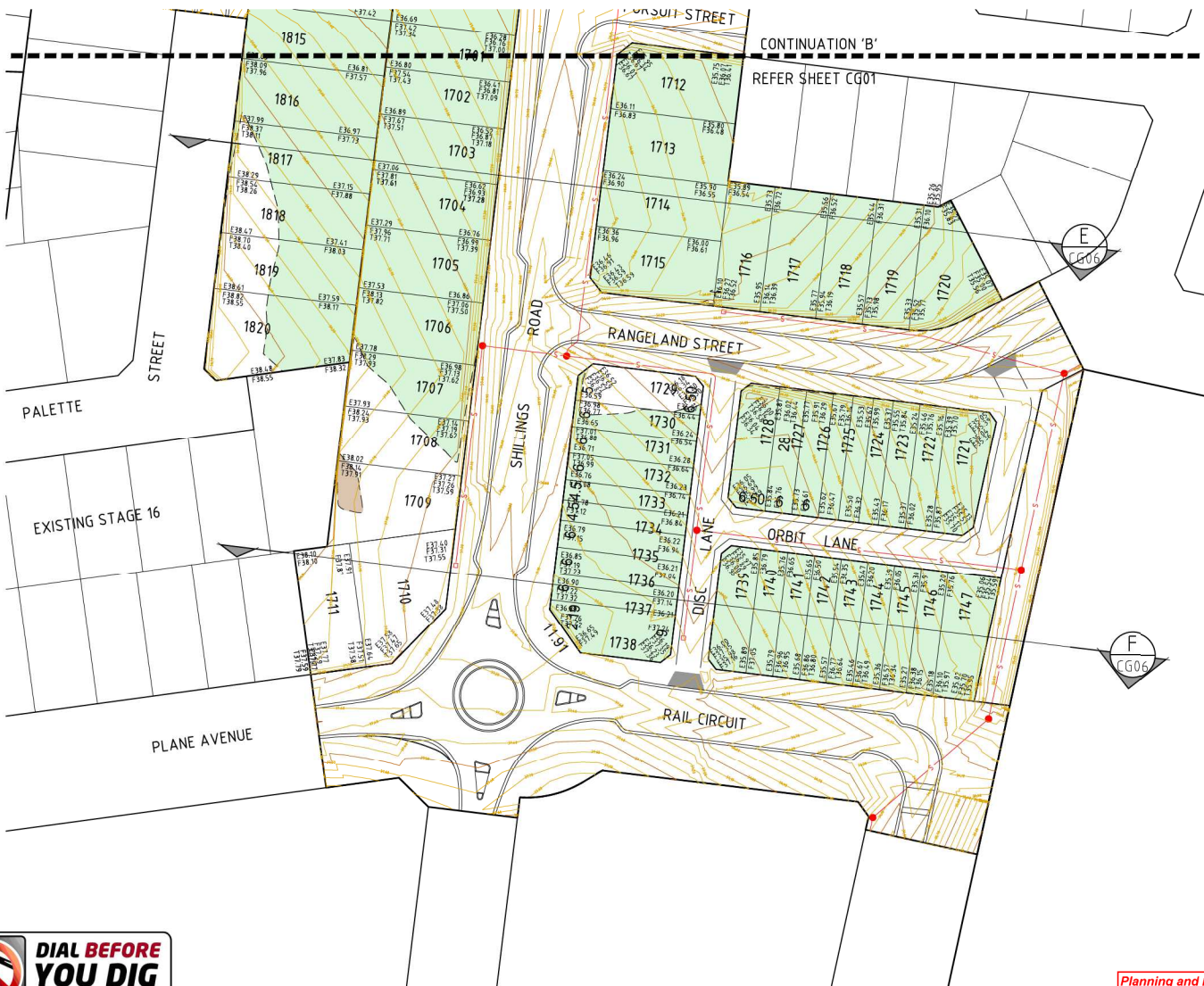
L6 414 LA TROBE STREET PO BOX 16084 MELBOURNE
VICTORIA 3007 AUSTRALIA T 61 3 9993 7888
spiire.com.au ABN 55 050 029 635

Designed
K. FEARN-WANNAN
Authorised
M. RANJANAN

Checked
G. KOHLMAN
Date
04/04/22

MAMBOURIN
STAGE 17, 18 & 19
BULK EARTHWORKS PLAN
FINISHED SURFACE CONTOURS SHEET 1 OF 2
WYNDHAM CITY COUNCIL
FRASERS PROPERTY LTD

CONSTRUCTION 309504CG01



DESCRIPTION	EXISTING	PROPOSED
SURFACE CONTOUR MINOR	- 165.00 -	165.00
SURFACE CONTOUR MAJOR	- 168.00 -	168.00
SURFACE LEVEL	E123.45	F124.68
BATTER LEVEL (TOP)	1124.80	1124.80
LIMIT OF WORKS		
BATTER		
EXCAVATION GREATER THAN 0.20m		
FILLING GREATER THAN 0.20m		

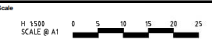
- GFNFRAI NOTES:**
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 - ALL WORKS TO BE CARRIED OUT IN ACCORDANCE WITH AS1204-1992 GENERAL CONDITIONS OF CONTRACT, THE ROAD & DRAINAGE SPECIFICATION, APPROVED METROPOLITAN PLANNING AUTHORITY OR MUNICIPALITY SPECIFICATIONS AND STANDARD DRAWINGS WHERE NOTED AND TO THE SATISFACTION OF THE SUPERINTENDENT AND THE MUNICIPAL ENGINEER OR HIS REPRESENTATIVE.
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WARNING
BEWARE OF UNDERGROUND/OVERHEAD SERVICES
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Planning and Environment Act 1987
Wyndham Planning Scheme

Approved Plan As Required
under Condition 45
Permit No WYP11481/19
Date 27/05/2022



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Designed
K. FEARN-WANNAN
Authorised
M. RANJANAN

Mambourin
Checked
G. KOHLMAN
Date
04/04/22

MAMBOURIN
STAGE 17, 18 & 19
BULK EARTHWORKS PLAN
FINISHED SURFACE CONTOURS SHEET 2 OF 2
WYNDHAM CITY COUNCIL
FRASERS PROPERTY LTD
Dwg No
CONSTRUCTION 309504CG02
Rev
0

Rev	Amendments	Approved	Date
D	ISSUED FOR CONSTRUCTION	Mi R	24/05/22
A	PRELIMINARY ISSUE	Mi R	04/04/22

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 Plot Date: 04/04/22 10:22:27
 File Name: 309504CG02_Bulk Earthworks - Proposed - D05 - 04/04/22.dwg



LEVEL ONE
SURVEILLANCE
AND INSPECTION REPORT

APPENDIX B



GEOTECHNICAL LABORATORIES

ACN 102 571 077

14 Ravenhall Way, Ravenhall, Vic 3023

Email: info@geolab.com.au PH: (03) 8361-9140

DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 9024/002

LOCATION: SYMON BROS - Mambourin, Stage 17

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m ³)	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m ³)	STANDARD OPTIMUM MOISTURE CONTENT (%)	PROBE DEPTH SETTING (mm)	VARIATION FROM OPTIMUM MOISTURE CONTENT (%)	MOISTURE RATIO (%)	WET +19mm (%)	WET +37.5mm (%)	APPROX. DEPTH BELOW FINISH LEVEL (mm)	
3/08/22	1	<i>Refer to #9024/003 for approx. test site locations.</i>	1.91	21.0	100.0	1.91	24.0	175	3.0 Drier	88.0	0	0	1000	
3/08/22	2		2.01	29.5	102.0	1.97	32.0	175	2.5 Drier	92.0	0	0	1000	
3/08/22	3		1.93	20.5	97.5	✱ 1.98	22.0	175	1.5 Drier	92.5	5	0	1200	
-	-		-	-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-	-

NOTES: Clayey Fill Ex. Onsite

Test sites located - Geolab Procedure 4, Part 4.4.

Compaction specimens sampled after compaction.

Start Time: 10:00am Finish Time: 10:50am

A Hilf Rapid Compaction test was carried out on a sample taken from each Field Density location to obtain the Compaction Parameters tabulated on this Report.

Moisture Content: AS 1289 2.1.1

Compaction Test: AS 1289 5.7.1

Soil Layer thickness: 200mm

Hilf Density Ratio and Hilf Moisture Variation ,Hilf Adjusted (APCWD) & Peak (PCWD) Converted Wet Density AS 1289 5.7.1

Field Density, Nuclear Gauge: AS 1289 5.8.1

Materials Sampled : AS 1289 1.2.1 Clause 6.4(b)

✱ Indicates APCWD

❖



Accredited for compliance with ISO/IEC

17025 - Testing

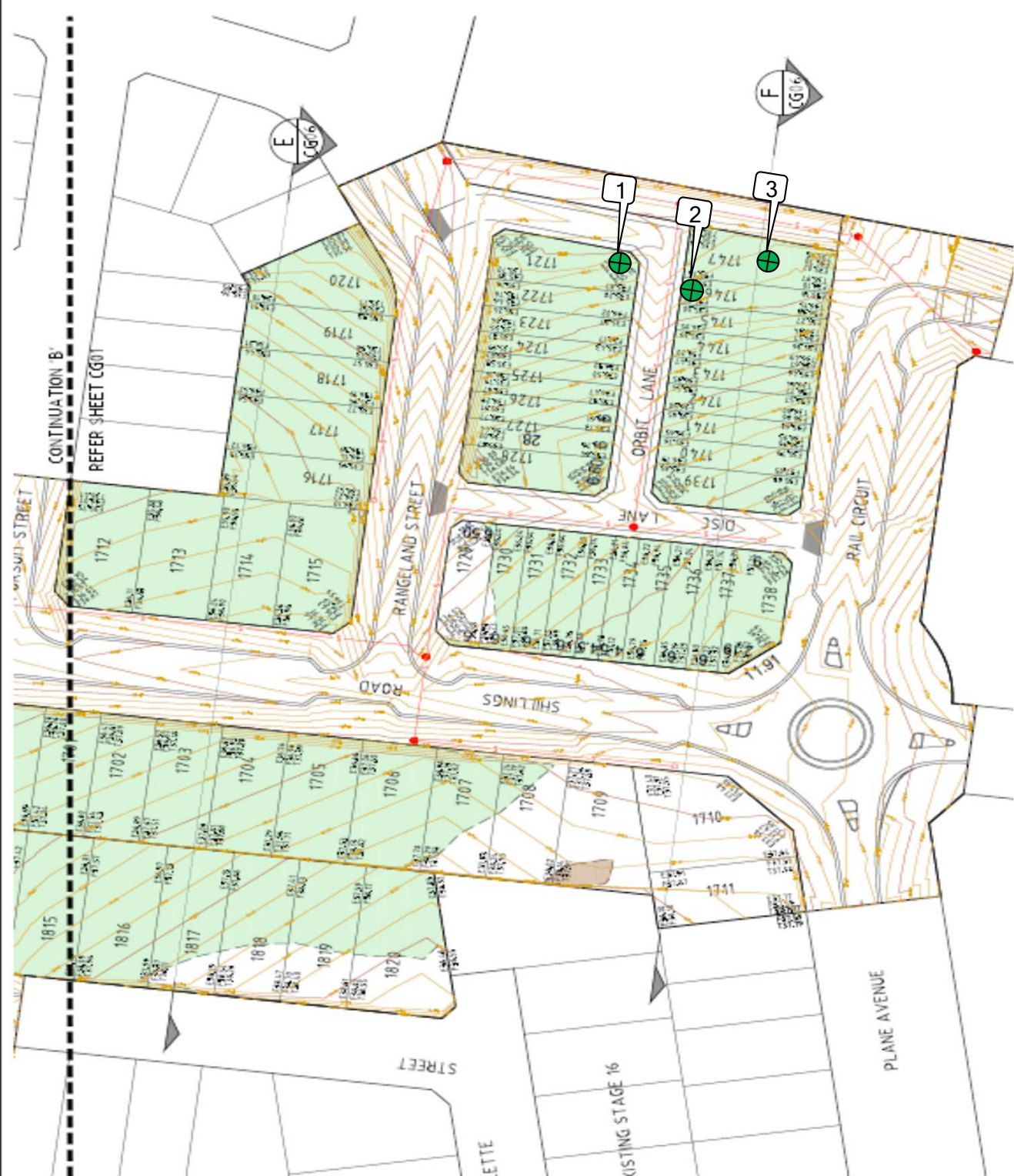
NATA Accredited Laboratory Number 14561

MICK CROWE
(Approved Signatory)

Issue Date: 9/8/2022

LEG	DESC	APP	REF	DATE	UNIT	DATE	BY	FILE
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GE	1	2	3	4	5	6	7	8	9	10	11	12
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GEOTECHNICAL LABORATORIES

GEOTECHNICAL LABORATORIES
ACN 102 571 077

14 Ravenhall Way, Ravenhall, Vic 3023
 Email: info@geolab.com.au PH: (03) 8361-9140

CLIENT: SYMON BROS

LOCATION: Mambourin, Stage 17

Sketch indicating compaction test locations

DATE: /0/2022

OPERATOR:

SCALE: NTS

JOB No.: 9024/00

CHECKED:

FIGURE No: -



GEOTECHNICAL LABORATORIES
 ACN 102 571 077
 14 Ravenhall Way, Ravenhall, Vic 3023
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DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 9024/004

LOCATION: SYMON BROS - Mambourin, Stage 17 & 18

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m ³)	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m ³)	STANDARD OPTIMUM MOISTURE CONTENT (%)	PROBE DEPTH SETTING (mm)	VARIATION FROM OPTIMUM MOISTURE CONTENT (%)	MOISTURE RATIO (%)	WET +19mm (%)	WET +37.5mm (%)	APPROX. DEPTH BELOW FINISH LEVEL (mm)	
4/08/22	4	<i>Refer to #9024/005 for approx. test site locations.</i>	1.97	22.0	104.0	✘ 1.90	24.0	175	2.0 Drier	91.0	4	0	600	
4/08/22	5		2.06	24.5	104.5	✘ 1.97	26.0	175	1.5 Drier	93.5	13	0	600	
4/08/22	6		1.96	24.5	103.5	1.90	26.0	175	1.5 Drier	93.5	0	0	500	
-	-		-	-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-	-

NOTES: Clayey Fill Ex. Onsite

Test sites located - Geolab Procedure 4, Part 4.4.

Compaction specimens sampled after compaction.

Start Time: 1:25pm Finish Time: 2:15pm

A Hilf Rapid Compaction test was carried out on a sample taken from each Field Density location to obtain the Compaction Parameters tabulated on this Report.

Moisture Content: AS 1289 2.1.1

Compaction Test: AS 1289 5.7.1

Soil Layer thickness: 200mm

Hilf Density Ratio and Hilf Moisture Variation ,Hilf Adjusted (APCWD) & Peak (PCWD) Converted Wet Density AS 1289 5.7.1

Field Density, Nuclear Gauge: AS 1289 5.8.1

Materials Sampled : AS 1289 1.2.1 Clause 6.4(b)

✘ Indicates APCWD



Accredited for compliance with ISO/IEC 17025 - Testing

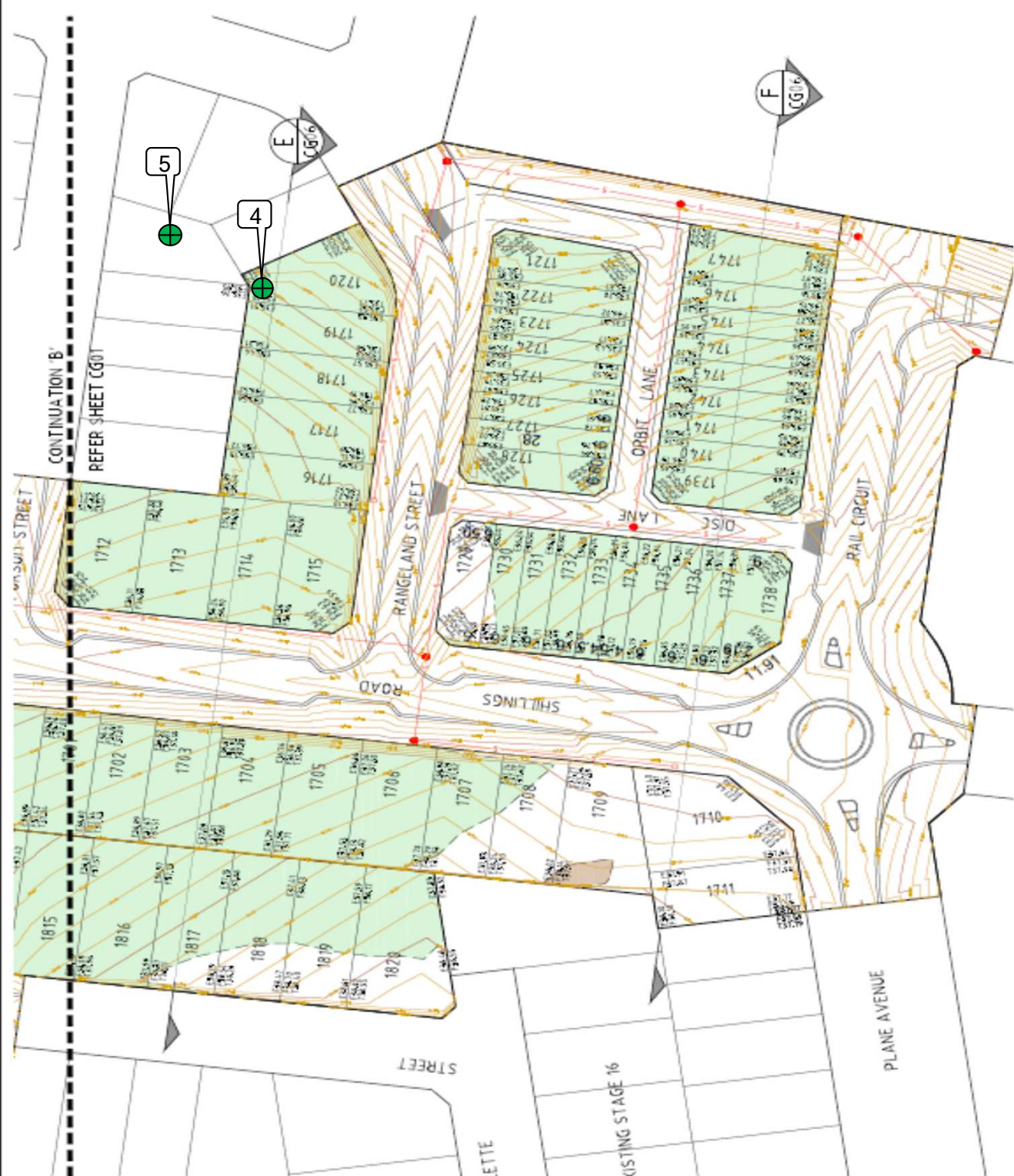
NATA Accredited Laboratory Number 14561

MICK CROWE
(Approved Signatory)

Issue Date: 10/8/2022

LEG	DESC	APP	REF	DATE	UNIT	SCALE	FILE
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GE	1	2	3	4	5	6	7	8	9	10	11
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ACN 102 571 077

14 Ravenhall Way, Ravenhall, Vic 3023
 Email: info@geolab.com.au PH: (03) 8361-9140

CLIENT: SYMON BROS

LOCATION: Mambourin, Stage 17 & 18

Sketch indicating compaction test locations

DATE: 4/08/2022

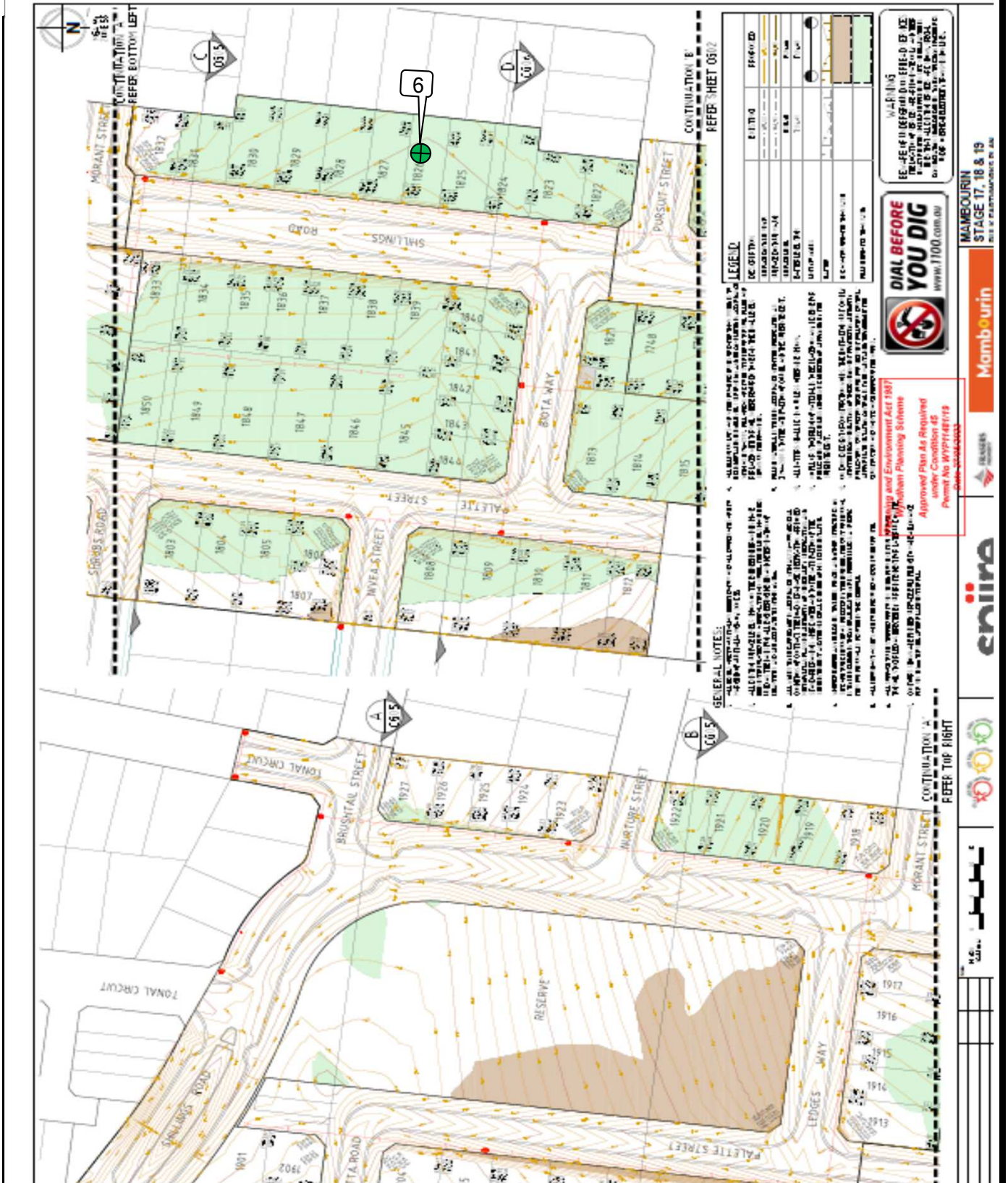
OPERATOR: BM

SCALE: NTS

JOB No.: 9024/005

CHECKED: KK

FIGURE No: 1 of 2



NO	DESCRIPTION	DATE	BY
1	ISSUED FOR TENDERS	20/08/2022	B.M.
2	ISSUED FOR TENDERS	20/08/2022	B.M.
3	ISSUED FOR TENDERS	20/08/2022	B.M.
4	ISSUED FOR TENDERS	20/08/2022	B.M.
5	ISSUED FOR TENDERS	20/08/2022	B.M.

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WARNING
SEEK PROFESSIONAL ADVICE BEFORE ANY WORK BEGINS. THIS PLAN IS FOR INFORMATION ONLY AND DOES NOT REPRESENT A GUARANTEE OF ACCURACY. THE CLIENT ACCEPTS FULL RESPONSIBILITY FOR OBTAINING NECESSARY PERMITS AND APPROVALS.

GENERAL NOTES:

- 1. ALL DIMENSIONS UNLESS OTHERWISE SPECIFIED ARE IN METERS.
- 2. ALL DIMENSIONS TO FACE UNLESS SPECIFICALLY NOTED OTHERWISE.
- 3. ALL DIMENSIONS TO CENTERLINE UNLESS SPECIFICALLY NOTED OTHERWISE.
- 4. ALL DIMENSIONS TO FACE UNLESS SPECIFICALLY NOTED OTHERWISE.
- 5. ALL DIMENSIONS TO CENTERLINE UNLESS SPECIFICALLY NOTED OTHERWISE.
- 6. ALL DIMENSIONS TO FACE UNLESS SPECIFICALLY NOTED OTHERWISE.
- 7. ALL DIMENSIONS TO CENTERLINE UNLESS SPECIFICALLY NOTED OTHERWISE.
- 8. ALL DIMENSIONS TO FACE UNLESS SPECIFICALLY NOTED OTHERWISE.
- 9. ALL DIMENSIONS TO CENTERLINE UNLESS SPECIFICALLY NOTED OTHERWISE.
- 10. ALL DIMENSIONS TO FACE UNLESS SPECIFICALLY NOTED OTHERWISE.
- 11. ALL DIMENSIONS TO CENTERLINE UNLESS SPECIFICALLY NOTED OTHERWISE.
- 12. ALL DIMENSIONS TO FACE UNLESS SPECIFICALLY NOTED OTHERWISE.
- 13. ALL DIMENSIONS TO CENTERLINE UNLESS SPECIFICALLY NOTED OTHERWISE.
- 14. ALL DIMENSIONS TO FACE UNLESS SPECIFICALLY NOTED OTHERWISE.
- 15. ALL DIMENSIONS TO CENTERLINE UNLESS SPECIFICALLY NOTED OTHERWISE.
- 16. ALL DIMENSIONS TO FACE UNLESS SPECIFICALLY NOTED OTHERWISE.
- 17. ALL DIMENSIONS TO CENTERLINE UNLESS SPECIFICALLY NOTED OTHERWISE.
- 18. ALL DIMENSIONS TO FACE UNLESS SPECIFICALLY NOTED OTHERWISE.
- 19. ALL DIMENSIONS TO CENTERLINE UNLESS SPECIFICALLY NOTED OTHERWISE.
- 20. ALL DIMENSIONS TO FACE UNLESS SPECIFICALLY NOTED OTHERWISE.



GEOTECHNICAL LABORATORIES

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ACN 102 571 077

14 Ravenhall Way, Ravenhall, Vic 3023
Email: info@geolab.com.au PH: (03) 8361-9140

CLIENT: SYMON BROS

LOCATION: Mambourin, Stage 17 & 18

Sketch indicating compaction test locations

DATE: 4/08/2022

JOB No.: 9024/005

OPERATOR: BM

CHECKED: KK

SCALE: NTS

FIGURE No: 2 of 2

MAMBOURIN STAGE 17, 18 & 19
PLANS & PARTNERSHIP BY AIA

mambourin

chira





GEOTECHNICAL LABORATORIES

ACN 102 571 077

14 Ravenhall Way, Ravenhall, Vic 3023

Email: info@geolab.com.au PH: (03) 8361-9140

DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 9024/006

LOCATION: SYMON BROS - Mambourin, Stage 17

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m ³)	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m ³)	STANDARD OPTIMUM MOISTURE CONTENT (%)	PROBE DEPTH SETTING (mm)	VARIATION FROM OPTIMUM MOISTURE CONTENT (%)	MOISTURE RATIO (%)	WET +19mm (%)	WET +37.5mm (%)	APPROX. DEPTH BELOW FINISH LEVEL (mm)	
5/08/22	7	<i>Refer to #9024/007 for approx. test site locations.</i>	1.96	18.5	103.0	1.91	21.5	175	3.5 Drier	84.5	0	0	1000	
5/08/22	8		1.97	18.5	103.0	1.92	21.0	175	2.5 Drier	87.5	0	0	1000	
5/08/22	9		2.00	19.5	104.5	1.91	22.5	175	3.0 Drier	86.5	0	0	1000	
5/08/22	10		1.93	18.5	99.0	✱ 1.95	22.0	175	3.5 Drier	83.5	4	0	1000	
-	-		-	-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-	-

NOTES: Clayey Fill Ex. Onsite

Test sites located - Geolab Procedure 4, Part 4.4.

Compaction specimens sampled after compaction.

Start Time: 1:10pm Finish Time: 1:45pm

A Hilf Rapid Compaction test was carried out on a sample taken from each Field Density location to obtain the Compaction Parameters tabulated on this Report.

Moisture Content: AS 1289 2.1.1

Compaction Test: AS 1289 5.7.1

Soil Layer thickness: 200mm

Hilf Density Ratio and Hilf Moisture Variation, Hilf Adjusted (APCWD) & Peak (PCWD) Converted Wet Density AS 1289 5.7.1

Field Density, Nuclear Gauge: AS 1289 5.8.1

Materials Sampled : AS 1289 1.2.1 Clause 6.4(b)

✱ Indicates APCWD



Accredited for compliance with ISO/IEC
17025 - Testing

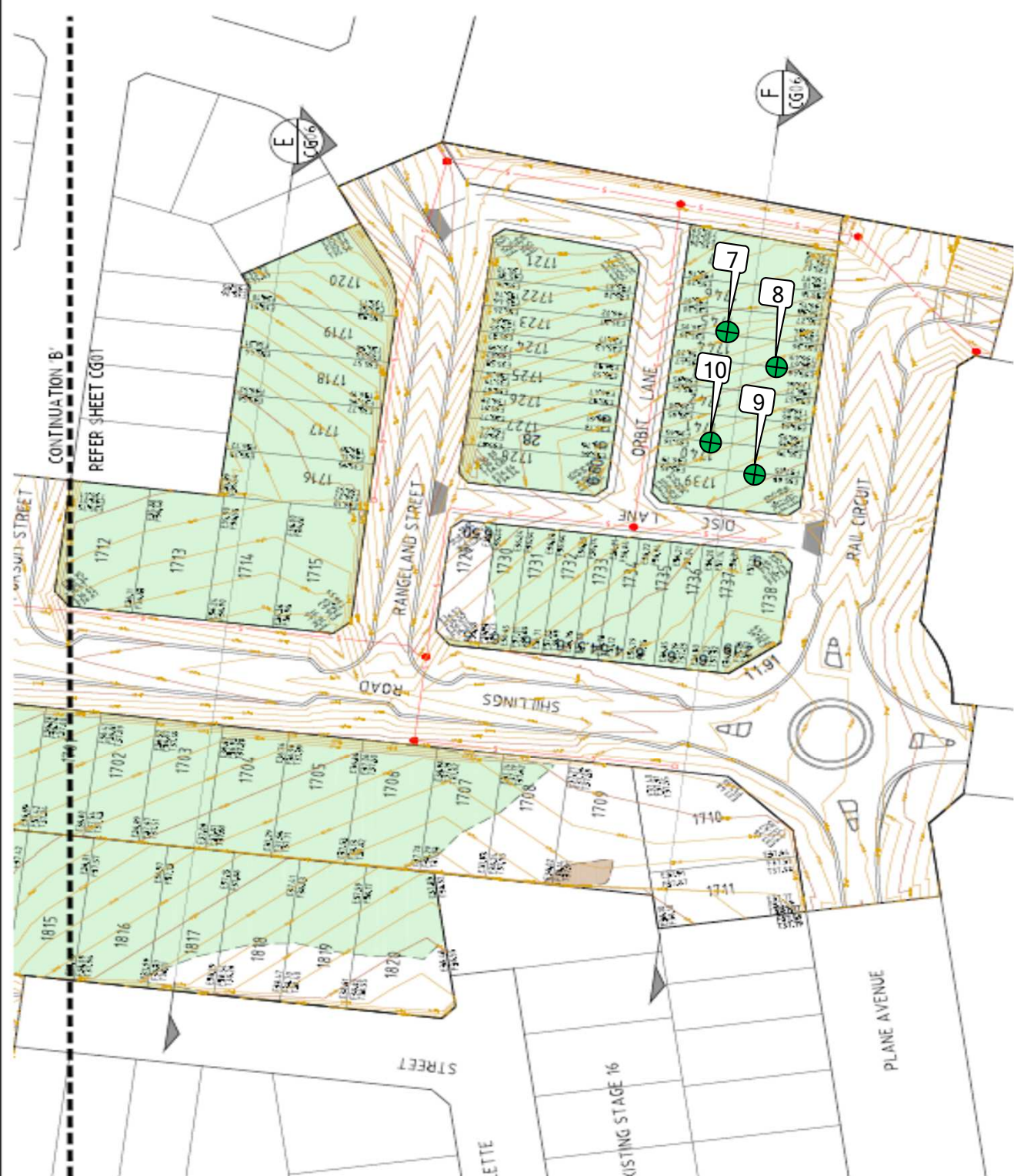
NATA Accredited Laboratory Number 14561

MICK CROWE
(Approved Signatory)

Issue Date: 12/8/2022

LEG	DESC	APP	DIFF	DATE	UNIT	DATE	SCALE	FILE
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GE	1	2	3	4	5	6	7	8	9	10
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GEOTECHNICAL LABORATORIES

GEOTECHNICAL LABORATORIES
ACN 102 571 077

14 Ravenhall Way, Ravenhall, Vic 3023
 Email: info@geolab.com.au PH: (03) 8361-9140

CLIENT: SYMON BROS

LOCATION: Mambourin, Stage 17

Sketch indicating compaction test locations

DATE: 5/08/2022

OPERATOR: BM

SCALE: NTS

JOB No.: 9024/007

CHECKED: KK

FIGURE No: -



GEOTECHNICAL LABORATORIES
 ACN 102 571 077
 14 Ravenhall Way, Ravenhall, Vic 3023
 Email: info@geolab.com.au PH: (03) 8361-9140

DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 9024/008

LOCATION: SYMON BROS - Mambourin, Stage 17

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m ³)	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m ³)	STANDARD OPTIMUM MOISTURE CONTENT (%)	PROBE DEPTH SETTING (mm)	VARIATION FROM OPTIMUM MOISTURE CONTENT (%)	MOISTURE RATIO (%)	WET +19mm (%)	WET +37.5mm (%)	APPROX. DEPTH BELOW FINISH LEVEL (mm)	
8/08/22	11	<i>Refer to #9024/009 for approx. test site locations.</i>	1.99	20.0	104.5	1.90	23.0	175	3.0 Drier	86.5	0	0	800	
8/08/22	12		1.95	20.5	100.5	1.94	23.5	175	2.5 Drier	88.5	0	0	800	
8/08/22	13		1.94	21.0	98.5	✱ 1.97	22.5	175	1.0 Drier	94.5	8	0	800	
8/08/22	14		1.93	21.0	99.5	1.94	23.0	175	2.0 Drier	90.5	0	0	800	
-	-		-	-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-	-

NOTES: Clayey Fill Ex. Onsite

Test sites located - Geolab Procedure 4, Part 4.4.

Compaction specimens sampled after compaction.

Start Time: 2:00pm Finish Time: 2:30pm

A Hilf Rapid Compaction test was carried out on a sample taken from each Field Density location to obtain the Compaction Parameters tabulated on this Report.

Moisture Content: AS 1289 2.1.1

Compaction Test: AS 1289 5.7.1

Soil Layer thickness: 200mm

Hilf Density Ratio and Hilf Moisture Variation ,Hilf Adjusted (APCWD) & Peak (PCWD) Converted Wet Density AS 1289 5.7.1

Field Density, Nuclear Gauge: AS 1289 5.8.1

Materials Sampled : AS 1289 1.2.1 Clause 6.4(b)

✱ Indicates APCWD

❖

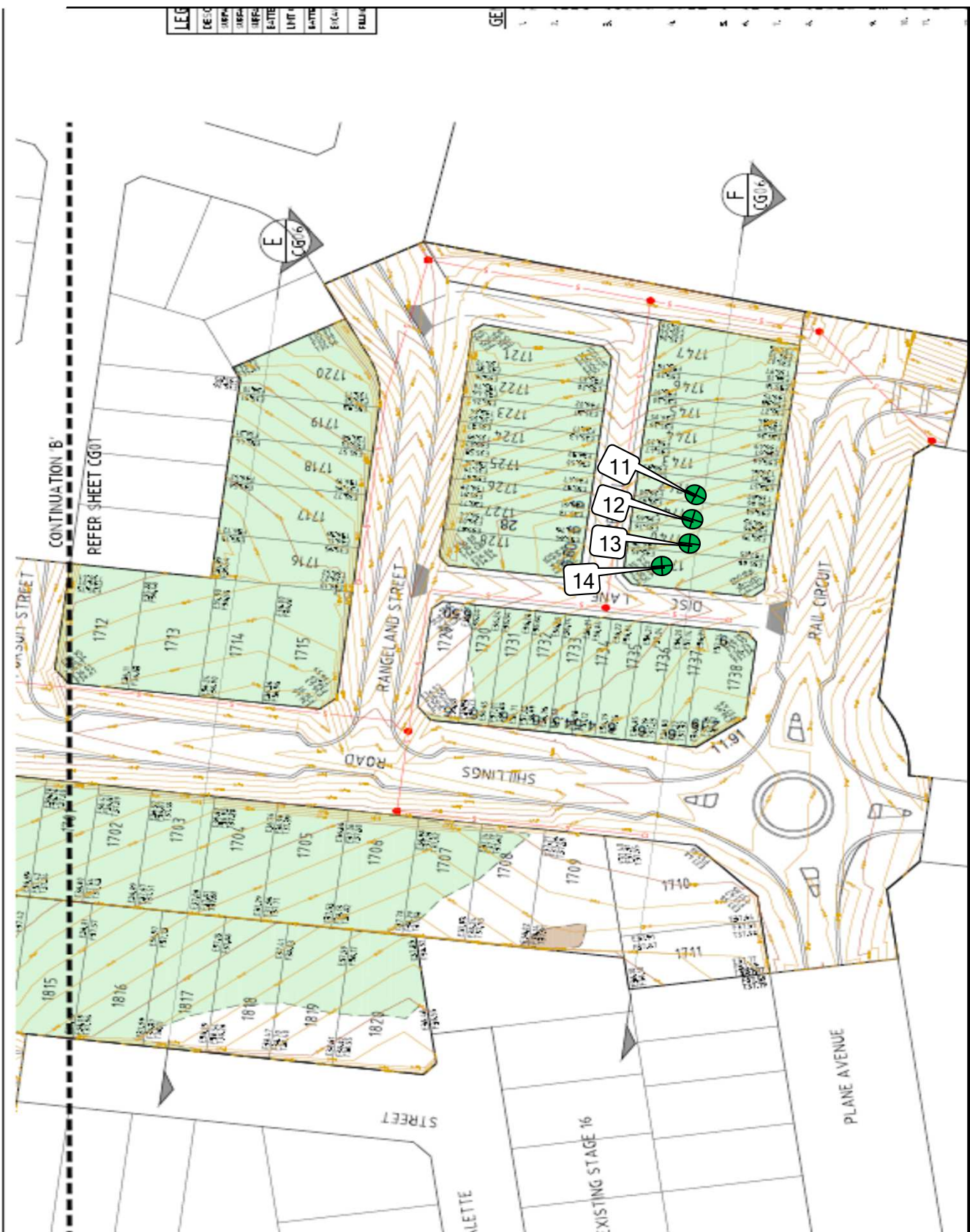


*Accredited for compliance with ISO/IEC
17025 - Testing*

NATA Accredited Laboratory Number 14561

MICK CROWE
(Approved Signatory)

Issue Date: 12/8/2022



GEOTECHNICAL LABORATORIES

GEOTECHNICAL LABORATORIES
ACN 102 571 077

14 Ravenhall Way, Ravenhall, Vic 3023
 Email: info@geolab.com.au PH: (03) 8361-9140

CLIENT: SYMON BROS

LOCATION: Mambourin, Stage 17

Sketch indicating compaction test locations

DATE: 8/08/2022

OPERATOR: PS

SCALE: NTS

JOB No.: 9024/009

CHECKED: KK

FIGURE No: -



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 ACN 102 571 077
 14 Ravenhall Way, Ravenhall, Vic 3023
 Email: info@geolab.com.au PH: (03) 8361-9140

DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 9024/010

LOCATION: SYMON BROS - Mambourin, Stage 17

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m ³)	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m ³)	STANDARD OPTIMUM MOISTURE CONTENT (%)	PROBE DEPTH SETTING (mm)	VARIATION FROM OPTIMUM MOISTURE CONTENT (%)	MOISTURE RATIO (%)	WET +19mm (%)	WET +37.5mm (%)	APPROX. DEPTH BELOW FINISH LEVEL (mm)	
9/08/22	15	<i>Refer to #9024/011 for approx. test site locations.</i>	2.07	21.5	106.5	1.94	24.0	175	2.5 Drier	90.0	0	0	600	
9/08/22	16		1.90	24.0	95.5	1.98	24.0	175	0.0 Drier	100.0	0	0	600	
9/08/22	17		2.14	22.5	107.5	✕ 1.99	23.0	175	0.5 Drier	97.0	4	0	700	
9/08/22	18		2.00	20.5	106.5	1.87	24.0	175	3.5 Drier	85.0	0	0	800	
-	-		-	-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-	-

NOTES: Clayey Fill Ex. Onsite

Test sites located - Geolab Procedure 4, Part 4.4.

Compaction specimens sampled after compaction.

Start Time: 2:15pm Finish Time: 2:50pm

A Hilf Rapid Compaction test was carried out on a sample taken from each Field Density location to obtain the Compaction Parameters tabulated on this Report.

Moisture Content: AS 1289 2.1.1

Compaction Test: AS 1289 5.7.1

Soil Layer thickness: 200mm

Hilf Density Ratio and Hilf Moisture Variation, Hilf Adjusted (APCWD) & Peak (PCWD) Converted Wet Density AS 1289 5.7.1

Field Density, Nuclear Gauge: AS 1289 5.8.1

Materials Sampled : AS 1289 1.2.1 Clause 6.4(b)

✕ Indicates APCWD

❖



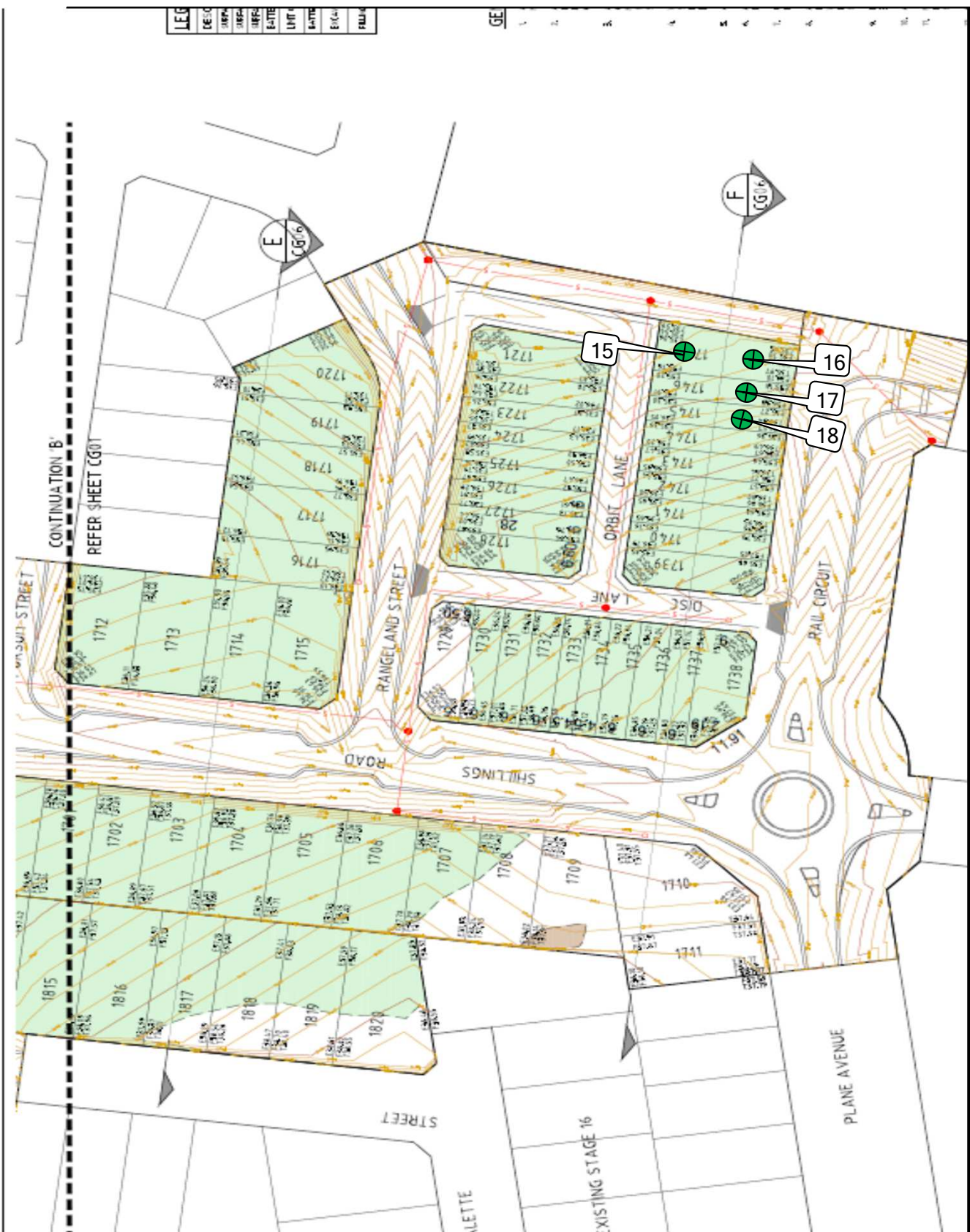
Accredited for compliance with ISO/IEC

17025 - Testing

NATA Accredited Laboratory Number 14561

MICK CROWE
(Approved Signatory)

Issue Date: 15/8/2022



LEG	DE-10	SURF	SURF	SURF	E-ATTE	LIFT	E-ATTE	E-10	FILL
-----	-------	------	------	------	--------	------	--------	------	------

GE	1	2	3	4	5	6	7	8	9	10	11
----	---	---	---	---	---	---	---	---	---	----	----



GEOTECHNICAL LABORATORIES

GEOTECHNICAL LABORATORIES
ACN 102 571 077

14 Ravenhall Way, Ravenhall, Vic 3023
 Email: info@geolab.com.au PH: (03) 8361-9140

CLIENT: SYMON BROS

LOCATION: Mambourin, Stage 17

Sketch indicating compaction test locations

DATE: 9/08/2022

OPERATOR: BM

SCALE: NTS

JOB No.: 9024/011

CHECKED: KK

FIGURE No: -



GEOTECHNICAL LABORATORIES
ACN 102 571 077

14 Ravenhall Way, Ravenhall, Vic 3023
 Email: info@geolab.com.au PH: (03) 8361-9140

DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 9024/012

LOCATION: SYMON BROS - Mambourin, Stage 17

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m ³)	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m ³)	STANDARD OPTIMUM MOISTURE CONTENT (%)	PROBE DEPTH SETTING (mm)	VARIATION FROM OPTIMUM MOISTURE CONTENT (%)	MOISTURE RATIO (%)	WET +19mm (%)	WET +37.5mm (%)	APPROX. DEPTH BELOW FINISH LEVEL (mm)	
10/08/22	19	<i>Refer to #9024/013 for approx. test site locations.</i>	2.00	24.0	100.5	1.99	21.5	175	2.5 Wetter	111.5	0	0	300	
10/08/22	20		2.05	25.0	101.5	2.02	23.0	175	2.0 Wetter	108.5	0	0	300	
10/08/22	21		1.89	24.5	97.0	✘ 1.95	24.0	175	0.0 Wetter	101.0	5	0	300	
10/08/22	22		1.86	23.5	96.0	✘ 1.94	23.5	175	0.0 Drier	99.0	4	0	300	
-	-		-	-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-	-

NOTES: Clayey Fill Ex. Onsite

Test sites located - Geolab Procedure 4, Part 4.4.

Compaction specimens sampled after compaction.

Start Time: 1:15pm Finish Time: 2:00pm

A Hilf Rapid Compaction test was carried out on a sample taken from each Field Density location to obtain the Compaction Parameters tabulated on this Report.

Moisture Content: AS 1289 2.1.1

Compaction Test: AS 1289 5.7.1

Soil Layer thickness: 200mm

Hilf Density Ratio and Hilf Moisture Variation, Hilf Adjusted (APCWD) & Peak (PCWD) Converted Wet Density AS 1289 5.7.1

Field Density, Nuclear Gauge: AS 1289 5.8.1

Materials Sampled : AS 1289 1.2.1 Clause 6.4(b)

✘ Indicates APCWD



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 17025 - Testing*

NATA Accredited Laboratory Number 14561

MICK CROWE
 (Approved Signatory)

Issue Date: 16/8/2022



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ACN 102 571 077

14 Ravenhall Way, Ravenhall, Vic 3023
Email: info@geolab.com.au PH: (03) 8361-9140

CLIENT: SYMON BROS

LOCATION: Mambourin, Stage 17

Sketch indicating compaction test locations

DATE: 10/08/2022

OPERATOR: BM

SCALE: NTS

JOB No.: 9024/013

CHECKED: KK

FIGURE No: -



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 14 Ravenhall Way, Ravenhall, Vic 3023
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DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 9024/014

LOCATION: SYMON BROS - Mambourin, Stage 17

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m ³)	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m ³)	STANDARD OPTIMUM MOISTURE CONTENT (%)	PROBE DEPTH SETTING (mm)	VARIATION FROM OPTIMUM MOISTURE CONTENT (%)	MOISTURE RATIO (%)	WET +19mm (%)	WET +37.5mm (%)	APPROX. DEPTH BELOW FINISH LEVEL (mm)	
11/08/22	23	<i>Refer to #9024/015 for approx. test site locations.</i>	1.85	21.0	97.0	1.91	23.0	175	1.5 Drier	92.5	0	0	300	
11/08/22	24		1.93	19.5	101.5	1.90	22.0	175	2.5 Drier	88.0	0	0	300	
11/08/22	25		1.90	19.0	99.0	1.91	23.0	175	4.0 Drier	82.5	0	0	1000	
11/08/22	26		2.10	20.0	102.0	2.05	20.5	175	0.5 Drier	96.5	0	0	1000	
-	-		-	-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-	-

NOTES: Clayey Fill Ex. Onsite

Test sites located - Geolab Procedure 4, Part 4.4.

Compaction specimens sampled after compaction.

Start Time: 1:30pm Finish Time: 2:20pm

A Hilf Rapid Compaction test was carried out on a sample taken from each Field Density location to obtain the Compaction Parameters tabulated on this Report.

Moisture Content: AS 1289 2.1.1

Compaction Test: AS 1289 5.7.1

Soil Layer thickness: 200mm

Hilf Density Ratio and Hilf Moisture Variation ,Hilf Adjusted (APCWD) & Peak (PCWD) Converted Wet Density AS 1289 5.7.1

Field Density, Nuclear Gauge: AS 1289 5.8.1

Materials Sampled : AS 1289 1.2.1 Clause 6.4(b)

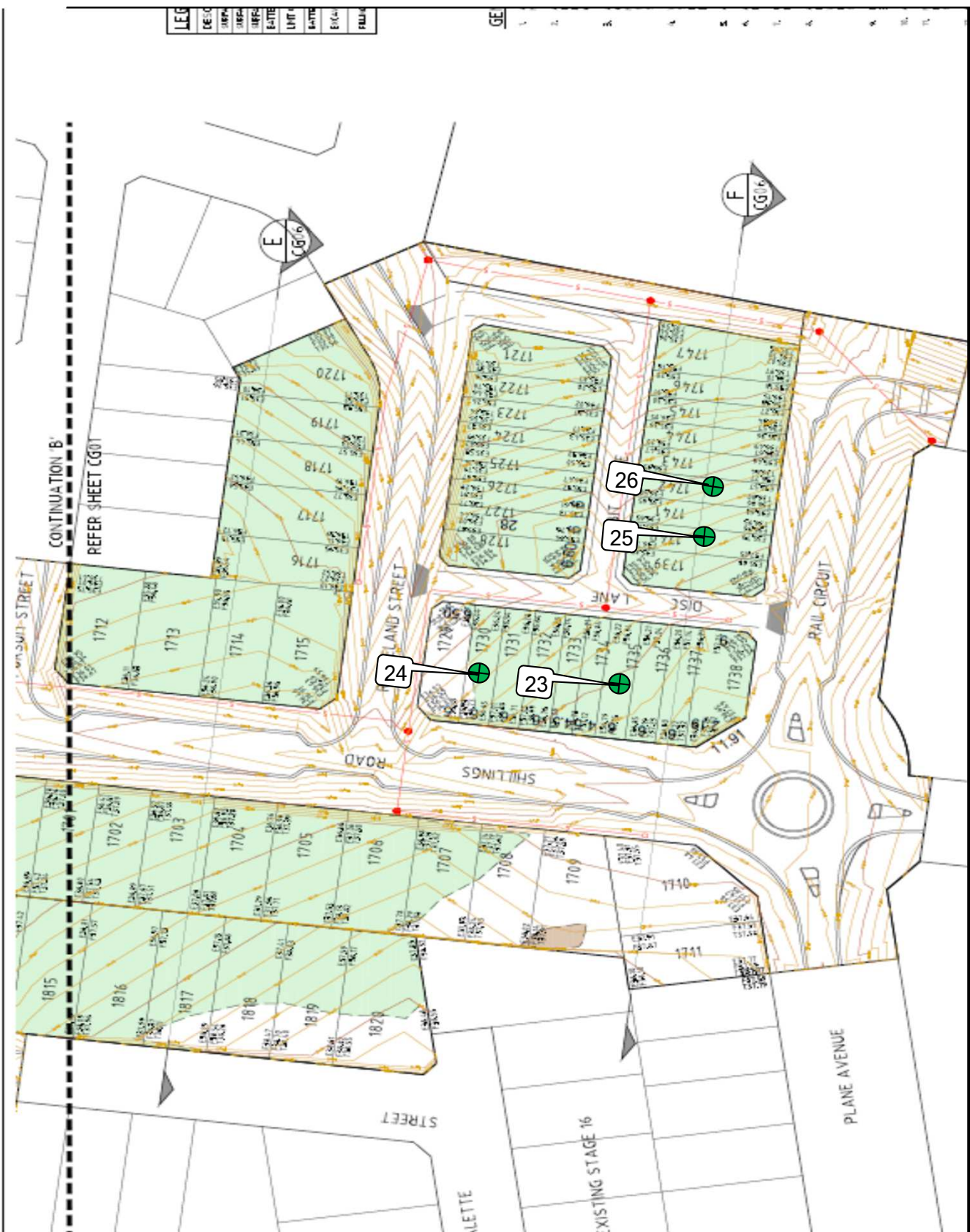


Accredited for compliance with ISO/IEC 17025 - Testing

NATA Accredited Laboratory Number 14561

MICK CROWE
(Approved Signatory)

Issue Date: 18/8/2022



**GEOTECHNICAL
LABORATORIES**

GEOTECHNICAL LABORATORIES

ACN 102 571 077

14 Ravenhall Way, Ravenhall, Vic 3023

Email: info@geolab.com.au PH: (03) 8361-9140

CLIENT: SYMON BROS

LOCATION: Mambourin, Stage 17

Sketch indicating compaction test locations

DATE: 11/08/2022

OPERATOR: BM

SCALE: NTS

JOB No.: 9024/015

CHECKED: KK

FIGURE No: -



GEOTECHNICAL LABORATORIES
ACN 102 571 077

14 Ravenhall Way, Ravenhall, Vic 3023
 Email: info@geolab.com.au PH: (03) 8361-9140

DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 9024/016

LOCATION: SYMON BROS - Mambourin, Stage 17

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m ³)	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m ³)	STANDARD OPTIMUM MOISTURE CONTENT (%)	PROBE DEPTH SETTING (mm)	VARIATION FROM OPTIMUM MOISTURE CONTENT (%)	MOISTURE RATIO (%)	WET +19mm (%)	WET +37.5mm (%)	APPROX. DEPTH BELOW FINISH LEVEL (mm)	
12/08/22	27	<i>Refer to #9024/017 for approx. test site locations.</i>	1.97	26.0	98.5	✘ 2.00	23.0	175	3.5 Wetter	114.5	4	0	600	
12/08/22	28		1.86	24.5	96.5	1.92	25.0	175	0.5 Drier	98.0	0	0	800	
12/08/22	29		1.89	23.0	96.0	✘ 1.96	23.0	175	0.0 Drier	100.0	5	0	1000	
12/08/22	30		1.86	22.0	95.0	1.96	22.5	175	0.5 Drier	97.0	0	0	1200	
-	-		-	-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-	-

NOTES: Clayey Fill Ex. Onsite

Test sites located - Geolab Procedure 4, Part 4.4.

Compaction specimens sampled after compaction.

Start Time: 1:30pm Finish Time: 2:30pm

A Hilf Rapid Compaction test was carried out on a sample taken from each Field Density location to obtain the Compaction Parameters tabulated on this Report.

Moisture Content: AS 1289 2.1.1

Compaction Test: AS 1289 5.7.1

Soil Layer thickness: 200mm

Hilf Density Ratio and Hilf Moisture Variation ,Hilf Adjusted (APCWD) & Peak (PCWD) Converted Wet Density AS 1289 5.7.1

Field Density, Nuclear Gauge: AS 1289 5.8.1

Materials Sampled : AS 1289 1.2.1 Clause 6.4(b)

✘ Indicates APCWD



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17025 - Testing*

NATA Accredited Laboratory Number 14561

MICK CROWE
(Approved Signatory)

Issue Date: 18/8/2022



LEG	DE-10	SURF	SURF	SURF	E-ATTE	LIFT	E-ATTE	E-ATTE	FILL
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GE	1	2	3	4	5	6	7	8	9	10	11
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**GEOTECHNICAL
LABORATORIES**

**GEOTECHNICAL LABORATORIES
ACN 102 571 077**

14 Ravenhall Way, Ravenhall, Vic 3023
Email: info@geolab.com.au PH: (03) 8361-9140

CLIENT: SYMON BROS LOCATION: Mambourin, Stage 17 Sketch indicating compaction test locations	DATE: 12/08/2022	JOB No.: 9024/017
	OPERATOR: TC	CHECKED: KK
	SCALE: NTS	FIGURE No: -



GEOTECHNICAL LABORATORIES
ACN 102 571 077

14 Ravenhall Way, Ravenhall, Vic 3023
 Email: info@geolab.com.au PH: (03) 8361-9140

DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 9024/018

LOCATION: SYMON BROS - Mambourin, Stage 17

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m ³)	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m ³)	STANDARD OPTIMUM MOISTURE CONTENT (%)	PROBE DEPTH SETTING (mm)	VARIATION FROM OPTIMUM MOISTURE CONTENT (%)	MOISTURE RATIO (%)	WET +19mm (%)	WET +37.5mm (%)	APPROX. DEPTH BELOW FINISH LEVEL (mm)	
15/08/22	31	<i>Refer to #9024/019 for approx. test site locations.</i>	1.93	23.0	98.0	✘ 1.97	23.5	175	0.0 Drier	99.0	5	0	700	
15/08/22	32		2.00	21.0	101.5	1.96	22.0	175	0.5 Drier	96.5	0	0	900	
15/08/22	33		1.99	24.0	103.5	1.92	24.5	175	0.5 Drier	98.0	0	0	1100	
15/08/22	34		1.97	24.5	101.0	✘ 1.95	24.5	175	0.0 Drier	100.0	4	0	1300	
-	-		-	-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-	-

NOTES: Clayey Fill Ex. Onsite

Test sites located - Geolab Procedure 4, Part 4.4.

Compaction specimens sampled after compaction.

Start Time: 1:15pm Finish Time: 2:00pm

A Hilf Rapid Compaction test was carried out on a sample taken from each Field Density location to obtain the Compaction Parameters tabulated on this Report.

Moisture Content: AS 1289 2.1.1

Compaction Test: AS 1289 5.7.1

Soil Layer thickness: 200mm

Hilf Density Ratio and Hilf Moisture Variation ,Hilf Adjusted (APCWD) & Peak (PCWD) Converted Wet Density AS 1289 5.7.1

Field Density, Nuclear Gauge: AS 1289 5.8.1

Materials Sampled : AS 1289 1.2.1 Clause 6.4(b)

✘ Indicates APCWD



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 17025 - Testing*

NATA Accredited Laboratory Number 14561

MICK CROWE
 (Approved Signatory)

Issue Date: 19/8/2022



GEOTECHNICAL LABORATORIES

GEOTECHNICAL LABORATORIES
ACN 102 571 077

14 Ravenhall Way, Ravenhall, Vic 3023
Email: info@geolab.com.au PH: (03) 8361-9140

CLIENT: SYMON BROS

LOCATION: Mambourin, Stage 17

Sketch indicating compaction test locations

DATE: 15/08/2022

OPERATOR: BM

SCALE: NTS

JOB No.: 9024/019

CHECKED: KK

FIGURE No: -



GEOTECHNICAL LABORATORIES
ACN 102 571 077

14 Ravenhall Way, Ravenhall, Vic 3023
Email: info@geolab.com.au PH: (03) 8361-9140

DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 9024/050

LOCATION: SYMON BROS - Mambourin, Stage 17

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m ³)	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m ³)	STANDARD OPTIMUM MOISTURE CONTENT (%)	PROBE DEPTH SETTING (mm)	VARIATION FROM OPTIMUM MOISTURE CONTENT (%)	MOISTURE RATIO (%)	WET +19mm (%)	WET +37.5mm (%)	APPROX. DEPTH BELOW FINISH LEVEL (mm)
26/08/22	59	<i>Refer to #9024/051 for approx. test site locations.</i>	1.97	25.5	100.5	1.96	23.5	175	2.0 Wetter	107.5	0	0	0
26/08/22	60		1.98	23.0	101.5	1.95	23.5	175	0.5 Drier	98.0	0	0	0
26/08/22	61		1.93	19.5	97.0	1.99	21.5	175	2.0 Drier	91.0	0	0	0
26/08/22	62		1.89	21.0	97.5	✱ 1.94	23.0	175	1.5 Drier	92.5	4	0	0
26/08/22	63		1.89	23.5	96.0	1.97	24.0	175	0.0 Drier	99.0	0	0	0
26/08/22	64		1.94	25.0	102.0	1.90	25.5	175	0.5 Drier	98.0	0	0	0

NOTES: Clayey Fill Ex. Onsite

Test sites located - Geolab Procedure 4, Part 4.4.

Compaction specimens sampled after compaction.

Start Time: 1:45pm Finish Time: 2:30pm

A Hilf Rapid Compaction test was carried out on a sample taken from each Field Density location to obtain the Compaction Parameters tabulated on this Report.

Moisture Content: AS 1289 2.1.1

Compaction Test: AS 1289 5.7.1

Soil Layer thickness: 200mm

Hilf Density Ratio and Hilf Moisture Variation ,Hilf Adjusted (APCWD) & Peak (PCWD) Converted Wet Density AS 1289 5.7.1

Field Density, Nuclear Gauge: AS 1289 5.8.1

Materials Sampled : AS 1289 1.2.1 Clause 6.4(b)

✱ Indicates APCWD

❖

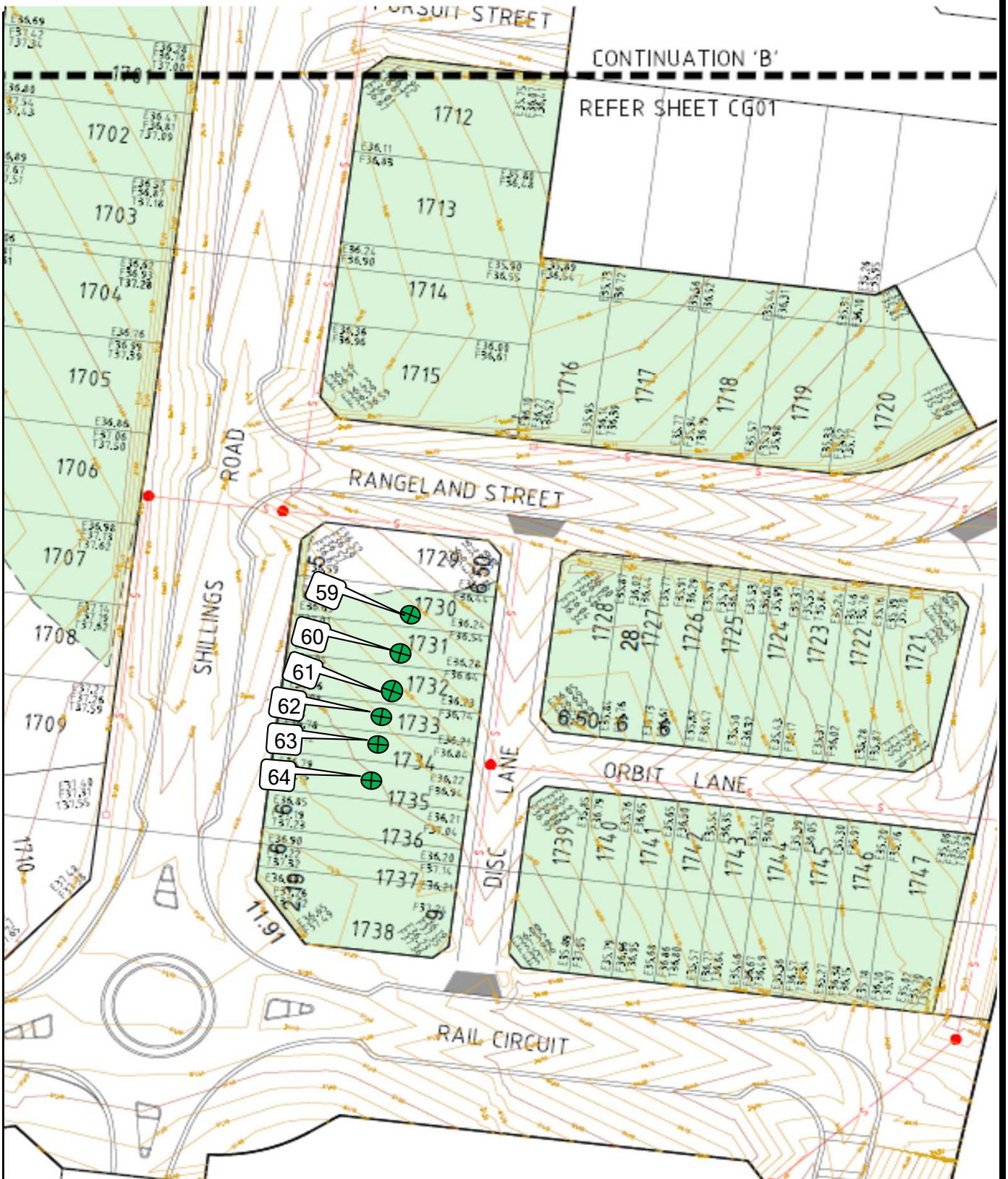


*Accredited for compliance with ISO/IEC
17025 - Testing*

NATA Accredited Laboratory Number 14561

MICK CROWE
(Approved Signatory)

Issue Date: 30/8/2022



**GEOTECHNICAL
LABORATORIES**

GEOTECHNICAL LABORATORIES

ACN 102 571 077

14 Ravenhall Way, Ravenhall, Vic 3023

Email: info@geolab.com.au PH: (03) 8361-9140

CLIENT: SYMON BROS

LOCATION: Mambourin, Stage 17

Sketch indicating compaction test locations

DATE: 26/08/2022

JOB No.: 9024/051

OPERATOR: SLI/N **CHECKED: KK**

SCALE: NTS

FIGURE No: -



GEOTECHNICAL LABORATORIES
ACN 102 571 077

14 Ravenhall Way, Ravenhall, Vic 3023
Email: info@geolab.com.au PH: (03) 8361-9140

DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 9024/055

LOCATION: SYMON BROS - Mambourin, Stage 17

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m ³)	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m ³)	STANDARD OPTIMUM MOISTURE CONTENT (%)	PROBE DEPTH SETTING (mm)	VARIATION FROM OPTIMUM MOISTURE CONTENT (%)	MOISTURE RATIO (%)	WET +19mm (%)	WET +37.5mm (%)	APPROX. DEPTH BELOW FINISH LEVEL (mm)
29/08/22	69	<i>Refer to #9024/056 for approx. test site locations.</i>	2.03	22.0	108.0	1.89	25.5	175	3.5 Drier	86.5	0	0	0
29/08/22	70		2.01	21.0	106.0	1.89	24.5	175	3.5 Drier	86.0	0	0	0
29/08/22	71		1.86	21.5	100.0	1.86	24.0	175	3.0 Drier	88.0	0	0	0
29/08/22	72		2.01	27.0	105.5	1.90	27.0	175	0.0 Drier	100.0	0	0	0
29/08/22	73		1.89	21.0	99.0	✘ 1.91	24.0	175	3.0 Drier	88.0	5	0	0
29/08/22	74		1.94	21.0	103.5	1.88	24.0	175	2.5 Drier	89.0	0	0	0

NOTES: Clayey Fill Ex. Onsite

Test sites located - Geolab Procedure 4, Part 4.3.

Compaction specimens sampled after compaction.

Start Time: 9.30AM Finish Time: 10.30AM

A Hilf Rapid Compaction test was carried out on a sample taken from each Field Density location to obtain the Compaction Parameters tabulated on this Report.

Moisture Content: AS 1289 2.1.1

Compaction Test: AS 1289 5.7.1

Soil Layer thickness: 200mm

Hilf Density Ratio and Hilf Moisture Variation ,Hilf Adjusted (APCWD) & Peak (PCWD) Converted Wet Density AS 1289 5.7.1

Field Density, Nuclear Gauge: AS 1289 5.8.1

Materials Sampled : AS 1289 1.2.1 Clause 6.4(b)

✘ Indicates APCWD

❖



*Accredited for compliance with ISO/IEC
17025 - Testing*

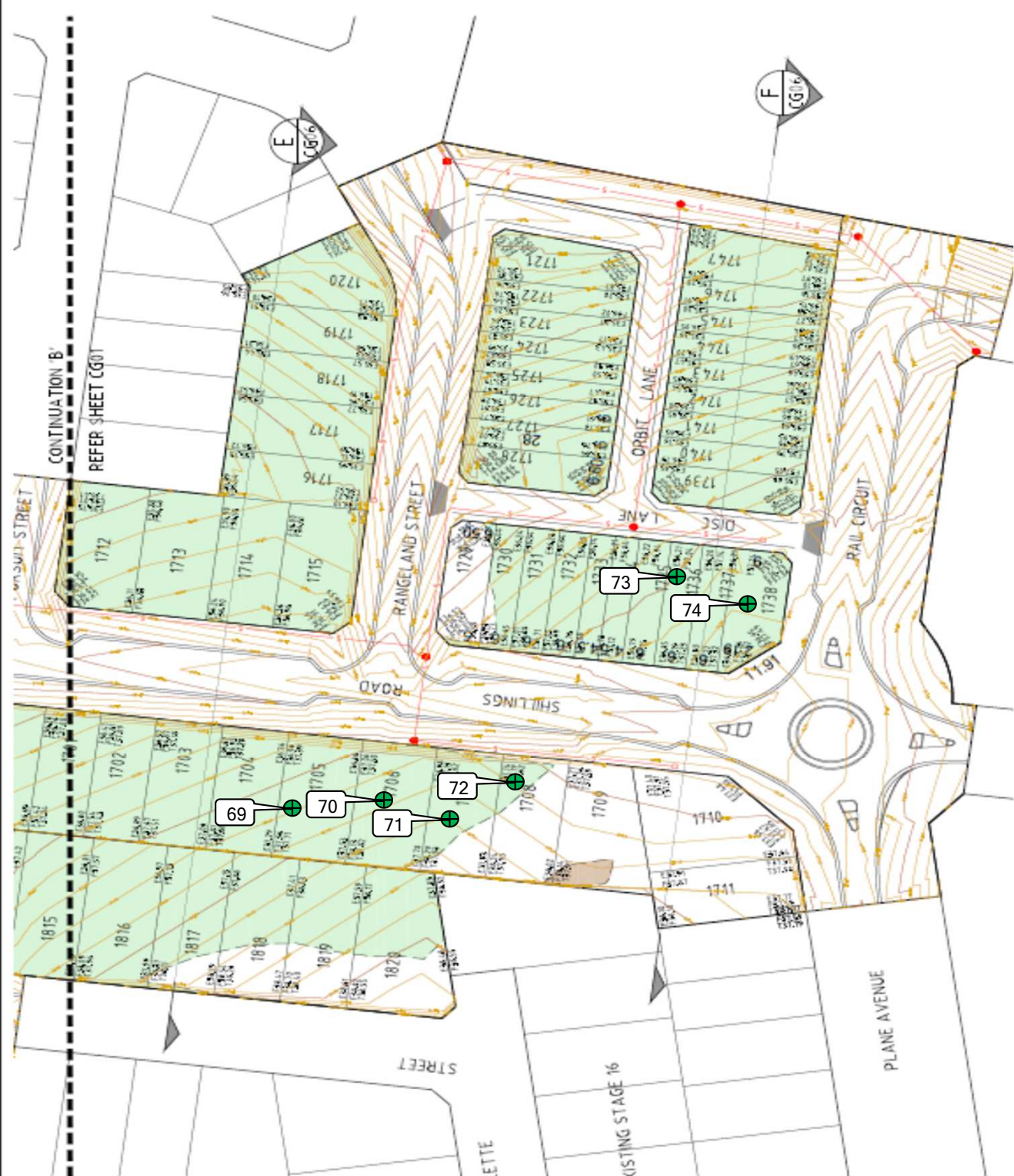
NATA Accredited Laboratory Number 14561

MICK CROWE
(Approved Signatory)

Issue Date: 1/9/2022

LEG	DESC	APP	REF	DATE	UNIT	DATE	BY	FILE
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GE	1	2	3	4	5	6	7	8	9	10	11	12
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**GEOTECHNICAL
LABORATORIES**

**GEOTECHNICAL LABORATORIES
ACN 102 571 077**

14 Ravenhall Way, Ravenhall, Vic 3023
Email: info@geolab.com.au PH: (03) 8361-9140

CLIENT: SYMON BROS

LOCATION: Mambourin, Stage 17

Sketch indicating compaction test locations

DATE: 29/08/2022

OPERATOR: NE

SCALE: NTS

JOB No.: 9024/056

CHECKED: KK

FIGURE No: -



GEOTECHNICAL LABORATORIES
 ACN 102 571 077
 14 Ravenhall Way, Ravenhall, Vic 3023
 Email: info@geolab.com.au PH: (03) 8361-9140

DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 9024/057

LOCATION: SYMON BROS - Mambourin Estate, Stage 17 & 18

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m ³)	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m ³)	STANDARD OPTIMUM MOISTURE CONTENT (%)	PROBE DEPTH SETTING (mm)	VARIATION FROM OPTIMUM MOISTURE CONTENT (%)	MOISTURE RATIO (%)	WET +19mm (%)	WET +37.5mm (%)	APPROX. DEPTH BELOW FINISH LEVEL (mm)	
7/09/22	75	<i>Refer to #9024/058 for approx. test site locations.</i>	1.95	25.0	102.0	1.91	29.0	175	4.0 Drier	87.0	0	0	0	
7/09/22	76		1.93	24.0	102.5	1.88	25.0	175	0.5 Drier	97.0	0	0	200	
7/09/22	77		1.99	25.5	104.5	1.91	26.0	175	1.0 Drier	97.0	0	0	300	
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NOTES: Clayey Fill Ex. Onsite

Test sites located - Geolab Procedure 4, Part 4.4.

Compaction specimens sampled after compaction.

Start Time: 12.40PM Finish Time: 2.00PM

A Hilf Rapid Compaction test was carried out on a sample taken from each Field Density location to obtain the Compaction Parameters tabulated on this Report.

Moisture Content: AS 1289 2.1.1

Compaction Test: AS 1289 5.7.1

Soil Layer thickness: 200mm

Hilf Density Ratio and Hilf Moisture Variation ,Hilf Adjusted (APCWD) & Peak (PCWD) Converted Wet Density AS 1289 5.7.1

Field Density, Nuclear Gauge: AS 1289 5.8.1

Materials Sampled : AS 1289 1.2.1 Clause 6.4(b)



Accredited for compliance with ISO/IEC

17025 - Testing

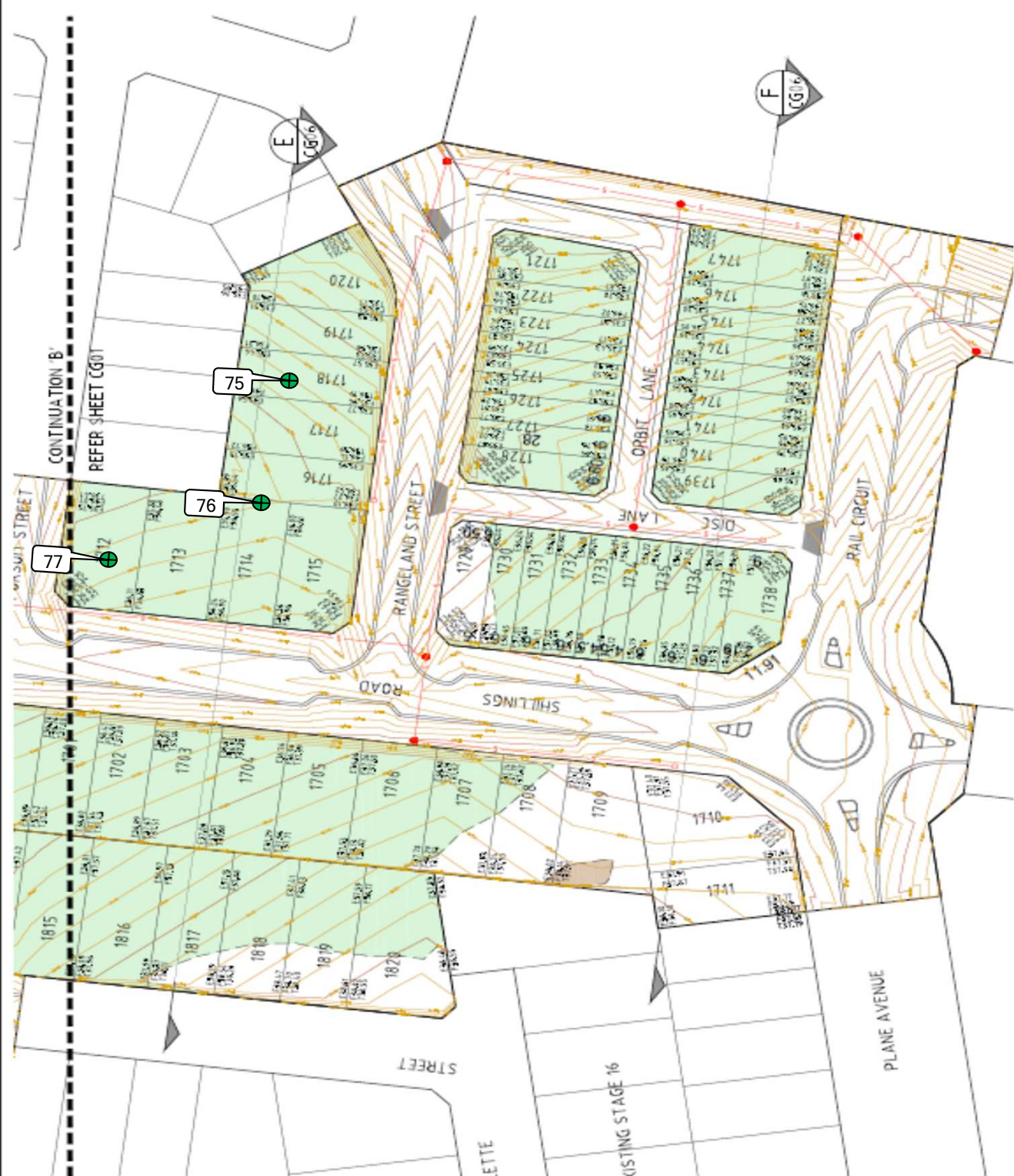
NATA Accredited Laboratory Number 14561

MICK CROWE
(Approved Signatory)

Issue Date: 8/9/2022

LEG	DESC	APP	REF	DATE	UNIT	SCALE	FILE
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GEOTECHNICAL LABORATORIES

GEOTECHNICAL LABORATORIES
ACN 102 571 077

14 Ravenhall Way, Ravenhall, Vic 3023
 Email: info@geolab.com.au PH: (03) 8361-9140

CLIENT: SYMON BROS

LOCATION: Mambourin, Stage 17

Sketch indicating compaction test locations

DATE: 7/9/2022

OPERATOR: SLI/N

SCALE: NTS

JOB No.: 9024/058

CHECKED: KK

FIGURE No: -



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 14 Ravenhall Way, Ravenhall, Vic 3023
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DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 9024/060

LOCATION: SYMON BROS - Mambourin Estate, Stage 17 & 18

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m ³)	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m ³)	STANDARD OPTIMUM MOISTURE CONTENT (%)	PROBE DEPTH SETTING (mm)	VARIATION FROM OPTIMUM MOISTURE CONTENT (%)	MOISTURE RATIO (%)	WET +19mm (%)	WET +37.5mm (%)	APPROX. DEPTH BELOW FINISH LEVEL (mm)	
6/09/22	78	<i>Refer to #9024/061 for approx. test site locations.</i>	1.87	26.5	97.0	✘ 1.94	30.0	175	4.0 Drier	87.5	4	0	0	
6/09/22	79		1.94	22.5	102.5	✘ 1.90	24.5	175	2.0 Drier	91.0	5	0	0	
6/09/22	80		1.95	24.0	102.5	✘ 1.91	26.5	175	2.5 Drier	90.5	4	0	0	
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NOTES: Clayey Fill Ex. Alex Fraser - Epping

Test sites located - Geolab Procedure 4, Part 4.4.

Compaction specimens sampled after compaction.

Start Time: 8.00AM Finish Time: 8.30AM

A Hilf Rapid Compaction test was carried out on a sample taken from each Field Density location to obtain the Compaction Parameters tabulated on this Report.

Moisture Content: AS 1289 2.1.1

Compaction Test: AS 1289 5.7.1

Soil Layer thickness: 200mm

Hilf Density Ratio and Hilf Moisture Variation ,Hilf Adjusted (APCWD) & Peak (PCWD) Converted Wet Density AS 1289 5.7.1

Field Density, Nuclear Gauge: AS 1289 5.8.1

Materials Sampled : AS 1289 1.2.1 Clause 6.4(b)

✘ Indicates APCWD



Accredited for compliance with ISO/IEC 17025 - Testing

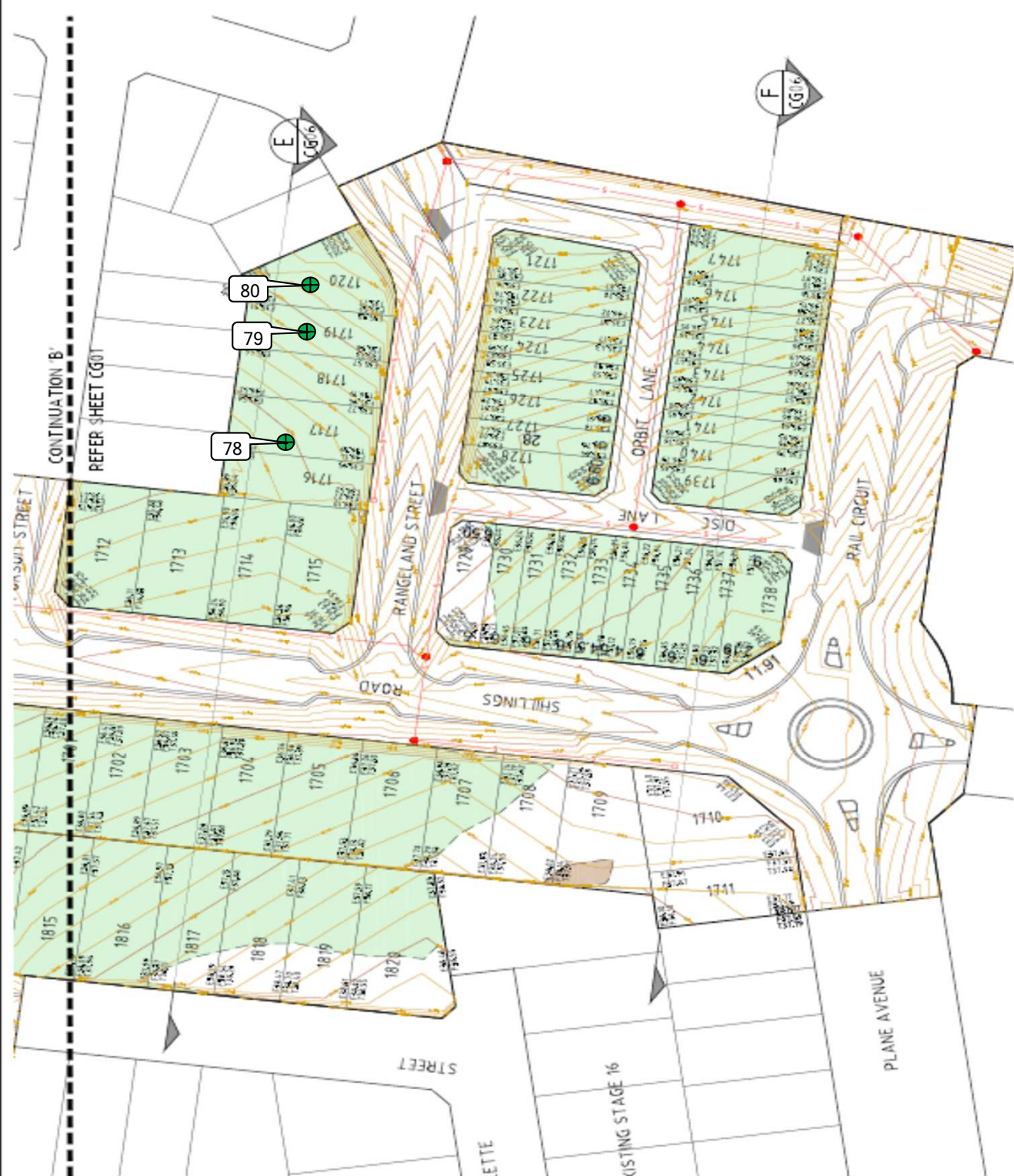
NATA Accredited Laboratory Number 14561

MICK CROWE
(Approved Signatory)

Issue Date: 8/9/2022

LEG	DESC	SYMBOL	REF	DATE	UNIT	SCALE	FILE
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**GEOTECHNICAL
LABORATORIES**

GEOTECHNICAL LABORATORIES

ACN 102 571 077

14 Ravenhall Way, Ravenhall, Vic 3023

Email: info@geolab.com.au PH: (03) 8361-9140

CLIENT: SYMON BROS

LOCATION: Mambourin, Stage 17

Sketch indicating compaction test locations

DATE: 6/09/2022

OPERATOR: KOB

SCALE: NTS

JOB No.: 9024/061

CHECKED: KK

FIGURE No: -



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 14 Ravenhall Way, Ravenhall, Vic 3023
 Email: info@geolab.com.au PH: (03) 8361-9140

DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 9024/062

LOCATION: SYMON BROS - Mambourin Estate, Stage 17

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m ³)	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m ³)	STANDARD OPTIMUM MOISTURE CONTENT (%)	PROBE DEPTH SETTING (mm)	VARIATION FROM OPTIMUM MOISTURE CONTENT (%)	MOISTURE RATIO (%)	WET +19mm (%)	WET +37.5mm (%)	APPROX. DEPTH BELOW FINISH LEVEL (mm)	
7/09/22	81	<i>Refer to #9024/063 for approx. test site locations.</i>	1.94	24.5	102.5	✘ 1.89	26.0	175	1.5 Drier	93.5	4	0	300	
7/09/22	82		1.87	23.5	99.5	✘ 1.88	26.5	175	2.5 Drier	89.5	3	0	300	
7/09/22	83		1.94	22.5	98.0	✘ 1.98	22.5	175	0.0 Drier	99.0	5	0	0	
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NOTES: Clayey Fill Ex. Onsite

Test sites located - Geolab Procedure 4, Part 4.3.

Compaction specimens sampled after compaction.

Start Time: 8.00AM Finish Time: 8.30PM

A Hilf Rapid Compaction test was carried out on a sample taken from each Field Density location to obtain the Compaction Parameters tabulated on this Report.

Moisture Content: AS 1289 2.1.1

Compaction Test: AS 1289 5.7.1

Soil Layer thickness: 200mm

Hilf Density Ratio and Hilf Moisture Variation ,Hilf Adjusted (APCWD) & Peak (PCWD) Converted Wet Density AS 1289 5.7.1

Field Density, Nuclear Gauge: AS 1289 5.8.1

Materials Sampled : AS 1289 1.2.1 Clause 6.4(b)

✘ Indicates APCWD



Accredited for compliance with ISO/IEC 17025 - Testing

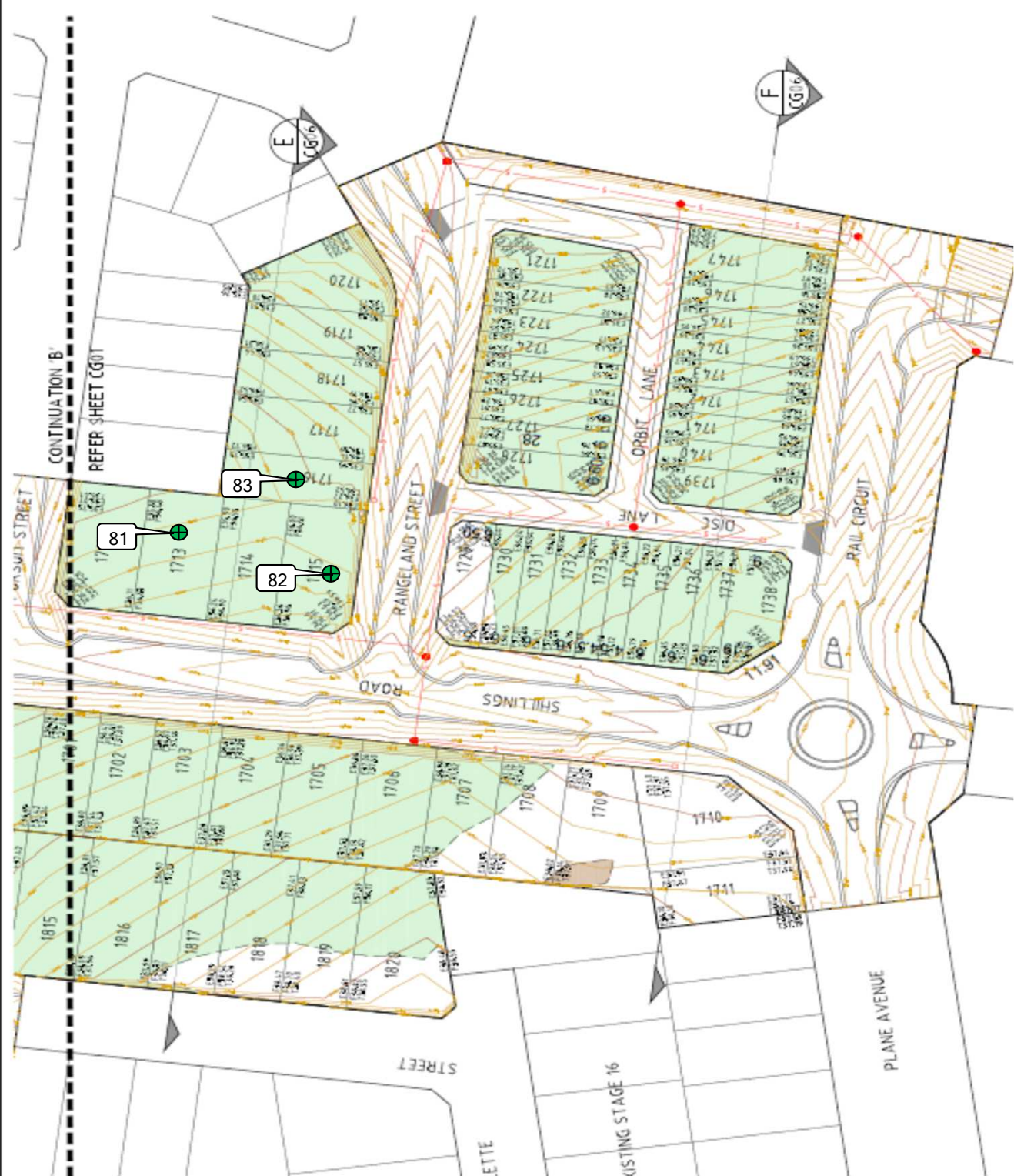
NATA Accredited Laboratory Number 14561

MICK CROWE
(Approved Signatory)

Issue Date: 8/9/2022

LEG	DESC	APP	REF	DATE	UNIT	SCALE	FILE

GE	1	2	3	4	5	6	7	8	9	10	11



GEOTECHNICAL LABORATORIES

GEOTECHNICAL LABORATORIES
ACN 102 571 077

14 Ravenhall Way, Ravenhall, Vic 3023
 Email: info@geolab.com.au PH: (03) 8361-9140

CLIENT: SYMON BROS

LOCATION: Mambourin, Stage 17

Sketch indicating compaction test locations

DATE: 7/09/2022

OPERATOR: SLI

SCALE: NTS

JOB No.: 9024/063

CHECKED: KK

FIGURE No: -



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DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 9024/072

LOCATION: SYMON BROS - Mambourin, Stage 17, 18

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m ³)	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m ³)	STANDARD OPTIMUM MOISTURE CONTENT (%)	PROBE DEPTH SETTING (mm)	VARIATION FROM OPTIMUM MOISTURE CONTENT (%)	MOISTURE RATIO (%)	WET +19mm (%)	WET +37.5mm (%)	APPROX. DEPTH BELOW FINISH LEVEL (mm)	
14/09/22	87	<i>Refer to #9024/073 for approx. test site locations.</i>	1.93	22.0	101.0	✘ 1.92	24.5	175	2.0 Drier	91.0	6	0	0	
14/09/22	88		1.89	23.5	98.5	1.91	25.5	175	1.5 Drier	93.0	0	0	0	
14/09/22	89		1.99	23.5	103.0	✘ 1.94	25.5	175	1.5 Drier	93.0	11	0	0	
14/09/22	90		2.02	26.0	105.5	1.92	24.0	175	2.0 Wetter	108.5	0	0	0	
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NOTES: Clayey Fill Ex. Onsite

Test sites located - Geolab Procedure 4, Part 4.4.

Compaction specimens sampled after compaction.

Start Time: 12:45pm Finish Time: 2:45pm

A Hilf Rapid Compaction test was carried out on a sample taken from each Field Density location to obtain the Compaction Parameters tabulated on this Report.

Moisture Content: AS 1289 2.1.1

Compaction Test: AS 1289 5.7.1

Soil Layer thickness: 200mm

Hilf Density Ratio and Hilf Moisture Variation ,Hilf Adjusted (APCWD) & Peak (PCWD) Converted Wet Density AS 1289 5.7.1

Field Density, Nuclear Gauge: AS 1289 5.8.1

Materials Sampled : AS 1289 1.2.1 Clause 6.4(b)

✘ Indicates APCWD



Accredited for compliance with ISO/IEC 17025 - Testing

NATA Accredited Laboratory Number 14561

MICK CROWE
(Approved Signatory)

Issue Date: 16/9/2022



**GEOTECHNICAL
LABORATORIES**

GEOTECHNICAL LABORATORIES

ACN 102 571 077

14 Ravenhall Way, Ravenhall, Vic 3023

Email: info@geolab.com.au PH: (03) 8361-9140

CLIENT: SYMON BROS

LOCATION: Mambourin, Stage 17, 18

Sketch indicating compaction test locations

DATE: 14/09/2022

OPERATOR: PS

SCALE: NTS

JOB No.: 9024/073

CHECKED: MC

FIGURE No: -



GEOTECHNICAL LABORATORIES
 ACN 102 571 077
 14 Ravenhall Way, Ravenhall, Vic 3023
 Email: info@geolab.com.au PH: (03) 8361-9140

DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 9024/106

LOCATION: SYMON BROS - Mambourin, Stage 17

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m ³)	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m ³)	STANDARD OPTIMUM MOISTURE CONTENT (%)	PROBE DEPTH SETTING (mm)	VARIATION FROM OPTIMUM MOISTURE CONTENT (%)	MOISTURE RATIO (%)	WET +19mm (%)	WET +37.5mm (%)	APPROX. DEPTH BELOW FINISH LEVEL (mm)	
14/11/22	132	<i>Refer to #9024/107 for approx. test site locations.</i>	1.88	32.0	99.0	1.90	31.0	175	1.0 Wetter	102.5	0	0	0	
14/11/22	133		1.92	34.0	102.5	1.87	31.0	175	3.0 Wetter	109.5	0	0	0	
14/11/22	134		1.88	33.5	98.0	1.91	30.0	175	3.5 Wetter	111.5	0	0	0	
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NOTES: Clayey Fill Ex. Onsite

Test sites located - Geolab Procedure 4, Part 4.4.

Compaction specimens sampled after compaction.

Start Time: 12:25pm Finish Time: 12:40pm

A Hilf Rapid Compaction test was carried out on a sample taken from each Field Density location to obtain the Compaction Parameters tabulated on this Report.

Moisture Content: AS 1289 2.1.1

Compaction Test: AS 1289 5.7.1

Soil Layer thickness: 200mm

Hilf Density Ratio and Hilf Moisture Variation ,Hilf Adjusted (APCWD) & Peak (PCWD) Converted Wet Density AS 1289 5.7.1

Field Density, Nuclear Gauge: AS 1289 5.8.1

Materials Sampled : AS 1289 1.2.1 Clause 6.4(b)



Accredited for compliance with ISO/IEC

17025 - Testing

NATA Accredited Laboratory Number 14561

MICK CROWE
(Approved Signatory)

Issue Date: 21/11/2022

LEG	DESC	DATE	BY	CHKD	APPD

GEOTECHNICAL LABORATORIES

Planning and Environment Act 1987
Wyndham Planning Scheme
Approved Plan As Required
under Condition 45



GEOTECHNICAL LABORATORIES

GEOTECHNICAL LABORATORIES
ACN 102 571 077

14 Ravenhall Way, Ravenhall, Vic 3023
Email: info@geolab.com.au PH: (03) 8361-9140

CLIENT: SYMON BROS

LOCATION: Mambourin, Stage 17

Sketch indicating compaction test locations

DATE: 14/11/2022

OPERATOR: SA

SCALE: NTS

JOB No.: 9024/107

CHECKED: KK

FIGURE No: -



**GEOTECHNICAL
LABORATORIES**

**GEOTECHNICAL LABORATORIES
ACN 102 571 077**

14 Ravenhall Way, Ravenhall, Vic 3023
Email: info@geolab.com.au PH: (03) 8361-9140

DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 9024/112

LOCATION: SYMON BROS - Mambourin, Stage 17 & 18

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m ³)	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m ³)	STANDARD OPTIMUM MOISTURE CONTENT (%)	PROBE DEPTH SETTING (mm)	VARIATION FROM OPTIMUM MOISTURE CONTENT (%)	MOISTURE RATIO (%)	WET +19mm (%)	WET +37.5mm (%)	APPROX. DEPTH BELOW FINISH LEVEL (mm)	
5/06/23	138	<i>Refer to #9024/113 for approx. test site locations.</i>	1.92	25.0	99.5	1.93	24.5	175	0.5 Wetter	102.0	0	0	0	
5/06/23	139		1.88	24.5	96.5	1.95	24.0	175	0.0 Wetter	101.0	0	0	0	
5/06/23	140		1.99	22.0	99.5	2.01	22.0	175	0.0 Drier	100.0	0	0	0	
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NOTES: Clayey Fill Ex. Onsite

Test sites located - Geolab Procedure 4, Part 4.4.

Compaction specimens sampled after compaction.

Start Time: 1.00PM Finish Time: 1.40PM

A Hilf Rapid Compaction test was carried out on a sample taken from each Field Density location to obtain the Compaction Parameters tabulated on this Report.

Moisture Content: AS 1289 2.1.1

Compaction Test: AS 1289 5.7.1

Soil Layer thickness: 200mm

Hilf Density Ratio and Hilf Moisture Variation ,Hilf Adjusted (APCWD) & Peak (PCWD) Converted Wet Density AS 1289 5.7.1

Field Density, Nuclear Gauge: AS 1289 5.8.1

Materials Sampled : AS 1289 1.2.1 Clause 6.4(b)



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17025 - Testing*

NATA Accredited Laboratory Number 14561

MICK CROWE
(Approved Signatory)

Issue Date: 8/6/2023

