

LEVEL ONE

Reference  
No.: 9112-059

SURVEILLANCE

AND INSPECTION REPORT

*Carried Out  
By*



PREPARED FOR: -

SYMON BROS. CONSTRUCTIONS PTY LTD



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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: Heartford Estate, Stages 1-3

Date: 10<sup>th</sup> of October 2023

Author: Mr. Sam Loza

Reference No.: 9112-059

Revision: 0

Project Manager: Mr. Vince Colubriale

### **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 15<sup>th</sup> of August 2023 to the 27<sup>th</sup> of September 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 Layout Plan Sheet 1 Drawing No. 3002-EW-100 (Rev. 1)
- (1). Bulk Earthworks Layout Plan Sheet 2 Drawing No. 3002-EW-101 (Rev. 1)
- (1). Bulk Earthworks Layout Plan Sheet 3 Drawing No. 3002-EW-102 (Rev. 1)
- (1). Bulk Earthworks Layout Plan Sheet 4 Drawing No. 3002-EW-103 (Rev. 1)

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

### **2. Site Preparation**

Site inspections were undertaken on the 5<sup>th</sup> of July 2023 confirming that selected areas to be filled were completely stripped of topsoil prior to filling. The silty topsoils had been stockpiled around the site for later removal off-site.

Initial proof roll inspections were performed and subsequently throughout the project duration to ensure no significant soft areas were present prior to filling.

### **3. Fill Material**

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



The fill material is best described as a silty CLAY, brown, dark grey, moist, medium to high plasticity with basalt gravel 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:

- Dump trucks
- A watercart
- A padfoot roller (16T)
- A dozer
- An excavator

The dozer placed material in horizontal loose layers of approximately 250-300mm. The pad foot roller 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-four 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 hlf density ratio not less than 95 percent of the maximum hlf density value as determined by the Standard Hlf 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 15<sup>th</sup> of August 2023 to the 27<sup>th</sup> of September 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

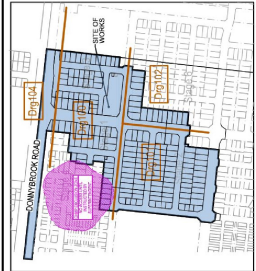
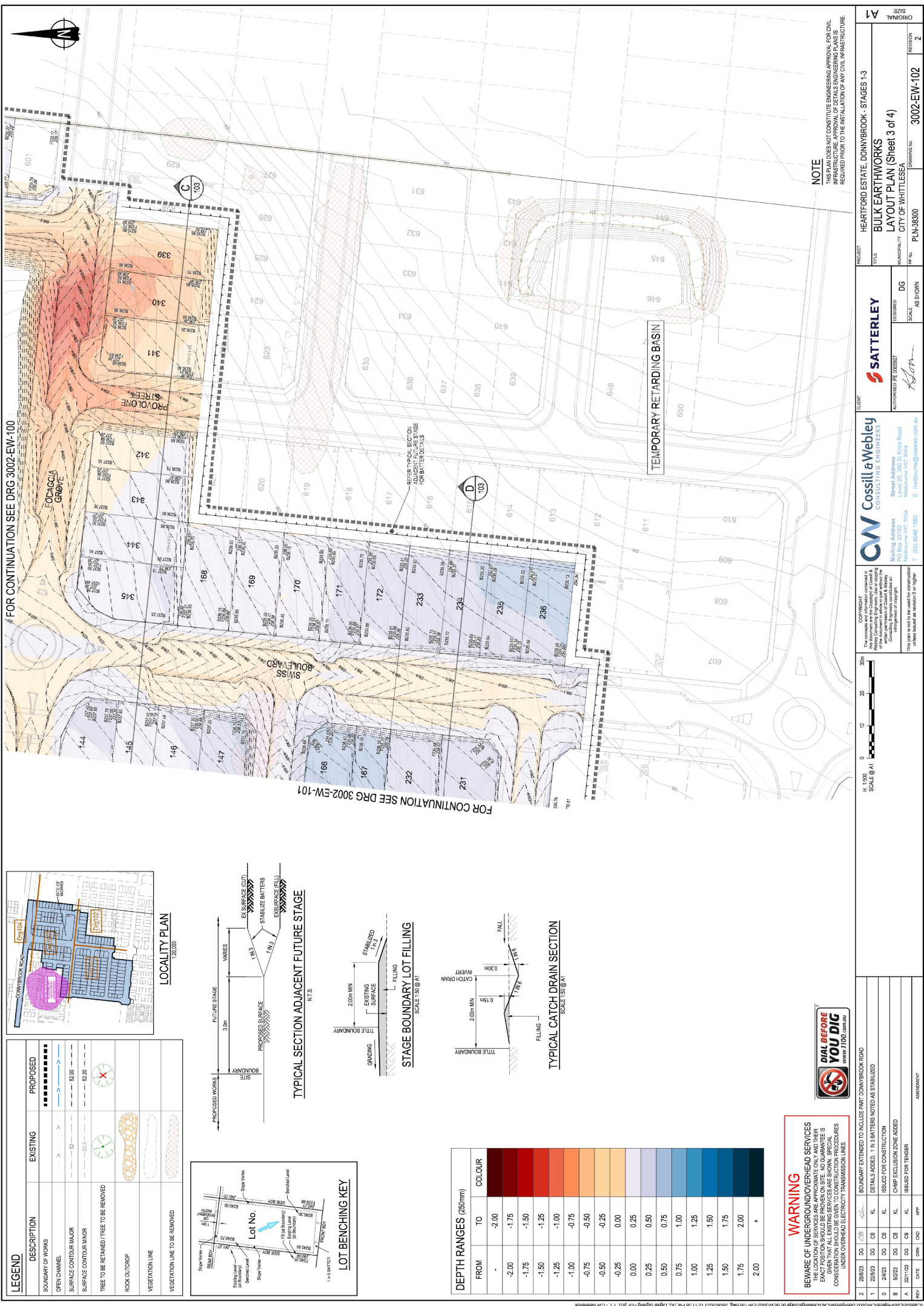




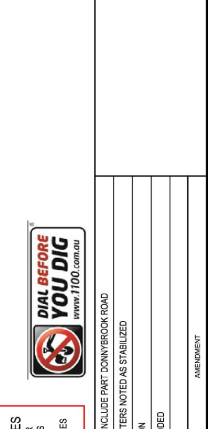
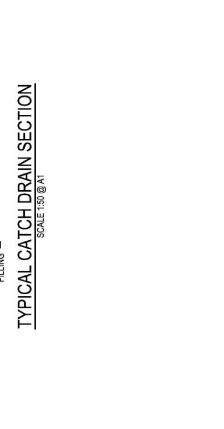
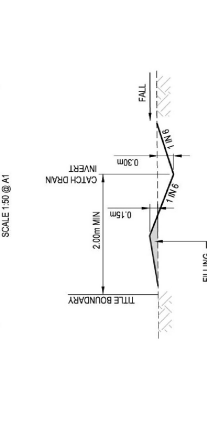
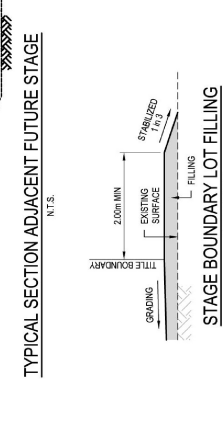
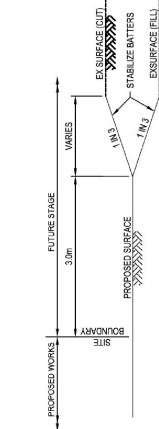




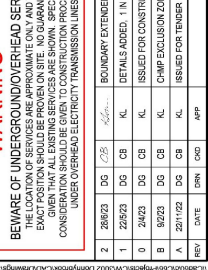
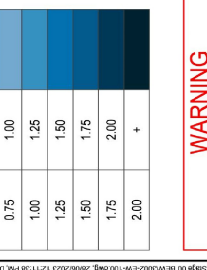
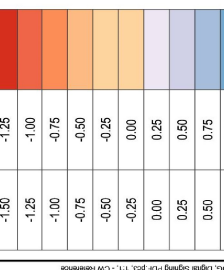
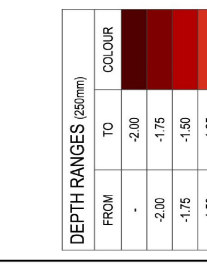
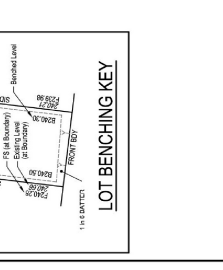




LEGEND	DESCRIPTION	EXISTING	PROPOSED
BOUNDARY OF WORKS		---	---
OPEN CHANNEL		---	---
SURFACE CONTOUR MAJOR		---	---
SURFACE CONTOUR MINOR		---	---
TREE TO BE RETAINED / TREE TO BE REMOVED		---	---
ROCK OUTCROP		---	---
VEGETATION LINE		---	---
VEGETATION LINE TO BE REMOVED		---	---



DEPTH RANGES (250mm)	FROM	TO	COLOUR
-	-2.00	-1.75	Red
-1.75	-1.50	-1.25	Orange
-1.25	-1.00	-0.75	Yellow
-0.75	-0.50	-0.25	Green
-0.25	0.00	0.25	Blue
0.25	0.50	0.75	Light Blue
0.75	1.00	1.25	Dark Blue
1.25	1.50	1.75	Very Dark Blue
1.75	2.00	+	Black



FOR CONTINUATION SEE DRG 3002-EW-100

FOR CONTINUATION SEE DRG 3002-EW-101

FOR CONTINUATION SEE DRG 3002-EW-102

**NOTE**  
THIS DOCUMENT IS NOT TO BE USED FOR ANY OTHER PURPOSES WITHOUT THE WRITTEN PERMISSION OF SATTRELEY.  
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THIS DOCUMENT IS NOT TO BE USED FOR ANY OTHER PURPOSES WITHOUT THE WRITTEN PERMISSION OF SATTRELEY.

**CLIENT**  
HEARTFORD ESTATE, DONNYBROOK - STAGES 1-3  
**TITLE**  
BULK EARTHWORKS  
LAYOUT PLAN (Sheet 3 of 4)  
**MUNICIPALITY**  
CITY OF WHITLESEA  
**PP No.**  
PLN-38300  
**DRAWING No.**  
3002-EW-102  
**REVISION**  
2

**DESIGNED**  
DG  
**SCALE**  
AS SHOWN  
**DATE**  
10/10/2023

**Crossill & Webley**  
CONSULTING ENGINEERS  
Mailing Address  
Level 20, 300 S. Kings Road  
Melbourne VIC 3004  
E: info@crossill.com.au  
P: 03 9594 1500

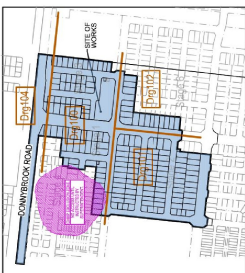
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**WARNING**  
BEWARE OF UNDERGROUND SERVICES  
THE LOCATION OF SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT EXISTING SERVICES ARE SHOWN. SPECIAL CONSIDERATION SHOULD BE GIVEN TO THE LOCATION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

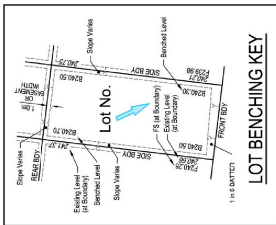
**BOUNDARY EXTENDED TO INCLUDE PART DONNYBROOK ROAD**  
DETAILS ADDED. IN 3 BATTERS NOTED AS STABILIZED  
ISSUED FOR CONSTRUCTION  
CHAMP EXCLUSION ZONE ADDED  
ISSUED FOR TENDER

REV	DATE	BY	CHK	APP	REMARKS
2	28/02/23	DO	DO	KL	BOUNDARY EXTENDED TO INCLUDE PART DONNYBROOK ROAD
1	22/02/23	DO	DO	KL	DETAILS ADDED. IN 3 BATTERS NOTED AS STABILIZED
0	24/02/23	DO	DO	KL	ISSUED FOR CONSTRUCTION
B	09/02/23	DO	DO	KL	CHAMP EXCLUSION ZONE ADDED
A	22/10/22	DO	DO	KL	ISSUED FOR TENDER



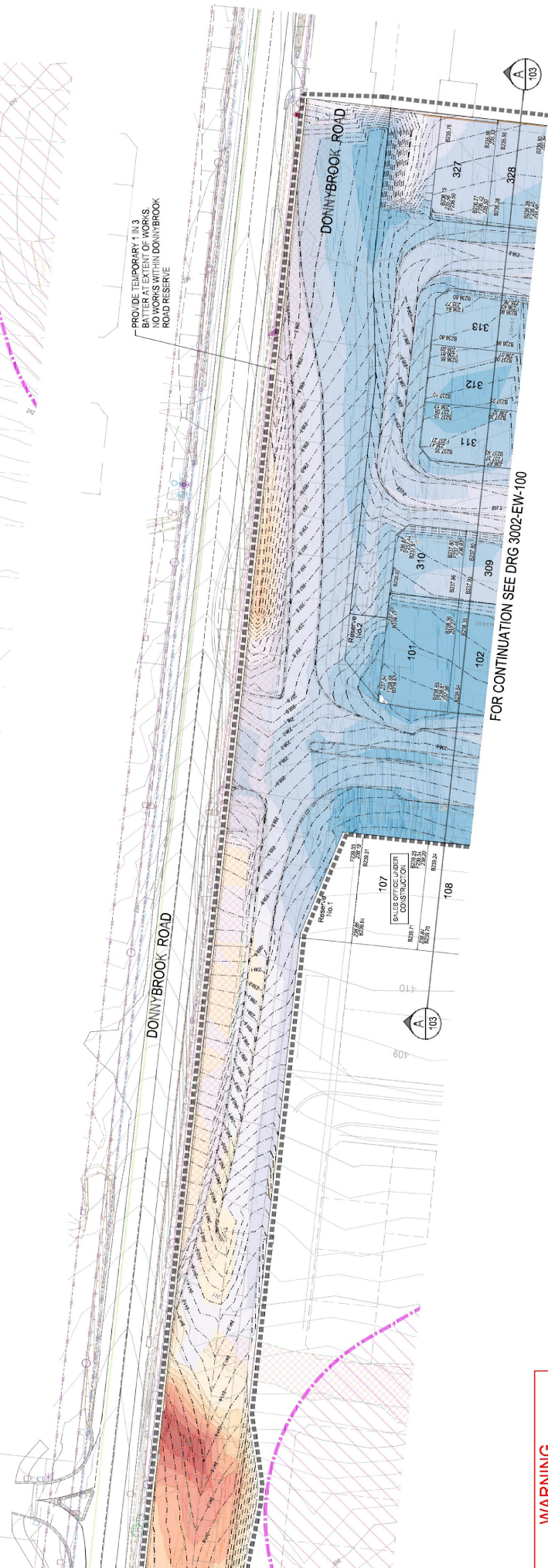


LEGEND	DESCRIPTION	EXISTING	PROPOSED
BOUNDARY OF WORKS		---	---
OPEN CHANNEL		---	---
SURFACE CONTOUR MAJOR		---	---
SURFACE CONTOUR MINOR		---	---
TREE TO BE RETAINED / TREE TO BE REMOVED		---	---
ROCK OUTCROP		---	---
VEGETATION LINE		---	---
VEGETATION LINE TO BE REMOVED		---	---



FOR CONTINUATION SEE BELOW

FOR CONTINUATION SEE ABOVE



**WARNING**  
BEWARE OF UNDERGROUND/UNDERHEAD SERVICES  
THE LOCATION OF SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVIDED ON SITE. NO GUARANTEE IS GIVEN THAT EXISTING SERVICES ARE SHOWN. SPECIFIC SERVICES UNDER OVERHEAD ELECTRICITY TRANSMISSION LINES.



**NOTE**

THIS PLAN IS NOT TO BE USED FOR CONSTRUCTION OF ANY CIVIL INFRASTRUCTURE. APPROVAL OF DETAILS ENGINEERING PLANS IS REQUIRED PRIOR TO THE INSTALLATION OF ANY CIVIL INFRASTRUCTURE.

REV	DATE	BY	CHK	APP	REMARK
1	28/02/23	DO	CS		NEW DRAWING. BOUNDARY EXTENDED TO INCLUDE PART DONNYBROOK ROAD
2	28/02/23	DO	CS	KL	ISSUED FOR CONSTRUCTION

PROJECT	HEARTFORD ESTATE, DONNYBROOK - STAGES 1-3
TITLE	BULK EARTHWORKS LAYOUT PLAN (Sheet 4 of 4)
MUNICIPALITY	CITY OF WHITLESEA
PP No.	PLN-38300
DRAWING No.	3002-EW-103
AS SHOWN	AS SHOWN
DATE	1

CLIENT	Cosill & Webley CONSULTING ENGINEERS
STREET ADDRESS	Level 20, 300 St Kilda Road Melbourne VIC 3004
MAILING ADDRESS	PO Box 33152 Melbourne VIC 3004
PHONE	(03) 5548 1500
EMAIL	info@cosillandwebley.com.au

DESIGNED	DO
CHECKED	CS
DATE	28/02/23

APPROVED	KL
DATE	28/02/23

ORIGINAL	A1
REVISION	1





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.: # 9112/009

LOCATION: SYMON BROS - Heartford Estate, Stage 1-3

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m <sup>3</sup> )	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m <sup>3</sup> )	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)
15/08/23	1	<b>Refer to #9112/010 for approx. test site locations.</b>	1.87	26.5	97.5	1.92	25.5	175	1.0 Wetter	103.0	0	0	400
15/08/23	2		1.92	26.5	100.0	1.92	26.0	175	1.0 Wetter	103.0	0	0	400
15/08/23	3		1.86	29.5	101.0	1.85	30.0	175	0.5 Drier	98.5	0	0	400
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-

NOTES: Clayey Fill Ex. Onsite

Test sites located - Geolab Procedure 4, Part 4.4.

Compaction specimens sampled after compaction.

Start Time: 10:45am Finish Time: 11:20am

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: 22/8/2023



**FIGURE No: -**





**GEOTECHNICAL LABORATORIES**  
ACN 102 571 077

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## DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 2621/012

LOCATION: SYMON BROS - Heartford Estate, Stage 1- 3

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m <sup>3</sup> )	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m <sup>3</sup> )	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)
21/08/23	4	<b>Refer to #2621/013 for approx. test site locations.</b>	1.95	29.0	101.0	1.93	25.0	175	4.0 Wetter	115.5	0	0	400
21/08/23	5		1.92	32.0	99.0	1.93	28.5	175	3.5 Wetter	112.0	0	0	400
21/08/23	6		1.91	26.5	99.0	1.93	23.5	175	3.0 Wetter	113.0	0	0	400
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-

NOTES: Clayey Fill Ex. Onsite

Test sites located - Geolab Procedure 4, Part 4.4.

Compaction specimens sampled after compaction.

Start Time: 11:20am Finish Time: 11:45am

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)



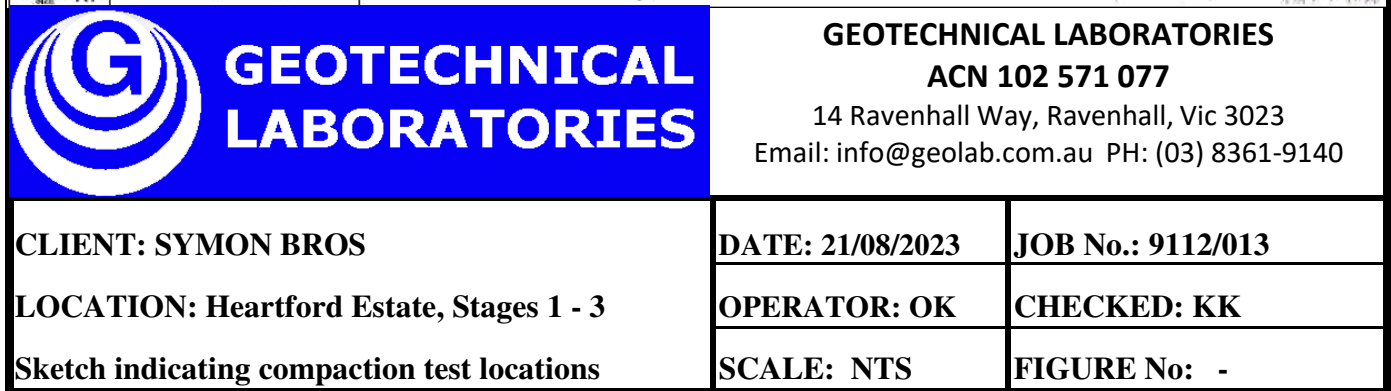
Accredited for compliance with ISO/IEC  
17025 - Testing

NATA Accredited Laboratory Number 14561

**MICK CROWE**  
(Approved Signatory)

Issue Date: 28/8/2023









**GEOTECHNICAL LABORATORIES**  
ACN 102 571 077

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

REPORT NO.: # 9112/015

LOCATION: SYMON BROS - Heartford Estate, Stage 1-3

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m <sup>3</sup> )	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m <sup>3</sup> )	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)
24/08/23	7	<b>Refer to #9112/016 for approx. test site locations.</b>	1.95	25.5	102.0	1.92	25.5	175	0.0 Drier	100.0	0	0	350
24/08/23	8		1.86	25.5	97.0	✱ 1.92	25.5	175	0.0 Drier	100.0	6	0	350
24/08/23	9		1.94	27.0	100.0	✱ 1.94	26.0	175	1.0 Wetter	104.0	3	0	350
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-

NOTES: Clayey Fill Ex. Onsite

Test sites located - Geolab Procedure 4, Part 4.4.

Compaction specimens sampled after compaction.

Start Time: 11:45am Finish Time: 12:30pm

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: 30/8/2023



**FIGURE No: -**





**GEOTECHNICAL LABORATORIES**  
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14 Ravenhall Way, Ravenhall, Vic 3023  
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## DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 9112/018

LOCATION: SYMON BROS - Heartford Estate, Stage 1-3

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m <sup>3</sup> )	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m <sup>3</sup> )	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)
25/08/23	10	<b>Refer to #9112/019 for approx. test site locations.</b>	1.85	24.5	97.0	1.91	25.0	175	0.0 Drier	99.0	0	0	600
25/08/23	11		1.95	28.0	102.5	1.90	27.0	175	1.0 Wetter	103.0	0	0	600
25/08/23	12		1.92	29.5	98.0	1.96	26.5	175	2.5 Wetter	109.5	0	0	600
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-

NOTES: Clayey Fill Ex. Onsite

Test sites located - Geolab Procedure 4, Part 4.4.

Compaction specimens sampled after compaction.

Start Time: 11:45am Finish Time: 12:25pm

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: 1/9/2023



**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.: # 9112/021

LOCATION: SYMON BROS - Heartford Estate, Stage 1-3

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m <sup>3</sup> )	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m <sup>3</sup> )	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)
28/08/23	13	<i>Refer to #9112/022 for approx. test site locations.</i>	1.97	26.5	101.0	1.95	25.5	175	1.0 Wetter	104.0	0	0	0
28/08/23	14		1.97	26.0	100.5	1.95	25.0	175	1.0 Wetter	104.0	0	0	0
28/08/23	15		2.04	17.0	97.5	2.09	16.0	175	1.0 Wetter	107.5	0	0	0
28/08/23	16		1.90	27.0	96.0	1.98	25.0	175	2.0 Wetter	108.0	0	0	0
28/08/23	17		1.87	30.0	96.5	1.94	27.5	175	2.5 Wetter	108.5	0	0	0
-	-		-	-	-	-	-	-	-	-	-	-	-

NOTES: Clayey Fill Ex. Onsite

Test sites located - Geolab Procedure 4, Part 4.4.

Compaction specimens sampled after compaction.

Start Time: 11:35am Finish Time: 12:25pm

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)

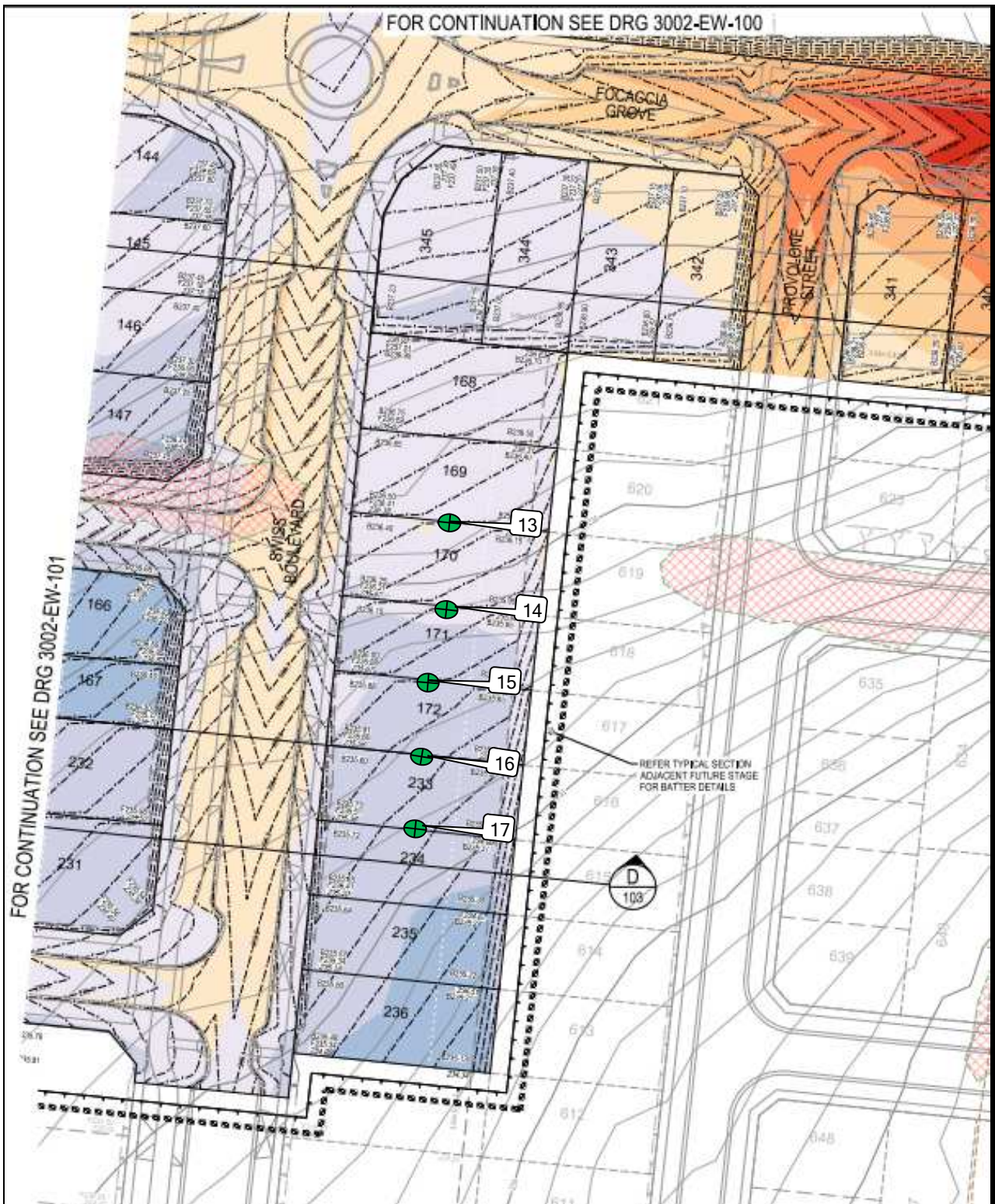


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MICK CROWE  
(Approved Signatory)

Issue Date: 5/9/2023



**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: Heartford Estate, Stages 1 - 3**

**Sketch indicating compaction test locations**

**DATE: 28/08/2023**

**OPERATOR: OK**

**SCALE: NTS**

**JOB No.: 9112/022**

**CHECKED: KK**

**FIGURE No: -**



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## DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 9112/024

LOCATION: SYMON BROS - Heartford Estate, Stage 1-3

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m <sup>3</sup> )	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m <sup>3</sup> )	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)
29/08/23	18	<i>Refer to #9112/025 for approx. test site locations.</i>	1.86	30.5	98.0	1.89	29.5	175	1.5 Wetter	104.5	0	0	0
29/08/23	19		1.92	31.5	99.0	1.93	28.0	175	3.5 Wetter	113.0	0	0	0
29/08/23	20		1.91	29.5	100.5	1.90	29.0	175	0.5 Wetter	102.0	0	0	0
29/08/23	21		1.95	24.5	99.5	1.96	23.5	175	1.0 Wetter	105.5	0	0	0
29/08/23	22		1.89	26.5	97.0	1.95	23.5	175	2.5 Wetter	110.5	0	0	0
-	-		-	-	-	-	-	-	-	-	-	-	-

NOTES: Clayey Fill Ex. Onsite

Test sites located - Geolab Procedure 4, Part 4.4.

Compaction specimens sampled after compaction.

Start Time: 10:45am Finish Time: 11:15am

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)



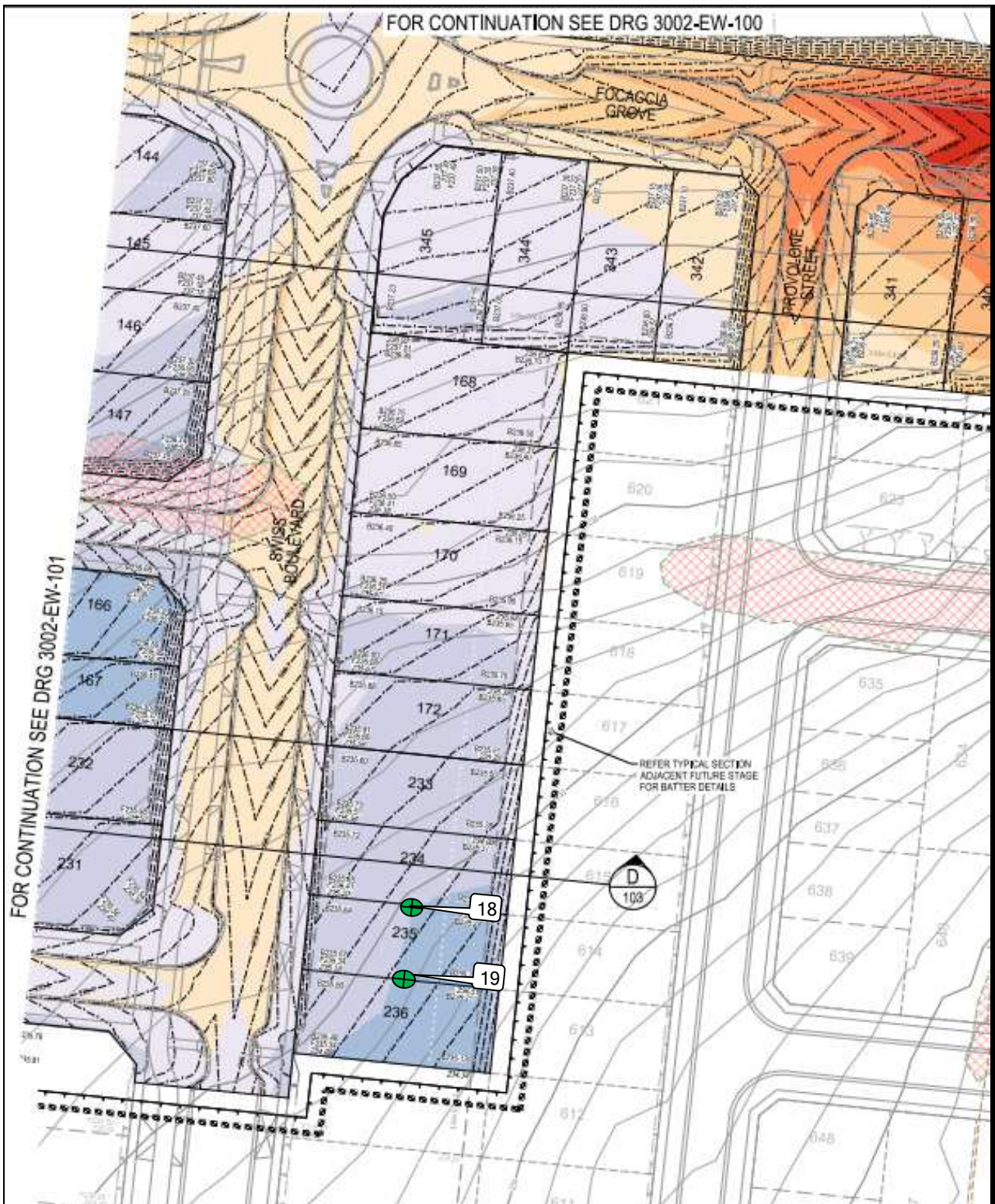
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**MICK CROWE**  
(Approved Signatory)

Issue Date: 5/9/2023





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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: Heartford Estate, Stages 1 - 3**

**Sketch indicating compaction test locations**

**DATE: 29/08/2023**

**OPERATOR: OK**

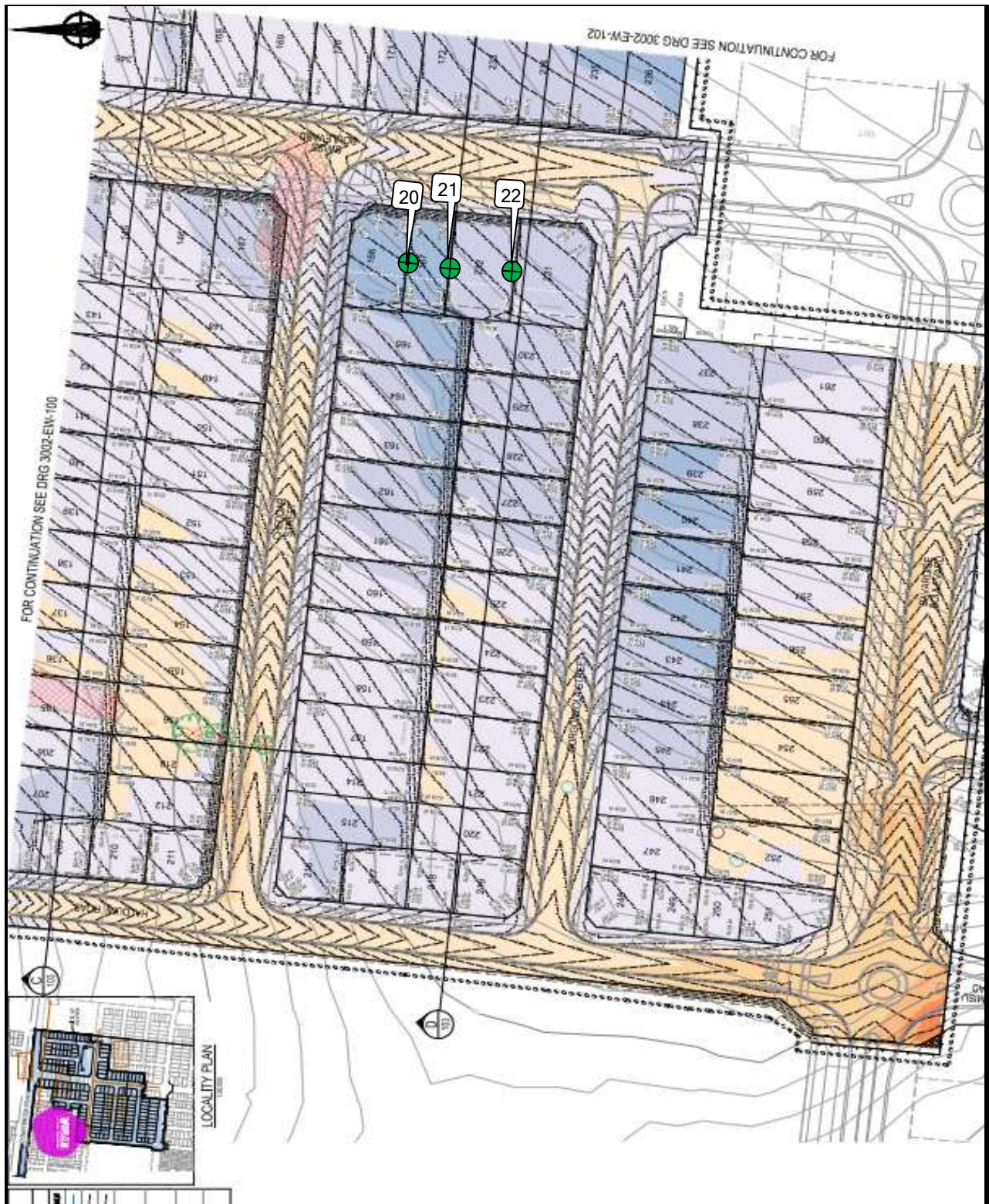
**SCALE: NTS**

**JOB No.: 9112/025**

**CHECKED: KK**

**FIGURE No: 1 of 2**





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**CLIENT: SYMON BROS**

**LOCATION: Heartford Estate, Stages 1 - 3**

**Sketch indicating compaction test locations**

**DATE: 29/08/2023**

**OPERATOR: OK**

**SCALE: NTS**

**JOB No.: 9112/025**

**CHECKED: KK**

**FIGURE No: 2 of 2**



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## DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 9112/027

LOCATION: SYMON BROS - Heartford, Stage 1-3

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m <sup>3</sup> )	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m <sup>3</sup> )	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)
31/08/23	23	<b><i>Refer to #9112/028 for approx. test site locations.</i></b>	1.94	22.5	99.0	1.96	23.0	175	0.5 Drier	98.0	0	0	0
31/08/23	24		1.90	24.0	95.0	2.00	23.0	175	1.0 Wetter	104.5	0	0	0
31/08/23	25		1.92	23.5	97.0	1.98	21.5	175	2.0 Wetter	109.0	0	0	0
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-

NOTES: Clayey Fill Ex. Onsite

Test sites located - Geolab Procedure 4, Part 4.4.

Compaction specimens sampled after compaction.

Start Time: 12.30PM Finish Time: 1.05PM

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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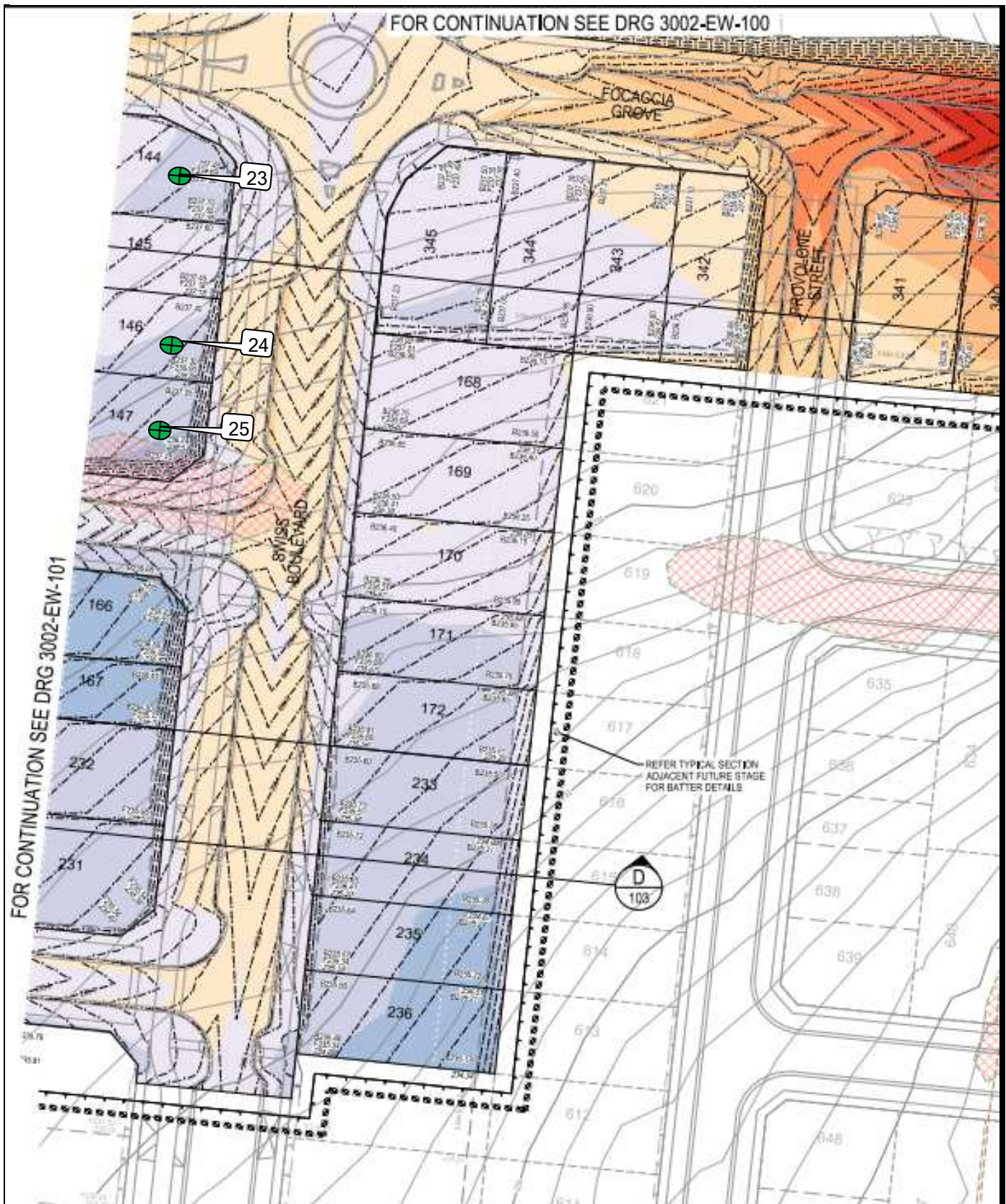
**MICK CROWE**  
 (Approved Signatory)

Issue Date: 7/9/2023

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**CLIENT: SYMON BROS**

**LOCATION: Heartford Estate, Stages 1 - 3**

**Sketch indicating compaction test locations**

**DATE: 31/08/2023**

**OPERATOR: OK**

**SCALE: NTS**

**JOB No.: 9112/028**

**CHECKED: NF**

**FIGURE No: -**





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## DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 9112/032

LOCATION: SYMON BROS - Heartford Estate, Stage 1-3

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m <sup>3</sup> )	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m <sup>3</sup> )	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)
5/09/23	26	<b>Refer to #9112/034 for approx. test site locations.</b>	2.02	24.0	104.5	1.93	24.0	175	0.0 Drier	100.0	0	0	0
5/09/23	27		2.02	24.5	103.0	1.96	24.0	175	0.0 Wetter	101.0	0	0	0
5/09/23	28		1.93	22.5	98.5	1.96	22.0	175	0.5 Wetter	102.0	0	0	0
5/09/23	29		2.03	22.5	105.0	1.93	21.5	175	1.0 Wetter	105.5	0	0	0
5/09/23	30		1.94	22.5	98.0	1.98	22.5	175	0.0 Wetter	101.0	0	0	0
5/09/23	31		1.92	27.0	99.5	1.93	26.0	175	1.5 Wetter	105.0	0	0	0

NOTES: Clayey Fill Ex. Onsite

Test sites located - Geolab Procedure 4, Part 4.4.

Compaction specimens sampled after compaction.

Start Time: 12:55pm Finish Time: 1:55pm

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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**MICK CROWE**  
(Approved Signatory)

Issue Date: 12/9/2023

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## DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 9112/033

LOCATION: SYMON BROS - Heartford Estate, Stage 1-3

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m <sup>3</sup> )	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m <sup>3</sup> )	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)
5/09/23	32	<i>Refer to #9112/034 for approx. test site locations.</i>	1.95	22.5	99.5	1.95	22.0	175	0.5 Wetter	102.0	0	0	0
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-

NOTES: Clayey Fill Ex. Onsite

Test sites located - Geolab Procedure 4, Part 4.4.

Compaction specimens sampled after compaction.

Start Time: 12:55pm Finish Time: 1:55pm

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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MICK CROWE  
(Approved Signatory)

Issue Date: 12/9/2023

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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: Heartford Estate, Stages 1 - 3**

**Sketch indicating compaction test locations**

**DATE: 5/09/2023**

**OPERATOR: OK**

**SCALE: NTS**

**JOB No.: 9112/034**

**CHECKED: KK**

**FIGURE No: -**



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## DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 9112/036

LOCATION: SYMON BROS - Heartford Estate, Stage 1-3

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m <sup>3</sup> )	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m <sup>3</sup> )	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)
6/09/23	33	<i>Refer to #9112/037 for approx. test site locations.</i>	1.94	23.0	98.5	1.97	21.0	175	2.0 Wetter	110.5	0	0	0
6/09/23	34		1.95	26.5	100.0	1.95	25.0	175	2.0 Wetter	107.0	0	0	400
6/09/23	35		2.04	24.5	102.5	✱ 1.98	23.0	175	1.0 Wetter	105.5	4	0	400
-	-		-	-	-	-	-	-	-	-	-	-	-
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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: 12:30pm Finish Time: 1:05pm

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



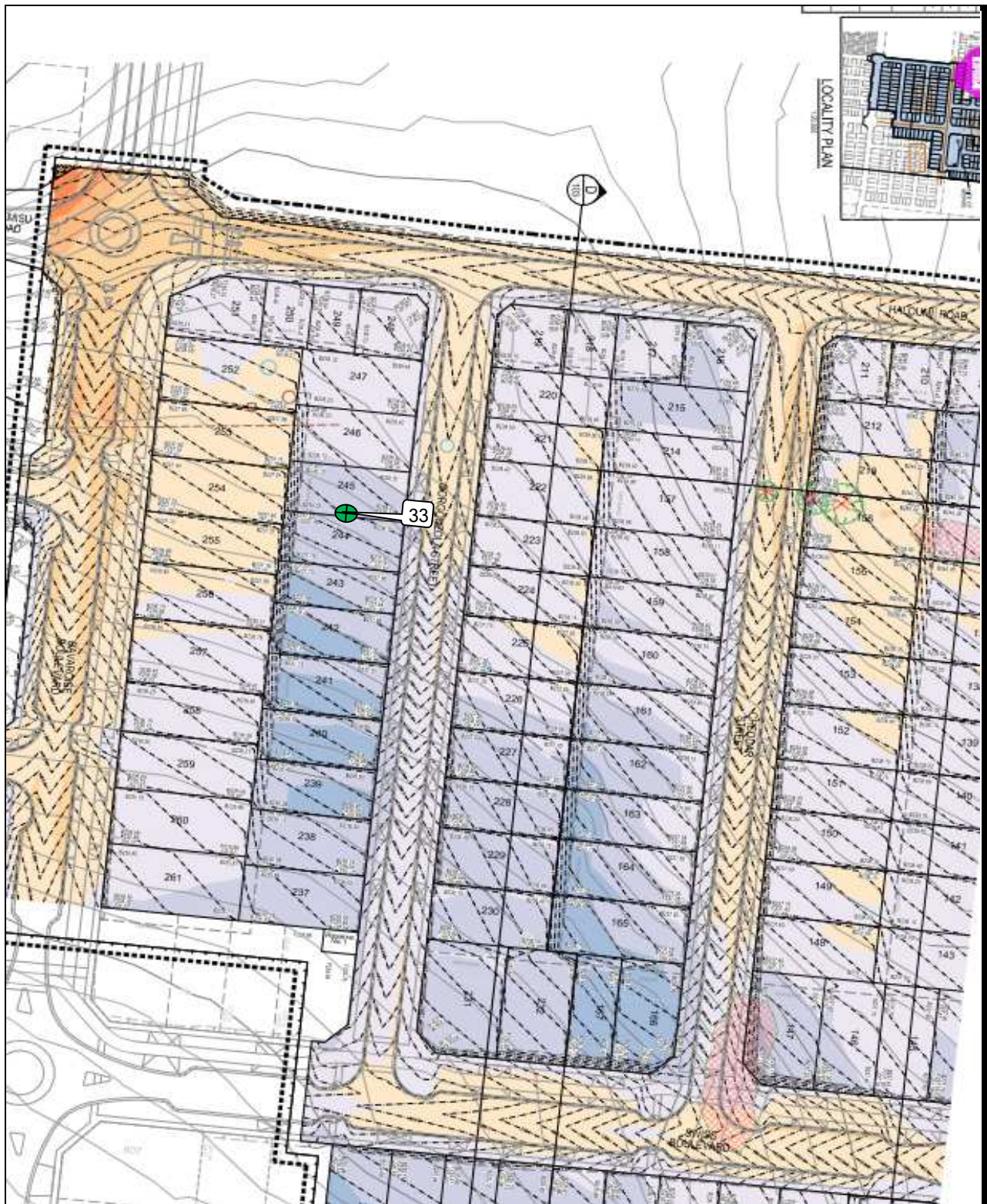
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NATA Accredited Laboratory Number 14561

**MICK CROWE**  
(Approved Signatory)

Issue Date: 13/9/2023





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**ACN 102 571 077**

14 Ravenhall Way, Ravenhall, Vic 3023

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

**CLIENT: SYMON BROS**

**LOCATION: Heartford Estate, Stages 1 - 3**

**Sketch indicating compaction test locations**

**DATE: 6/09/2023**

**OPERATOR: OK**

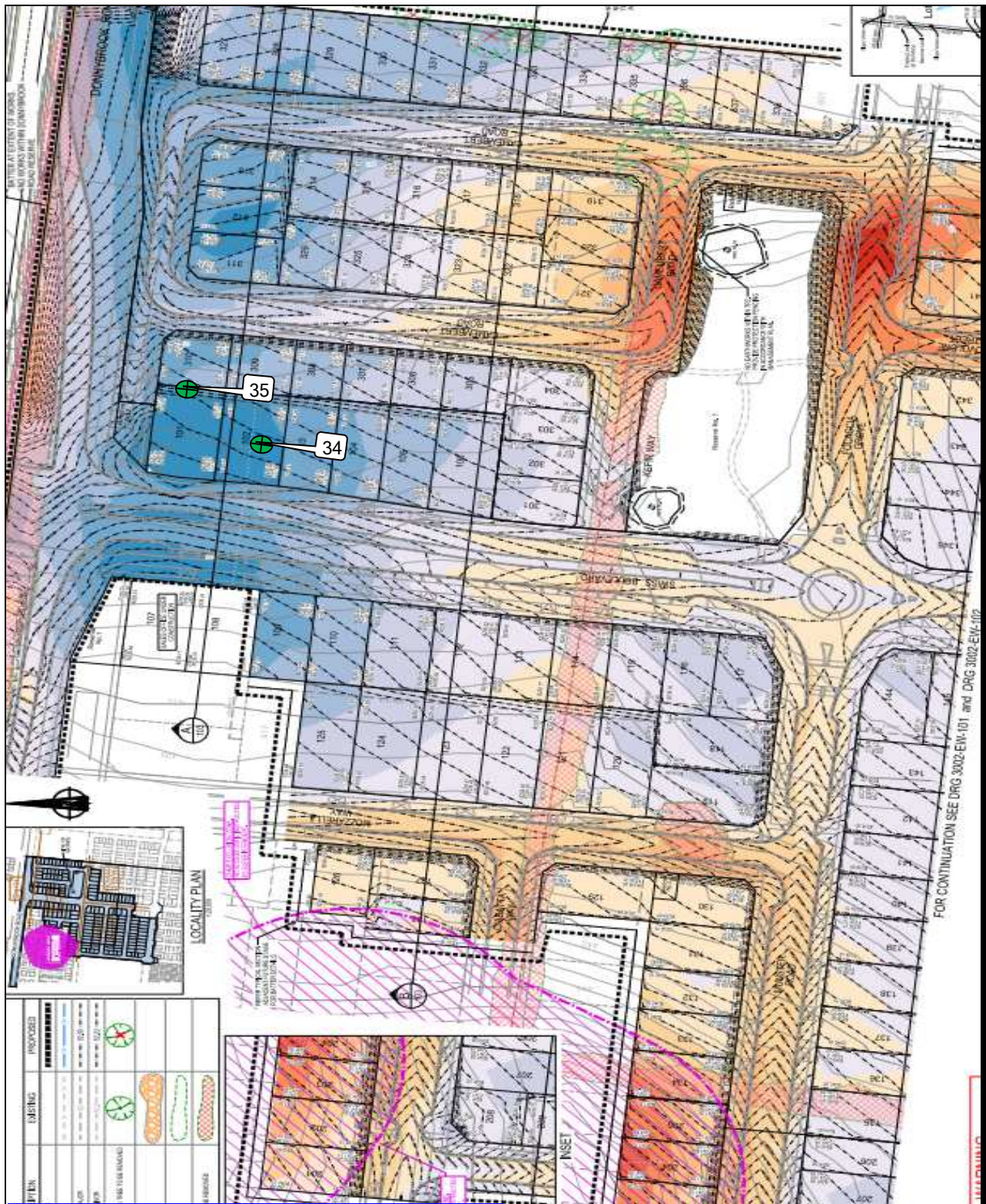
**SCALE: NTS**

**JOB No.: 9112/037**

**CHECKED: KK**

**FIGURE No: 1 of 2**





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

**CLIENT: SYMON BROS**

**LOCATION: Heartford Estate, Stages 1 - 3**

**Sketch indicating compaction test locations**

**DATE: 6/09/2023**

**OPERATOR: OK**

**SCALE: NTS**

**JOB No.: 9112/037**

**CHECKED: KK**

**FIGURE No: 2 of 2**



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## DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 9112/039

LOCATION: SYMON BROS - Heartford Estate, Stage 1-3

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m <sup>3</sup> )	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m <sup>3</sup> )	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)
7/09/23	36	<b><i>Refer to #9112/040 for approx. test site locations.</i></b>	1.95	21.5	97.5	2.01	21.5	175	0.0 Drier	100.0	0	0	100
7/09/23	37		1.93	24.5	97.0	1.99	24.0	175	0.0 Wetter	101.0	0	0	100
7/09/23	38		1.94	22.5	98.0	1.98	23.0	175	0.5 Drier	97.0	0	0	100
7/09/23	39		1.89	30.5	97.5	1.93	28.5	175	2.5 Wetter	108.5	0	0	100
7/09/23	40		1.93	26.5	97.0	2.00	26.5	175	0.0 Drier	100.0	0	0	100
7/09/23	41		1.96	21.5	98.0	2.00	22.0	175	0.0 Drier	99.0	0	0	100

NOTES: Clayey Fill Ex. Onsite

Test sites located - Geolab Procedure 4, Part 4.4.

Compaction specimens sampled after compaction.

Start Time: 12:20pm Finish Time: 1:20pm

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)



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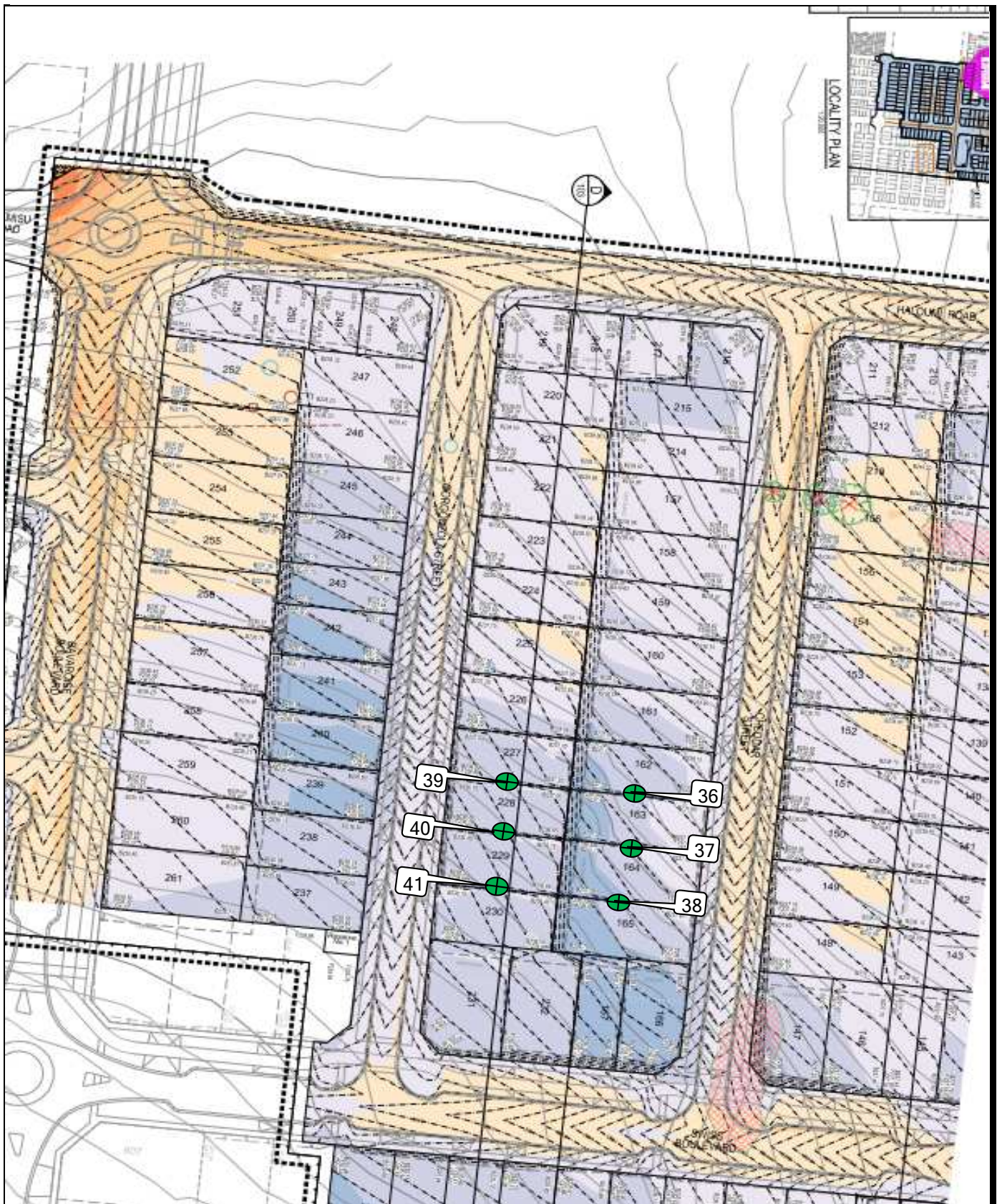
**MICK CROWE**  
 (Approved Signatory)

Issue Date: 13/9/2023

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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: Heartford Estate, Stages 1 - 3**

**Sketch indicating compaction test locations**

**DATE: 7/09/2023**

**OPERATOR: OK**

**SCALE: NTS**

**JOB No.: 9112/040**

**CHECKED: KK**

**FIGURE No: -**





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## DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 9112/042

LOCATION: SYMON BROS - Heartford Estate, Stage 1-3

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m <sup>3</sup> )	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m <sup>3</sup> )	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)
12/09/23	42	<i>Refer to #9112/043 for approx. test site locations.</i>	1.90	24.5	95.5	1.98	23.0	175	1.5 Wetter	107.5	0	0	300
12/09/23	43		1.97	24.5	100.0	1.97	24.0	175	0.5 Wetter	103.0	0	0	300
12/09/23	44		1.89	23.5	95.0	✱ 1.99	22.5	175	0.5 Wetter	103.5	4	0	400
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-

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: 10:15am

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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**MICK CROWE**  
(Approved Signatory)

Issue Date: 18/9/2023



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

**CLIENT: SYMON BROS**

**LOCATION: Heartford Estate, Stages 1 - 3**

**Sketch indicating compaction test locations**

**DATE: 12/09/2023**

**OPERATOR: FH**

**SCALE: NTS**

**JOB No.: 9112/043**

**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.: # 9112/046A

LOCATION: SYMON BROS - Heartford, Stage 1-3

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m <sup>3</sup> )	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m <sup>3</sup> )	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)
19/09/23	45	<b><i>Refer to #9112/047A for approx. test site locations.</i></b>	1.93	21.5	99.5	1.94	22.5	175	1.0 Drier	95.5	0	0	200
19/09/23	46		1.90	25.5	99.0	1.93	28.0	175	2.5 Drier	92.0	0	0	200
19/09/23	47		1.93	21.5	100.0	1.93	24.0	175	2.0 Drier	91.0	0	0	200
-	-		-	-	-	-	-	-	-	-	-	-	-
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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: 2:10pm Finish Time: 2:55pm

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.

This Report Supersedes Report # 9112/046

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)

✱

❖



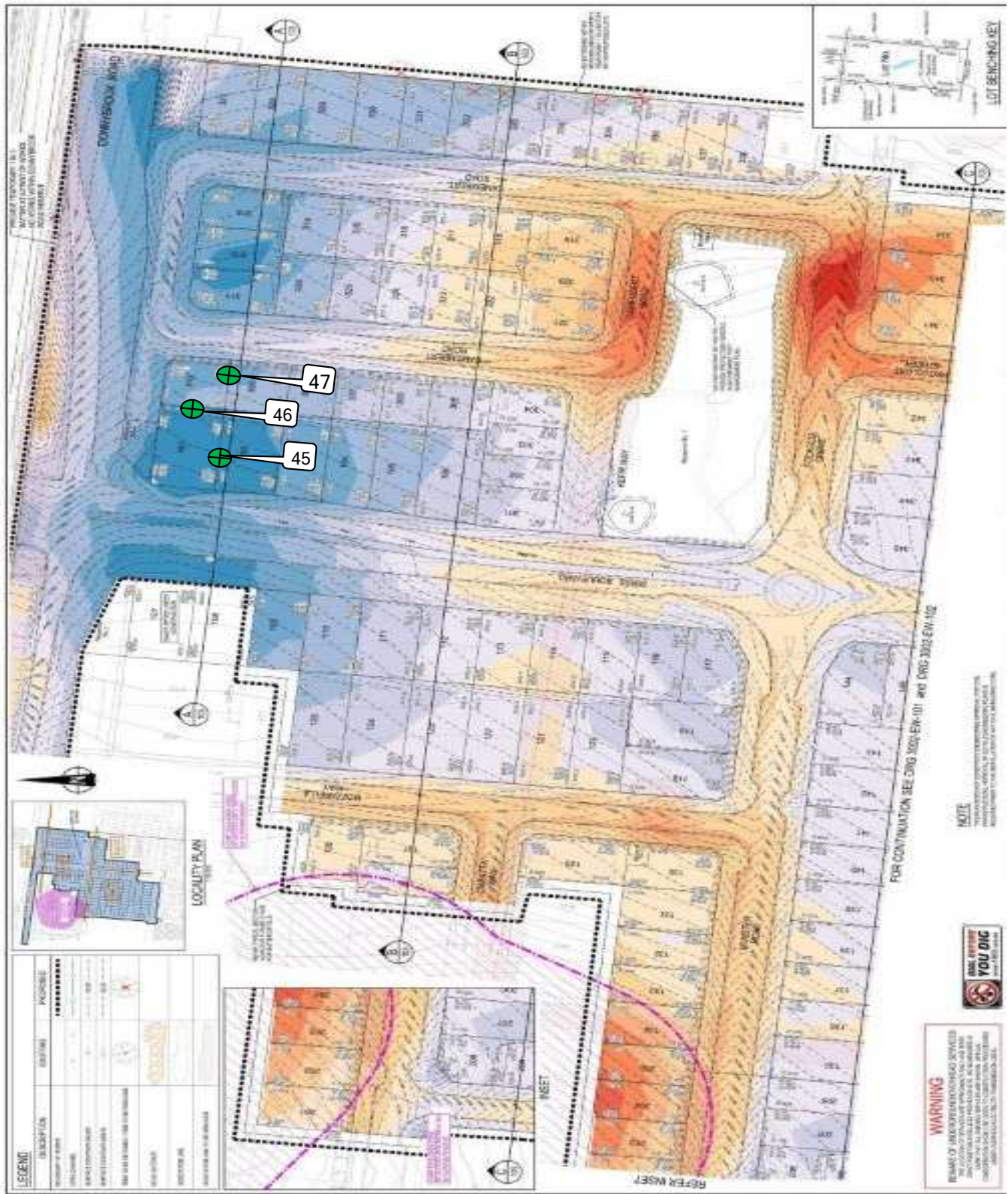
WORLD RECOGNISED  
ACCREDITATION

Accredited for compliance with ISO/IEC  
17025 - Testing

NATA Accredited Laboratory Number 14561

**MICK CROWE**  
(Approved Signatory)

Issue Date: 26/9/2023



**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: Heartford Estate, Stages 1 - 3**

**Sketch indicating compaction test locations**

**DATE: 19/09/2023**

**OPERATOR: OK**

**SCALE: NTS**

**JOB No.: 9112/047A**

**CHECKED: KK**

**FIGURE No: -**





**GEOTECHNICAL  
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## DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 9112/049

LOCATION: SYMON BROS - Heartford Estate, Stage 1-3

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m <sup>3</sup> )	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m <sup>3</sup> )	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)
21/09/23	48	<i>Refer to #9112/051 for approx. test site locations.</i>	1.94	18.5	100.0	1.94	22.0	175	3.5 Drier	85.0	0	0	0
21/09/23	49		1.95	20.5	99.5	1.96	22.5	175	1.5 Drier	92.5	0	0	0
21/09/23	50		1.86	23.0	98.5	1.89	25.0	175	1.5 Drier	93.0	0	0	0
21/09/23	51		1.82	26.0	96.0	1.90	24.5	175	1.5 Wetter	105.0	0	0	0
21/09/23	52		1.84	26.0	96.0	1.92	25.0	175	1.0 Wetter	103.0	0	0	0
21/09/23	53		1.94	27.5	101.5	1.91	26.0	175	1.0 Wetter	104.0	0	0	0

NOTES: Clayey Fill Ex. Onsite

Test sites located - Geolab Procedure 4, Part 4.4.

Compaction specimens sampled after compaction.

Start Time: 12:05pm Finish Time: 1:30pm

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)



Accredited for compliance with ISO/IEC  
17025 - Testing

NATA Accredited Laboratory Number 14561

*M. Crowe*

MICK CROWE  
(Approved Signatory)

Issue Date: 2/10/2023



**GEOTECHNICAL  
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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.: # 9112/050

LOCATION: SYMON BROS - Heartford Estate, Stage 1-3

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m <sup>3</sup> )	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m <sup>3</sup> )	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)
21/09/23	54	<i>Refer to #9112/051 for approx. test site locations.</i>	1.82	30.0	95.0	1.92	29.5	175	1.0 Wetter	102.5	0	0	0
21/09/23	55		2.03	22.5	101.5	2.01	21.5	175	0.5 Wetter	103.5	0	0	0
21/09/23	56		1.95	24.0	99.0	1.97	23.5	175	0.5 Wetter	102.0	0	0	0
21/09/23	57		1.96	26.0	100.0	1.96	24.5	175	1.5 Wetter	106.0	0	0	200
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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: 12:05pm Finish Time: 1:30pm

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)



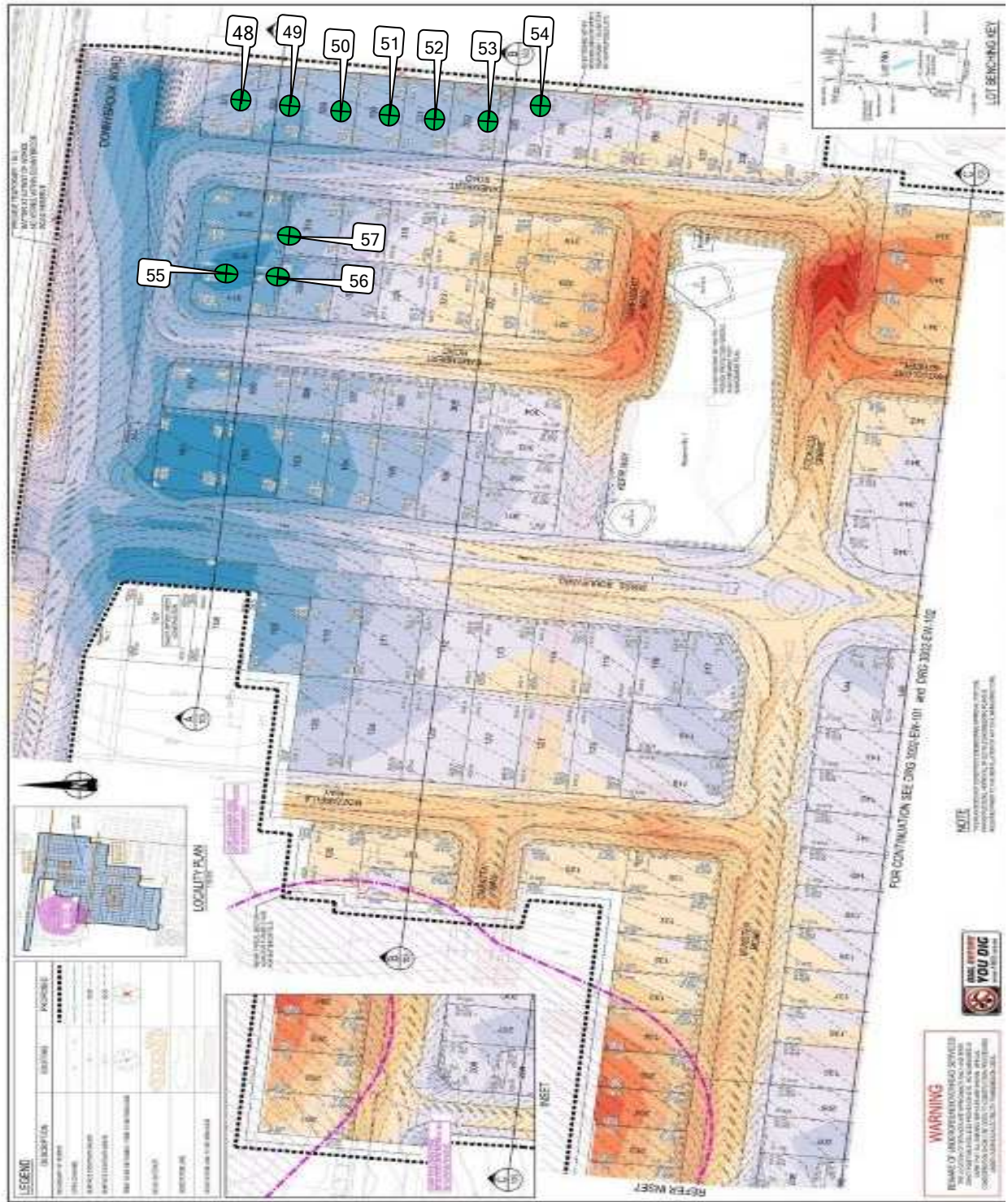
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17025 - Testing

NATA Accredited Laboratory Number 14561

**MICK CROWE**  
(Approved Signatory)

Issue Date: 2/10/2023





**GEOTECHNICAL  
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**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: Heartford Estate, Stages 1 - 3**

**Sketch indicating compaction test locations**

**DATE: 21/09/2023**

**OPERATOR: OK**

**SCALE: NTS**

**JOB No.: 9112/051**

**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.: # 9112/053

LOCATION: SYMON BROS - Heartford Estate, Stage 1-3

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m <sup>3</sup> )	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m <sup>3</sup> )	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)
25/09/23	58	<b>Refer to #9112/054 for approx. test site locations.</b>	1.85	27.0	97.5	1.90	27.0	175	0.0 Drier	100.0	0	0	0
25/09/23	59		1.94	25.5	100.5	1.93	23.5	175	2.0 Wetter	107.5	0	0	0
25/09/23	60		1.81	27.5	96.0	1.89	27.5	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: 1.30PM Finish Time: 2.05PM

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)



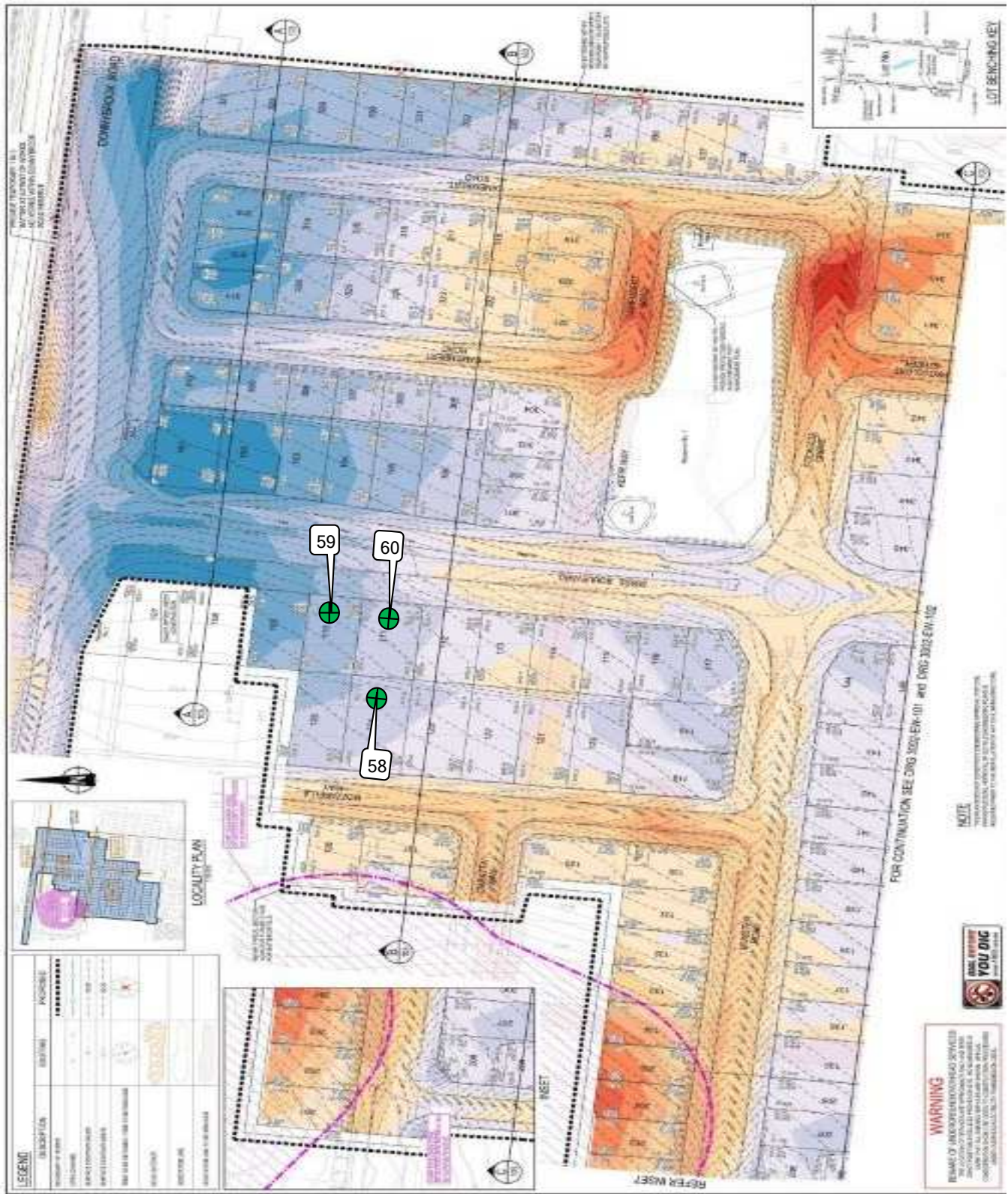
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NATA Accredited Laboratory Number 14561

**MICK CROWE**  
(Approved Signatory)

Issue Date: 3/10/2023





**GEOTECHNICAL  
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**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: Heartford Estate, Stages 1 - 3**

**Sketch indicating compaction test locations**

**DATE: 25/09/2023**

**OPERATOR: OK**

**SCALE: NTS**

**JOB No.: 9112/054**

**CHECKED: NF**

**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.: # 9112/056

LOCATION: SYMON BROS - Heartford Estate, Stage 1-3

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m <sup>3</sup> )	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m <sup>3</sup> )	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)
27/09/23	61	<i>Refer to #9112/057 for approx. test site locations.</i>	1.97	27.0	99.0	1.98	25.0	175	2.0 Wetter	108.0	0	0	0
27/09/23	62		1.98	28.0	99.5	1.99	25.0	175	3.0 Wetter	111.0	0	0	0
27/09/23	63		1.98	23.0	99.5	✱ 1.99	23.0	175	0.0 Wetter	101.0	4	0	0
27/09/23	64		1.89	22.0	97.5	1.94	21.5	175	0.0 Wetter	101.0	0	0	0
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-

NOTES: Clayey Fill Ex. Onsite

Test sites located - Geolab Procedure 4, Part 4.4.

Compaction specimens sampled after compaction.

Start Time: 1.30PM 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)

✱ Indicates APCWD



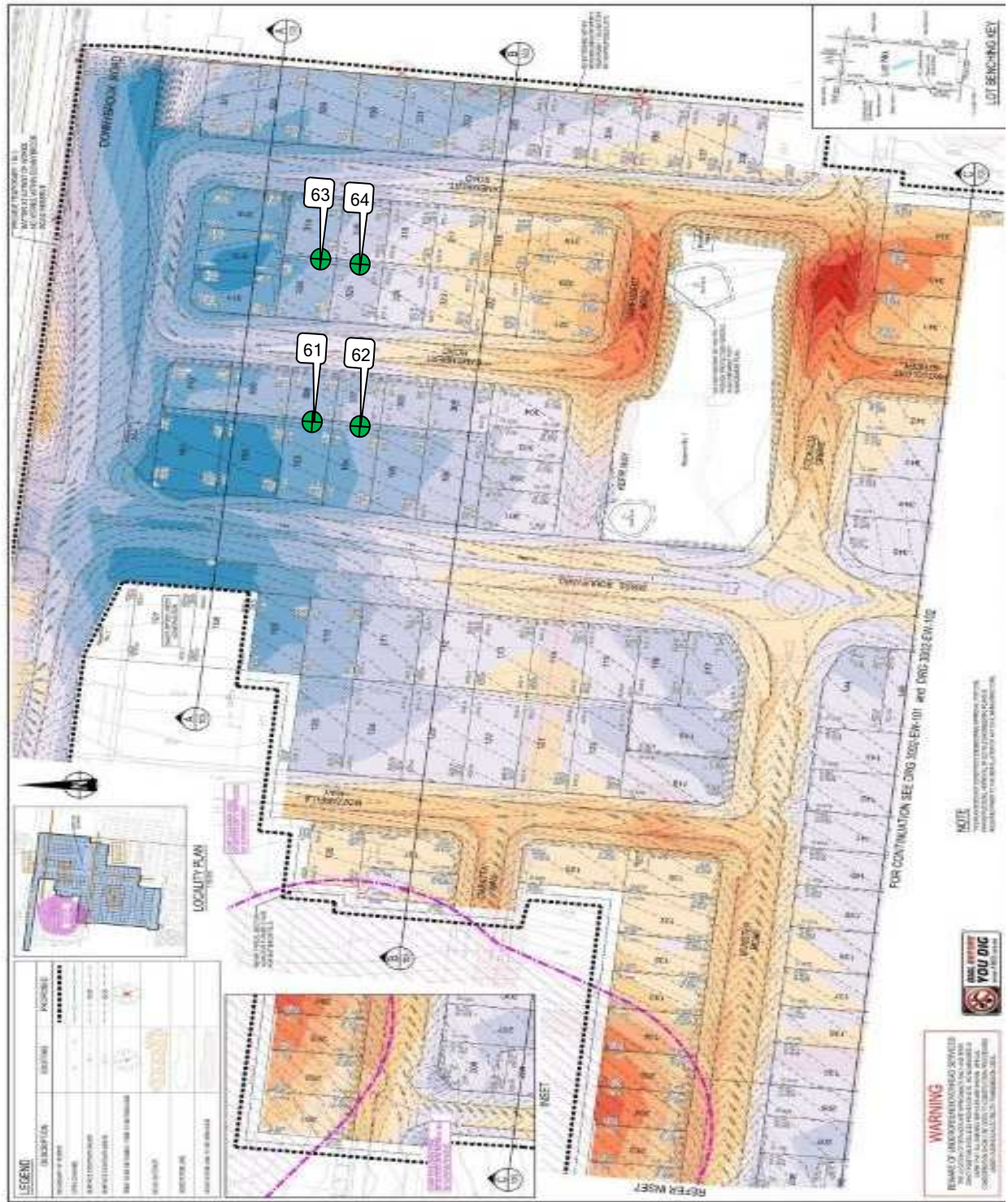
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NATA Accredited Laboratory Number 14561

**MICK CROWE**  
(Approved Signatory)

Issue Date: 5/10/2023





**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: Heartford Estate, Stages 1 - 3**

**Sketch indicating compaction test locations**

**DATE: 27/09/2023**

**OPERATOR: OK**

**SCALE: NTS**

**JOB No.: 9112/057**

**CHECKED: KK**

**FIGURE No: -**