

Merrifield Estate - Stage 49, Mickleham

Level 1 Inspection & Testing Report

Reference: 1120 0322-1



Prepared for:

BMD Urban

May 2023



A&Y ASSOCIATES
GEOTECHNICAL ENGINEERING CONSULTANTS

Document Control Record

Prepared by:

A&Y Associates Pty Ltd

ABN 92 614 244 665

5/16 Network Drive

Truganina, VIC 3029

T: (03) 8754 8325

E: info@ayassociates.com.au

W: www.ayassociates.com.au

Document control

Report title	Level 1 Inspection & Testing				
Project reference number	1120 0322-1				
Client	BMD Urban				
Contact name	Alyssa Willder				
Contact number	0400 207 600				
Contact e-mail	Alyssa.Willder@bmd.com.au				
Revision	Date	Descriptions/Status	Author	Reviewer	Approver
0	10/05/2023	First Issue	Y Balkis	A Tan	A Tan

Approver



Alvin Tan

(BE Civil and Infrastructure), MIEAust

Senior Geotechnical Engineer

E: alvin@ayassociates.com.au | M: 0449 288 338



ENGINEERS
AUSTRALIA
Professional Engineer
MEMBER

Disclaimer

The findings and conclusions contained in this report are made based on site conditions that existed at the time this work was conducted. The conclusions present in this report are relevant to the conditions of the site and the state of legislation currently enacted as at the date of this report.

Findings and conclusions are made assuming that the soil, groundwater, geological and chemical conditions detailed within this report are accurate and remain applicable to the site at the time of writing. No other warranties are made or intended.

A&Y Associates (A&Y) Pty Ltd has used a degree of skill and care ordinarily exercised by reputable members of our profession practicing in the same or similar locality.

A&Y does not make any representation or warranty that the conclusions in this report will be applicable in the future as there may be changes in the condition of the site, applicable legislation or other factors that would affect the conclusions contained in this report.

This report has been prepared exclusively for use by our client. This report cannot be reproduced without the written authorisation of A&Y and then can only be reproduced in its entirety.

Applicability

This report has been prepared for the benefit for our client with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose without our prior review and agreement.

No responsibility for this report will be taken by A&Y if it is altered in any way, or not reproduced in full.

Contents

1	Introduction.....	3
2	Project Summary	3
3	Project Specifications.....	4
4	Subgrade Assessment.....	5
5	Earthworks.....	5
6	Fill Material	5
7	Testing.....	6
8	Finished Surface Levels	6
9	Exclusion	6
10	Conclusion	7
	Appendix A - Site Plan	8
	Appendix B – Test Locations	10
	Appendix C – Test Results Summary	13
	Appendix D – NATA Test Results	20

1 Introduction

This report presents the results of the Level 1 Inspection and Testing for the construction of the fill platforms located in Merrifield Estate - Stage 49, Mickleham.

2 Project Summary

It is understood that BMD Urban require the fill platforms within Stage 49 to be constructed under Level 1 Inspection and Testing undertaken by a Geotechnical Inspection and Testing Authority (GITA).

Level 1 Inspection and Testing, as defined in AS3798-2007 "Guidelines on Earthworks for Commercial and Residential Development," provides for full time inspection of the construction of controlled fill and field and laboratory testing in accordance with AS1289 "Methods of Testing Soils for Engineering Purposes".

The Level 1 inspection was undertaken by a Geotechnician from A&Y Associates over a period of **52 working days** from the **30th March 2022 to 17th February 2023**.

This report is applicable for fill placed by BMD Urban in Merrifield Estate - Stage 49, Mickleham, as shown in Appendix A – Site Plan.

3 Project Specifications

The supervision and inspections were performed based on AS3798, the specifications provided in the geotechnical report (ref: "Geotechnical Site Investigation, Merrifield Living – Section E&G Donnybrook Road, Mickleham"; Report No. G4719.1 REVAB, by Ground Science Pty Ltd, Dated 19/05/2022) and the drawing (ref: "Merrifield Living – Section E – Stage 49"; Project No: 17040-49, Drawing No: RD102 - REV0 by Verve Projects Pty Ltd, Dated 05/09/2022) for the construction works in Merrifield Estate – Stage 49, Mickleham. A short summary of the requirements is provided below:

- Material to be used for fill construction shall satisfy the requirements of AS3798-2007 "Guidelines on Earthworks for Commercial and Residential Developments". Material used shall be free of:
 - Organic soils, such as topsoils, severely root affected subsoil and peat;
 - Contaminated soils;
 - Materials which undergo volume change or loss of strength when disturbed and exposed to moisture;
 - Silts, or materials that have deleterious engineering properties of silt;
 - Fill that contains wood, metal, plastic, boulders, or other deleterious material, in sufficient proportions to affect the required performance of fill;
 - The maximum particle size of any rocks or other lump, within the layer, has not exceeded two-thirds (2/3) of the compacted layer thickness.
- Compaction to achieve a dry density ratio of at least 95% Standard, as the project was classified as **Residential**.

4 Subgrade Assessment

The subgrade was assessed by A&Y Associates following the topsoil removal and before any fill was placed. The subgrade assessment was undertaken on the **19th of March 2022 and the 22nd of March 2022**, as mentioned in report **1120 0322-1 (SS11)**.

The exposed subgrade material was found to be comprised of silty clay. No wet or soft patches were found during the inspection. No evidence of deleterious material was found during the inspection.

5 Earthworks

The earthworks for this project included stripping of topsoil, removing of tree roots, proof rolling the subgrade and placement and compaction of fill to construct engineered platforms.

Based on design plans and site inspection, the fill thickness is approximately 200mm – 3100mm. The fill layers or thickness nominated in this report are provided as a guide on the amounts of fill placed and do not necessarily reflect an accurate survey of the fill levels.

6 Fill Material

The fill material used for the platform consisted of imported material. The imported material was predominantly comprising of Silty Clay with gravel.

7 Testing

Field density testing was undertaken on the compacted fill at a frequency of a minimum of 3 tests per lot (AS3798 Table 8.1).

Tests were performed using a Nuclear Density Gauge for field density determination as per AS 1289.5.8.1. Testing was completed at a minimum rate of 3 field density tests per day's production based on the minimum requirements of AS 3798-2007 and taken from each layer of fill placed.

A total of 153 field density tests were performed during the earthworks. All of the test results met the specified compaction requirement of 95% Standard Compaction.

The locations of the 153 field density tests are shown in Appendix B – Test Locations. A summary of the test results obtained from the field density testing is presented in Appendix C – Test Results Summary. The laboratory test reports of the field density tests are presented in Appendix D – NATA Test Results.

8 Finished Surface Levels

It should be noted that even though the final fill layer meets the specification requirements, over time, the material may be subject to adverse weather conditions resulting in either surface softening or drying and cracking. The top 150mm – 200mm of the fill will deteriorate with time and should be considered by the foundation engineer.

9 Exclusion

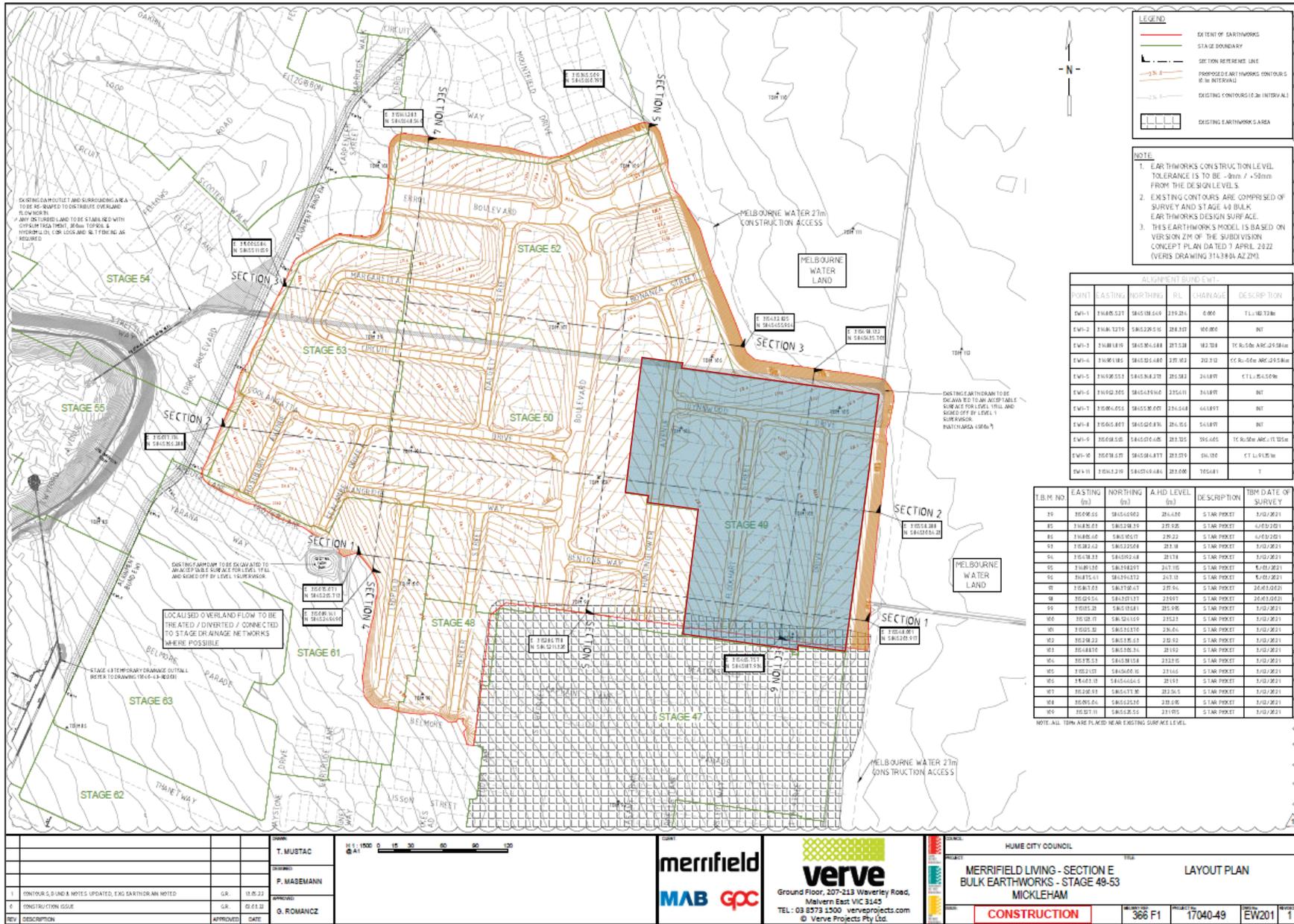
A&Y Associates was not involved in monitoring and testing the following works and as such are not included in the Level 1 report.

- Any trenches excavated and backfilled on site for the installation of underground services such as sewers, electrical conduits, water mains etc.
- Footpaths in front of the lots that may be excavated and filled after the Level 1 supervision conducted by A&Y Associates.
- Uncontrolled fill and topsoil that may have been placed as part of the landscaping of the site following the completion of the engineered fill construction.

10 Conclusion

On the completion of the earthworks and after analysing the materials used, it has been concluded that the filling procedure conducted by BMD Urban appears to be consistent with the requirements of AS 3798 in regards to the placement of fill materials on a project under Level 1 Supervision and in accordance with the project specification as provided to A&Y Associates.

Appendix A - Site Plan



Area Inspected and Tested

PROJECT:
Merrifield Estate – Stage 49 (Level 1)

LOCATION:
Mickleham

CLIENT:
BMD Urban

PROJECT No:
1120 0322-1

SITE PLAN SKETCH—NOT TO SCALE

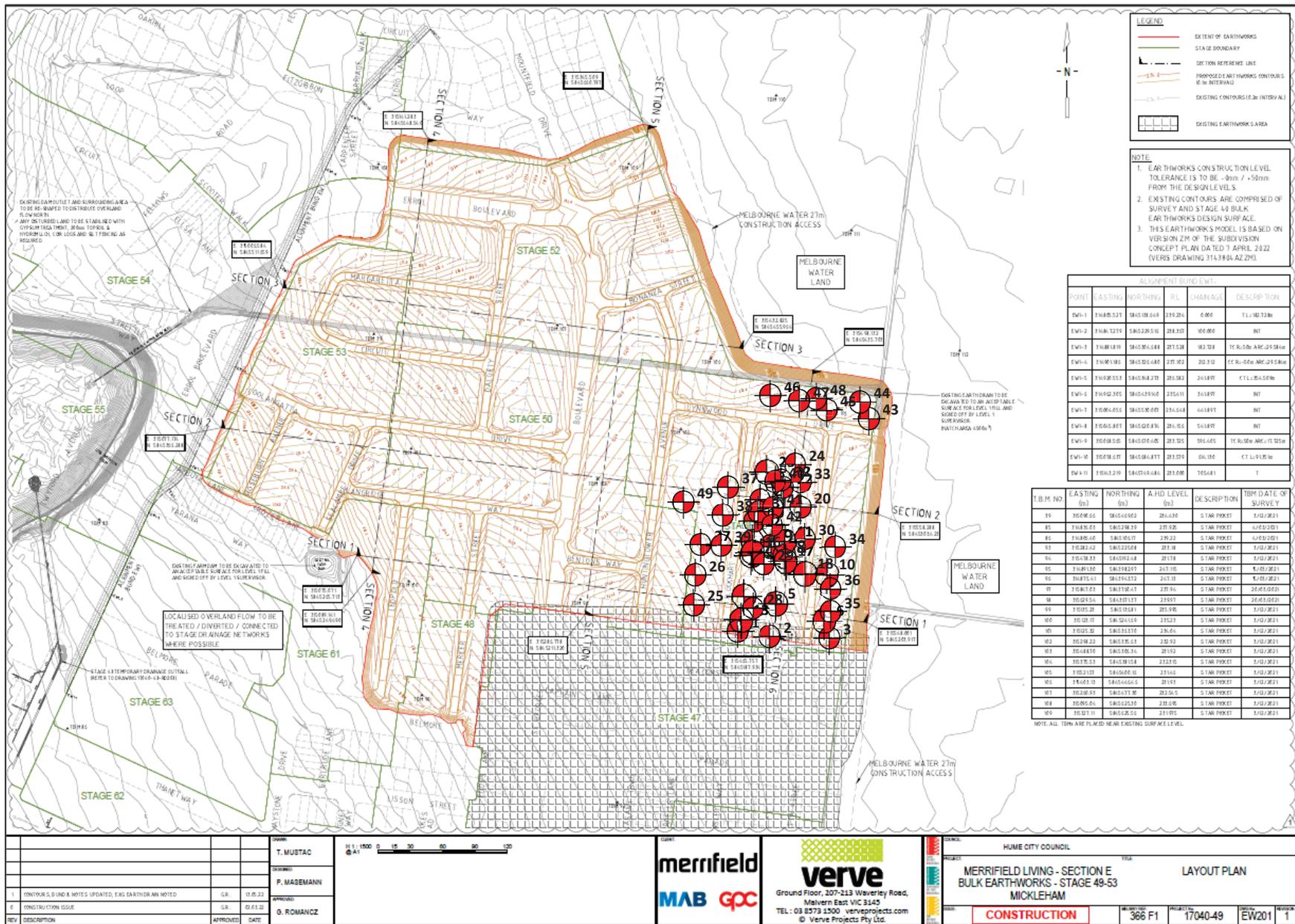


<p>DATE: 13/05/23</p> <p>DESIGNED BY: T. MUSTAC</p> <p>CHECKED BY: P. MASEMANN</p> <p>APPROVED BY: G. ROMANCZ</p>	<p>SCALE: 1:1000</p> <p>10 20 30 40 50 60 70 80 90 100</p>	<p>merrifield</p> <p>MAB gpc</p>	<p>verve</p> <p>Ground Floor, 207-213 Waverley Road, Mickleham East VIC 3142 TEL: 03 8573 1500 verveprojects.com © Verve Projects Pty Ltd.</p>	<p>HUME CITY COUNCIL</p> <p>MERRIFIELD LIVING - SECTION E BULK EARTHWORKS - STAGE 49-53 MICKLEHAM</p> <p>LAYOUT PLAN</p> <p>CONSTRUCTION</p> <p>368 F1 17040-49 EW201 1</p>
---	--	--	--	--

Appendix B – Test Locations



Indicative Test Location



PROJECT:
Project : Merrifield Estate - Stage 49 (Level1)

LOCATION:
Location : Mickleham

CLIENT:
Client : BMD Urban

PROJECT No:
Project No : 1120 0322-1

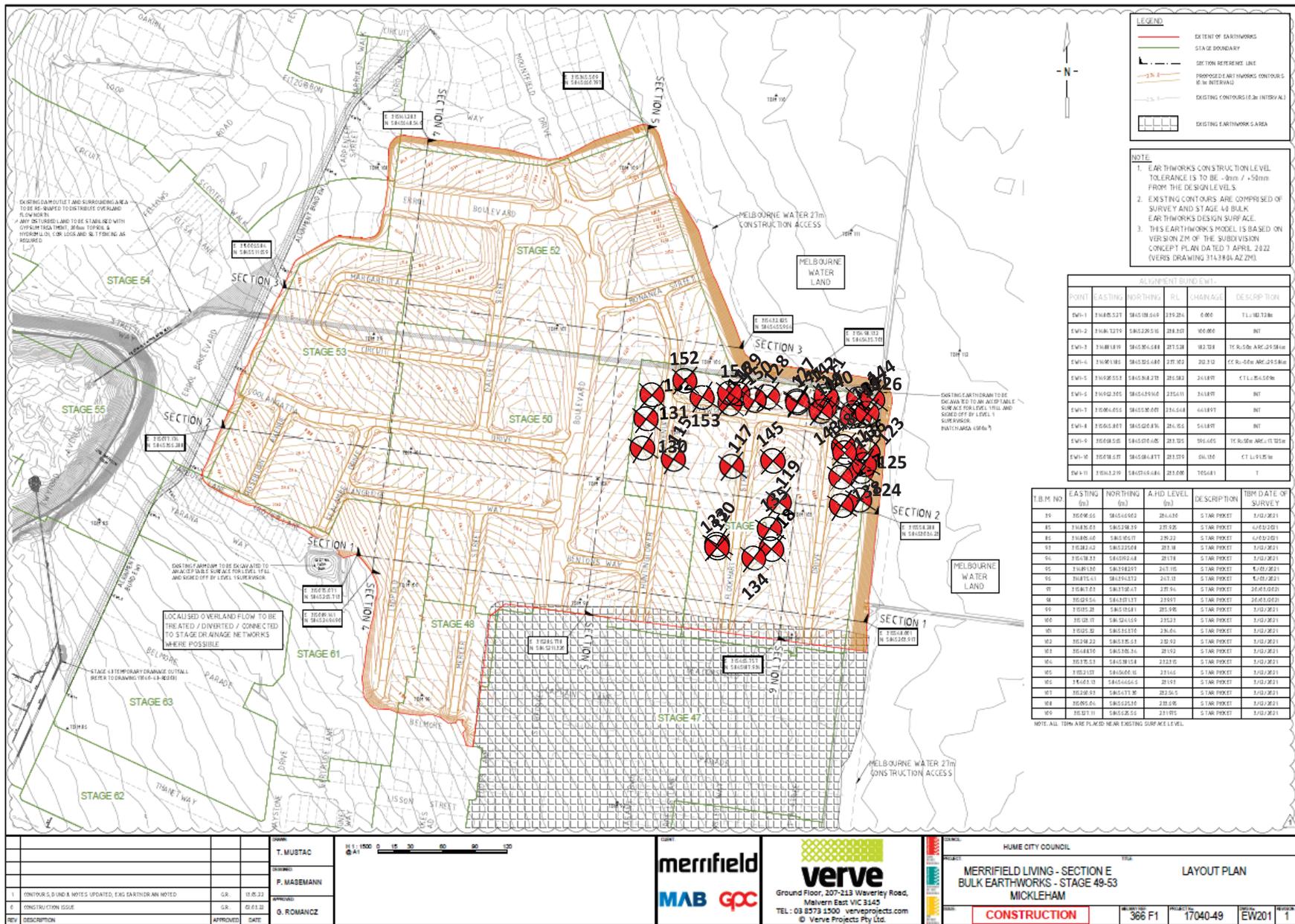
SITE PLAN SKETCH—NOT TO SCALE



T. MUSTAC P. MASEMANN G. ROMANICZ		 Ground Floor, 207-213 Waverley Road, Melburn East VIC 3145 TEL: 03 8773 5300 www.projects.com © Verve Projects Pty Ltd.	HUME CITY COUNCIL MERRIFIELD LIVING - SECTION E BULK EARTHWORKS - STAGE 49-53 MICKLEHAM LAYOUT PLAN CONSTRUCTION
1. CONTOUR S, D AND A NOTES UPDATED, EXC. S. REVISION NOTED 2. CONSTRUCTION ISSUE	G.R. 11.05.22 G.R. 02.01.22	1:1000 0 10 20 30 40 50 60 70 80 90 100	PROJECT NO: 17040-49 SHEET NO: 366 F1 DRAWING NO: EW201 REVISION: 1



Indicative Test Location



PROJECT:
Project : Merrifield Estate - Stage 49 (Level1)

LOCATION:
Location : Mickleham

CLIENT:
Client : BMD Urban

PROJECT No:
Project No : 1120 0322-1

SITE PLAN SKETCH—NOT TO SCALE

A&Y ASSOCIATES
GEOTECHNICAL ENGINEERING CONSULTANTS

DESIGNED BY	T. MUSTAC	DATE	11.05.22
CHECKED BY	P. MASEMANN	DATE	02.11.22
APPROVED BY	G. ROMANICZ	DATE	
REVISION			
1	CONTOUR S, D AND A NOTES UPDATED, EXCISE REVISION NOTED	G.R.	11.05.22
2	CONSTRUCTION ISSUE	G.R.	02.11.22
3			
4			

merrifield **MAB gpc** **verve**

Ground Floor, 207-213 Waverley Road,
Melburn East VIC 3145
TEL: 03 8773 5300 www.projects.com
© Verve Projects Pty Ltd.

HUME CITY COUNCIL

MERRIFIELD LIVING - SECTION E
BULK EARTHWORKS - STAGE 49-53
MICKLEHAM

LAYOUT PLAN

CONSTRUCTION 366 F1 17040-49 EW201 1

Appendix C – Test Results Summary

Project No		1120 0322-1				Client		BMD Urban	
Project Name		Merrifield - Stage 49 (Level 1)							
Location		Mickleham				Specification			
Test No	Retest of Test	Date	Location	Layer	Oversize	Density Ratio	Moisture Ratio	Moisture Variation	Density Ratio \geq 95% of Peak Wet Density
#	#		Lot #	#	%	%	%	%	Pass / Fail
1	-	30/03/2022	-	1	4.8	97.5	97.5	-0.5	Pass
2	-	30/03/2022	-	1	3.2	96.5	96.5	-0.5	Pass
3	-	30/03/2022	-	1	4.3	95.5	99.0	-0.5	Pass
4	-	31/03/2022	-	1	4.9	98.0	99.0	-0.5	Pass
5	-	31/03/2022	-	1	5.6	96.0	95.5	-0.5	Pass
6	-	31/03/2022	-	1	5.9	99.0	113.5	2.0	Pass
7	-	4/01/2022	-	1	4.1	96.5	99.5	-0.5	Pass
8	-	4/01/2022	-	1	3.9	96.5	99.0	0.0	Pass
9	-	4/01/2022	-	1	4.8	97.5	99.0	-0.5	Pass
10	-	4/04/2022	-	1	3.1	96.5	99.0	-0.5	Pass
11	-	4/04/2022	-	1	4.5	97.5	95.5	-1.0	Pass
12	-	4/04/2022	-	1	4.2	96.0	97.0	-1.0	Pass
13	-	4/05/2022	-	2	3.2	96.5	97.0	-0.5	Pass
14	-	4/05/2022	-	2	3.5	98.0	108.5	1.5	Pass
15	-	4/05/2022	-	2	2.9	97.5	106.5	1.5	Pass
16	-	4/06/2022	-	2	4.5	96.5	97.0	-0.5	Pass
17	-	4/06/2022	-	2	3.0	96.5	106.0	1.5	Pass
18	-	4/06/2022	-	2	3.5	97.5	97.0	-0.5	Pass
19	-	4/07/2022	-	2	5.5	96.5	96.5	-0.5	Pass
20	-	4/07/2022	-	2	5.9	96.0	113.5	1.5	Pass
21	-	4/07/2022	-	2	4.8	96.5	111.5	1.5	Pass
22	-	4/08/2022	-	2	3.5	98.0	110.5	1.5	Pass
23	-	4/08/2022	-	2	4.0	98.5	99.5	-0.5	Pass
24	-	4/08/2022	-	2	4.5	95.5	113.5	2.0	Pass
25	-	4/09/2022	-	1	4.2	97.5	96.5	-1.0	Pass

** Negative (-) value indicates that the field moisture content is drier than the optimum moisture content (OMC)

** Positive (+) value indicates that the field moisture content is wetter than the optimum moisture content (OMC)

26	-	4/09/2022	-	1	4.0	98.0	97.5	-0.5	Pass	-
27	-	4/09/2022	-	1	4.5	96.5	108.0	1.5	Pass	-
28	-	4/11/2022	-	3	4.8	98.0	99.0	-0.5	Pass	-
29	-	4/11/2022	-	3	4.4	98.5	96.5	-0.5	Pass	-
30	-	4/11/2022	-	3	4.0	96.5	110.5	2.0	Pass	-
31	-	4/12/2022	-	3	4.1	97.5	95.5	-0.5	Pass	-
32	-	4/12/2022	-	3	5.5	98.0	111.0	2.0	Pass	-
33	-	4/12/2022	-	3	5.1	97.5	109.5	1.5	Pass	-
34	-	13/04/2022	-	3	4.1	100.5	96.5	-0.5	Pass	-
35	-	13/04/2022	-	3	5.5	97.0	108.5	1.5	Pass	-
36	-	13/04/2022	-	3	5.1	96.5	110.0	2.0	Pass	-
37	-	14/04/2022	-	3	4.8	98.0	99.0	-0.5	Pass	-
38	-	14/04/2022	-	3	3.2	95.5	99.0	-0.5	Pass	-
39	-	14/04/2022	-	3	4.3	96.0	97.0	-0.5	Pass	-
40	-	26/04/2022	-	3	4.1	95.5	108.5	1.5	Pass	-
41	-	26/04/2022	-	3	4.5	98.0	97.0	-0.5	Pass	-
42	-	26/04/2022	-	3	5.2	97.0	96.5	-1.0	Pass	-
43	-	27/04/2022	-	2	5.8	95.5	111.5	2.0	Pass	-
44	-	27/04/2022	-	2	4.3	96.5	99.0	-0.5	Pass	-
45	-	27/04/2022	-	2	3.2	97.0	107.5	1.5	Pass	-
46	-	28/04/2022	-	2	0.0	98.5	96.5	-0.5	Pass	-
47	-	28/04/2022	-	2	0.0	96.0	95.5	-1.0	Pass	-
48	-	28/04/2022	-	2	0.0	97.0	99.0	-0.5	Pass	-
49	-	29/04/2022	-	1	3.5	98.0	110.5	1.5	Pass	-
50	-	5/02/2022	-	5	4.2	97.5	96.5	-1.0	Pass	-
51	-	5/02/2022	-	5	4.0	98.0	95.0	-0.5	Pass	-
52	-	5/02/2022	-	5	4.4	96.5	108.0	1.5	Pass	-
53	-	5/03/2022	-	2	5.3	98.0	109.5	2.0	Pass	-
54	-	5/03/2022	-	2	4.5	96.5	96.5	-0.5	Pass	-
55	-	5/03/2022	-	2	3.8	95.5	107.5	2.0	Pass	-
56	-	5/04/2022	-	2	5.1	99.5	111.5	2.0	Pass	-

** Negative (-) value indicates that the field moisture content is drier than the optimum moisture content (OMC)

** Positive (+) value indicates that the field moisture content is wetter than the optimum moisture content (OMC)

57	-	5/04/2022	-	2	4.5	99.5	97.5	-0.5	Pass	-
58	-	5/04/2022	-	2	6.2	95.0	106.0	1.5	Pass	-
59	-	5/05/2022	-	2	4.3	98.0	97.5	-0.5	Pass	-
60	-	5/05/2022	-	2	5.2	95.5	109.0	2.0	Pass	-
61	-	5/05/2022	-	4	3.0	99.5	98.0	0.0	Pass	-
62	-	5/06/2022	-	4	4.7	95.5	109.0	1.5	Pass	-
63	-	5/06/2022	-	4	6.3	97.0	97.5	-0.5	Pass	-
64	-	5/06/2022	-	3	5.1	97.0	98.5	-0.5	Pass	-
65	-	5/09/2022	-	3	4.1	99.0	99.0	-0.5	Pass	-
66	-	5/09/2022	-	4	5.5	96.0	109.0	1.5	Pass	-
67	-	5/09/2022	-	4	3.2	98.5	96.5	-0.5	Pass	-
68	-	5/10/2022	-	3	4.5	95.0	97.0	-0.5	Pass	-
69	-	5/10/2022	-	3	3.8	95.5	97.0	-1.0	Pass	-
70	-	5/10/2022	-	4	5.0	96.0	99.5	-0.5	Pass	-
71	-	5/11/2022	-	3	4.5	98.5	109.5	2.0	Pass	-
72	-	5/11/2022	-	3	5.1	98.0	98.0	0.0	Pass	-
73	-	5/11/2022	-	4	3.0	96.5	107.0	1.5	Pass	-
74	-	5/12/2022	-	4	5.9	97.0	95.5	-0.5	Pass	-
75	-	5/12/2022	-	4	4.2	95.5	108.0	1.5	Pass	-
76	-	5/12/2022	-	4	5.0	98.0	96.0	-0.5	Pass	-
77	-	13/05/2022	-	4	3.2	98.5	109.5	2.0	Pass	-
78	-	13/05/2022	-	4	3.1	95.0	108.0	1.5	Pass	-
79	-	13/05/2022	-	4	2.6	95.5	97.5	-0.5	Pass	-
80	-	16/05/2022	-	4	0.0	98.0	108.5	1.5	Pass	-
81	-	16/05/2022	-	5	4.6	98.5	98.5	-0.5	Pass	-
82	-	16/05/2022	-	5	3.1	99.5	112.5	2.0	Pass	-
83	-	17/05/2022	-	4	5.3	98.5	108.5	1.5	Pass	-
84	-	17/05/2022	-	4	3.2	99.0	99.0	-0.5	Pass	-
85	-	17/05/2022	-	4	5.8	99.0	96.5	-0.5	Pass	-
86	-	18/05/2022	-	4	5.3	98.5	109.0	1.5	Pass	-
87	-	18/05/2022	-	4	3.2	96.5	102.5	0.5	Pass	-

** Negative (-) value indicates that the field moisture content is drier than the optimum moisture content (OMC)

** Positive (+) value indicates that the field moisture content is wetter than the optimum moisture content (OMC)

88	-	18/05/2022	-	4	5.8	95.5	97.0	-0.5	Pass	-
89	-	19/05/2022	-	4	5.9	98.5	99.0	-0.5	Pass	-
90	-	19/05/2022	-	4	4.1	99.0	96.5	-1.0	Pass	-
91	-	19/05/2022	-	4	3.2	97.0	108.0	2.0	Pass	-
92	-	20/05/2022	-	4	4.9	97.5	108.5	1.5	Pass	-
93	-	20/05/2022	-	4	2.5	99.5	99.0	-0.5	Pass	-
94	-	20/05/2022	-	4	3.8	99.0	99.0	-0.5	Pass	-
95	-	23/05/2022	-	5	5.4	98.5	108.5	1.5	Pass	-
96	-	23/05/2022	-	5	4.8	97.0	110.5	2.0	Pass	-
97	-	23/05/2022	-	5	3.2	95.0	98.0	-0.5	Pass	-
98	-	24/05/2022	-	5	4.8	98.5	98.0	-0.5	Pass	-
99	-	24/05/2022	-	5	5.1	99.5	99.0	-0.5	Pass	-
100	-	24/05/2022	-	5	3.8	97.0	108.5	1.5	Pass	-
101	-	25/05/2022	-	5	5.1	98.5	110.5	2.0	Pass	-
102	-	25/05/2022	-	5	5.0	99.0	97.0	-0.5	Pass	-
103	-	25/05/2022	-	4	0.0	98.0	107.5	1.5	Pass	-
104	-	26/05/2022	-	5	4.7	97.5	108.0	1.5	Pass	-
105	-	26/05/2022	-	5	5.1	97.0	107.0	1.5	Pass	-
106	-	26/05/2022	-	5	3.8	99.5	99.0	-0.5	Pass	-
107	-	27/05/2022	-	6	5.1	98.5	107.0	1.5	Pass	-
108	-	27/05/2022	-	6	5.0	98.5	98.5	-1.0	Pass	-
109	-	27/05/2022	-	6	3.0	97.0	108.5	2.0	Pass	-
110	-	30/05/2022	-	6	5.1	99.0	97.5	-0.5	Pass	-
111	-	30/05/2022	-	6	5.0	97.5	109.5	1.5	Pass	-
112	-	30/05/2022	-	6	3.0	99.5	99.0	-0.5	Pass	-
113	-	29/04/2022	-	1	4.0	98.5	99.5	-0.5	Pass	-
114	-	29/04/2022	-	1	4.5	99.0	113.5	2.0	Pass	-
115	-	16/01/2023	-	5	0.0	98.5	108.0	2.0	Pass	-
116	-	16/01/2023	-	5	0.0	95.5	107.0	1.5	Pass	-
117	-	16/01/2023	-	5	3.9	96.0	96.5	-0.5	Pass	-
118	-	19/01/2023	-	4	3.2	97.0	107.5	1.5	Pass	-

** Negative (-) value indicates that the field moisture content is drier than the optimum moisture content (OMC)

** Positive (+) value indicates that the field moisture content is wetter than the optimum moisture content (OMC)

119	-	19/01/2023	-	4	2.0	97.0	108.5	1.5	Pass	-
120	-	19/01/2023	-	4	3.9	96.0	98.5	-0.5	Pass	-
121	-	20/01/2023	-	7	3.7	97.5	99.0	-0.5	Pass	-
122	-	20/01/2023	-	7	5.1	96.5	98.0	-0.5	Pass	-
123	-	20/01/2023	-	7	2.1	96.0	107.0	2.0	Pass	-
124	-	23/01/2023	-	8	4.0	97.0	96.5	-0.5	Pass	-
125	-	23/01/2023	-	8	3.6	96.5	109.0	2.0	Pass	-
126	-	23/01/2023	-	8	2.4	98.0	108.0	2.0	Pass	-
127	-	24/01/2023	-	6	2.0	97.0	107.5	1.5	Pass	-
128	-	24/01/2023	-	6	3.6	97.0	98.5	-0.5	Pass	-
129	-	24/01/2023	-	6	5.2	97.5	97.0	-0.5	Pass	-
130	-	25/01/2023	-	3	3.0	97.0	107.5	2.0	Pass	-
131	-	25/01/2023	-	4	0.0	97.5	97.0	-0.5	Pass	-
132	-	25/01/2023	-	4	5.0	97.5	96.0	-1.0	Pass	-
133	-	30/01/2023	-	FSL	0.0	95.5	108.0	1.5	Pass	-
134	-	30/01/2023	-	FSL	0.0	96.0	107.0	2.0	Pass	-
135	-	30/01/2023	-	FSL	0.0	95.5	105.5	1.5	Pass	-
136	-	2/09/2023	-	10	3.1	97.5	107.0	1.5	Pass	-
137	-	2/09/2023	-	10	3.1	98.5	107.5	2.0	Pass	-
138	-	2/09/2023	-	11	3.1	101.0	106.5	1.5	Pass	-
139	-	2/10/2023	-	12	6.1	97.5	99.0	-0.5	Pass	-
140	-	2/10/2023	-	13	4.6	97.0	97.5	-0.5	Pass	-
141	-	2/10/2023	-	13	4.6	98.0	98.0	-0.5	Pass	-
142	-	13/02/2023	-	14	3.2	97.0	98.0	-0.5	Pass	-
143	-	13/02/2023	-	FSL	2.0	97.0	96.5	-1.0	Pass	-
144	-	13/02/2023	-	FSL	0.0	98.0	107.5	2.0	Pass	-
145	-	14/02/2023	-	9	0.0	98.5	96.5	-1.0	Pass	-
146	-	14/02/2023	-	14	0.0	98.0	96.5	-1.0	Pass	-
147	-	14/02/2023	-	14	0.0	99.0	97.5	-0.5	Pass	-
148	-	15/02/2023	-	10	0.0	95.5	96.5	-1.0	Pass	-
149	-	15/02/2023	-	15	0.0	96.0	97.0	-1.0	Pass	-

** Negative (-) value indicates that the field moisture content is drier than the optimum moisture content (OMC)

** Positive (+) value indicates that the field moisture content is wetter than the optimum moisture content (OMC)

150	-	15/02/2023	-	15	0.0	96.0	97.0	-1.0	Pass	-
151	-	17/02/2023	-	FSL	4.1	97.5	98.5	0.0	Pass	-
152	-	17/02/2023	-	FSL	6.3	96.5	98.0	-0.5	Pass	-
153	-	17/02/2023	-	FSL	4.9	97.5	96.0	-1.0	Pass	-

** Negative (-) value indicates that the field moisture content is drier than the optimum moisture content (OMC)

** Positive (+) value indicates that the field moisture content is wetter than the optimum moisture content (OMC)

Appendix D – NATA Test Results

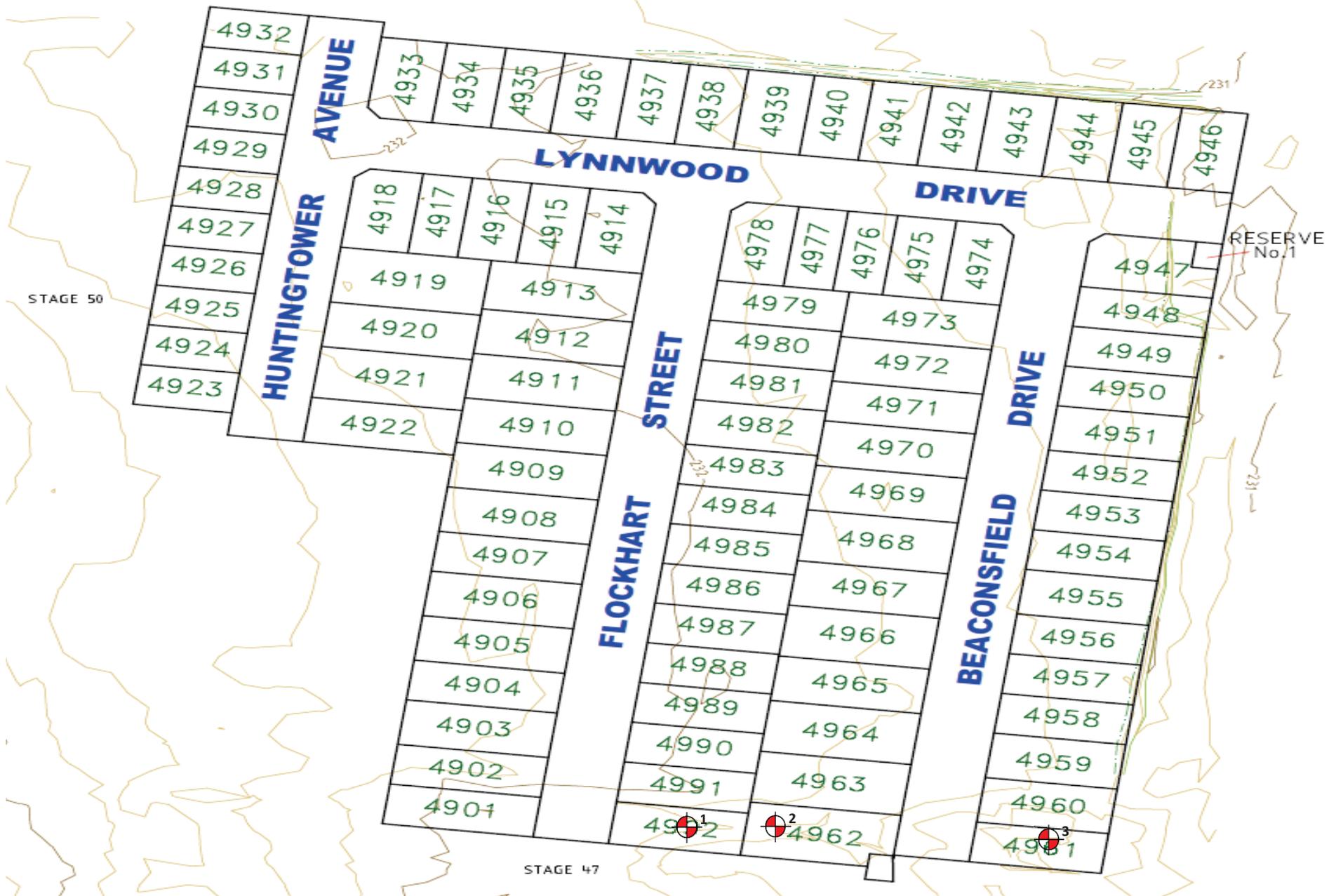
Field Density Test Results

AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate - Stage 49 (Level 1)	Report:	1
Location:	Mickleham		
Sample No	1	2	3
Date Tested	30/03/2022	30/03/2022	30/03/2022
Time Tested	PM	PM	PM
Test Location	Refer to Plan	Refer to Plan	Refer to Plan
Level/Layer	Layer 1	Layer 1	Layer 1
Layer Thickness	mm 200	mm 200	mm 200
Test Depth	mm 175	mm 175	mm 175
Field Wet Density	t/m ³ 1.83	t/m ³ 1.87	t/m ³ 1.85
Field Moisture Content	% 22.4	% 21.3	% 23.3
Material:	Imported Clay	Imported Clay	Imported Clay
Oversize Material	WET, % 4.8	WET, % 3.2	WET, % 4.3
Sieve Size	mm 19	mm 19	mm 19
Peak Converted Wet Density	t/m ³ 1.86	t/m ³ 1.93	t/m ³ 1.91
Optimum Moisture Content	% 23	% 22	% 23.5
Moisture Ratio	% 97.5	% 96.5	% 99
Moisture Variation from OMC	% -0.5 Drier	% -0.5 Drier	% -0.5 Drier
Density Ratio	% 97.5	% 96.5	% 95.5

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI01)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)

	<p>NATA Accredited Laboratory No. 20172</p> <p>Accreditation for compliance with ISO/IEC 17025 - Testing</p> <p>The results of tests, calibrations and/or measurements included in this document, are traceable to Australian / National Standards</p>	<p>Approved Signatory: </p> <p>David Burns</p> <p>Date: 28/04/2022</p>
---	--	---



Project : Merrifield Estate - Stage 49 (Level1)

Client : BMD Urban

Date : 30/03/2022

Location : Mickleham

Project No : 1120 0322-1 (SI01)

SITE PLAN SKETCH—NOT TO SCALE



Field Density Test Results

AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate - Stage 49 (Level 1)	Report:	2
Location:	Mickleham		

Sample No	4	5	6			
Date Tested	31/03/2022	31/03/2022	31/03/2022			
Time Tested	PM	PM	PM			

Test Location	Refer to Plan	Refer to Plan	Refer to Plan			
Level/Layer	Layer 1	Layer 1	Layer 1			
Layer Thickness	mm 200	mm 200	mm 200			
Test Depth	mm 175	mm 175	mm 175			
Field Wet Density	t/m ³ 1.97	t/m ³ 2.01	t/m ³ 2.04			
Field Moisture Content	% 18.3	% 17.2	% 17.0			
Material:	Imported Clay	Imported Clay	Imported Clay			

Oversize Material	WET, %	4.9	5.6	5.9		
Sieve Size	mm	19	19	19		
Peak Converted Wet Density	t/m ³	2.00	2.07	2.05		
Optimum Moisture Content	%	18.5	18	15		

Moisture Ratio	%	99	95.5	113.5		
Moisture Variation from OMC	%	-0.5 Drier	-0.5 Drier	2.0 Wetter		
Density Ratio	%	98.0	96.0	99.0		

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI02)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)



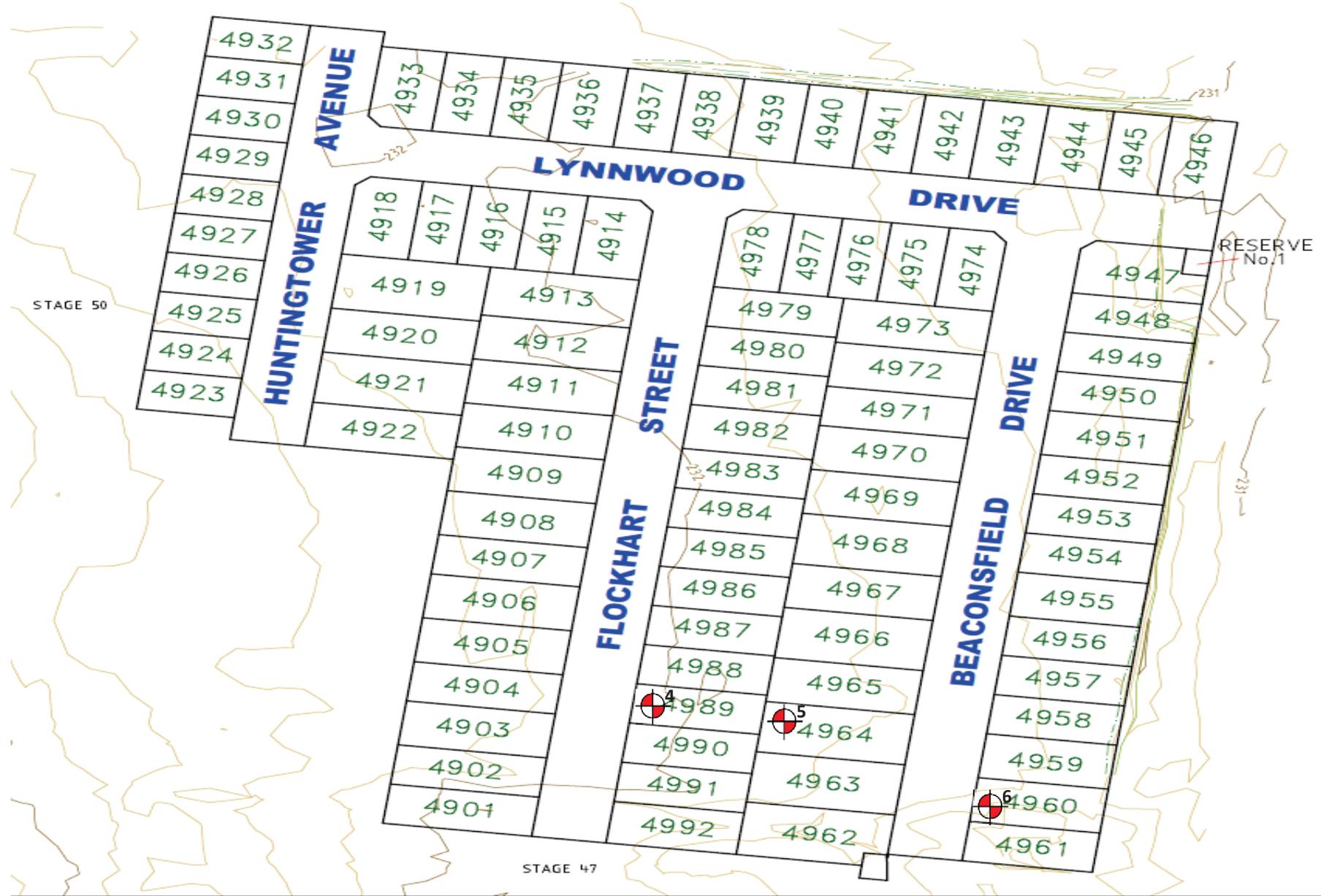
NATA Accredited Laboratory No. 20172
Accreditation for compliance with ISO/IEC 17025 - Testing
The results of tests, calibrations and/or measurements included in this document, are traceable to Australian / National Standards

Approved Signatory:



David Burns

Date: 28/04/2022



Project : Merrifield Estate - Stage 49 (Level1)

Client : BMD Urban

Date : 31/03/2022

Location : Mickleham

Project No : 1120 0322-1 (S102)

SITE PLAN SKETCH—NOT TO SCALE



Field Density Test Results AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate - Stage 49 (Level 1)	Report:	3
Location:	Mickleham		

Sample No	7	8	9			
Date Tested	01/04/2022	01/04/2022	01/04/2022			
Time Tested	PM	PM	PM			

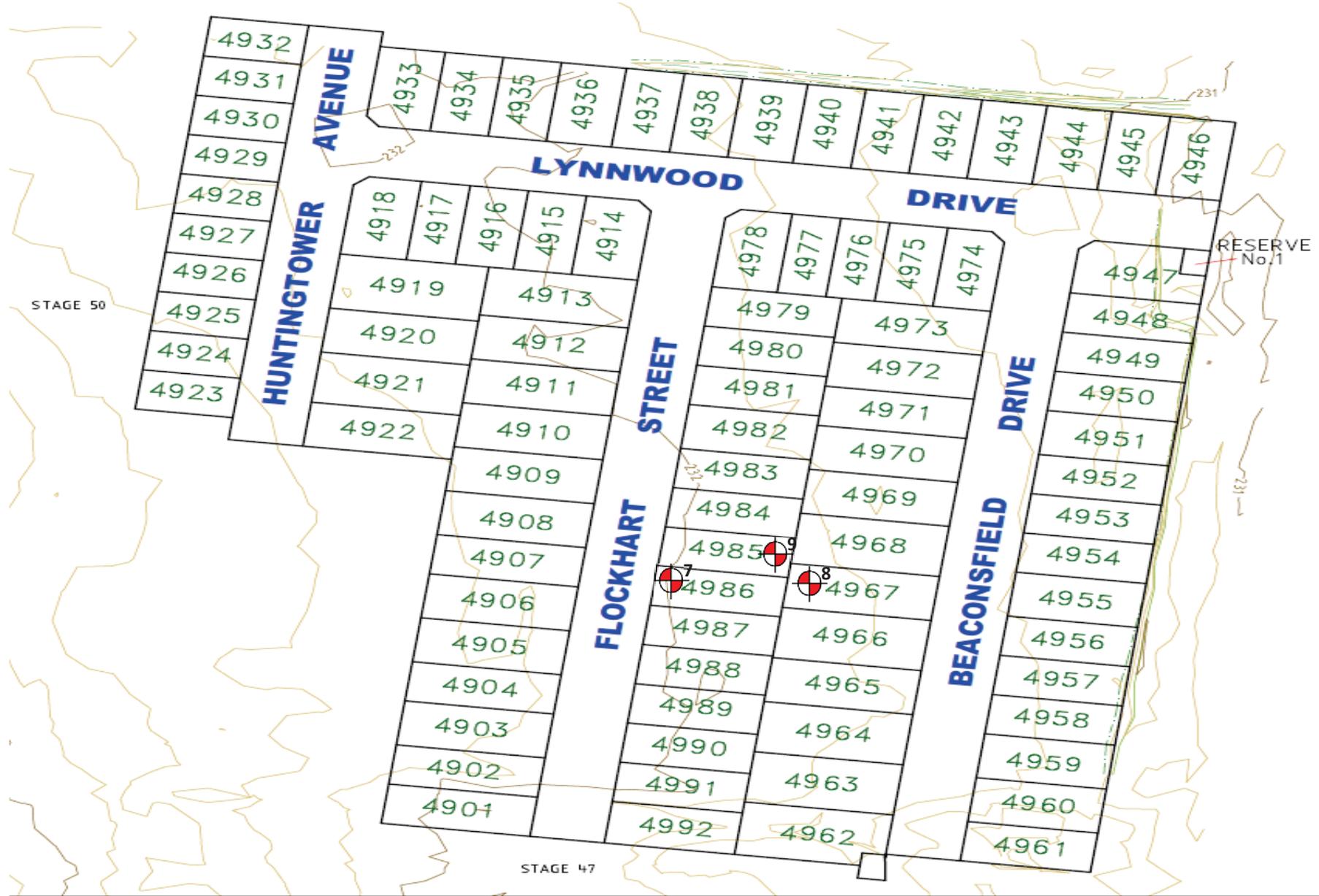
Test Location	Refer to Plan	Refer to Plan	Refer to Plan			
Level/Layer	Layer 1	Layer 1	Layer 1			
Layer Thickness	mm 200	mm 200	mm 200			
Test Depth	mm 175	mm 175	mm 175			
Field Wet Density	t/m ³ 1.95	t/m ³ 1.92	t/m ³ 1.99			
Field Moisture Content	% 18.4	% 18.8	% 17.3			
Material:	Imported Clay	Imported Clay	Imported Clay			

Oversize Material	WET, %	4.1	3.9	4.8		
Sieve Size	mm	19	19	19		
Peak Converted Wet Density	t/m ³	2.00	1.98	2.02		
Optimum Moisture Content	%	18.5	19	17.5		

Moisture Ratio	%	99.5	99	99		
Moisture Variation from OMC	%	-0.5 Drier	0.0 OMC	-0.5 Drier		
Density Ratio	%	96.5	96.5	97.5		

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI03)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)

 <p>NATA WORLD RECOGNISED ACCREDITATION</p>	<p>NATA Accredited Laboratory No. 20172 Accreditation for compliance with ISO/IEC 17025 - Testing The results of tests, calibrations and/or measurements included in this document, are traceable to Australian / National Standards</p>	<p>Approved Signatory: </p> <p style="text-align: right;">David Burns</p> <p>Date: 28/04/2022</p>
---	--	--



Project : Merrifield Estate - Stage 49 (Level1)

Client : BMD Urban

Date : 01/04/2022

Location : Mickleham

Project No : 1120 0322-1 (S103)

SITE PLAN SKETCH—NOT TO SCALE



Field Density Test Results AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate - Stage 49 (Level 1)	Report:	4
Location:	Mickleham		

Sample No	10	11	12			
Date Tested	04/04/2022	04/04/2022	04/04/2022			
Time Tested	PM	PM	PM			

Test Location	Refer to Plan	Refer to Plan	Refer to Plan			
Level/Layer	Layer 1	Layer 1	Layer 1			
Layer Thickness	mm 200	mm 200	mm 200			
Test Depth	mm 175	mm 175	mm 175			
Field Wet Density	t/m ³ 1.87	t/m ³ 1.94	t/m ³ 1.93			
Field Moisture Content	% 23.3	% 22.0	% 22.8			
Material:	Imported Clay	Imported Clay	Imported Clay			

Oversize Material	WET, %	3.1	4.5	4.2		
Sieve Size	mm	19	19	19		
Peak Converted Wet Density	t/m ³	1.93	1.97	2.01		
Optimum Moisture Content	%	23.5	23	23.5		

Moisture Ratio	%	99	95.5	97		
Moisture Variation from OMC	%	-0.5	-1.0	-1.0		
Density Ratio	%	96.5	97.5	96.0		

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI04)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)



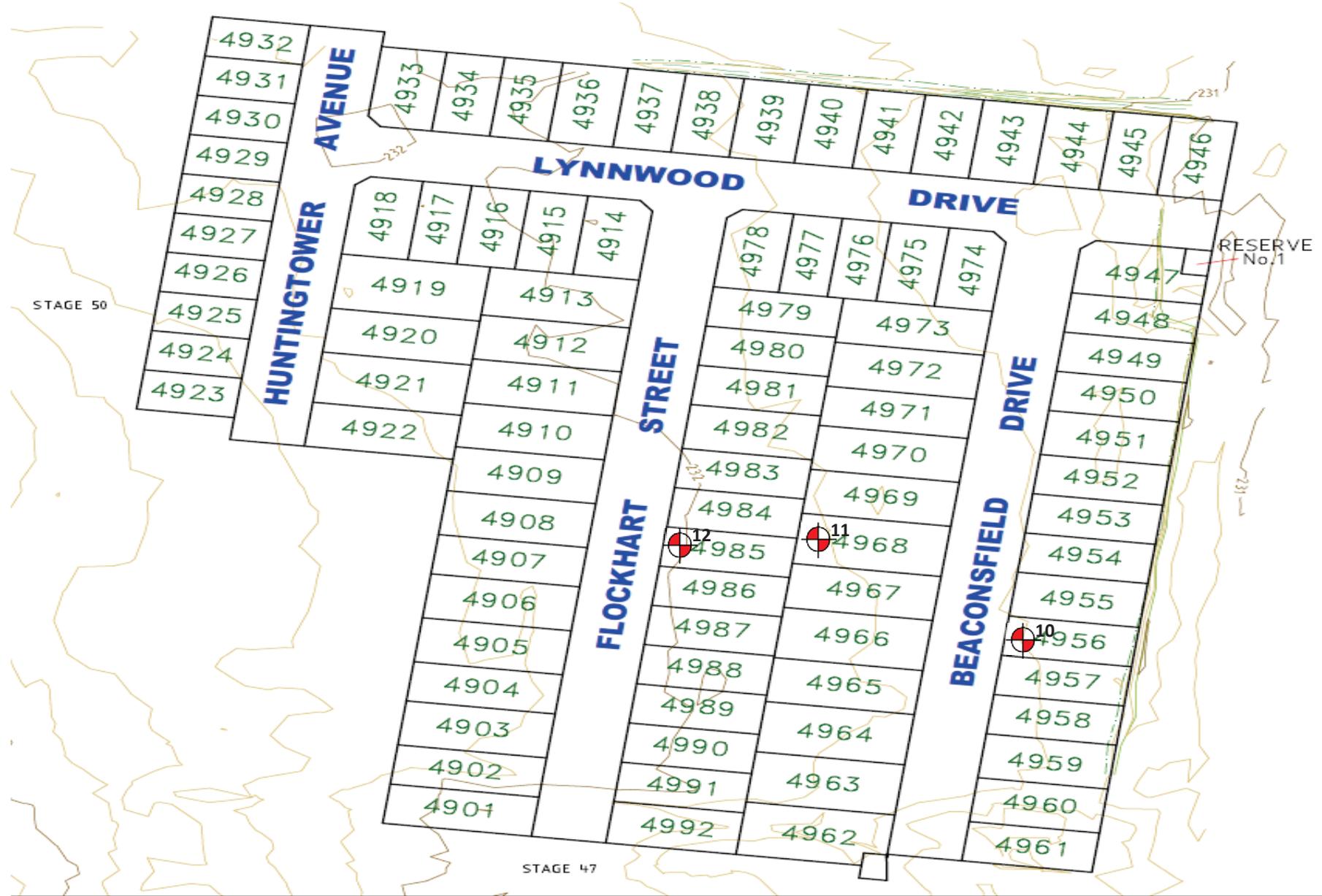
NATA Accredited Laboratory No. 20172
Accreditation for compliance with ISO/IEC 17025 - Testing
The results of tests, calibrations and/or measurements included in this document, are traceable to Australian / National Standards

Approved Signatory:



David Burns

Date: 28/04/2022



Project : Merrifield Estate - Stage 49 (Level1)

Client : BMD Urban

Date : 04/04/2022

Location : Mickleham

Project No : 1120 0322-1 (S104)

SITE PLAN SKETCH—NOT TO SCALE



Field Density Test Results

AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate - Stage 49 (Level 1)	Report:	5
Location:	Mickleham		

Sample No	13	14	15			
Date Tested	05/04/2022	05/04/2022	05/04/2022			
Time Tested	PM	PM	PM			

Test Location	Refer to Plan	Refer to Plan	Refer to Plan			
Level/Layer	Layer 2	Layer 2	Layer 2			
Layer Thickness	mm 200	mm 200	mm 200			
Test Depth	mm 175	mm 175	mm 175			
Field Wet Density	t/m ³ 1.84	t/m ³ 1.89	t/m ³ 1.83			
Field Moisture Content	% 23.3	% 22.8	% 24.5			
Material:	Imported Clay	Imported Clay	Imported Clay			

Oversize Material	WET, %	3.2	3.5	2.9		
Sieve Size	mm	19	19	19		
Peak Converted Wet Density	t/m ³	1.90	1.92	1.86		
Optimum Moisture Content	%	24	21	23		

Moisture Ratio	%	97	108.5	106.5		
Moisture Variation from OMC	%	-0.5 Drier	1.5 Wetter	1.5 Wetter		
Density Ratio	%	96.5	98.0	97.5		

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI05)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)



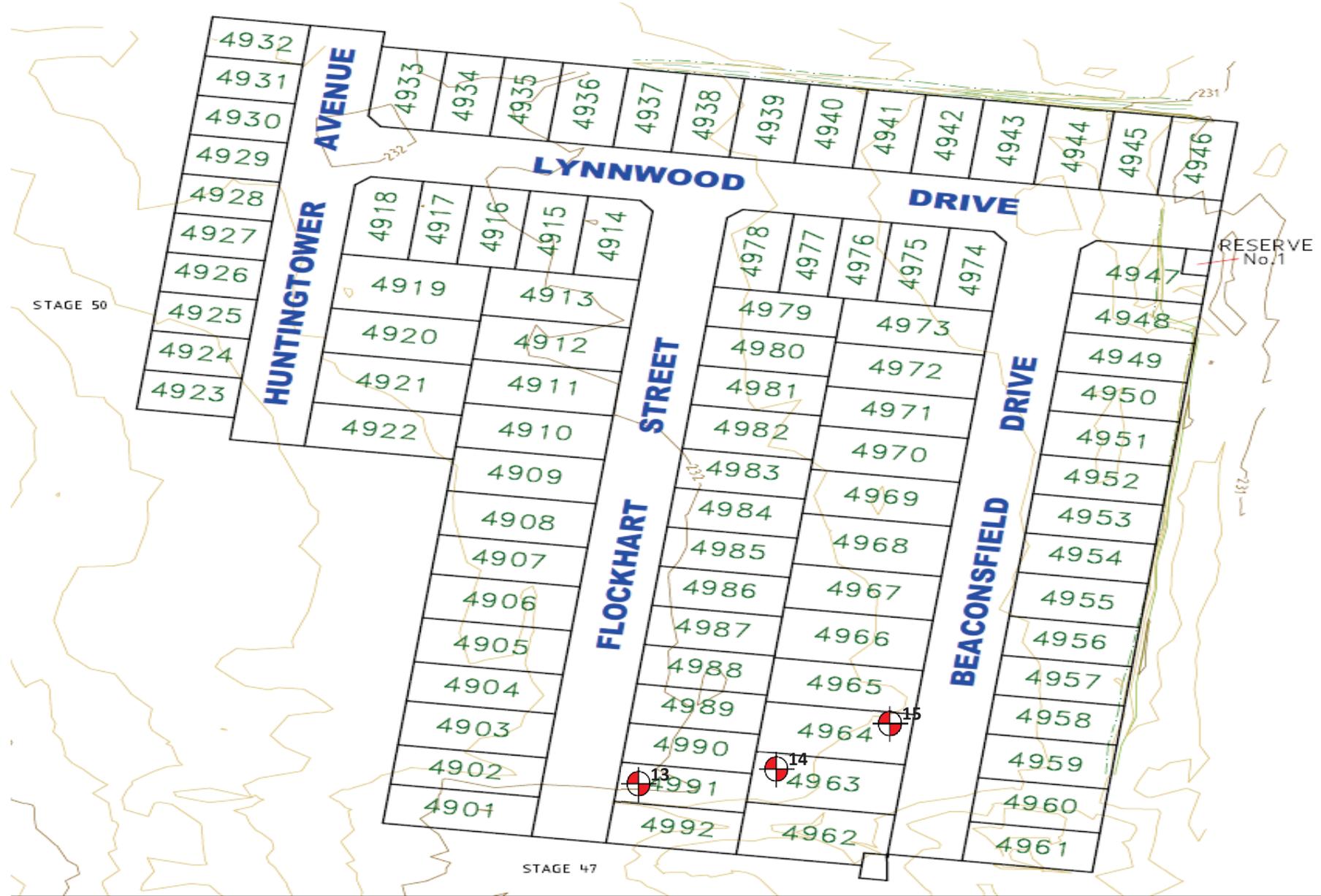
NATA Accredited Laboratory No. 20172
Accreditation for compliance with ISO/IEC 17025 - Testing
The results of tests, calibrations and/or measurements included in this document, are traceable to Australian / National Standards

Approved Signatory:



David Burns

Date: 28/04/2022



Project : Merrifield Estate - Stage 49 (Level1)

Client : BMD Urban

Date : 05/04/2022

Location : Mickleham

Project No : 1120 0322-1 (S105)

SITE PLAN SKETCH—NOT TO SCALE



Field Density Test Results

AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate - Stage 49 (Level 1)	Report:	6
Location:	Mickleham		

Sample No	16	17	18			
Date Tested	06/04/2022	06/04/2022	06/04/2022			
Time Tested	PM	PM	PM			

Test Location	Refer to Plan	Refer to Plan	Refer to Plan			
Level/Layer	Layer 2	Layer 2	Layer 2			
Layer Thickness	mm 200	mm 200	mm 200			
Test Depth	mm 175	mm 175	mm 175			
Field Wet Density	t/m ³ 1.94	t/m ³ 1.81	t/m ³ 1.84			
Field Moisture Content	% 21.3	% 24.4	% 23.3			
Material:	Imported Clay	Imported Clay	Imported Clay			

Oversize Material	WET, %	4.5	3.0	3.5		
Sieve Size	mm	19	19	19		
Peak Converted Wet Density	t/m ³	2.00	1.86	1.88		
Optimum Moisture Content	%	22	23	24		

Moisture Ratio	%	97	106	97		
Moisture Variation from OMC	%	-0.5 Drier	1.5 Wetter	-0.5 Drier		
Density Ratio	%	96.5	96.5	97.5		

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI06)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)



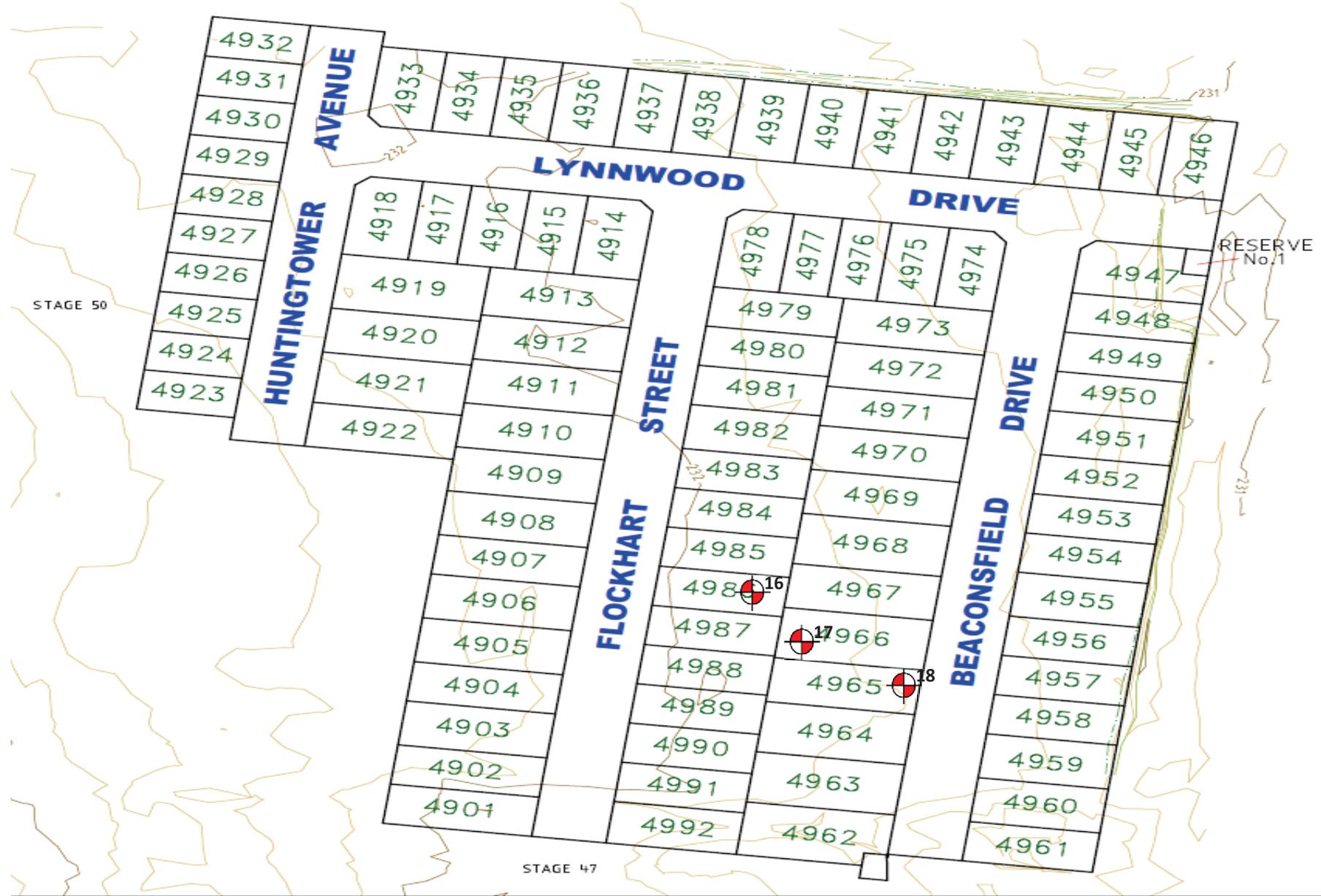
NATA Accredited Laboratory No. 20172
Accreditation for compliance with ISO/IEC 17025 - Testing
The results of tests, calibrations and/or measurements included in this document, are traceable to Australian / National Standards

Approved Signatory:



David Burns

Date: 28/04/2022



Project : Merrifield Estate - Stage 49 (Level1)

Client : BMD Urban

Date : 06/04/2022

Location : Mickleham

Project No : 1120 0322-1 (S106)

SITE PLAN SKETCH—NOT TO SCALE



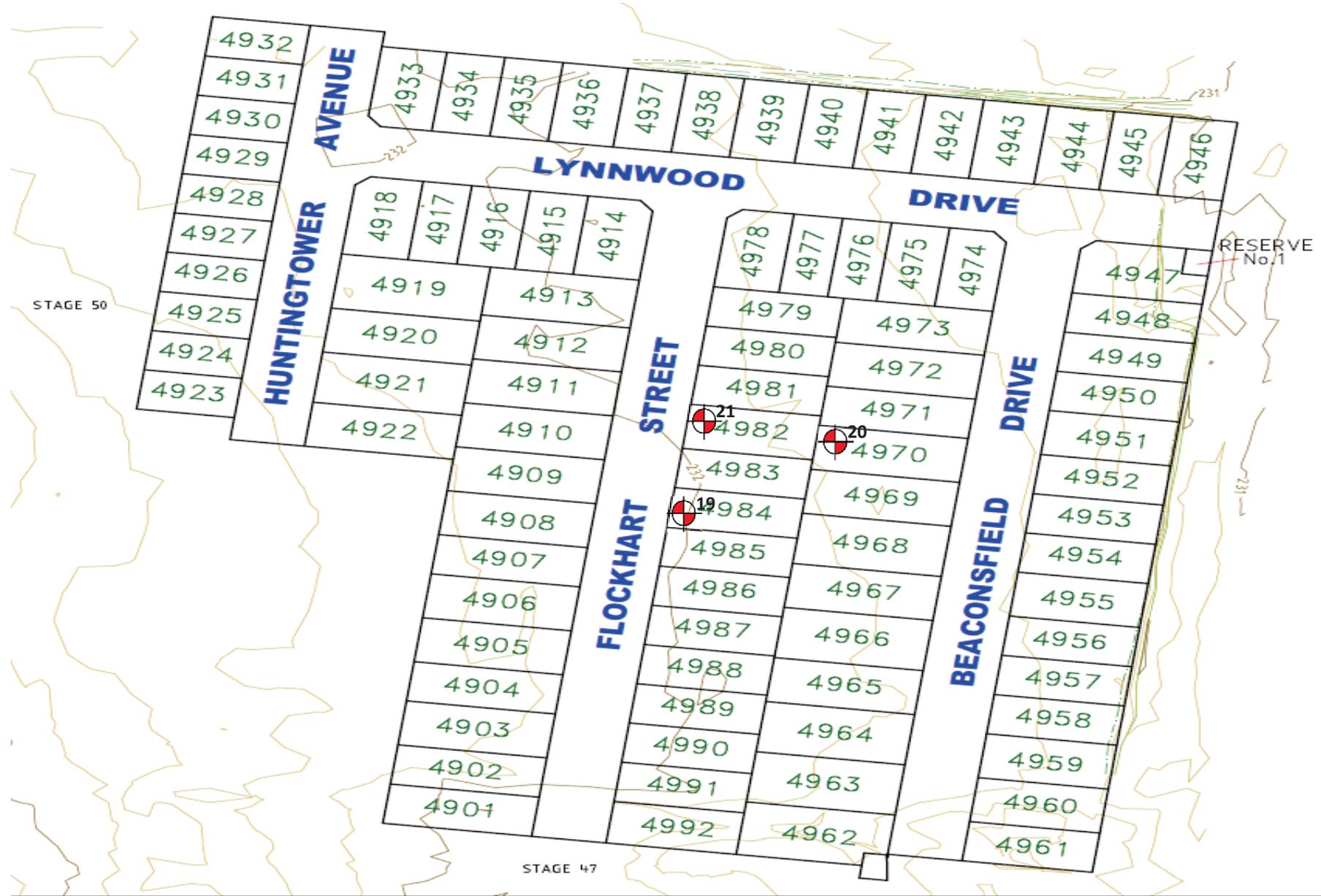
Field Density Test Results

AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate - Stage 49 (Level 1)	Report:	7
Location:	Mickleham		
Sample No	19	20	21
Date Tested	07/04/2022	07/04/2022	07/04/2022
Time Tested	PM	PM	PM
Test Location	Refer to Plan	Refer to Plan	Refer to Plan
Level/Layer	Layer 2	Layer 2	Layer 2
Layer Thickness	mm 200	mm 200	mm 200
Test Depth	mm 175	mm 175	mm 175
Field Wet Density	t/m ³ 1.99	t/m ³ 2.04	t/m ³ 1.93
Field Moisture Content	% 17.9	% 17.0	% 18.4
Material:	Imported Clay	Imported Clay	Imported Clay
Oversize Material	WET, % 5.5	WET, % 5.9	WET, % 4.8
Sieve Size	mm 19	mm 19	mm 19
Peak Converted Wet Density	t/m ³ 2.05	t/m ³ 2.11	t/m ³ 1.98
Optimum Moisture Content	% 18.5	% 15	% 16.5
Moisture Ratio	% 96.5	% 113.5	% 111.5
Moisture Variation from OMC	% -0.5 Drier	% 1.5 Wetter	% 1.5 Wetter
Density Ratio	% 96.5	% 96.0	% 96.5

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI07)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)

	<p>NATA Accredited Laboratory No. 20172</p> <p>Accreditation for compliance with ISO/IEC 17025 - Testing</p> <p>The results of tests, calibrations and/or measurements included in this document, are traceable to Australian / National Standards</p>	<p>Approved Signatory: </p> <p>David Burns</p> <p>Date: 28/04/2022</p>
---	--	---



Project : Merrifield Estate - Stage 49 (Level1)

Client : BMD Urban

Date : 07/04/2022

Location : Mickleham

Project No : 1120 0322-1 (S107)

SITE PLAN SKETCH—NOT TO SCALE

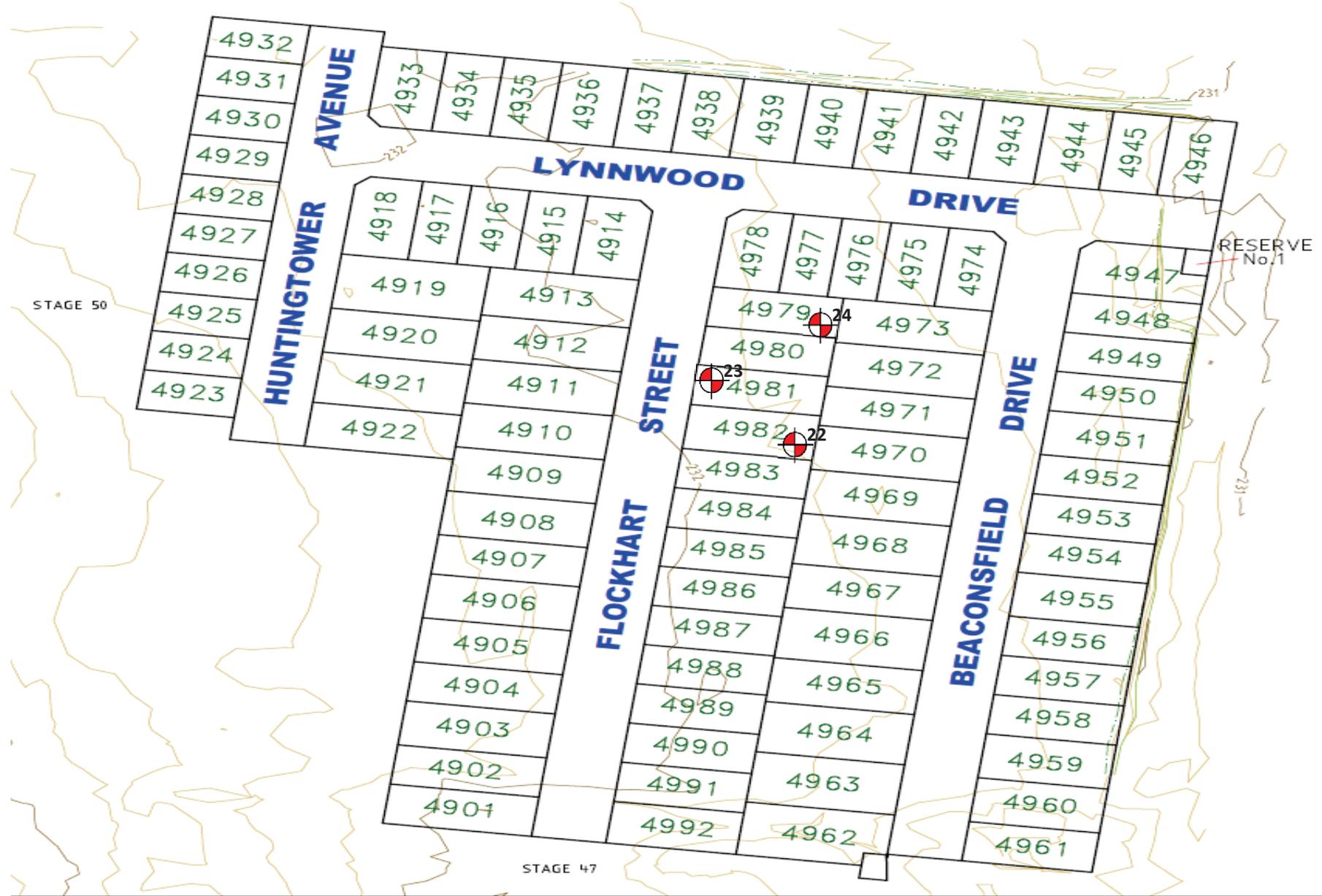


Field Density Test Results AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate - Stage 49 (Level 1)	Report:	8
Location:	Mickleham		
Sample No	22	23	24
Date Tested	08/04/2022	08/04/2022	08/04/2022
Time Tested	PM	PM	PM
Test Location	Refer to Plan	Refer to Plan	Refer to Plan
Level/Layer	Layer 2	Layer 2	Layer 2
Layer Thickness	mm 200	mm 200	mm 200
Test Depth	mm 175	mm 175	mm 175
Field Wet Density	t/m ³ 1.99	t/m ³ 1.93	t/m ³ 1.96
Field Moisture Content	% 18.8	% 19.4	% 17.6
Material:	Imported Clay	Imported Clay	Imported Clay
Oversize Material	WET, % 3.5	WET, % 4.0	WET, % 4.5
Sieve Size	mm 19	mm 19	mm 19
Peak Converted Wet Density	t/m ³ 2.02	t/m ³ 1.95	t/m ³ 1.96
Optimum Moisture Content	% 17	% 19.5	% 15.5
Moisture Ratio	% 110.5	% 99.5	% 113.5
Moisture Variation from OMC	% 1.5 Wetter	% -0.5 Drier	% 2.0 Wetter
Density Ratio	% 98.0	% 98.5	% 95.5

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI08)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)

 <p>NATA WORLD RECOGNISED ACCREDITATION</p>	<p>NATA Accredited Laboratory No. 20172 Accreditation for compliance with ISO/IEC 17025 - Testing The results of tests, calibrations and/or measurements included in this document, are traceable to Australian / National Standards</p>	<p>Approved Signatory:</p> <div style="text-align: center;">  David Burns Date: 28/04/2022 </div>
---	--	--



Project : Merrifield Estate - Stage 49 (Level1)

Client : BMD Urban

Date : 08/04/2022

Location : Mickleham

Project No : 1120 0322-1 (S108)

SITE PLAN SKETCH—NOT TO SCALE



Field Density Test Results

AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate - Stage 49 (Level 1)	Report:	9
Location:	Mickleham		

Sample No	25	26	27			
Date Tested	09/04/2022	09/04/2022	09/04/2022			
Time Tested	AM	AM	AM			

Test Location	Refer to Plan	Refer to Plan	Refer to Plan			
Level/Layer	Layer 1	Layer 1	Layer 1			
Layer Thickness	mm 200	mm 200	mm 200			
Test Depth	mm 175	mm 175	mm 175			
Field Wet Density	t/m ³ 1.94	t/m ³ 1.90	t/m ³ 1.96			
Field Moisture Content	% 19.3	% 20.0	% 18.4			
Material:	Imported Clay	Imported Clay	Imported Clay			

Oversize Material	WET, %	4.2	4.0	4.5		
Sieve Size	mm	19	19	19		
Peak Converted Wet Density	t/m ³	1.97	1.92	2.02		
Optimum Moisture Content	%	20	20.5	17		

Moisture Ratio	%	96.5	97.5	108		
Moisture Variation from OMC	%	-1.0 Drier	-0.5 Drier	1.5 Wetter		
Density Ratio	%	97.5	98.0	96.5		

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI09)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)



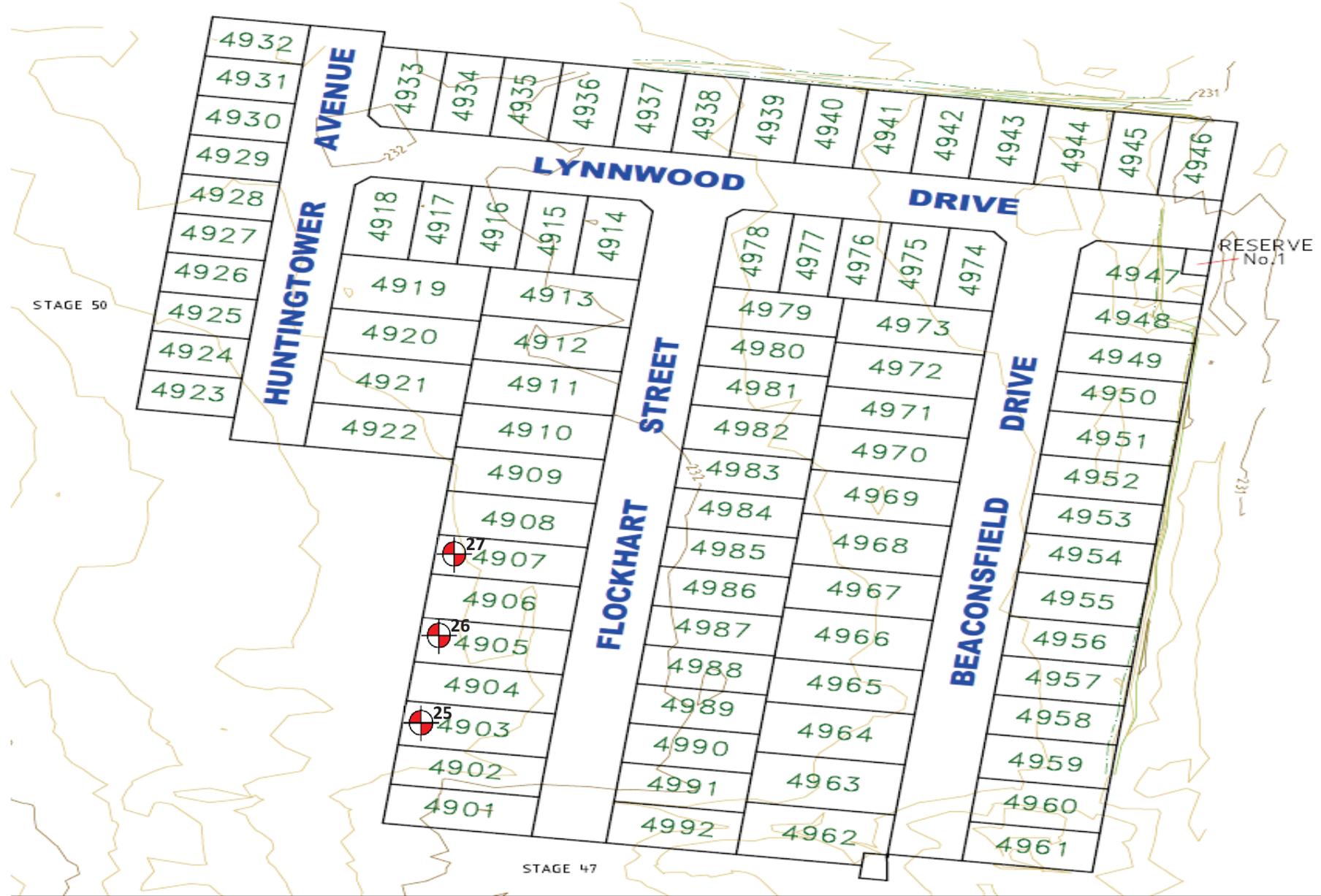
NATA Accredited Laboratory No. 20172
Accreditation for compliance with ISO/IEC 17025 - Testing
The results of tests, calibrations and/or measurements included in this document, are traceable to Australian / National Standards

Approved Signatory:



David Burns

Date: 28/04/2022



Project : Merrifield Estate - Stage 49 (Level1)

Client : BMD Urban

Date : 09/04/2022

Location : Mickleham

Project No : 1120 0322-1 (S109)

SITE PLAN SKETCH—NOT TO SCALE



Field Density Test Results

AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate - Stage 49 (Level 1)	Report:	10
Location:	Mickleham		

Sample No	28	29	30			
Date Tested	11/04/2022	11/04/2022	11/04/2022			
Time Tested	PM	PM	PM			

Test Location	Refer to Plan	Refer to Plan	Refer to Plan			
Level/Layer	Layer 3	Layer 3	Layer 3			
Layer Thickness	mm 200	mm 200	mm 200			
Test Depth	mm 175	mm 175	mm 175			
Field Wet Density	t/m ³ 1.97	t/m ³ 1.96	t/m ³ 1.91			
Field Moisture Content	% 19.3	% 18.8	% 18.2			
Material:	Imported Clay	Imported Clay	Imported Clay			

Oversize Material	WET, %	4.8	4.4	4.0		
Sieve Size	mm	19	19	19		
Peak Converted Wet Density	t/m ³	2.00	1.98	1.96		
Optimum Moisture Content	%	19.5	19.5	16.5		

Moisture Ratio	%	99	96.5	110.5		
Moisture Variation from OMC	%	-0.5 Drier	-0.5 Drier	2.0 Wetter		
Density Ratio	%	98.0	98.5	96.5		

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI10)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)



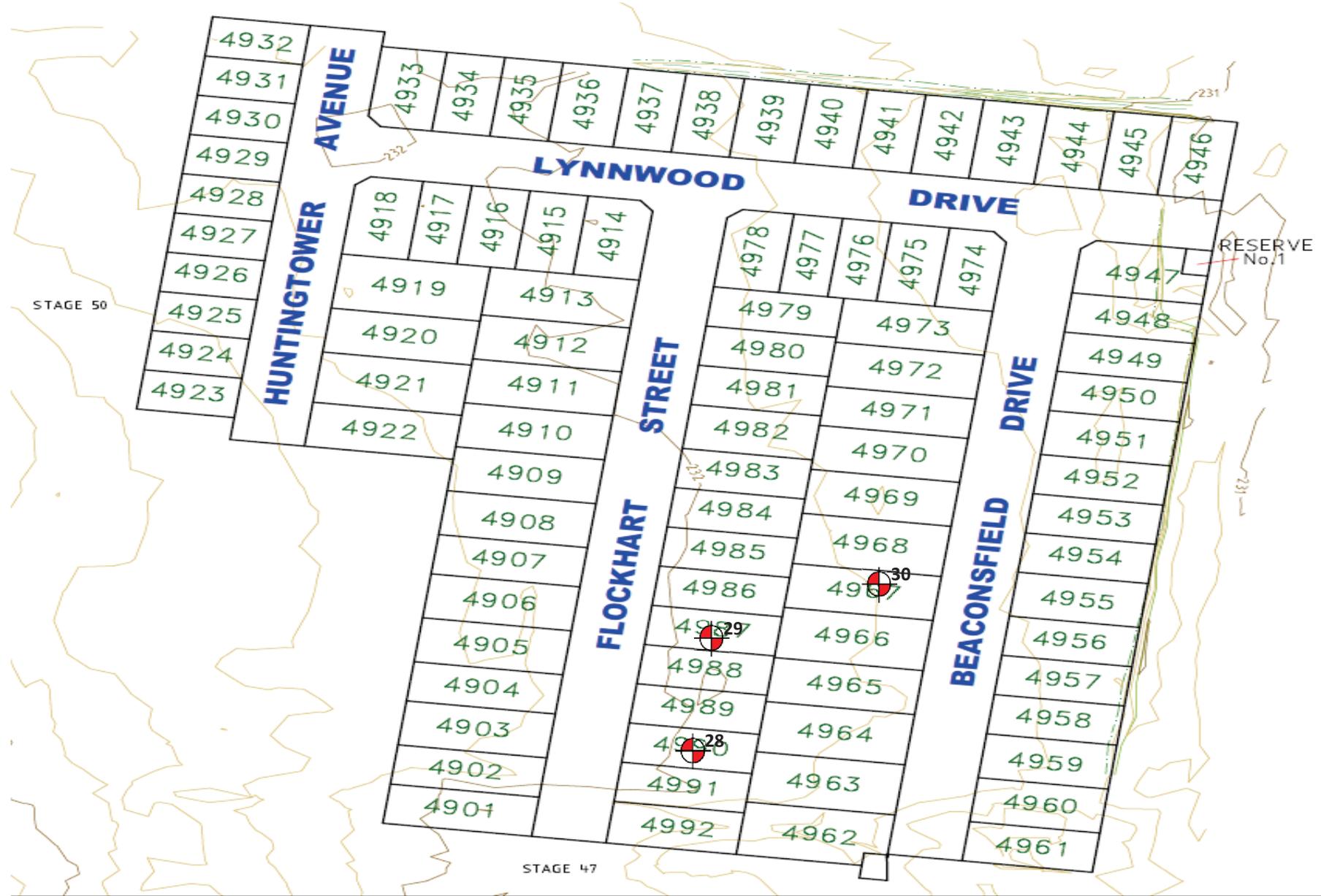
NATA Accredited Laboratory No. 20172
Accreditation for compliance with ISO/IEC 17025 - Testing
The results of tests, calibrations and/or measurements included in this document, are traceable to Australian / National Standards

Approved Signatory:



David Burns

Date: 28/04/2022



Project : Merrifield Estate - Stage 49 (Level1)

Client : BMD Urban

Date : 11/04/2022

Location : Mickleham

Project No : 1120 0322-1 (S110)

SITE PLAN SKETCH—NOT TO SCALE



Field Density Test Results

AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate - Stage 49 (Level 1)	Report:	11
Location:	Mickleham		

Sample No	31	32	33			
Date Tested	12/04/2022	12/04/2022	12/04/2022			
Time Tested	PM	PM	PM			

Test Location	Refer to Plan	Refer to Plan	Refer to Plan			
Level/Layer	Layer 3	Layer 3	Layer 3			
Layer Thickness	mm 200	mm 200	mm 200			
Test Depth	mm 175	mm 175	mm 175			
Field Wet Density	t/m ³ 1.93	t/m ³ 1.98	t/m ³ 1.96			
Field Moisture Content	% 19.1	% 18.3	% 18.6			
Material:	Imported Clay	Imported Clay	Imported Clay			

Oversize Material	WET, %	4.1	5.5	5.1		
Sieve Size	mm	19	19	19		
Peak Converted Wet Density	t/m ³	1.97	2.01	2.00		
Optimum Moisture Content	%	20	16.5	17		

Moisture Ratio	%	95.5	111	109.5		
Moisture Variation from OMC	%	-0.5	2.0	1.5		
Density Ratio	%	Drier	Wetter	Wetter		
	%	97.5	98.0	97.5		

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI11)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)



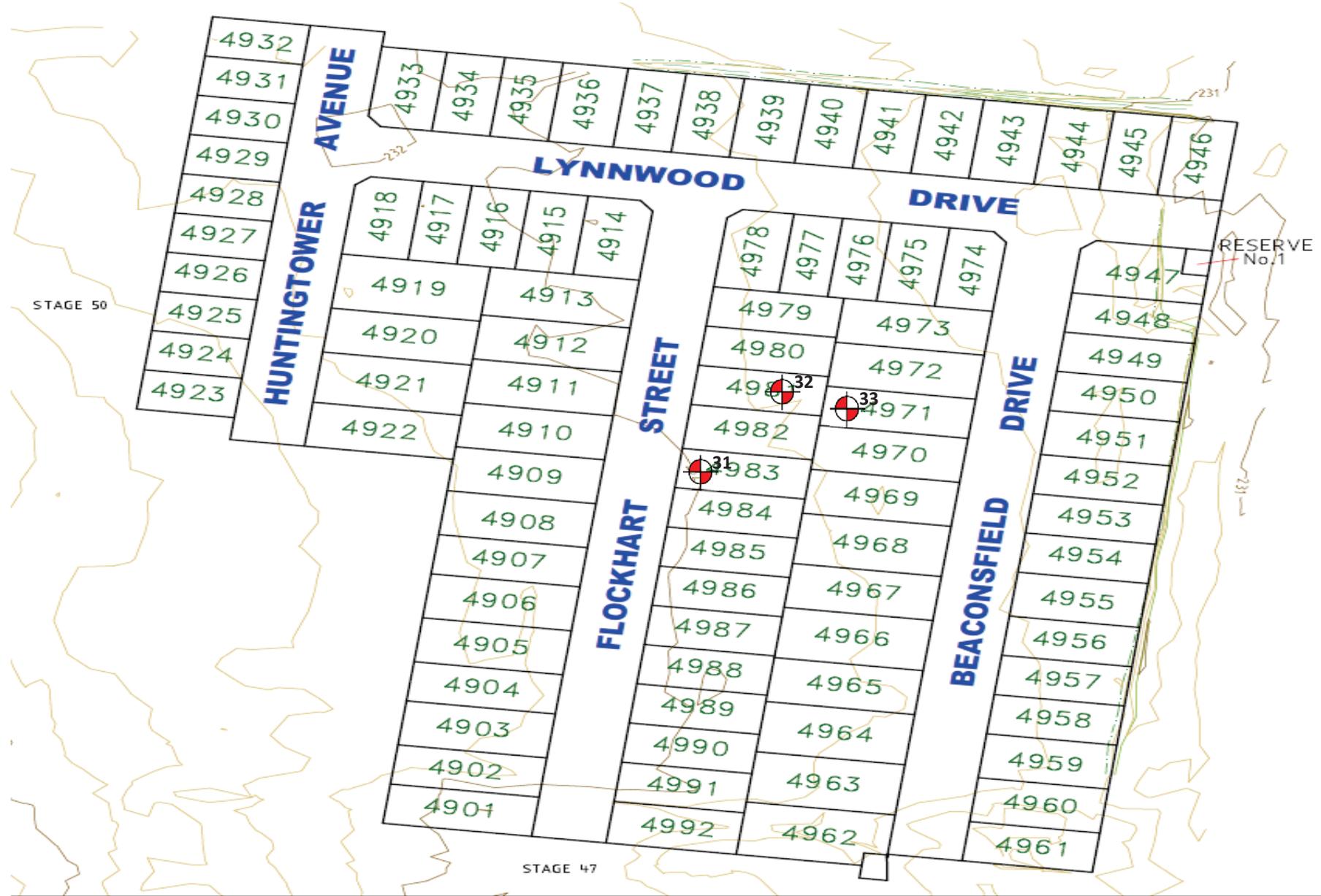
NATA Accredited Laboratory No. 20172
Accreditation for compliance with ISO/IEC 17025 - Testing
The results of tests, calibrations and/or measurements included in this document, are traceable to Australian / National Standards

Approved Signatory:



David Burns

Date: 28/04/2022



Project : Merrifield Estate - Stage 49 (Level1)

Client : BMD Urban

Date : 12/04/2022

Location : Mickleham

Project No : 1120 0322-1 (SI11)

SITE PLAN SKETCH—NOT TO SCALE



Field Density Test Results

AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate - Stage 49 (Level 1)	Report:	12
Location:	Mickleham		

Sample No	34	35	36			
Date Tested	13/04/2022	13/04/2022	13/04/2022			
Time Tested	PM	PM	PM			

Test Location	Refer to Plan	Refer to Plan	Refer to Plan			
Level/Layer	Layer 3	Layer 3	Layer 3			
Layer Thickness	mm 200	mm 200	mm 200			
Test Depth	mm 175	mm 175	mm 175			
Field Wet Density	t/m ³ 1.99	t/m ³ 1.98	t/m ³ 1.95			
Field Moisture Content	% 19.3	% 20.1	% 19.8			
Material:	Imported Clay	Imported Clay	Imported Clay			

Oversize Material	WET, %	4.1	5.5	5.1		
Sieve Size	mm	19	19	19		
Peak Converted Wet Density	t/m ³	1.97	2.03	2.00		
Optimum Moisture Content	%	20	18.5	18		

Moisture Ratio	%	96.5	108.5	110		
Moisture Variation from OMC	%	-0.5 Drier	1.5 Wetter	2.0 Wetter		
Density Ratio	%	100.5	97.0	96.5		

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI12)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)



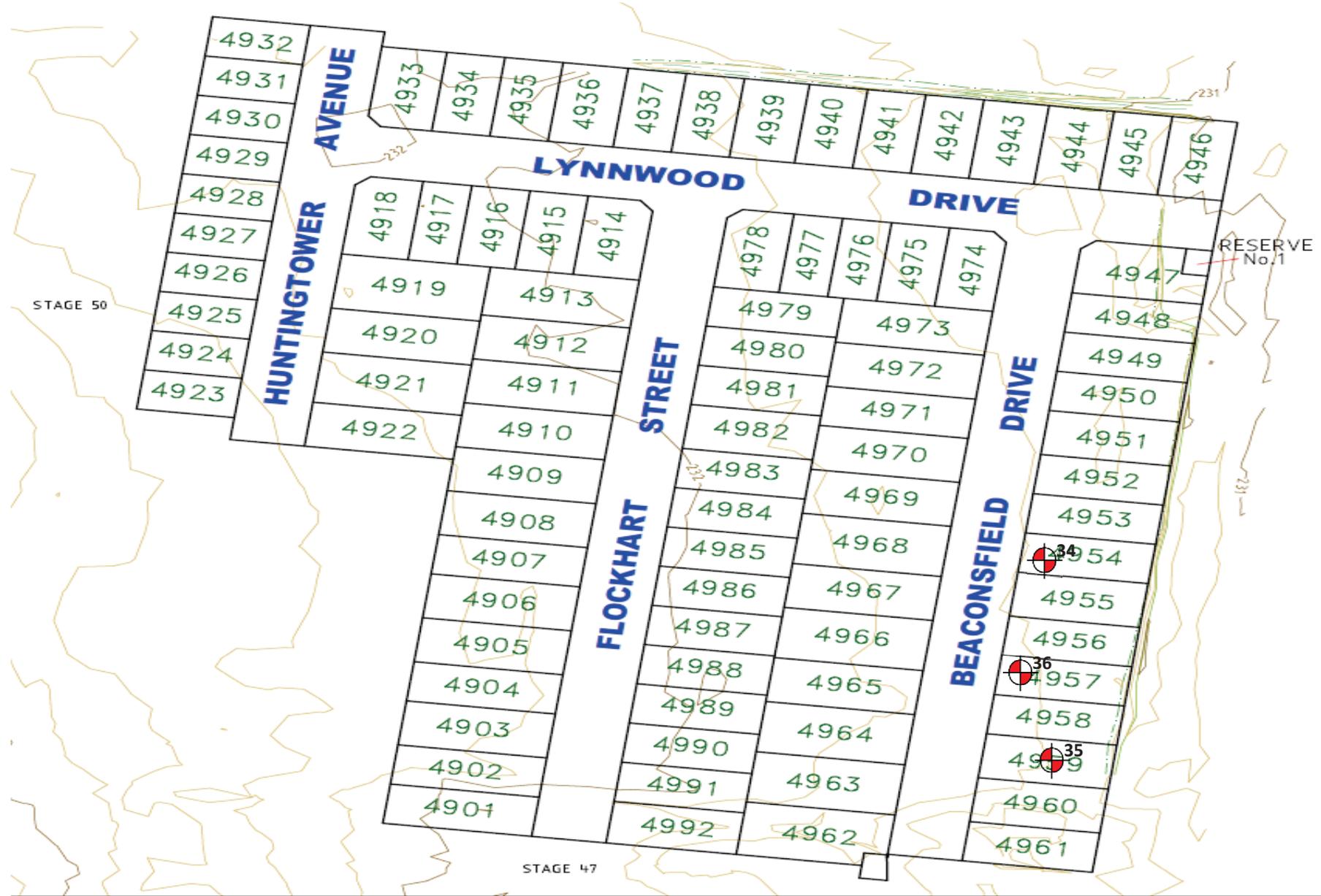
NATA Accredited Laboratory No. 20172
Accreditation for compliance with ISO/IEC 17025 - Testing
The results of tests, calibrations and/or measurements included in this document, are traceable to Australian / National Standards

Approved Signatory:



David Burns

Date: 28/04/2022



Project : Merrifield Estate - Stage 49 (Level1)

Client : BMD Urban

Date : 13/04/2022

Location : Mickleham

Project No : 1120 0322-1 (S112)

SITE PLAN SKETCH—NOT TO SCALE



Field Density Test Results

AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate - Stage 49 (Level 1)	Report:	13
Location:	Mickleham		

Sample No	37	38	39			
Date Tested	14/04/2022	14/04/2022	14/04/2022			
Time Tested	AM	AM	AM			

Test Location	Refer to Plan	Refer to Plan	Refer to Plan			
Level/Layer	Layer 3	Layer 3	Layer 3			
Layer Thickness	mm 200	mm 200	mm 200			
Test Depth	mm 175	mm 175	mm 175			
Field Wet Density	t/m ³ 1.94	t/m ³ 1.91	t/m ³ 1.97			
Field Moisture Content	% 20.8	% 21.3	% 20.4			
Material:	Imported Clay	Imported Clay	Imported Clay			

Oversize Material	WET, %	4.8	3.2	4.3		
Sieve Size	mm	19	19	19		
Peak Converted Wet Density	t/m ³	1.97	1.99	2.05		
Optimum Moisture Content	%	21	21.5	21		

Moisture Ratio	%	99	99	97		
Moisture Variation from OMC	%	-0.5	-0.5	-0.5		
Density Ratio	%	98.0	95.5	96.0		

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI13)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)



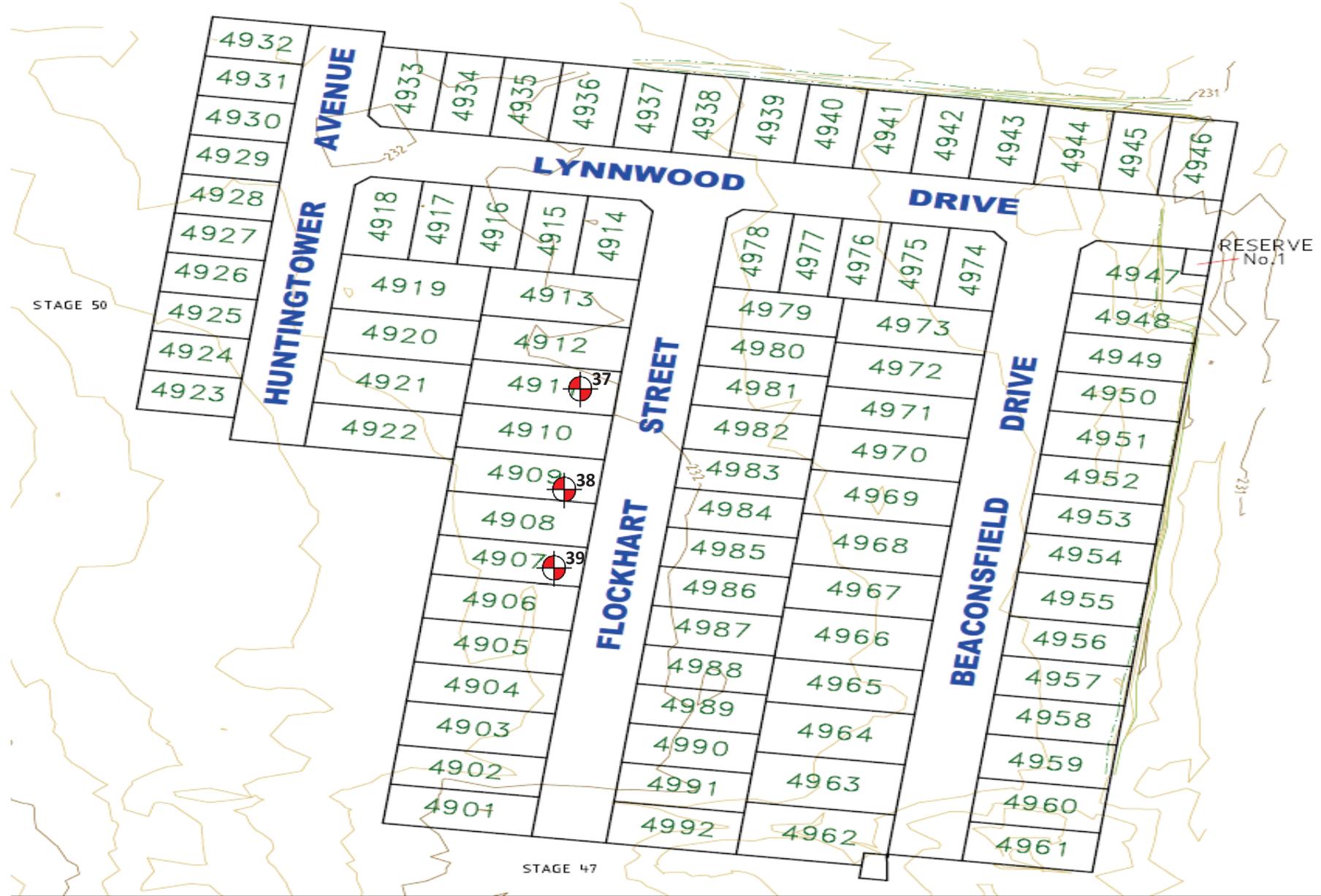
NATA Accredited Laboratory No. 20172
Accreditation for compliance with ISO/IEC 17025 - Testing
The results of tests, calibrations and/or measurements included in this document, are traceable to Australian / National Standards

Approved Signatory:



David Burns

Date: 28/04/2022



Project : Merrifield Estate - Stage 49 (Level1)

Client : BMD Urban

Date : 14/04/2022

Location : Mickleham

Project No : 1120 0322-1 (S113)

SITE PLAN SKETCH—NOT TO SCALE



Field Density Test Results

AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate - Stage 49 (Level 1)	Report:	14
Location:	Mickleham		

Sample No	40	41	42			
Date Tested	26/04/2022	26/04/2022	26/04/2022			
Time Tested	PM	PM	PM			

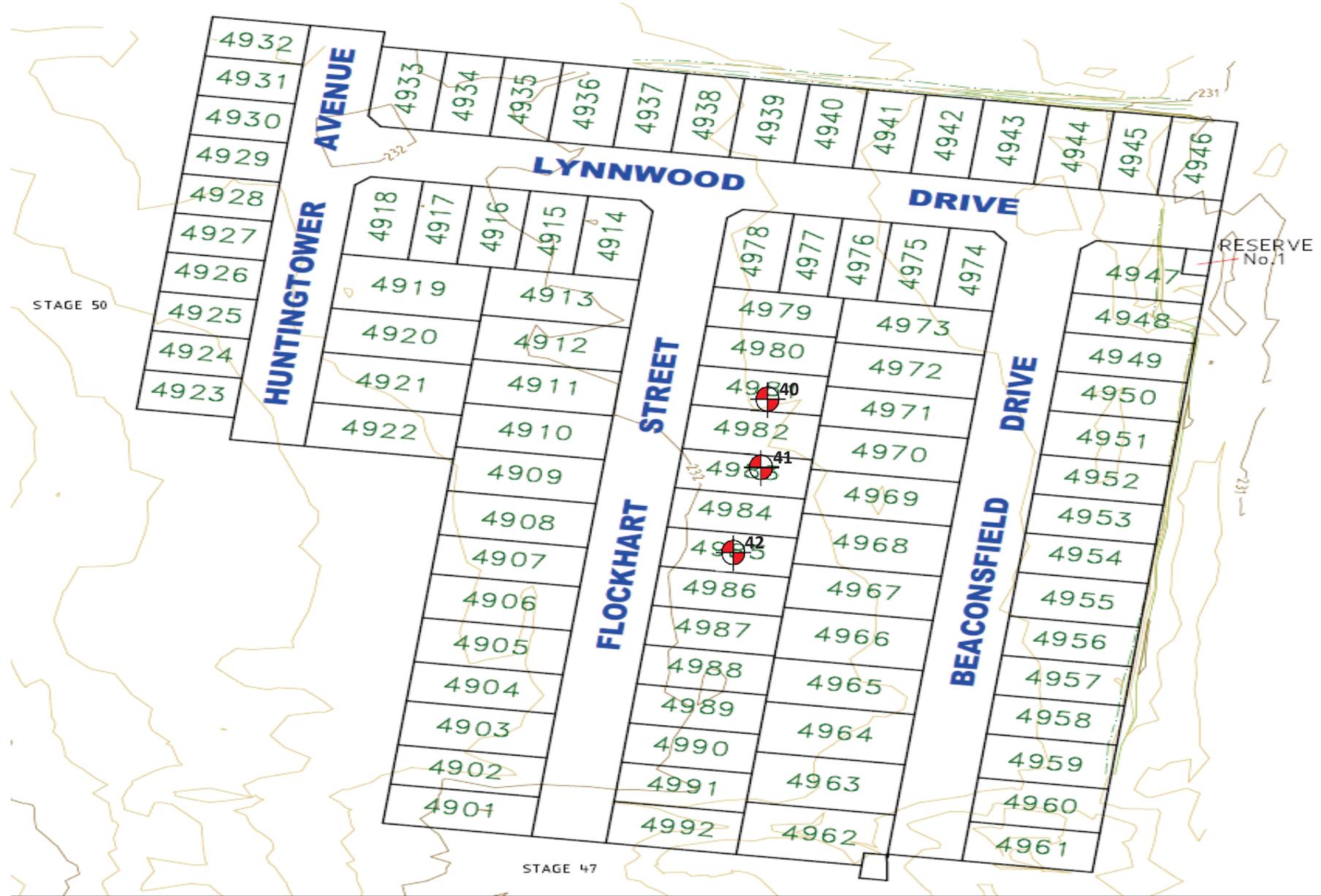
Test Location	Refer to Plan	Refer to Plan	Refer to Plan			
Level/Layer	Layer 3	Layer 3	Layer 3			
Layer Thickness	mm 200	mm 200	mm 200			
Test Depth	mm 175	mm 175	mm 175			
Field Wet Density	t/m ³ 1.89	t/m ³ 1.90	t/m ³ 1.97			
Field Moisture Content	% 23.3	% 22.8	% 21.2			
Material:	Imported Clay	Imported Clay	Imported Clay			

Oversize Material	WET, %	4.1	4.5	5.2		
Sieve Size	mm	19	19	19		
Peak Converted Wet Density	t/m ³	1.97	1.92	2.02		
Optimum Moisture Content	%	21.5	23.5	22		

Moisture Ratio	%	108.5	97	96.5		
Moisture Variation from OMC	%	1.5	-0.5	-1.0		
Density Ratio	%	95.5	98.0	97.0		

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI14)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)

	<p>NATA Accredited Laboratory No. 20172</p> <p>Accreditation for compliance with ISO/IEC 17025 - Testing</p> <p>The results of tests, calibrations and/or measurements included in this document, are traceable to Australian / National Standards</p>	<p>Approved Signatory:</p> <div style="text-align: center;">  David Burns </div> <p>Date: 28/04/2022</p>
---	--	--



Project : Merrifield Estate - Stage 49 (Level1)

Client : BMD Urban

Date : 26/04/2022

Location : Mickleham

Project No : 1120 0322-1 (S114)

SITE PLAN SKETCH—NOT TO SCALE



Field Density Test Results

AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate - Stage 49 (Level 1)	Report:	15
Location:	Mickleham		

Sample No	43	44	45			
Date Tested	27/04/2022	27/04/2022	27/04/2022			
Time Tested	PM	PM	PM			

Test Location	Refer to Plan	Refer to Plan	Refer to Plan			
Level/Layer	Layer 2	Layer 2	Layer 2			
Layer Thickness	mm 200	mm 200	mm 200			
Test Depth	mm 175	mm 175	mm 175			
Field Wet Density	t/m ³ 2.01	t/m ³ 1.95	t/m ³ 1.83			
Field Moisture Content	% 18.4	% 20.3	% 22.1			
Material:	Imported Clay	Imported Clay	Imported Clay			

Oversize Material	WET, %	5.8	4.3	3.2		
Sieve Size	mm	19	19	19		
Peak Converted Wet Density	t/m ³	2.09	2.01	1.88		
Optimum Moisture Content	%	16.5	20.5	20.5		

Moisture Ratio	%	111.5	99	107.5		
Moisture Variation from OMC	%	2.0	-0.5	1.5		
Density Ratio	%	95.5	96.5	97.0		

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI15)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)



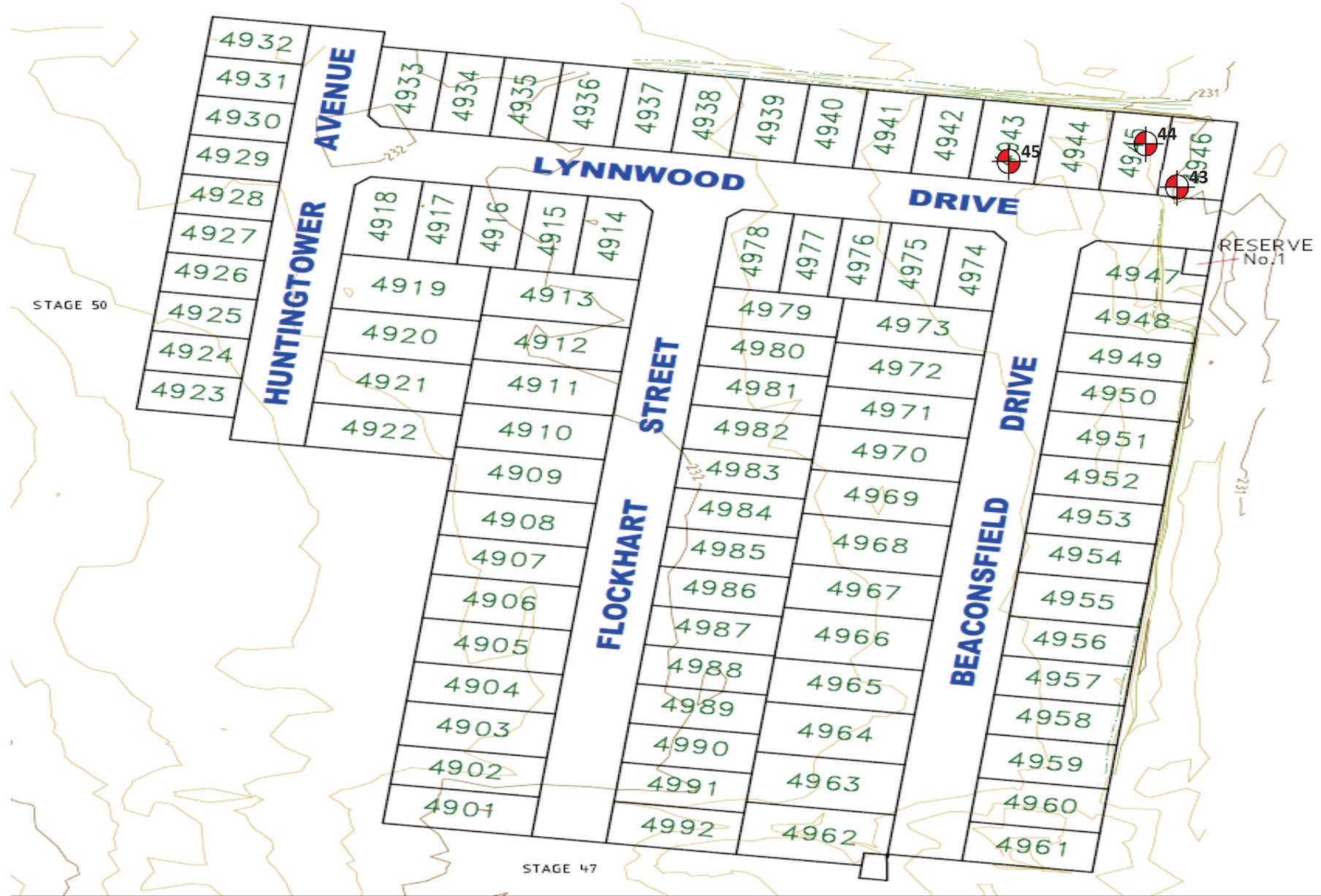
NATA Accredited Laboratory No. 20172
Accreditation for compliance with ISO/IEC 17025 - Testing
The results of tests, calibrations and/or measurements included in this document, are traceable to Australian / National Standards

Approved Signatory:



David Burns

Date: 28/04/2022



Project : Merrifield Estate - Stage 49 (Level1)

Client : BMD Urban

Date : 27/04/2022

Location : Mickleham

Project No : 1120 0322-1 (S115)

SITE PLAN SKETCH—NOT TO SCALE



Field Density Test Results

AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate - Stage 49 (Level 1)	Report:	16
Location:	Mickleham		

Sample No	46	47	48			
Date Tested	28/04/2022	28/04/2022	28/04/2022			
Time Tested	AM	AM	AM			

Test Location	Refer to Plan	Refer to Plan	Refer to Plan			
Level/Layer	Layer 2	Layer 2	Layer 2			
Layer Thickness	mm 200	mm 200	mm 200			
Test Depth	mm 175	mm 175	mm 175			
Field Wet Density	t/m ³ 1.95	t/m ³ 1.98	t/m ³ 1.91			
Field Moisture Content	% 20.3	% 21.0	% 18.3			
Material:	Imported Clay	Imported Clay	Imported Clay			

Oversize Material	WET, %	0.0	0.0	0.0		
Sieve Size	mm	19	19	19		
Peak Converted Wet Density	t/m ³	1.98	2.07	1.97		
Optimum Moisture Content	%	21	22	18.5		

Moisture Ratio	%	96.5	95.5	99		
Moisture Variation from OMC	%	-0.5	-1.0	-0.5		
Density Ratio	%	98.5	96.0	97.0		

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI16)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)



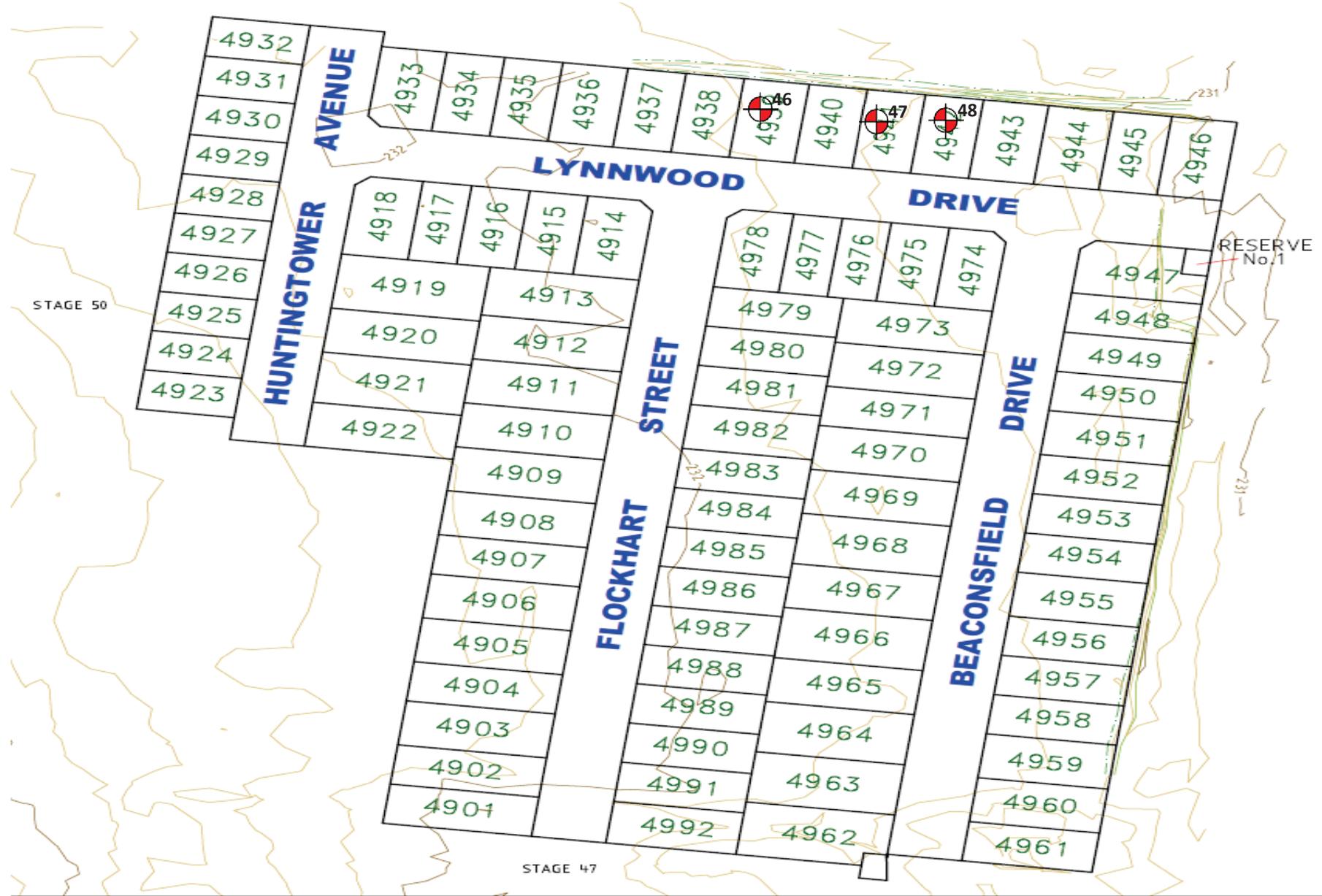
NATA Accredited Laboratory No. 20172
Accreditation for compliance with ISO/IEC 17025 - Testing
The results of tests, calibrations and/or measurements included in this document, are traceable to Australian / National Standards

Approved Signatory:



David Burns

Date: 31/05/2022



Project : Merrifield Estate - Stage 49 (Level1)

Client : BMD Urban

Date : 28/04/2022

Location : Mickleham

Project No : 1120 0322-1 (SI16)

SITE PLAN SKETCH—NOT TO SCALE



Field Density Test Results

AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate - Stage 49 (Level 1)	Report:	17
Location:	Mickleham		

Sample No	49				
Date Tested	29/04/2022				
Time Tested	AM				

Test Location	Refer to Plan				
Level/Layer	Layer 1				
Layer Thickness	mm 200				
Test Depth	mm 175				
Field Wet Density	t/m ³ 1.99				
Field Moisture Content	% 18.8				
Material:	Imported Clay				

Oversize Material	WET, %	3.5			
Sieve Size	mm	19			
Peak Converted Wet Density	t/m ³	2.02			
Optimum Moisture Content	%	17			

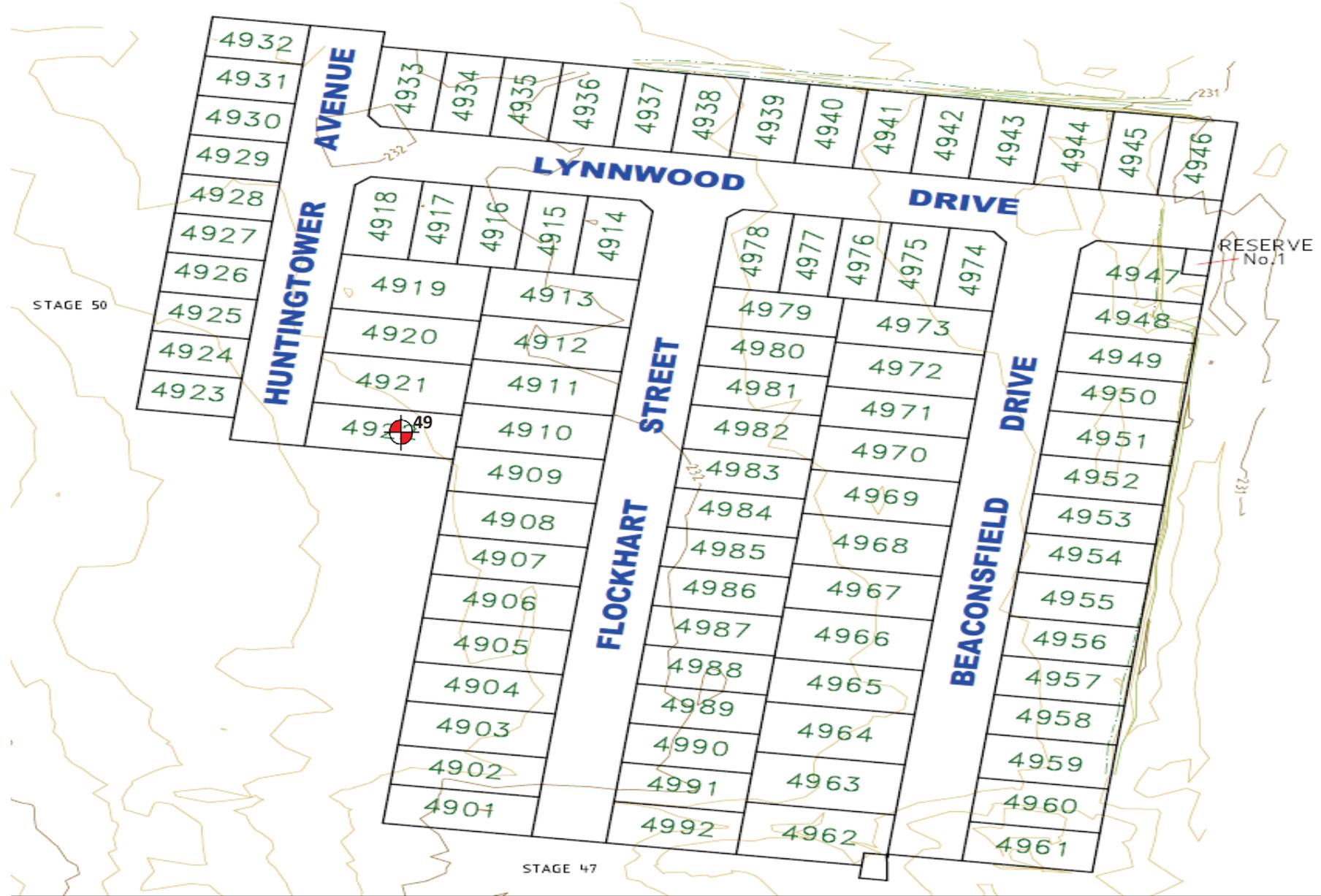
Moisture Ratio	%	110.5			
Moisture Variation from OMC	%	1.5			
Density Ratio	%	98.0			

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI17)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)



NATA Accredited Laboratory No. 20172
Accreditation for compliance with ISO/IEC 17025 - Testing
The results of tests, calibrations and/or measurements included in this document, are traceable to Australian / National Standards

Approved Signatory: 
David Burns
Date: 31/05/2022



Project : Merrifield Estate - Stage 49 (Level1)

Client : BMD Urban

Date : 29/04/2022

Location : Mickleham

Project No : 1120 0322-1 (S117)

SITE PLAN SKETCH—NOT TO SCALE



Field Density Test Results

AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate - Stage 49 (Level 1)	Report:	18
Location:	Mickleham		

Sample No	50	51	52			
Date Tested	02/05/2022	02/05/2022	02/05/2022			
Time Tested	AM	AM	AM			

Test Location	Refer to Plan	Refer to Plan	Refer to Plan			
Level/Layer	Layer 5	Layer 5	Layer 5			
Layer Thickness	mm 200	mm 200	mm 200			
Test Depth	mm 175	mm 175	mm 175			
Field Wet Density	t/m ³ 1.94	t/m ³ 1.90	t/m ³ 1.96			
Field Moisture Content	% 19.3	% 20.0	% 18.4			
Material:	Imported Clay	Imported Clay	Imported Clay			

Oversize Material	WET, %	4.2	4.0	4.4		
Sieve Size	mm	19	19	19		
Peak Converted Wet Density	t/m ³	1.97	1.92	2.02		
Optimum Moisture Content	%	20	21	17		

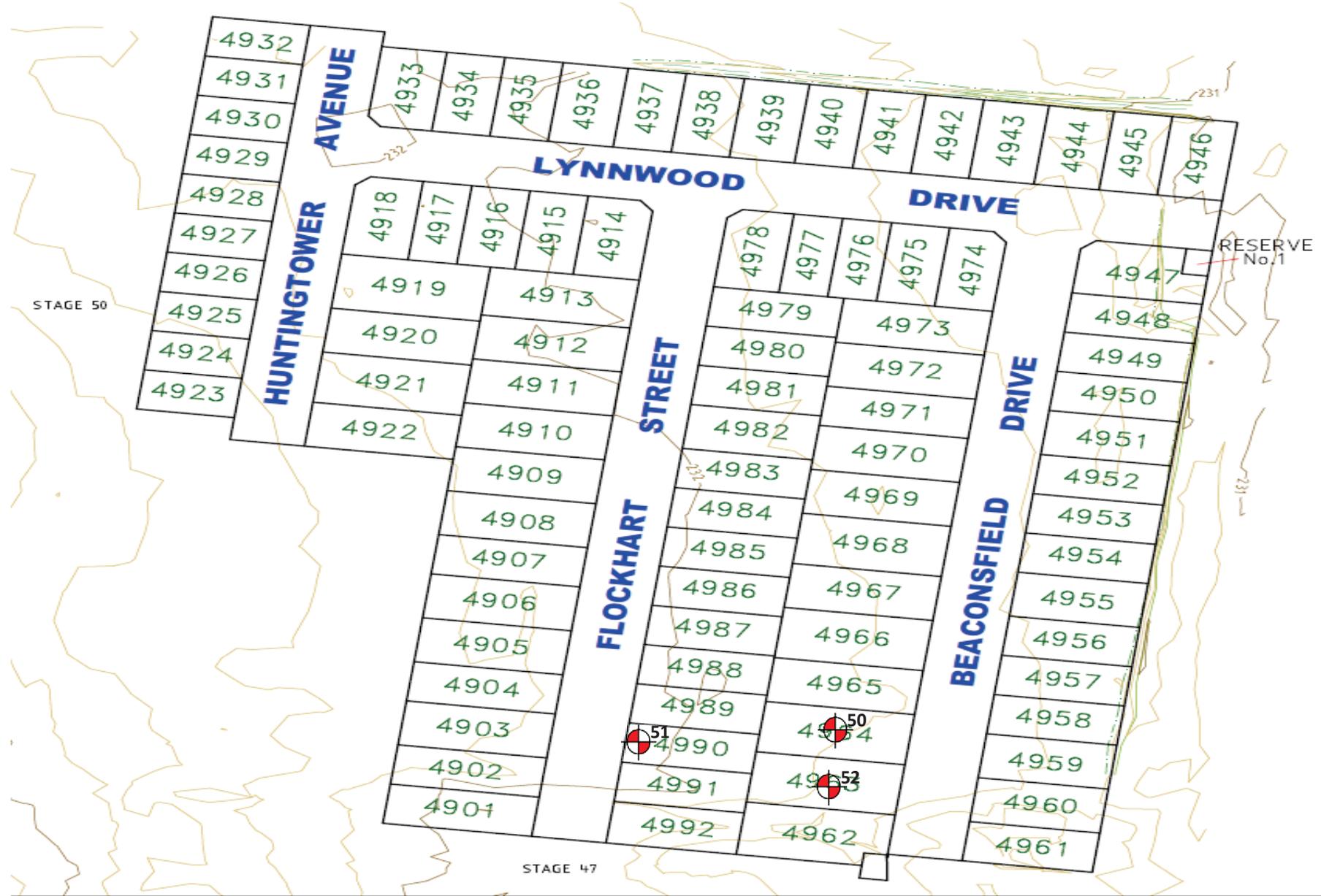
Moisture Ratio	%	96.5	95	108		
Moisture Variation from OMC	%	-1.0 Drier	-0.5 Drier	1.5 Wetter		
Density Ratio	%	97.5	98.0	96.5		

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI18)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)



NATA Accredited Laboratory No. 20172
Accreditation for compliance with ISO/IEC 17025 - Testing
The results of tests, calibrations and/or measurements included in this document, are traceable to Australian / National Standards

Approved Signatory: 
David Burns
Date: 31/05/2022



Project : Merrifield Estate - Stage 49 (Level1)

Client : BMD Urban

Date : 02/05/2022

Location : Mickleham

Project No : 1120 0322-1 (S118)

SITE PLAN SKETCH—NOT TO SCALE



Field Density Test Results AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate - Stage 49 (Level 1)	Report:	19
Location:	Mickleham		

Sample No	53	54	55			
Date Tested	03/05/2022	03/05/2022	03/05/2022			
Time Tested	PM	PM	PM			

Test Location	Refer to Plan	Refer to Plan	Refer to Plan			
Level/Layer	Layer 2	Layer 2	Layer 2			
Layer Thickness	mm 200	mm 200	mm 200			
Test Depth	mm 175	mm 175	mm 175			
Field Wet Density	t/m ³ 1.88	t/m ³ 1.89	t/m ³ 1.94			
Field Moisture Content	% 20.3	% 19.3	% 25.3			
Material:	Imported Clay	Imported Clay	Imported Clay			

Oversize Material	WET, % 5.3	4.5	3.8			
Sieve Size	mm 19	mm 19	mm 19			
Peak Converted Wet Density	t/m ³ 1.90	t/m ³ 1.94	t/m ³ 2.02			
Optimum Moisture Content	% 18.5	% 20	% 23.5			

Moisture Ratio	%	109.5	96.5	107.5		
Moisture Variation from OMC	%	2.0	-0.5	2.0		
Density Ratio	%	98.0	96.5	95.5		

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI19)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)



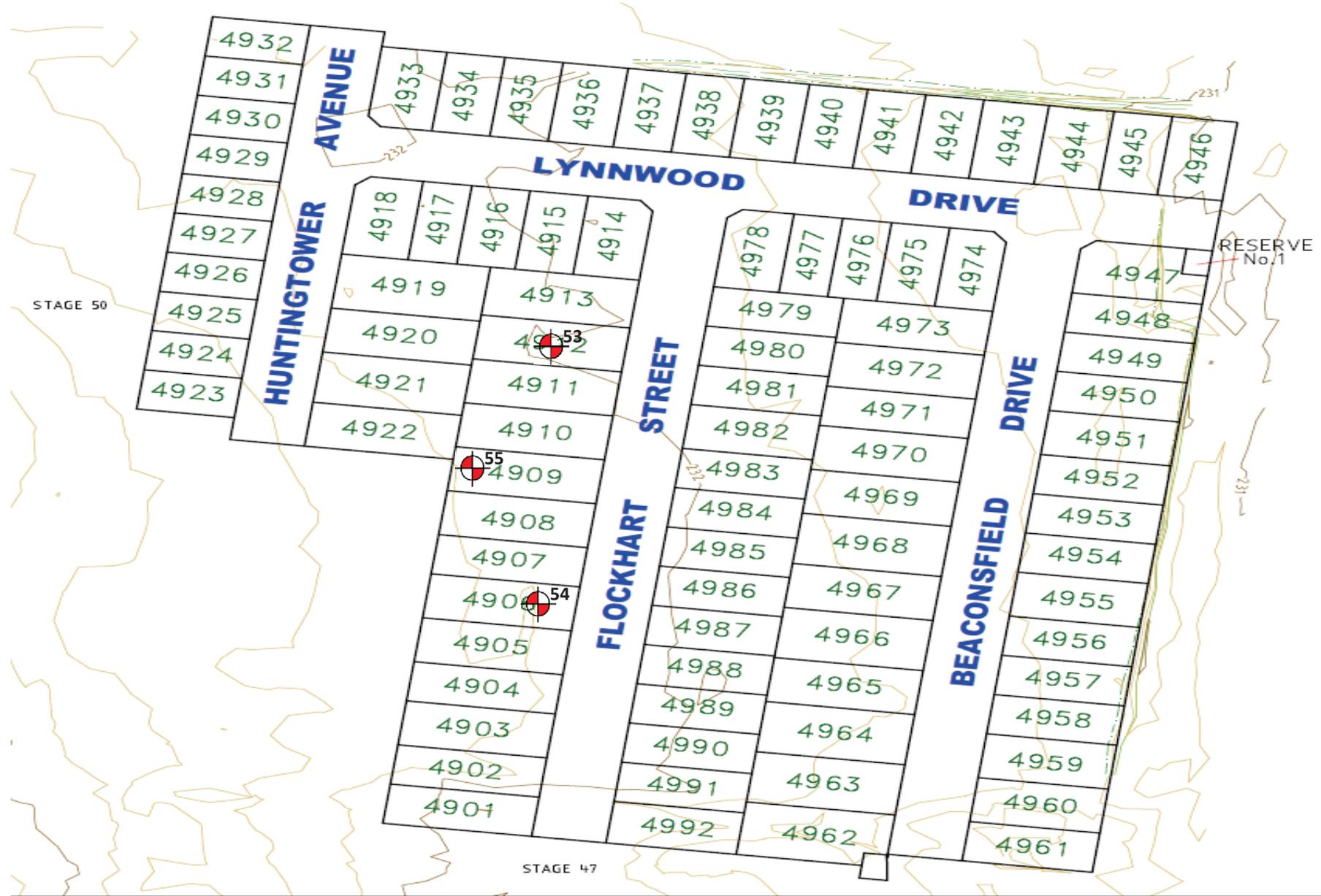
NATA Accredited Laboratory No. 20172
Accreditation for compliance with ISO/IEC 17025 - Testing
The results of tests, calibrations and/or measurements included in this document, are traceable to Australian / National Standards

Approved Signatory:



David Burns

Date: 31/05/2022



Project : Merrifield Estate - Stage 49 (Level1)

Client : BMD Urban

Date : 03/05/2022

Location : Mickleham

Project No : 1120 0322-1 (S119)

SITE PLAN SKETCH—NOT TO SCALE



Field Density Test Results

AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate - Stage 49 (Level 1)	Report:	20
Location:	Mickleham		

Sample No	56	57	58			
Date Tested	04/05/2022	04/05/2022	04/05/2022			
Time Tested	AM	AM	AM			

Test Location	Refer to Plan	Refer to Plan	Refer to Plan			
Level/Layer	Layer 2	Layer 2	Layer 2			
Layer Thickness	mm 200	mm 200	mm 200			
Test Depth	mm 175	mm 175	mm 175			
Field Wet Density	t/m ³ 1.95	t/m ³ 1.93	t/m ³ 1.94			
Field Moisture Content	% 21.7	% 23.4	% 26.5			
Material:	Imported Clay	Imported Clay	Imported Clay			

Oversize Material	WET, %	5.1	4.5	6.2		
Sieve Size	mm	19	19	19		
Peak Converted Wet Density	t/m ³	1.94	1.92	2.02		
Optimum Moisture Content	%	19.5	24	25		

Moisture Ratio	%	111.5	97.5	106		
Moisture Variation from OMC	%	2.0	-0.5	1.5		
Density Ratio	%	99.5	99.5	95.0		

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI20)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)



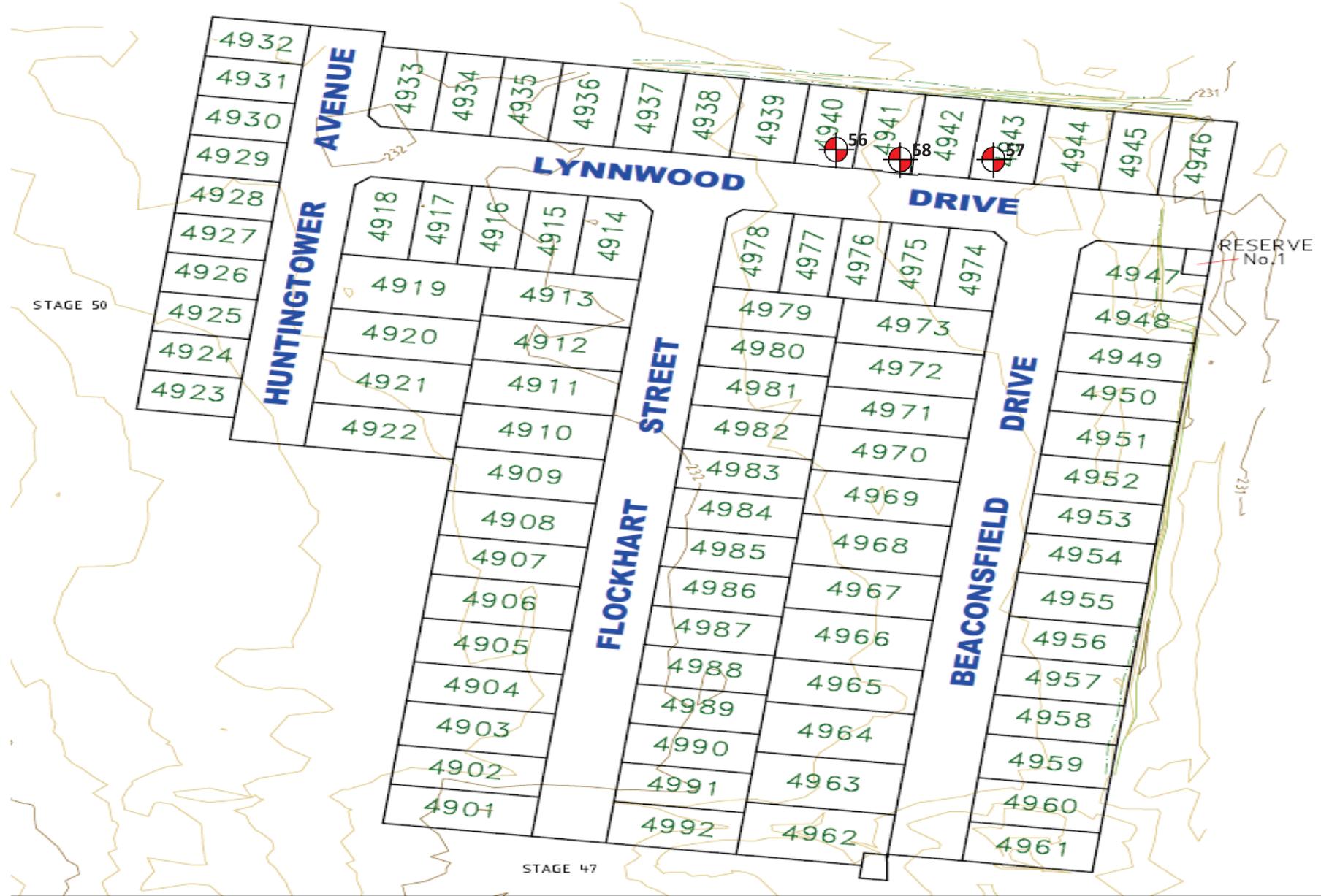
NATA Accredited Laboratory No. 20172
Accreditation for compliance with ISO/IEC 17025 - Testing
The results of tests, calibrations and/or measurements included in this document, are traceable to Australian / National Standards

Approved Signatory:



David Burns

Date: 31/05/2022



Project : Merrifield Estate - Stage 49 (Level1)

Client : BMD Urban

Date : 04/05/2022

Location : Mickleham

Project No : 1120 0322-1 (S120)

SITE PLAN SKETCH—NOT TO SCALE



Field Density Test Results

AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate - Stage 49 (Level 1)	Report:	21
Location:	Mickleham		

Sample No	59	60	61			
Date Tested	05/05/2022	05/05/2022	05/05/2022			
Time Tested	PM	PM	PM			

Test Location	Refer to Plan	Refer to Plan	Refer to Plan			
Level/Layer	Layer 2	Layer 2	Layer 4			
Layer Thickness	mm 200	mm 200	mm 200			
Test Depth	mm 175	mm 175	mm 175			
Field Wet Density	t/m ³ 1.85	t/m ³ 1.89	t/m ³ 1.99			
Field Moisture Content	% 25.3	% 24.5	% 20.1			
Material:	Imported Clay	Imported Clay	Imported Clay			

Oversize Material	WET, % 4.3	5.2	3.0			
Sieve Size	mm 19	mm 19	mm 19			
Peak Converted Wet Density	t/m ³ 1.87	t/m ³ 1.96	t/m ³ 1.98			
Optimum Moisture Content	% 26	% 22.5	% 20.5			

Moisture Ratio	%	97.5	109	98		
Moisture Variation from OMC	%	-0.5	2.0	0.0		
Density Ratio	%	98.0	95.5	99.5		

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI21)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)



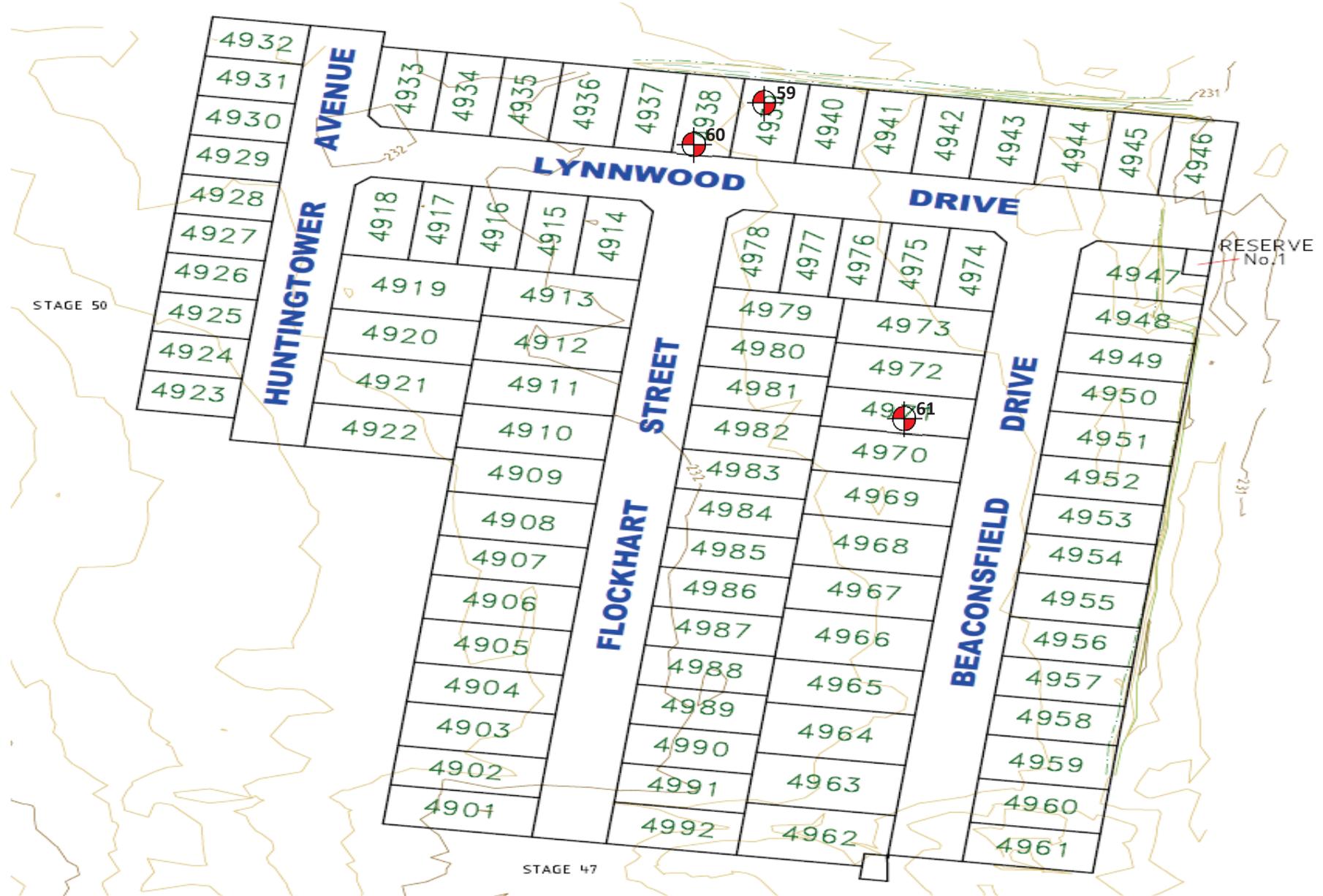
NATA Accredited Laboratory No. 20172
Accreditation for compliance with ISO/IEC 17025 - Testing
The results of tests, calibrations and/or measurements included in this document, are traceable to Australian / National Standards

Approved Signatory:



David Burns

Date: 31/05/2022



Project : Merrifield Estate - Stage 49 (Level1)

Client : BMD Urban

Date : 05/05/2022

Location : Mickleham

Project No : 1120 0322-1 (SI21)

SITE PLAN SKETCH—NOT TO SCALE



Field Density Test Results

AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate - Stage 49 (Level 1)	Report:	22
Location:	Mickleham		

Sample No	62	63	64			
Date Tested	06/05/2022	06/05/2022	06/05/2022			
Time Tested	PM	PM	PM			

Test Location	Refer to Plan	Refer to Plan	Refer to Plan			
Level/Layer	Layer 4	Layer 4	Layer 3			
Layer Thickness	mm 200	mm 200	mm 200			
Test Depth	mm 175	mm 175	mm 175			
Field Wet Density	t/m ³ 2.01	t/m ³ 1.90	t/m ³ 1.99			
Field Moisture Content	% 18.5	% 23.4	% 24.6			
Material:	Imported Clay	Imported Clay	Imported Clay			

Oversize Material	WET, % 4.7	6.3	5.1			
Sieve Size	mm 19	mm 19	mm 19			
Peak Converted Wet Density	t/m ³ 2.10	t/m ³ 1.95	t/m ³ 2.03			
Optimum Moisture Content	% 17	% 24	% 25			

Moisture Ratio	%	109	97.5	98.5		
Moisture Variation from OMC	%	1.5	-0.5	-0.5		
Density Ratio	%	95.5	97.0	97.0		

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI22)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)



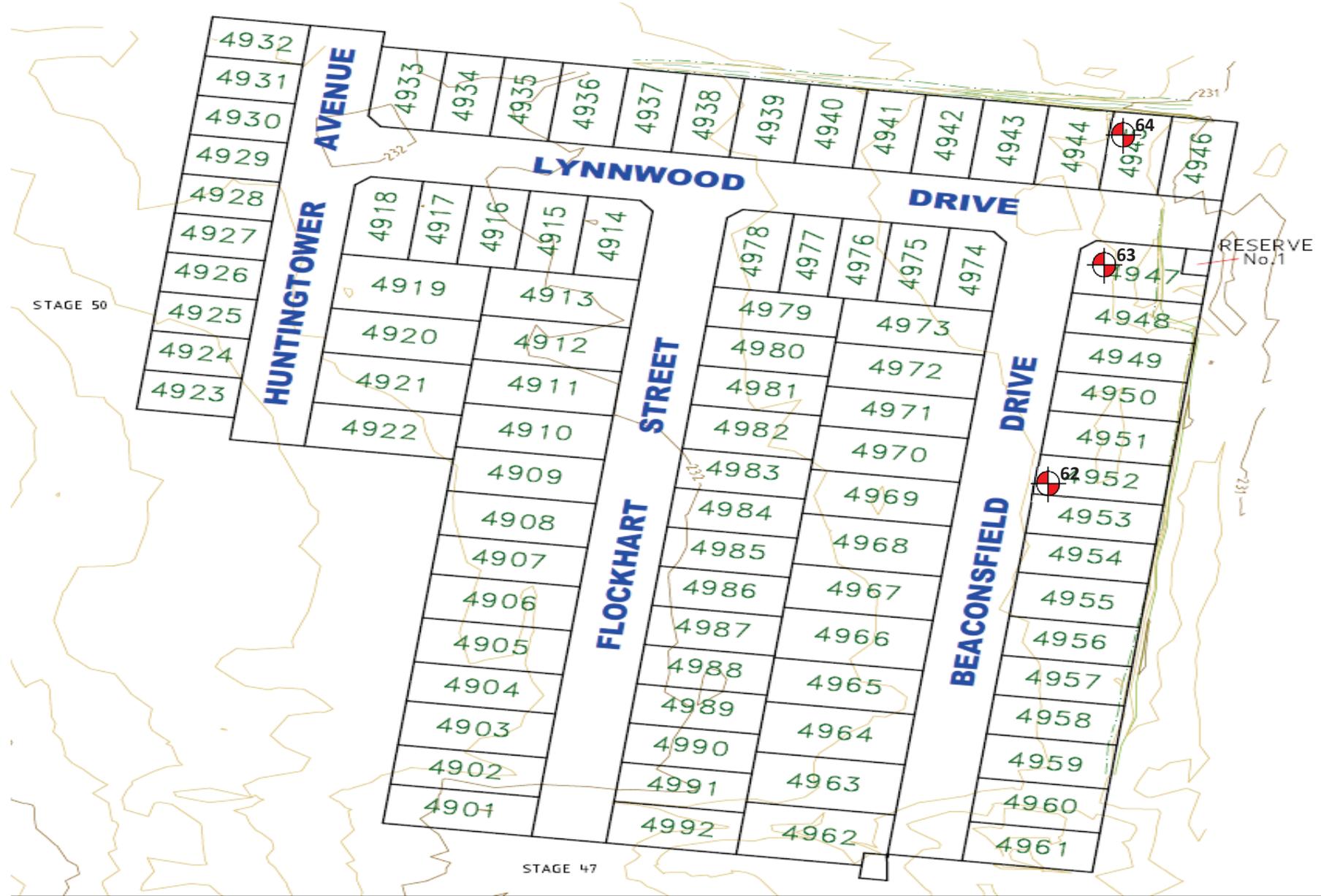
NATA Accredited Laboratory No. 20172
Accreditation for compliance with ISO/IEC 17025 - Testing
The results of tests, calibrations and/or measurements included in this document, are traceable to Australian / National Standards

Approved Signatory:



David Burns

Date: 31/05/2022



Project : Merrifield Estate - Stage 49 (Level1)

Client : BMD Urban

Date : 06/05/2022

Location : Mickleham

Project No : 1120 0322-1 (SI22)

SITE PLAN SKETCH—NOT TO SCALE



Field Density Test Results AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate - Stage 49 (Level 1)	Report:	23
Location:	Mickleham		

Sample No	65	66	67			
Date Tested	09/05/2022	09/05/2022	09/05/2022			
Time Tested	PM	PM	PM			

Test Location	Refer to Plan	Refer to Plan	Refer to Plan			
Level/Layer	Layer 3	Layer 4	Layer 4			
Layer Thickness	mm 200	200	200			
Test Depth	mm 175	175	175			
Field Wet Density	t/m ³ 1.94	1.97	1.83			
Field Moisture Content	% 23.3	21.8	24.1			
Material:	Imported Clay	Imported Clay	Imported Clay			

Oversize Material	WET, %	4.1	5.5	3.2		
Sieve Size	mm	19	19	19		
Peak Converted Wet Density	t/m ³	1.95	2.03	1.85		
Optimum Moisture Content	%	23.5	20	25		

Moisture Ratio	%	99	109	96.5		
Moisture Variation from OMC	%	-0.5	1.5	-0.5		
Density Ratio	%	99.0	96.0	98.5		

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI23)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)



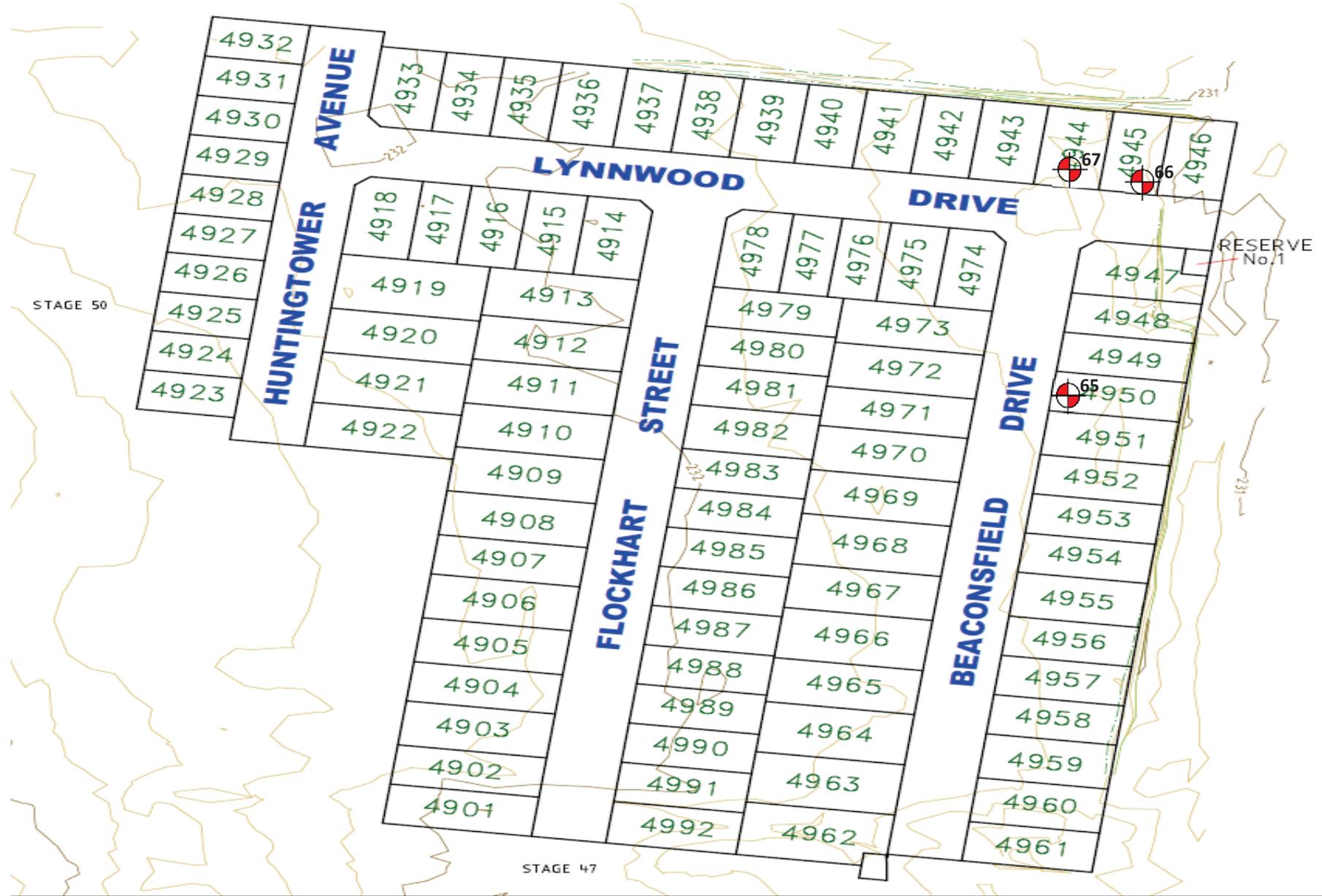
NATA Accredited Laboratory No. 20172
Accreditation for compliance with ISO/IEC 17025 - Testing
The results of tests, calibrations and/or measurements included in this document, are traceable to Australian / National Standards

Approved Signatory:



David Burns

Date: 31/05/2022



Project : Merrifield Estate - Stage 49 (Level1)

Client : BMD Urban

Date : 09/05/2022

Location : Mickleham

Project No : 1120 0322-1 (SI23)

SITE PLAN SKETCH—NOT TO SCALE



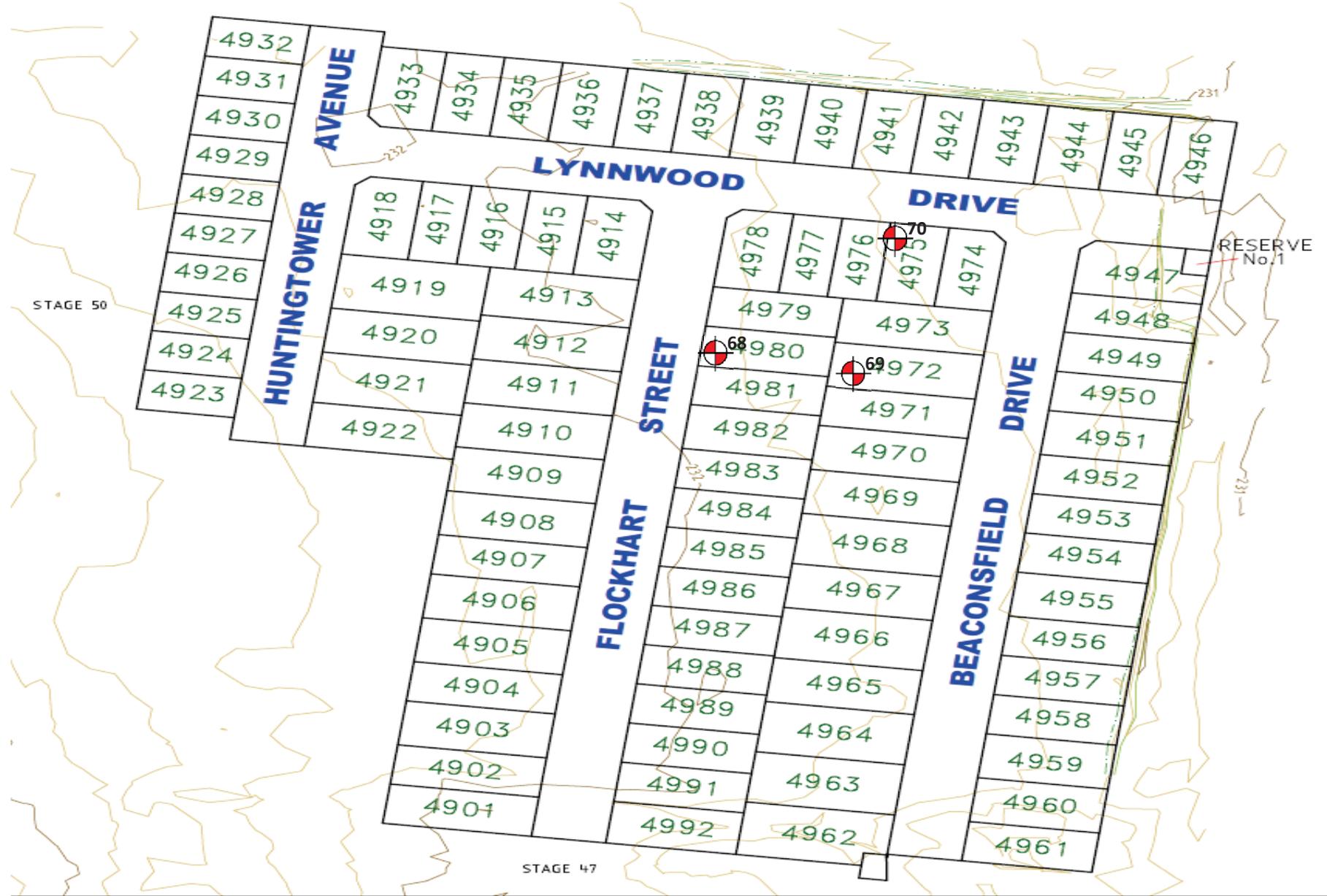
Field Density Test Results

AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate - Stage 49 (Level 1)	Report:	24
Location:	Mickleham		
Sample No	68	69	70
Date Tested	10/05/2022	10/05/2022	10/05/2022
Time Tested	PM	PM	PM
Test Location	Refer to Plan	Refer to Plan	Refer to Plan
Level/Layer	Layer 3	Layer 3	Layer 4
Layer Thickness	mm 200	mm 200	mm 200
Test Depth	mm 175	mm 175	mm 175
Field Wet Density	t/m ³ 1.89	t/m ³ 1.81	t/m ³ 1.93
Field Moisture Content	% 23.3	% 24.3	% 17.9
Material:	Imported Clay	Imported Clay	Imported Clay
Oversize Material	WET, % 4.5	WET, % 3.8	WET, % 5.0
Sieve Size	mm 19	mm 19	mm 19
Peak Converted Wet Density	t/m ³ 1.98	t/m ³ 1.88	t/m ³ 2.00
Optimum Moisture Content	% 24	% 25	% 18
Moisture Ratio	% 97	% 97	% 99.5
Moisture Variation from OMC	% -0.5 Drier	% -1.0 Drier	% -0.5 Drier
Density Ratio	% 95.0	% 95.5	% 96.0

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI24)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)

	<p>NATA Accredited Laboratory No. 20172</p> <p>Accreditation for compliance with ISO/IEC 17025 - Testing</p> <p>The results of tests, calibrations and/or measurements included in this document, are traceable to Australian / National Standards</p>	<p>Approved Signatory: </p> <p>David Burns</p> <p>Date: 31/05/2022</p>
---	--	---



Project : Merrifield Estate - Stage 49 (Level1)

Client : BMD Urban

Date : 10/05/2022

Location : Mickleham

Project No : 1120 0322-1 (SI24)

SITE PLAN SKETCH—NOT TO SCALE



Field Density Test Results

AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate - Stage 49 (Level 1)	Report:	25
Location:	Mickleham		

Sample No	71	72	73			
Date Tested	11/05/2022	11/05/2022	11/05/2022			
Time Tested	PM	PM	PM			

Test Location	Refer to Plan	Refer to Plan	Refer to Plan			
Level/Layer	Layer 3	Layer 3	Layer 4			
Layer Thickness	mm 200	mm 200	mm 200			
Test Depth	mm 175	mm 175	mm 175			
Field Wet Density	t/m ³ 1.94	t/m ³ 1.96	t/m ³ 1.83			
Field Moisture Content	% 20.3	% 19.6	% 23.5			
Material:	Imported Clay	Imported Clay	Imported Clay			

Oversize Material	WET, %	4.5	5.1	3.0		
Sieve Size	mm	19	19	19		
Peak Converted Wet Density	t/m ³	1.95	1.98	1.88		
Optimum Moisture Content	%	18.5	20	22		

Moisture Ratio	%	109.5	98	107		
Moisture Variation from OMC	%	2.0	0.0	1.5		
Density Ratio	%	98.5	98.0	96.5		

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI25)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)



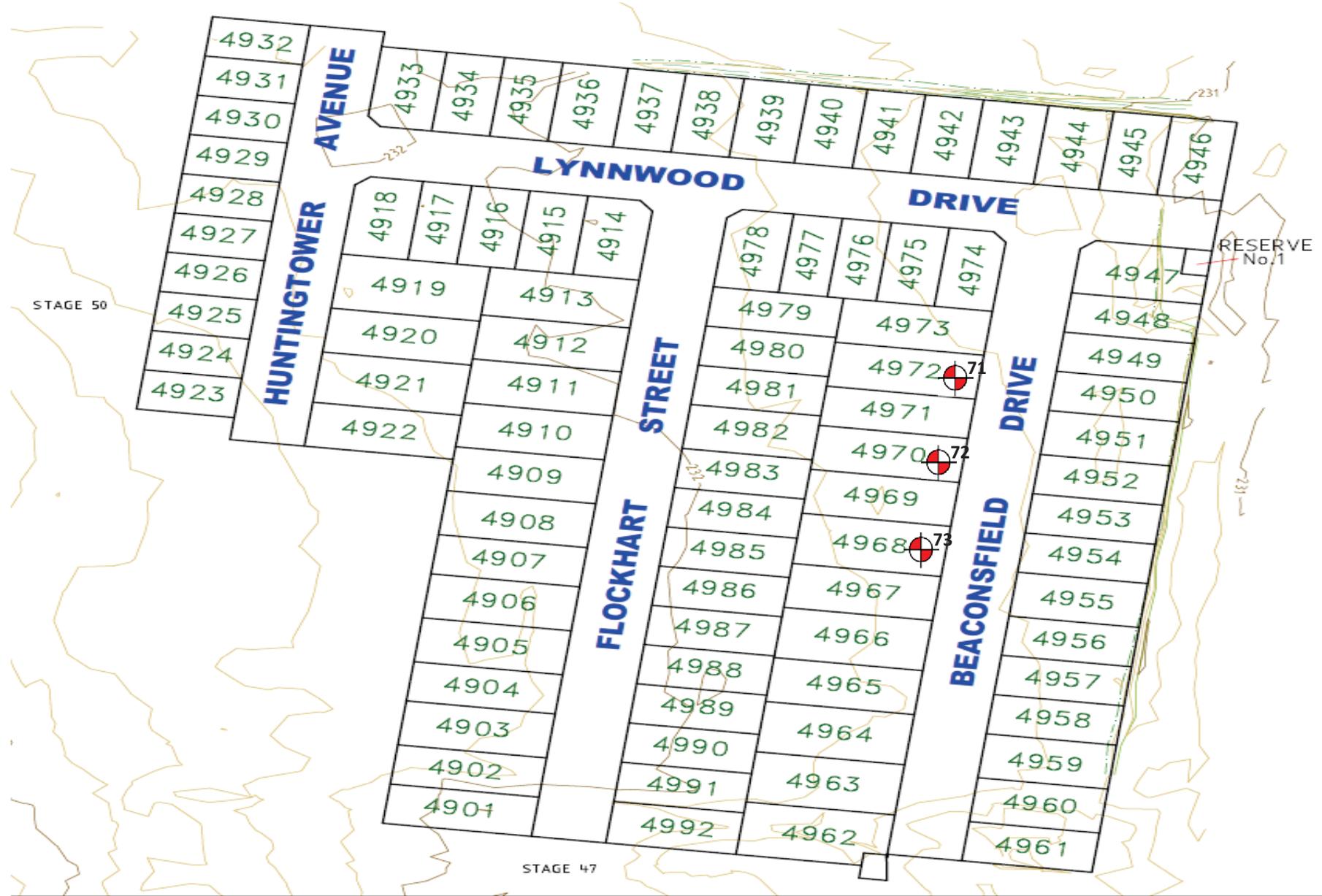
NATA Accredited Laboratory No. 20172
Accreditation for compliance with ISO/IEC 17025 - Testing
The results of tests, calibrations and/or measurements included in this document, are traceable to Australian / National Standards

Approved Signatory:



David Burns

Date: 31/05/2022



Project : Merrifield Estate - Stage 49 (Level1)

Client : BMD Urban

Date : 11/05/2022

Location : Mickleham

Project No : 1120 0322-1 (SI25)

SITE PLAN SKETCH—NOT TO SCALE



Field Density Test Results

AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate - Stage 49 (Level 1)	Report:	26
Location:	Mickleham		

Sample No	74	75	76			
Date Tested	12/05/2022	12/05/2022	12/05/2022			
Time Tested	PM	PM	PM			

Test Location	Refer to Plan	Refer to Plan	Refer to Plan			
Level/Layer	Layer 4	Layer 4	Layer 4			
Layer Thickness	mm 200	mm 200	mm 200			
Test Depth	mm 175	mm 175	mm 175			
Field Wet Density	t/m ³ 1.93	t/m ³ 1.86	t/m ³ 1.87			
Field Moisture Content	% 22.0	% 24.3	% 23.0			
Material:	Imported Clay	Imported Clay	Imported Clay			

Oversize Material	WET, %	5.9	4.2	5.0		
Sieve Size	mm	19	19	19		
Peak Converted Wet Density	t/m ³	1.97	1.93	1.89		
Optimum Moisture Content	%	23	22.5	24		

Moisture Ratio	%	95.5	108	96		
Moisture Variation from OMC	%	-0.5 Drier	1.5 Wetter	-0.5 Drier		
Density Ratio	%	97.0	95.5	98.0		

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI26)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)



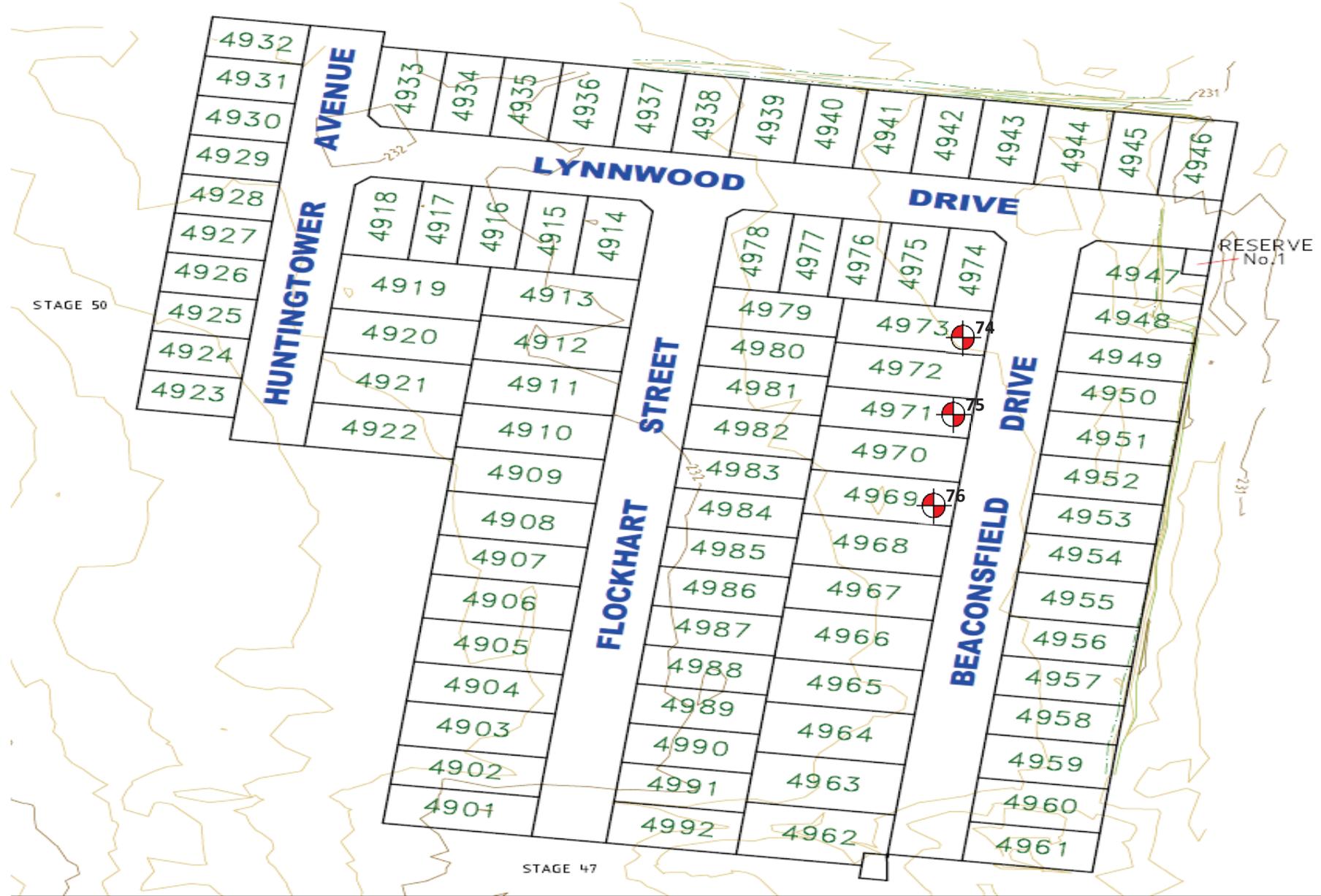
NATA Accredited Laboratory No. 20172
Accreditation for compliance with ISO/IEC 17025 - Testing
The results of tests, calibrations and/or measurements included in this document, are traceable to Australian / National Standards

Approved Signatory:



David Burns

Date: 31/05/2022



Project : Merrifield Estate - Stage 49 (Level1)

Client : BMD Urban

Date : 12/05/2022

Location : Mickleham

Project No : 1120 0322-1 (SI26)

SITE PLAN SKETCH—NOT TO SCALE



Field Density Test Results

AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate - Stage 49 (Level 1)	Report:	27
Location:	Mickleham		

Sample No	77	78	79			
Date Tested	13/05/2022	13/05/2022	13/05/2022			
Time Tested	PM	PM	PM			

Test Location	Refer to Plan	Refer to Plan	Refer to Plan			
Level/Layer	Layer 4	Layer 4	Layer 4			
Layer Thickness	mm 200	mm 200	mm 200			
Test Depth	mm 175	mm 175	mm 175			
Field Wet Density	t/m ³ 1.95	t/m ³ 1.91	t/m ³ 1.84			
Field Moisture Content	% 20.3	% 22.2	% 25.4			
Material:	Imported Clay	Imported Clay	Imported Clay			

Oversize Material	WET, %	3.2	3.1	2.6		
Sieve Size	mm	19	19	19		
Peak Converted Wet Density	t/m ³	1.96	2.00	1.92		
Optimum Moisture Content	%	18.5	20.5	26		

Moisture Ratio	%	109.5	108	97.5		
Moisture Variation from OMC	%	2.0 Wetter	1.5 Wetter	-0.5 Drier		
Density Ratio	%	98.5	95.0	95.5		

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI27)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)



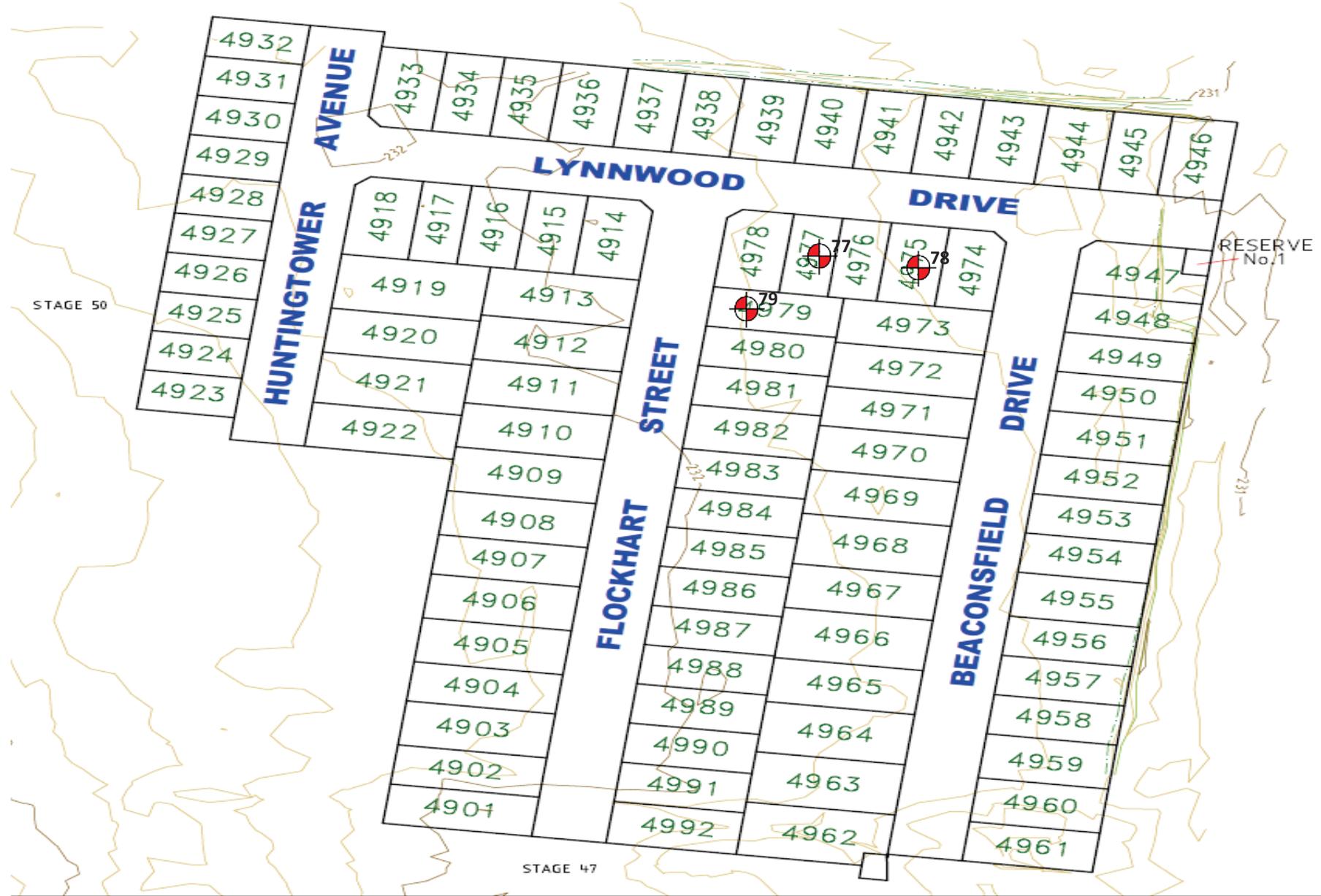
NATA Accredited Laboratory No. 20172
Accreditation for compliance with ISO/IEC 17025 - Testing
The results of tests, calibrations and/or measurements included in this document, are traceable to Australian / National Standards

Approved Signatory:



David Burns

Date: 31/05/2022



Project : Merrifield Estate - Stage 49 (Level1)

Client : BMD Urban

Date : 13/05/2022

Location : Mickleham

Project No : 1120 0322-1 (SI27)

SITE PLAN SKETCH—NOT TO SCALE



Field Density Test Results

AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate - Stage 49 (Level 1)	Report:	28
Location:	Mickleham		

Sample No	80	81	82			
Date Tested	16/05/2022	16/05/2022	16/05/2022			
Time Tested	PM	PM	PM			

Test Location	Refer to Plan	Refer to Plan	Refer to Plan			
Level/Layer	Layer 4	Layer 5	Layer 5			
Layer Thickness	mm 200	200	200			
Test Depth	mm 175	175	175			
Field Wet Density	t/m ³ 1.89	1.81	1.99			
Field Moisture Content	% 22.8	24.6	19.1			
Material:	Imported Clay	Imported Clay	Imported Clay			

Oversize Material	WET, %	0.0	4.6	3.1		
Sieve Size	mm	19	19	19		
Peak Converted Wet Density	t/m ³	1.93	1.91	2.00		
Optimum Moisture Content	%	21	25	17		

Moisture Ratio	%	108.5	98.5	112.5		
Moisture Variation from OMC	%	1.5	-0.5	2.0		
Density Ratio	%	98.0	98.5	99.5		

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI28)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)



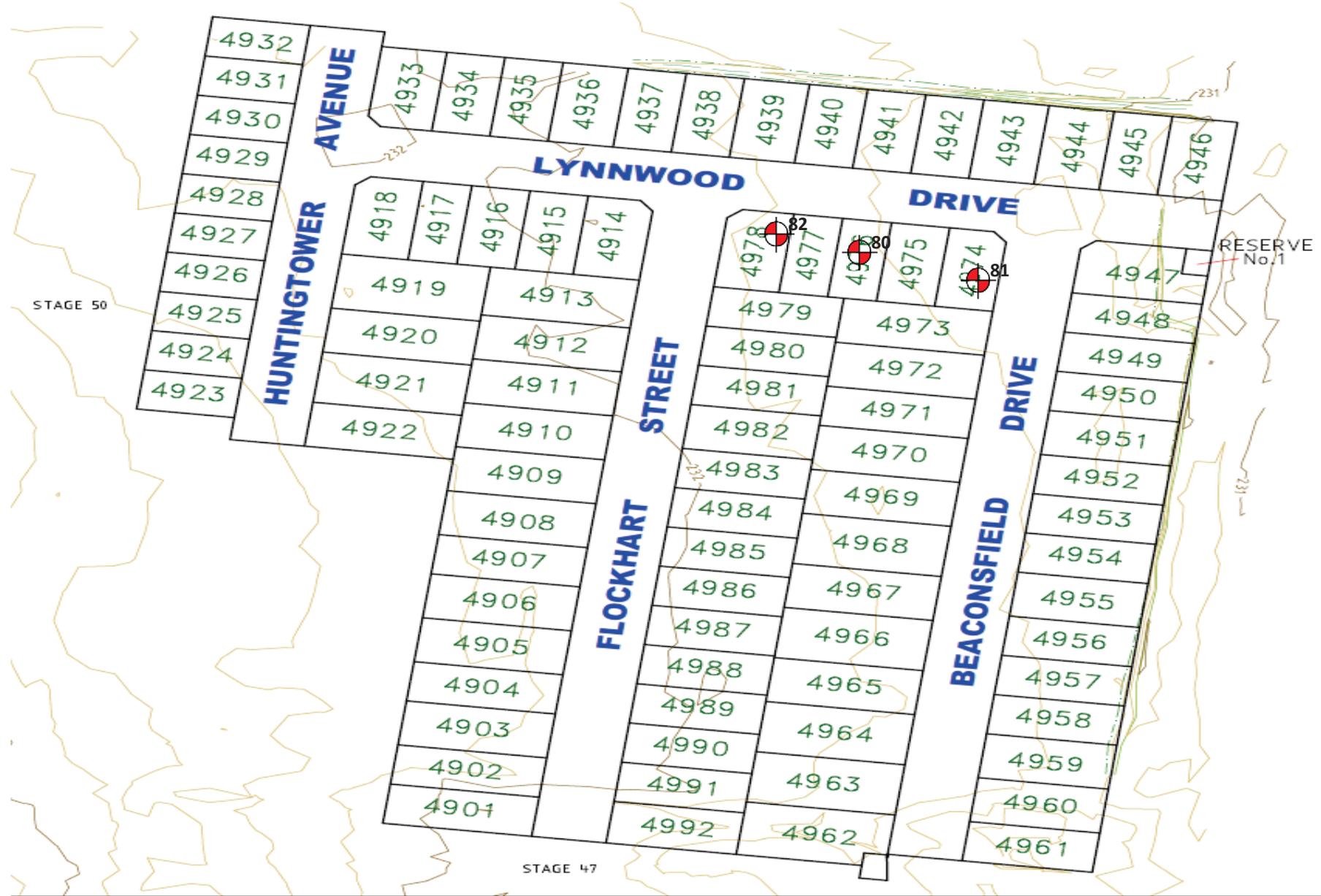
NATA Accredited Laboratory No. 20172
Accreditation for compliance with ISO/IEC 17025 - Testing
The results of tests, calibrations and/or measurements included in this document, are traceable to Australian / National Standards

Approved Signatory:



David Burns

Date: 31/05/2022



Project : Merrifield Estate - Stage 49 (Level1)

Client : BMD Urban

Date : 16/05/2022

Location : Mickleham

Project No : 1120 0322-1 (SI28)

SITE PLAN SKETCH—NOT TO SCALE



Field Density Test Results

AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate - Stage 49 (Level 1)	Report:	29
Location:	Mickleham		

Sample No	83	84	85			
Date Tested	17/05/2022	17/05/2022	17/05/2022			
Time Tested	PM	PM	PM			

Test Location	Refer to Plan	Refer to Plan	Refer to Plan			
Level/Layer	Layer 4	Layer 4	Layer 4			
Layer Thickness	mm 200	mm 200	mm 200			
Test Depth	mm 175	mm 175	mm 175			
Field Wet Density	t/m ³ 1.90	t/m ³ 1.81	t/m ³ 2.00			
Field Moisture Content	% 22.3	% 24.8	% 20.3			
Material:	Imported Clay	Imported Clay	Imported Clay			

Oversize Material	WET, %	5.3	3.2	5.8		
Sieve Size	mm	19	19	19		
Peak Converted Wet Density	t/m ³	1.91	1.81	2.00		
Optimum Moisture Content	%	20.5	25	21		

Moisture Ratio	%	108.5	99	96.5		
Moisture Variation from OMC	%	1.5	-0.5	-0.5		
Density Ratio	%	98.5	99.0	99.0		

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI29)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)



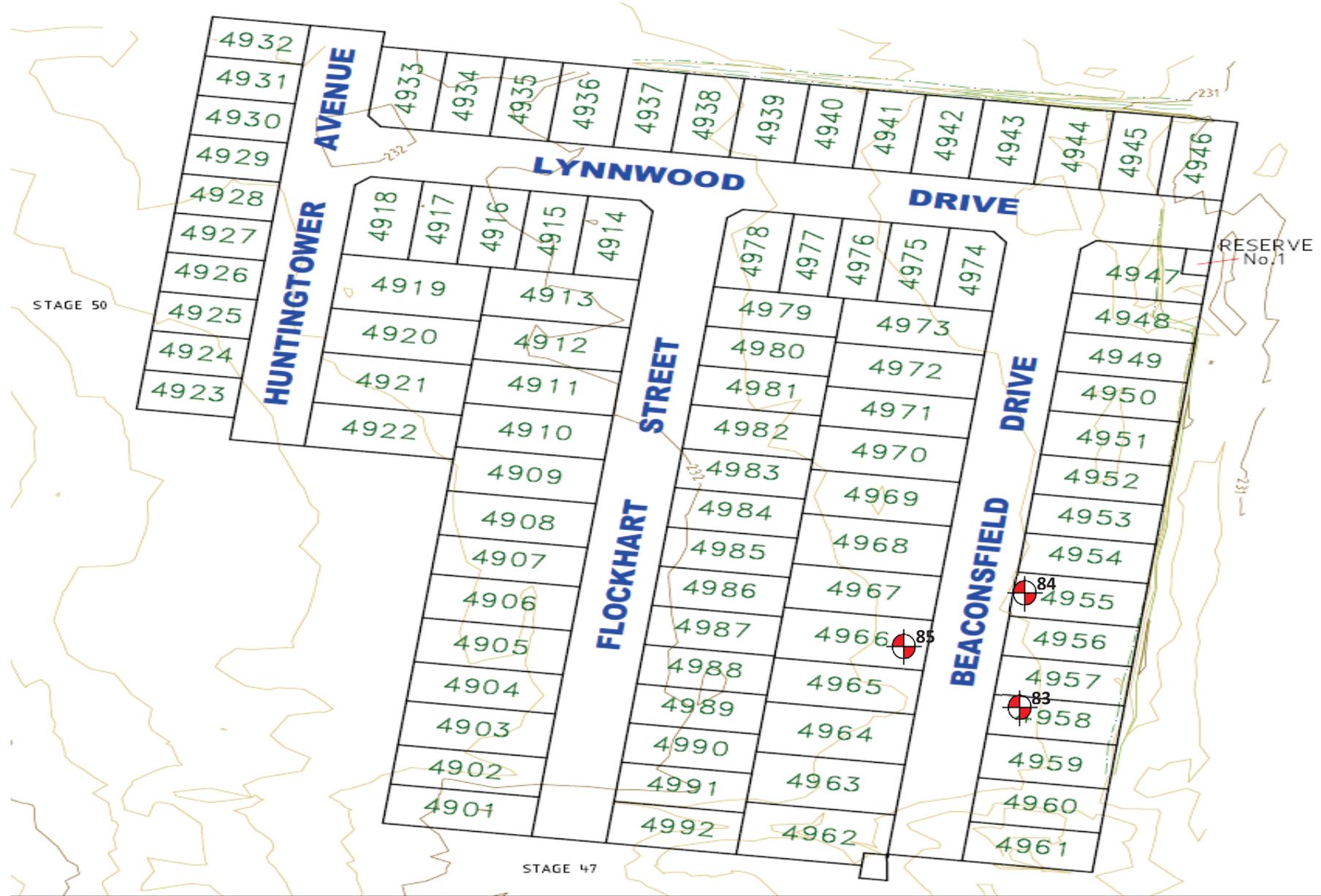
NATA Accredited Laboratory No. 20172
Accreditation for compliance with ISO/IEC 17025 - Testing
The results of tests, calibrations and/or measurements included in this document, are traceable to Australian / National Standards

Approved Signatory:



David Burns

Date: 31/05/2022



Project : Merrifield Estate - Stage 49 (Level1)

Client : BMD Urban

Date : 17/05/2022

Location : Mickleham

Project No : 1120 0322-1 (S129)

SITE PLAN SKETCH—NOT TO SCALE



Field Density Test Results

AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate - Stage 49 (Level 1)	Report:	30
Location:	Mickleham		

Sample No	86	87	88			
Date Tested	18/05/2022	18/05/2022	18/05/2022			
Time Tested	PM	PM	PM			

Test Location	Refer to Plan	Refer to Plan	Refer to Plan			
Level/Layer	Layer 4	Layer 4	Layer 4			
Layer Thickness	mm 200	mm 200	mm 200			
Test Depth	mm 175	mm 175	mm 175			
Field Wet Density	t/m ³ 1.91	t/m ³ 1.83	t/m ³ 1.92			
Field Moisture Content	% 22.4	% 24.6	% 21.9			
Material:	Imported Clay	Imported Clay	Imported Clay			

Oversize Material	WET, %	5.3	3.2	5.8		
Sieve Size	mm	19	19	19		
Peak Converted Wet Density	t/m ³	1.91	1.89	2.00		
Optimum Moisture Content	%	20.5	24	22.5		

Moisture Ratio	%	109	102.5	97		
Moisture Variation from OMC	%	1.5	0.5	-0.5		
Density Ratio	%	98.5	96.5	95.5		

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI30)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)



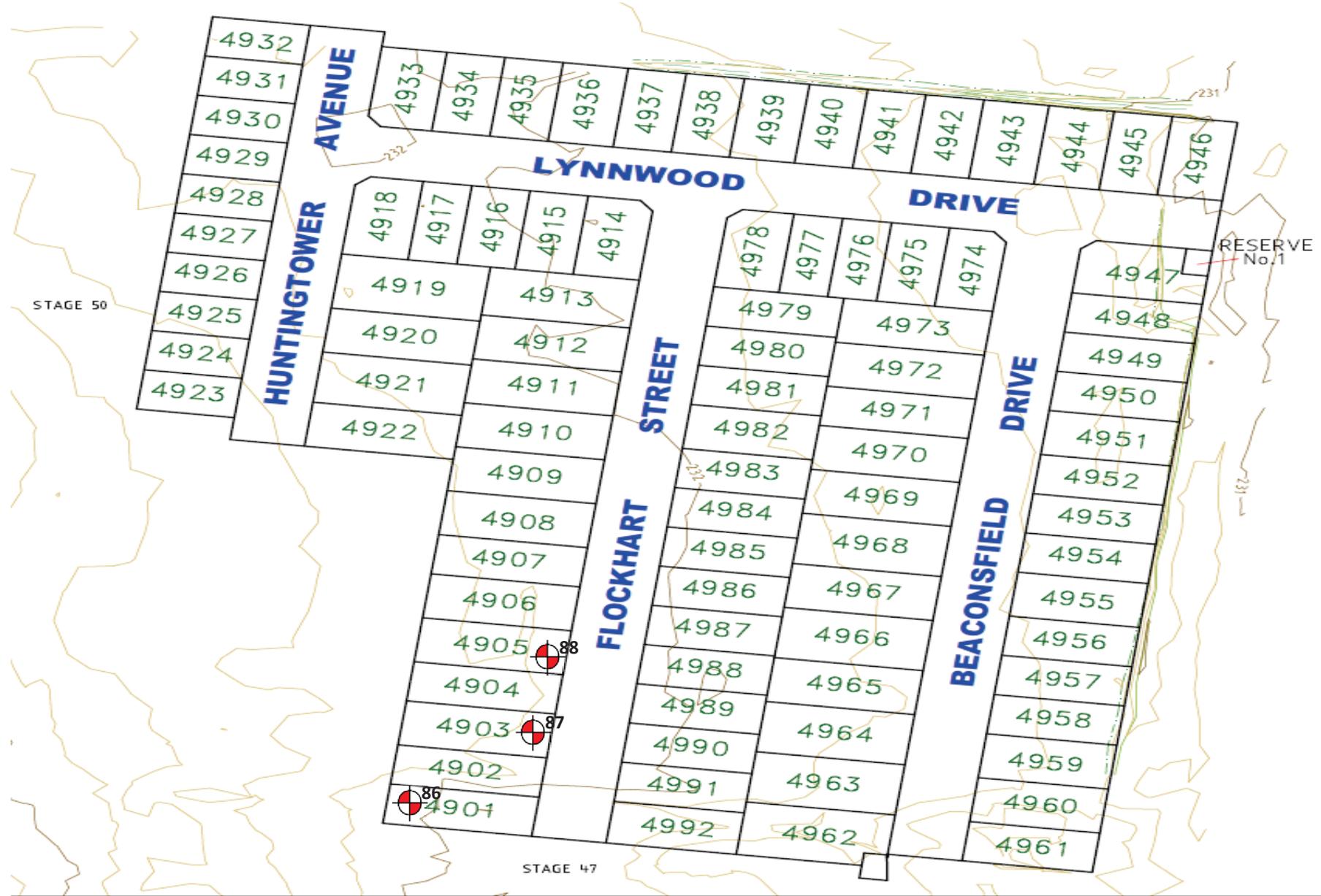
NATA Accredited Laboratory No. 20172
Accreditation for compliance with ISO/IEC 17025 - Testing
The results of tests, calibrations and/or measurements included in this document, are traceable to Australian / National Standards

Approved Signatory:



David Burns

Date: 31/05/2022



Project : Merrifield Estate - Stage 49 (Level1)

Client : BMD Urban

Date : 18/05/2022

Location : Mickleham

Project No : 1120 0322-1 (SI30)

SITE PLAN SKETCH—NOT TO SCALE



Field Density Test Results AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate - Stage 49 (Level 1)	Report:	31
Location:	Mickleham		

Sample No	89	90	91			
Date Tested	19/05/2022	19/05/2022	19/05/2022			
Time Tested	PM	PM	PM			

Test Location	Refer to Plan	Refer to Plan	Refer to Plan			
Level/Layer	Layer 4	Layer 4	Layer 4			
Layer Thickness	mm 200	mm 200	mm 200			
Test Depth	mm 175	mm 175	mm 175			
Field Wet Density	t/m ³ 1.99	t/m ³ 1.88	t/m ³ 1.82			
Field Moisture Content	% 18.8	% 23.1	% 24.8			
Material:	Imported Clay	Imported Clay	Imported Clay			

Oversize Material	WET, % 5.9	4.1	3.2			
Sieve Size	mm 19	mm 19	mm 19			
Peak Converted Wet Density	t/m ³ 2.01	t/m ³ 1.89	t/m ³ 1.86			
Optimum Moisture Content	% 19	% 24	% 23			

Moisture Ratio	%	99	96.5	108		
Moisture Variation from OMC	%	-0.5 Drier	-1.0 Drier	2.0 Wetter		
Density Ratio	%	98.5	99.0	97.0		

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI31)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)



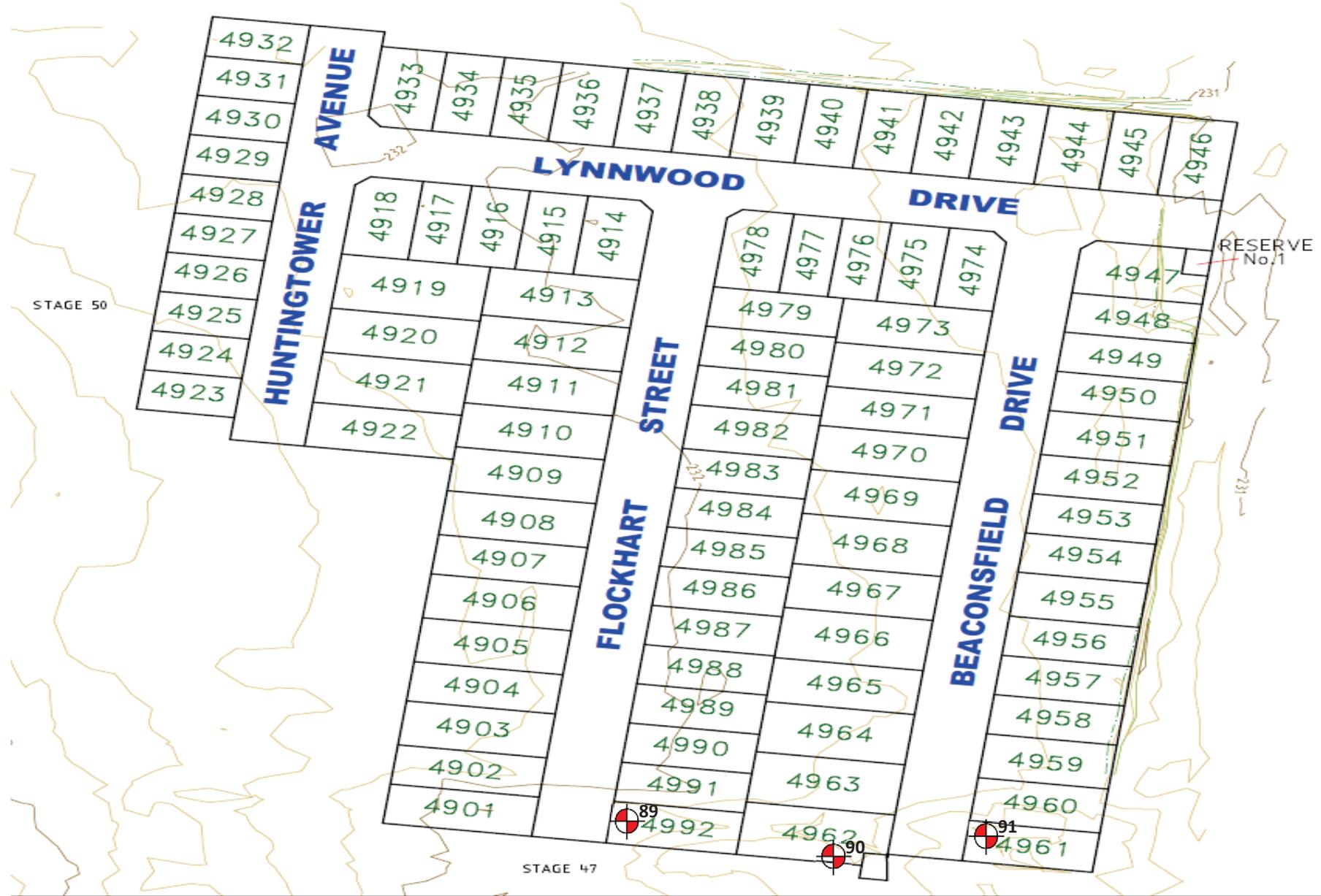
NATA Accredited Laboratory No. 20172
Accreditation for compliance with ISO/IEC 17025 - Testing
The results of tests, calibrations and/or measurements included in this document, are traceable to Australian / National Standards

Approved Signatory:



David Burns

Date: 31/05/2022



Project : Merrifield Estate - Stage 49 (Level1)

Client : BMD Urban

Date : 19/05/2022

Location : Mickleham

Project No : 1120 0322-1 (SI31)

SITE PLAN SKETCH—NOT TO SCALE



Field Density Test Results

AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate - Stage 49 (Level 1)	Report:	32
Location:	Mickleham		

Sample No	92	93	94			
Date Tested	20/05/2022	20/05/2022	20/05/2022			
Time Tested	PM	PM	PM			

Test Location	Refer to Plan	Refer to Plan	Refer to Plan			
Level/Layer	Layer 4	Layer 4	Layer 4			
Layer Thickness	mm 200	mm 200	mm 200			
Test Depth	mm 175	mm 175	mm 175			
Field Wet Density	t/m ³ 1.91	t/m ³ 1.85	t/m ³ 1.88			
Field Moisture Content	% 22.8	% 25.3	% 23.3			
Material:	Imported Clay	Imported Clay	Imported Clay			

Oversize Material	WET, %	4.9	2.5	3.8		
Sieve Size	mm	19	19	19		
Peak Converted Wet Density	t/m ³	1.94	1.84	1.88		
Optimum Moisture Content	%	21	25.5	23.5		

Moisture Ratio	%	108.5	99	99		
Moisture Variation from OMC	%	1.5	-0.5	-0.5		
Density Ratio	%	97.5	99.5	99.0		

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI32)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)



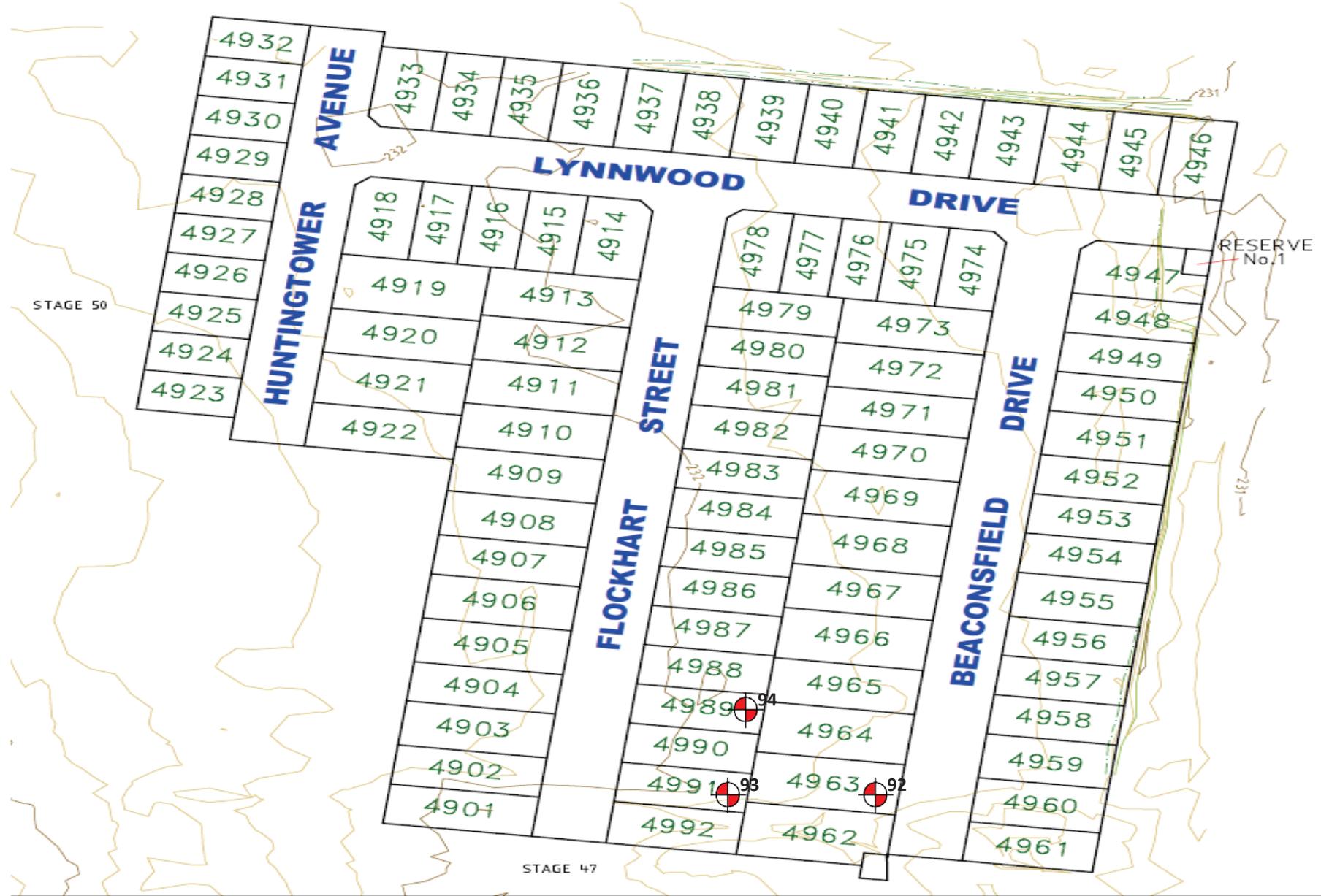
NATA Accredited Laboratory No. 20172
Accreditation for compliance with ISO/IEC 17025 - Testing
The results of tests, calibrations and/or measurements included in this document, are traceable to Australian / National Standards

Approved Signatory:



David Burns

Date: 31/05/2022



Project : Merrifield Estate - Stage 49 (Level1)

Client : BMD Urban

Date : 20/05/2022

Location : Mickleham

Project No : 1120 0322-1 (SI32)

SITE PLAN SKETCH—NOT TO SCALE



Field Density Test Results

AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate - Stage 49 (Level 1)	Report:	33
Location:	Mickleham		

Sample No	95	96	97			
Date Tested	23/05/2022	23/05/2022	23/05/2022			
Time Tested	PM	PM	PM			

Test Location	Refer to Plan	Refer to Plan	Refer to Plan			
Level/Layer	Layer 5	Layer 5	Layer 5			
Layer Thickness	mm 200	mm 200	mm 200			
Test Depth	mm 175	mm 175	mm 175			
Field Wet Density	t/m ³ 1.94	t/m ³ 1.89	t/m ³ 1.84			
Field Moisture Content	% 20.1	% 22.1	% 24.5			
Material:	Imported Clay	Imported Clay	Imported Clay			

Oversize Material	WET, %	5.4	4.8	3.2		
Sieve Size	mm	19	19	19		
Peak Converted Wet Density	t/m ³	1.96	1.93	1.93		
Optimum Moisture Content	%	18.5	20	25		

Moisture Ratio	%	108.5	110.5	98		
Moisture Variation from OMC	%	1.5 Wetter	2.0 Wetter	-0.5 Drier		
Density Ratio	%	98.5	97.0	95.0		

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI33)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)



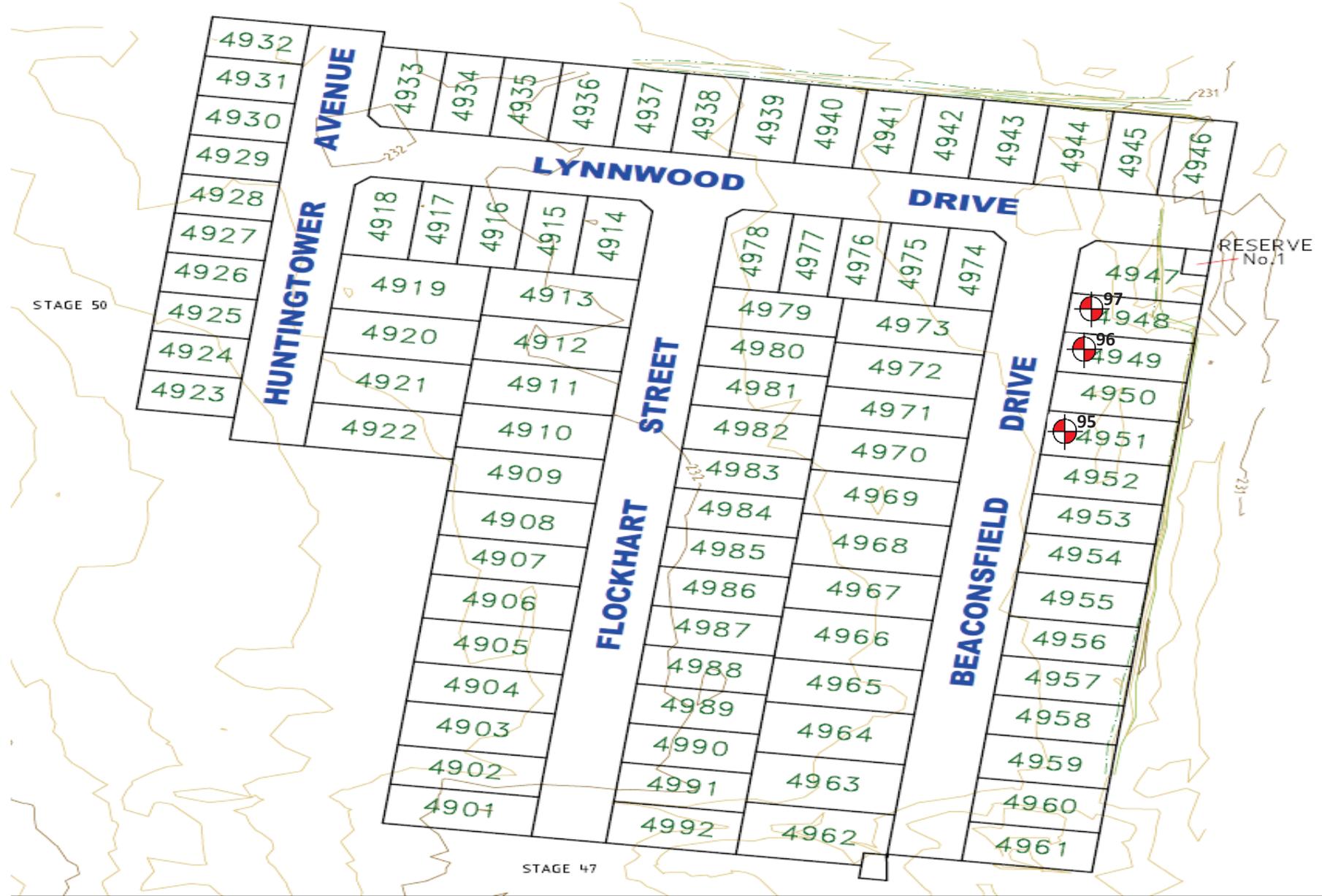
NATA Accredited Laboratory No. 20172
Accreditation for compliance with ISO/IEC 17025 - Testing
The results of tests, calibrations and/or measurements included in this document, are traceable to Australian / National Standards

Approved Signatory:



David Burns

Date: 31/05/2022



Project : Merrifield Estate - Stage 49 (Level1)

Client : BMD Urban

Date : 23/05/2022

Location : Mickleham

Project No : 1120 0322-1 (SI33)

SITE PLAN SKETCH—NOT TO SCALE



Field Density Test Results

AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate - Stage 49 (Level 1)	Report:	34
Location:	Mickleham		

Sample No	98	99	100			
Date Tested	24/05/2022	24/05/2022	24/05/2022			
Time Tested	PM	PM	PM			

Test Location	Refer to Plan	Refer to Plan	Refer to Plan			
Level/Layer	Layer 5	Layer 5	Layer 5			
Layer Thickness	mm 200	mm 200	mm 200			
Test Depth	mm 175	mm 175	mm 175			
Field Wet Density	t/m ³ 1.93	t/m ³ 1.94	t/m ³ 1.89			
Field Moisture Content	% 22.1	% 21.3	% 23.9			
Material:	Imported Clay	Imported Clay	Imported Clay			

Oversize Material	WET, % 4.8	5.1	3.8			
Sieve Size	mm 19	mm 19	mm 19			
Peak Converted Wet Density	t/m ³ 1.95	t/m ³ 1.94	t/m ³ 1.93			
Optimum Moisture Content	% 22.5	% 21.5	% 22			

Moisture Ratio	%	98	99	108.5		
Moisture Variation from OMC	%	-0.5 Drier	-0.5 Drier	1.5 Wetter		
Density Ratio	%	98.5	99.5	97.0		

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI34)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)



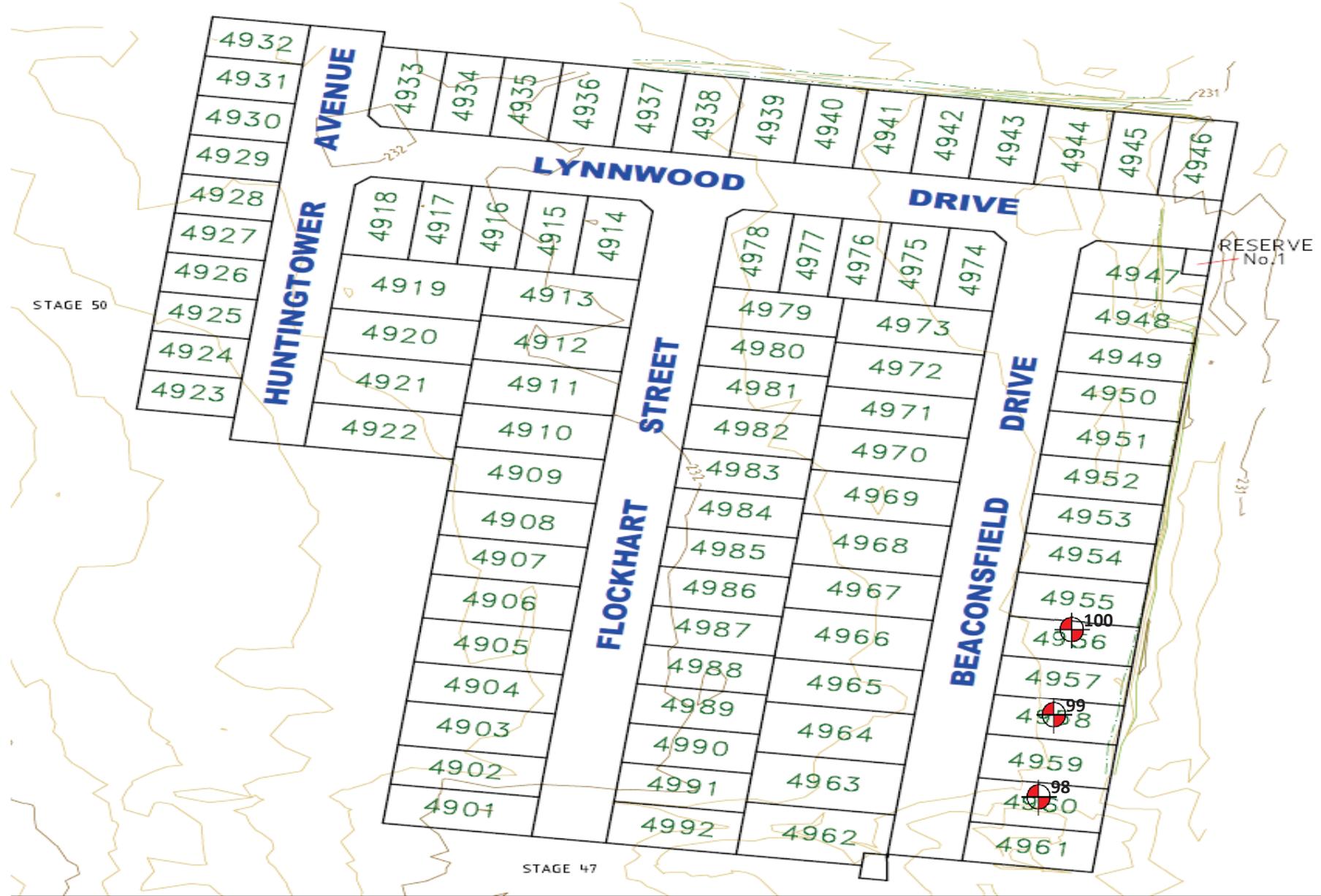
NATA Accredited Laboratory No. 20172
Accreditation for compliance with ISO/IEC 17025 - Testing
The results of tests, calibrations and/or measurements included in this document, are traceable to Australian / National Standards

Approved Signatory:



David Burns

Date: 31/05/2022



Project : Merrifield Estate - Stage 49 (Level1)

Client : BMD Urban

Date : 24/05/2022

Location : Mickleham

Project No : 1120 0322-1 (SI34)

SITE PLAN SKETCH—NOT TO SCALE



Field Density Test Results AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate - Stage 49 (Level 1)	Report:	35
Location:	Mickleham		

Sample No	101	102	103			
Date Tested	25/05/2022	25/05/2022	25/05/2022			
Time Tested	PM	PM	PM			

Test Location	Refer to Plan	Refer to Plan	Refer to Plan			
Level/Layer	Layer 5	Layer 5	Layer 4			
Layer Thickness	mm 200	mm 200	mm 200			
Test Depth	mm 175	mm 175	mm 175			
Field Wet Density	t/m ³ 1.95	t/m ³ 1.82	t/m ³ 1.89			
Field Moisture Content	% 19.3	% 23.3	% 21.5			
Material:	Imported Clay	Imported Clay	Imported Clay			

Oversize Material	WET, % 5.1	5.0	0.0			
Sieve Size	mm 19	mm 19	mm 19			
Peak Converted Wet Density	t/m ³ 1.96	t/m ³ 1.83	t/m ³ 1.93			
Optimum Moisture Content	% 17.5	% 24	% 20			

Moisture Ratio	%	110.5	97	107.5		
Moisture Variation from OMC	%	2.0	-0.5	1.5		
Density Ratio	%	98.5	99.0	98.0		
		Wetter	Drier	Wetter		

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI35)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)



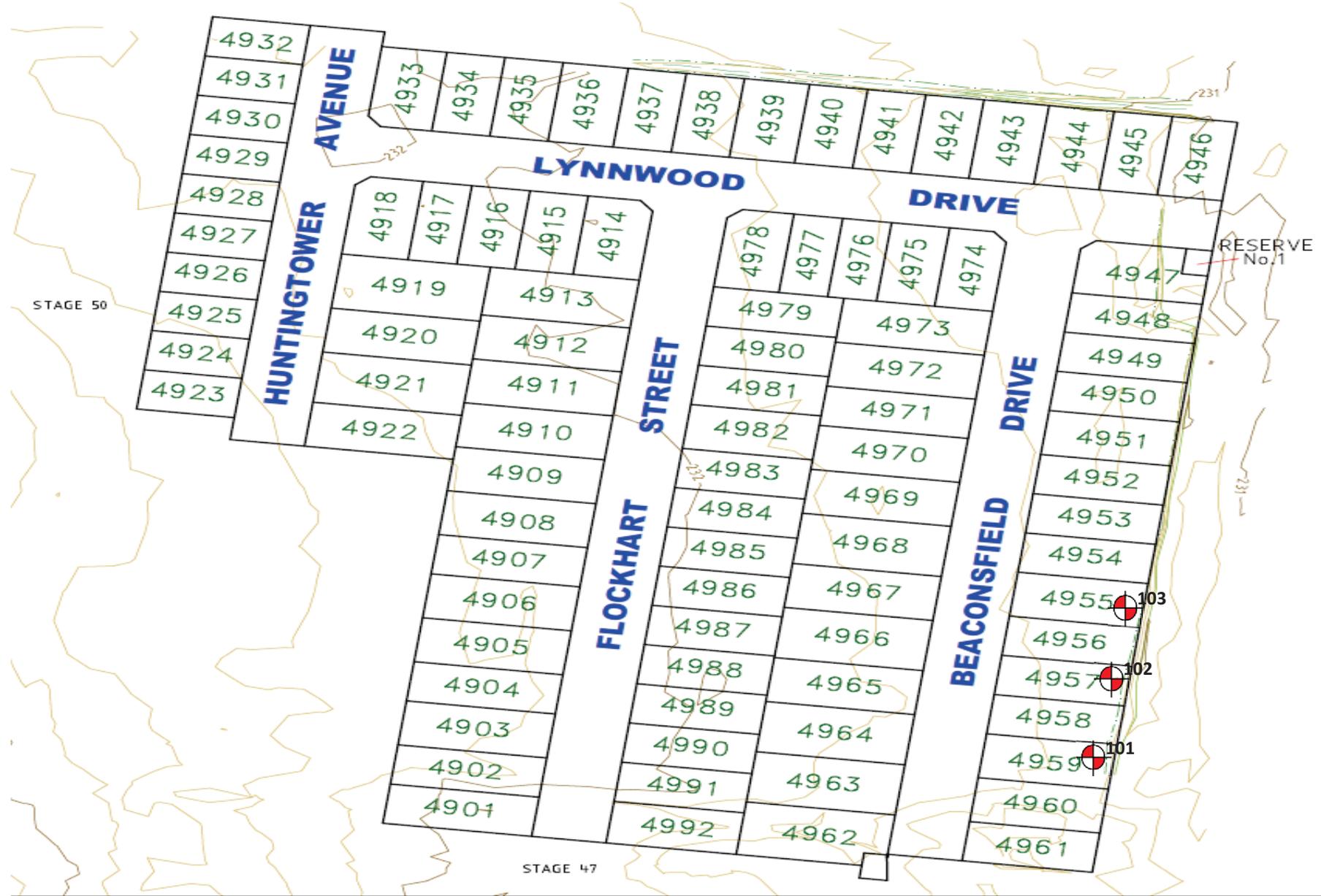
NATA Accredited Laboratory No. 20172
Accreditation for compliance with ISO/IEC 17025 - Testing
The results of tests, calibrations and/or measurements included in this document, are traceable to Australian / National Standards

Approved Signatory:



David Burns

Date: 31/05/2022



Project : Merrifield Estate - Stage 49 (Level1)

Client : BMD Urban

Date : 25/05/2022

Location : Mickleham

Project No : 1120 0322-1 (SI35)

SITE PLAN SKETCH—NOT TO SCALE



Field Density Test Results

AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate - Stage 49 (Level 1)	Report:	36
Location:	Mickleham		

Sample No	104	105	106			
Date Tested	26/05/2022	26/05/2022	26/05/2022			
Time Tested	PM	PM	PM			

Test Location	Refer to Plan	Refer to Plan	Refer to Plan			
Level/Layer	Layer 5	Layer 5	Layer 5			
Layer Thickness	mm 200	mm 200	mm 200			
Test Depth	mm 175	mm 175	mm 175			
Field Wet Density	t/m ³ 1.84	t/m ³ 1.87	t/m ³ 1.98			
Field Moisture Content	% 24.3	% 23.0	% 20.3			
Material:	Imported Clay	Imported Clay	Imported Clay			

Oversize Material	WET, %	4.7	5.1	3.8		
Sieve Size	mm	19	19	19		
Peak Converted Wet Density	t/m ³	1.88	1.91	1.97		
Optimum Moisture Content	%	22.5	21.5	20.5		

Moisture Ratio	%	108	107	99		
Moisture Variation from OMC	%	1.5 Wetter	1.5 Wetter	-0.5 Drier		
Density Ratio	%	97.5	97.0	99.5		

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI36)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)



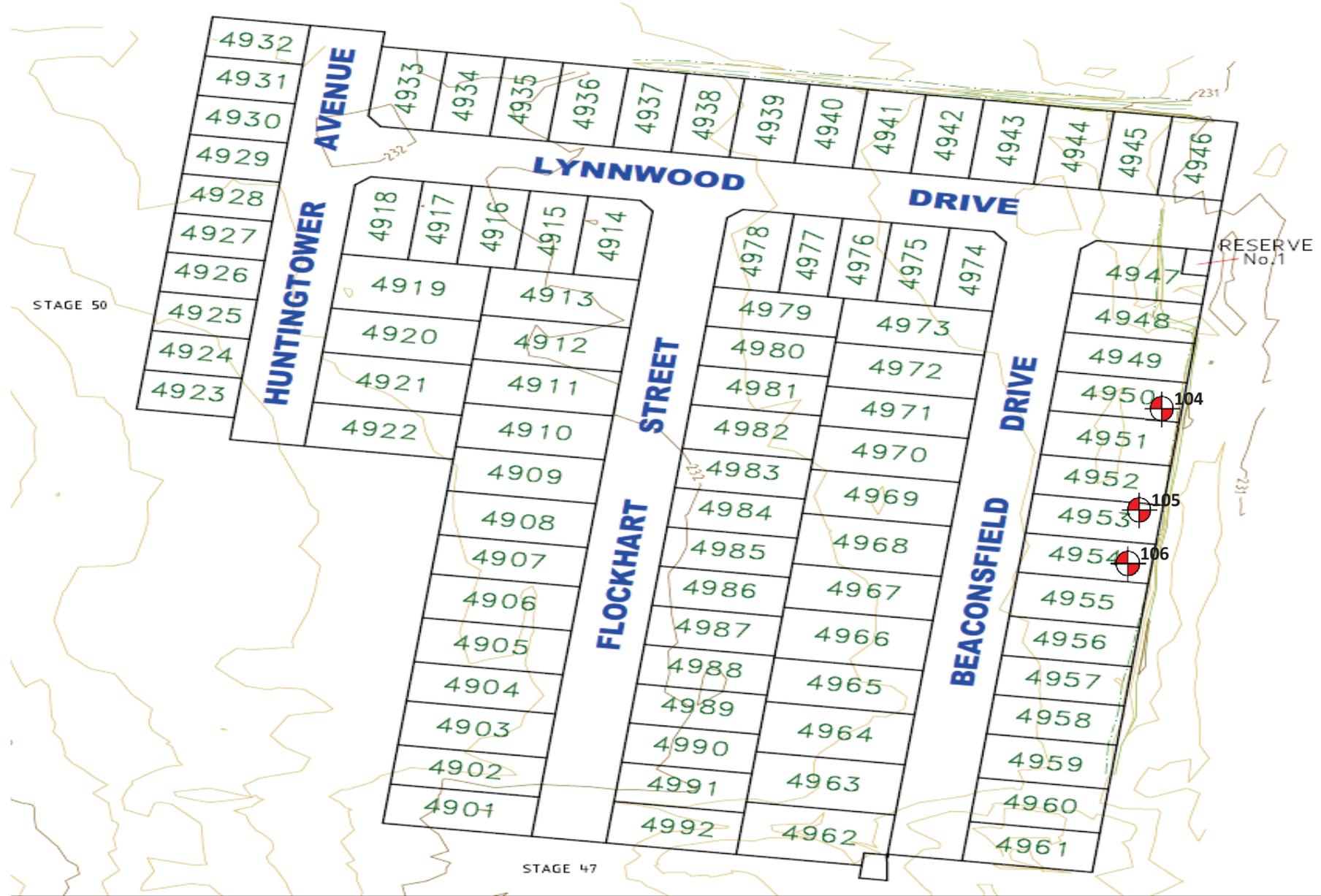
NATA Accredited Laboratory No. 20172
Accreditation for compliance with ISO/IEC 17025 - Testing
The results of tests, calibrations and/or measurements included in this document, are traceable to Australian / National Standards

Approved Signatory:



David Burns

Date: 31/05/2022



Project : Merrifield Estate - Stage 49 (Level1)

Client : BMD Urban

Date : 26/05/2022

Location : Mickleham

Project No : 1120 0322-1 (SI36)

SITE PLAN SKETCH—NOT TO SCALE



Field Density Test Results

AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate - Stage 49 (Level 1)	Report:	37
Location:	Mickleham		

Sample No	107	108	109			
Date Tested	27/05/2022	27/05/2022	27/05/2022			
Time Tested	PM	PM	PM			

Test Location	Refer to Plan	Refer to Plan	Refer to Plan			
Level/Layer	Layer 6	Layer 6	Layer 6			
Layer Thickness	mm 200	mm 200	mm 200			
Test Depth	mm 175	mm 175	mm 175			
Field Wet Density	t/m ³ 1.91	t/m ³ 1.84	t/m ³ 1.82			
Field Moisture Content	% 24.1	% 73.6	% 23.3			
Material:	Imported Clay	Imported Clay	Imported Clay			

Oversize Material	WET, %	5.1	5.0	3.0		
Sieve Size	mm	19	19	19		
Peak Converted Wet Density	t/m ³	1.92	1.85	1.86		
Optimum Moisture Content	%	22.5	74.5	21.5		

Moisture Ratio	%	107	98.5	108.5		
Moisture Variation from OMC	%	1.5	-1.0	2.0		
Density Ratio	%	98.5	98.5	97.0		

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI37)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)



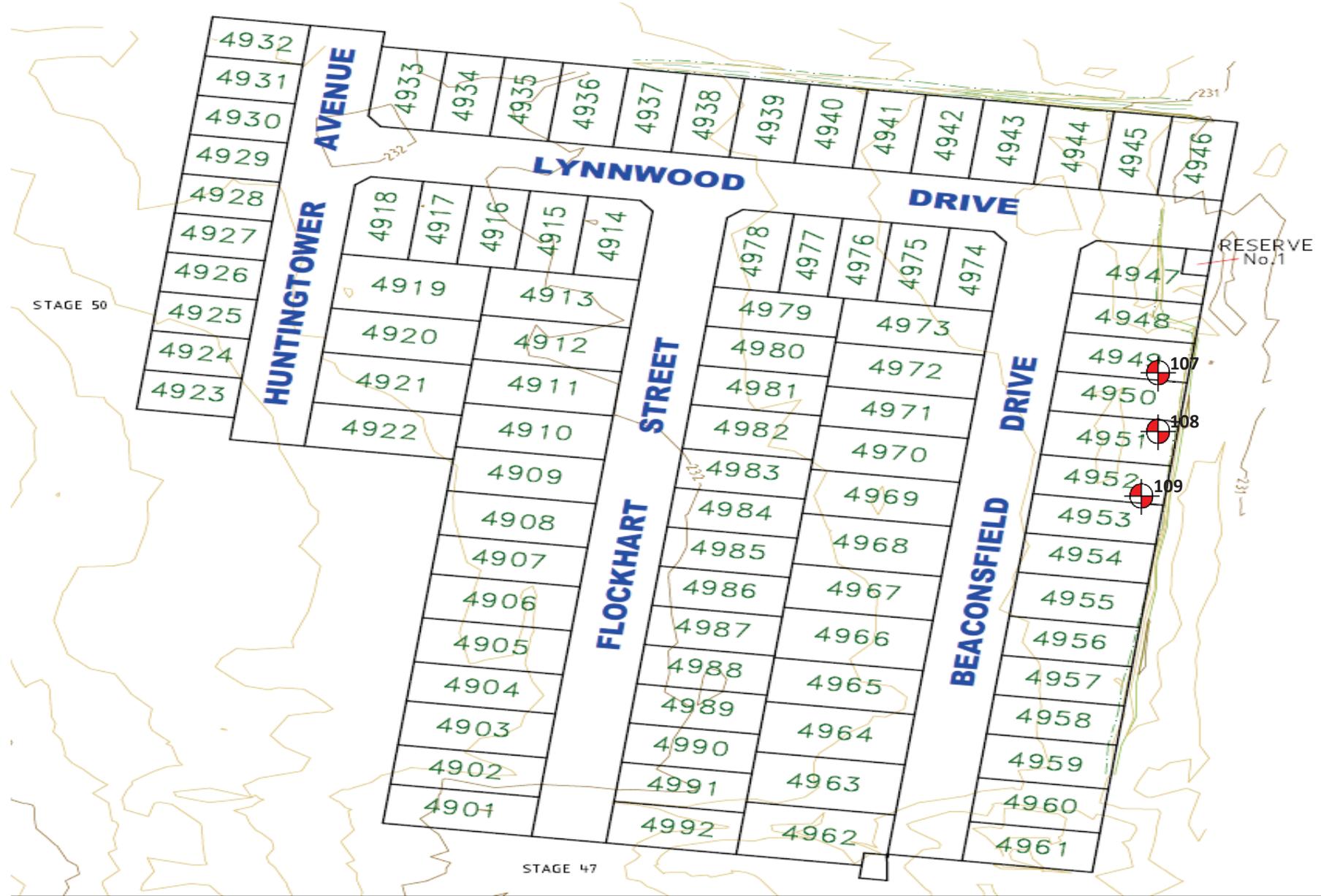
NATA Accredited Laboratory No. 20172
Accreditation for compliance with ISO/IEC 17025 - Testing
The results of tests, calibrations and/or measurements included in this document, are traceable to Australian / National Standards

Approved Signatory:



David Burns

Date: 31/05/2022



Project : Merrifield Estate - Stage 49 (Level1)

Client : BMD Urban

Date : 27/05/2022

Location : Mickleham

Project No : 1120 0322-1 (SI37)

SITE PLAN SKETCH—NOT TO SCALE

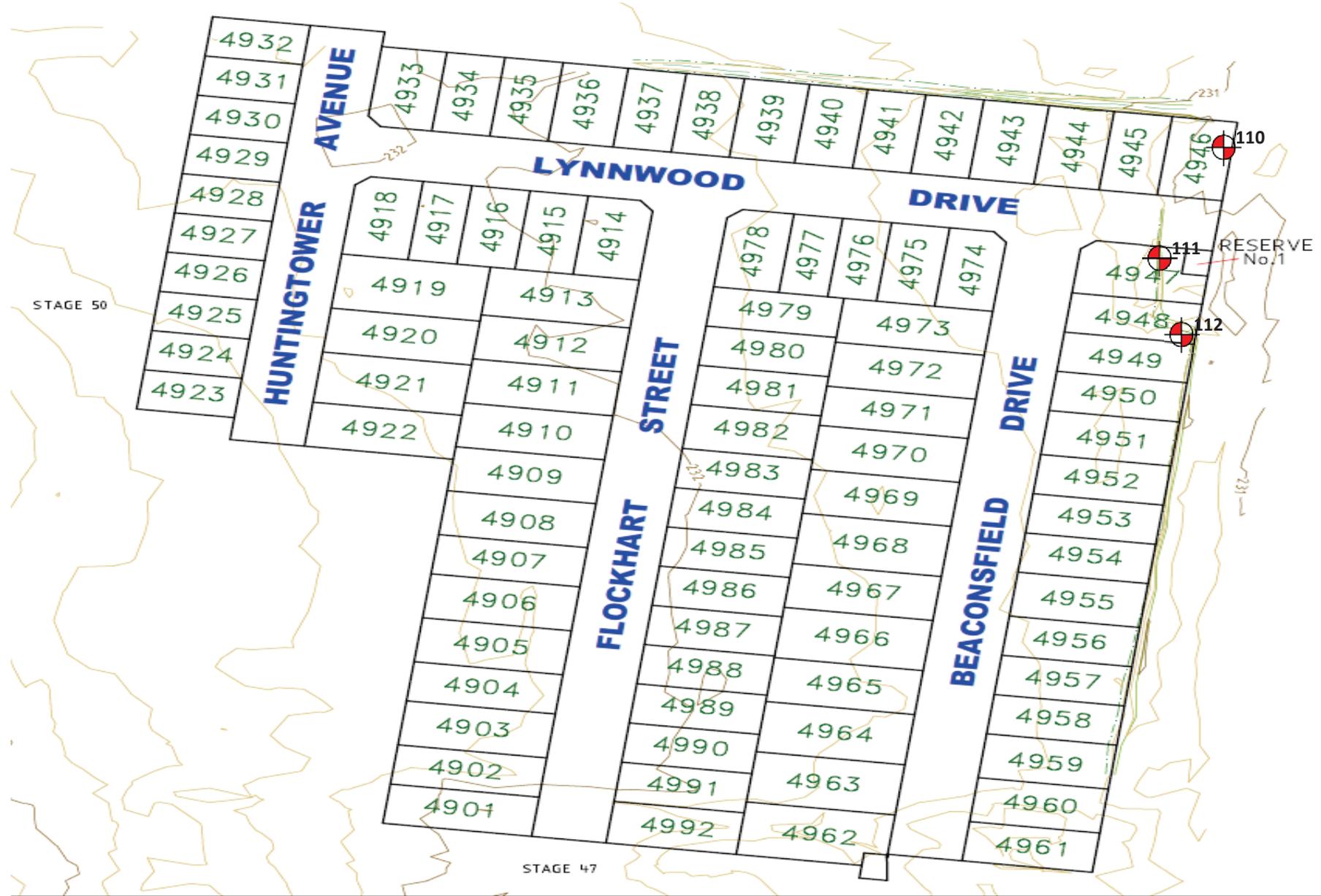


Field Density Test Results AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate - Stage 49 (Level 1)	Report:	38
Location:	Mickleham		
Sample No	110	111	112
Date Tested	30/05/2022	30/05/2022	30/05/2022
Time Tested	AM	AM	AM
Test Location	Refer to Plan	Refer to Plan	Refer to Plan
Level/Layer	Layer 6	Layer 6	Layer 6
Layer Thickness	mm 200	mm 200	mm 200
Test Depth	mm 175	mm 175	mm 175
Field Wet Density	t/m ³ 1.82	t/m ³ 1.94	t/m ³ 1.94
Field Moisture Content	% 24.3	% 21.4	% 23.3
Material:	Imported Clay	Imported Clay	Imported Clay
Oversize Material	WET, % 5.1	WET, % 5.0	WET, % 3.0
Sieve Size	mm 19	mm 19	mm 19
Peak Converted Wet Density	t/m ³ 1.82	t/m ³ 1.98	t/m ³ 1.94
Optimum Moisture Content	% 25	% 19.5	% 23.5
Moisture Ratio	% 97.5	% 109.5	% 99
Moisture Variation from OMC	% -0.5 Drier	% 1.5 Wetter	% -0.5 Drier
Density Ratio	% 99.0	% 97.5	% 99.5

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI38)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)

 <p>NATA WORLD RECOGNISED ACCREDITATION</p>	<p>NATA Accredited Laboratory No. 20172</p> <p>Accreditation for compliance with ISO/IEC 17025 - Testing</p> <p>The results of tests, calibrations and/or measurements included in this document, are traceable to Australian / National Standards</p>	<p>Approved Signatory: </p> <p>David Burns</p> <p>Date: 31/05/2022</p>
---	--	---



Project : Merrifield Estate - Stage 49 (Level1)

Client : BMD Urban

Date : 30/05/2022

Location : Mickleham

Project No : 1120 0322-1 (SI38)

SITE PLAN SKETCH—NOT TO SCALE



Field Density Test Results

AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate - Stage 49 (Level 1)	Report:	39
Location:	Mickleham		

Sample No	113	114			
Date Tested	29/04/2022	29/04/2022			
Time Tested	AM	AM			

Test Location	Refer to Plan	Refer to Plan			
Level/Layer	Layer 1	Layer 1			
Layer Thickness	mm 200	mm 200			
Test Depth	mm 175	mm 175			
Field Wet Density	t/m ³ 1.93	t/m ³ 1.96			
Field Moisture Content	% 19.4	% 17.6			
Material:	Imported Clay	Imported Clay			

Oversize Material	WET, %	4.0	4.5		
Sieve Size	mm	19	19		
Peak Converted Wet Density	t/m ³	1.95	1.96		
Optimum Moisture Content	%	19.5	15.5		

Moisture Ratio	%	99.5	113.5		
Moisture Variation from OMC	%	-0.5 Drier	2.0 Wetter		
Density Ratio	%	98.5	99.0		

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI39)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)



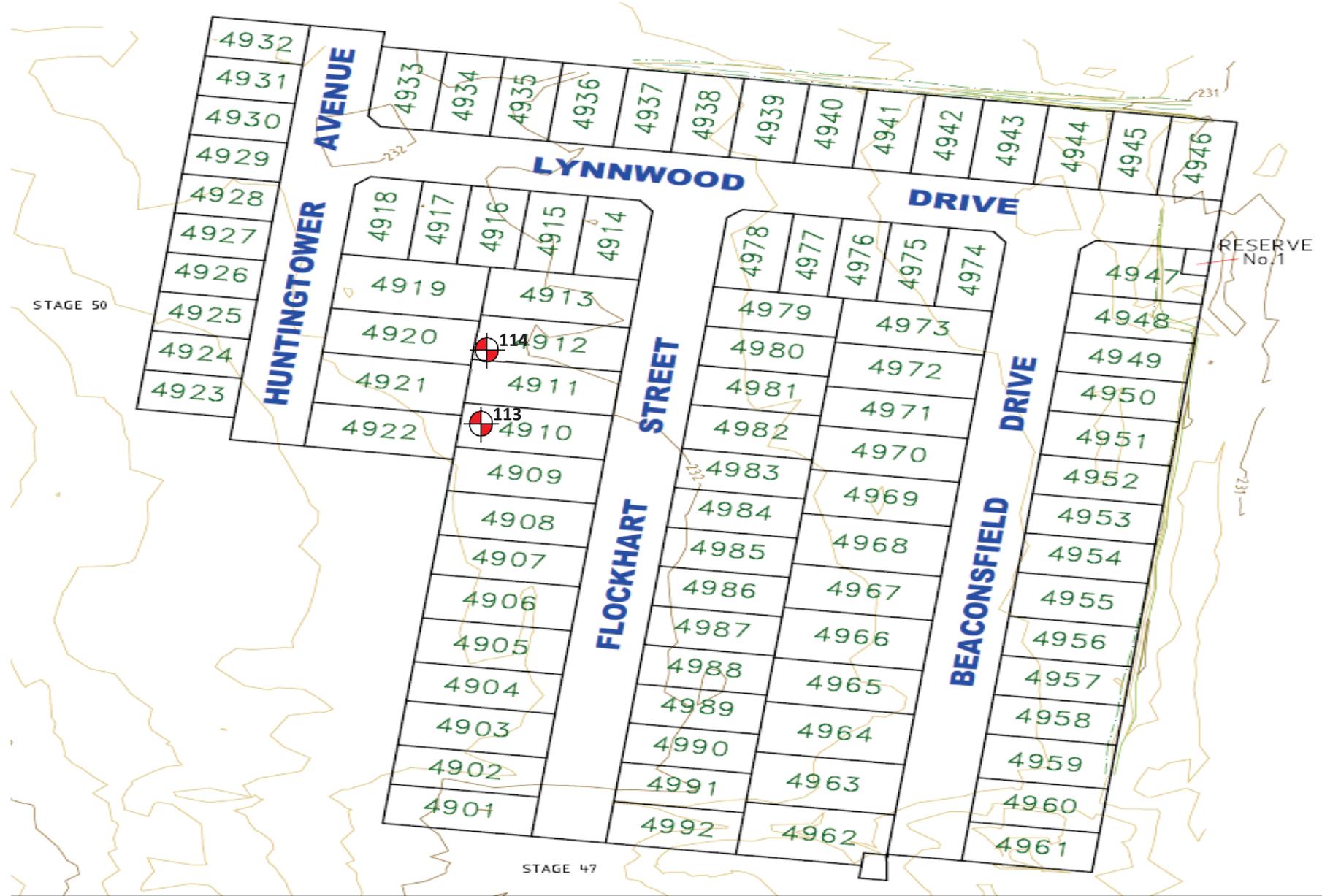
NATA Accredited Laboratory No. 20172
Accreditation for compliance with ISO/IEC 17025 - Testing
The results of tests, calibrations and/or measurements included in this document, are traceable to Australian / National Standards

Approved Signatory:



David Burns

Date: 02/06/2022



Project : Merrifield Estate - Stage 49 (Level1)

Client : BMD Urban

Date : 29/04/2022

Location : Mickleham

Project No : 1120 0322-1 (SI39)

SITE PLAN SKETCH—NOT TO SCALE



Field Density Test Results AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate Stage 49 (Level 1)	Report:	40
Location:	Mickleham		
Sample No	115	116	117
Date Tested	16/01/2023	16/01/2023	16/01/2023
Time Tested	AM	AM	AM
Test Location	Refer to Plan	Refer to Plan	Refer to Plan
Level/Layer	5	5	5
Layer Thickness	mm 200	mm 200	mm 200
Test Depth	mm 175	mm 175	mm 175
Field Wet Density	t/m ³ 1.90	t/m ³ 1.87	t/m ³ 1.94
Field Moisture Content	% 24.3	% 25.7	% 23.7
Material:	Imported Clay	Imported Clay	Imported Clay
Oversize Material	WET, % 0.0	WET, % 0.0	WET, % 3.9
Sieve Size	mm 19	mm 19	mm 19
Peak Converted Wet Density	t/m ³ 1.93	t/m ³ 1.95	t/m ³ 2.02
Optimum Moisture Content	% 22.5	% 24	% 24.5
Moisture Ratio	% 108	% 107	% 96.5
Moisture Variation from OMC	% 2.0 Wetter	% 1.5 Wetter	% -0.5 Drier
Density Ratio	% 98.5	% 95.5	% 96.0

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI40)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)

 NATA <small>WORLD RECOGNISED ACCREDITATION</small>	NATA Accredited Laboratory No. 20172 Accreditation for compliance with ISO/IEC 17025 - Testing	Approved Signatory:  Date: 06/02/2023	David Burns 06/02/2023
---	---	---	---------------------------



ALIGNMENT BOUNDARY

POINT	EASTING	NORTHING	CHANGING	DESCRIPTION	
EW-1	31408.527	584508.545	219.24	0.00	TL 10.12.0m
EW-2	31408.127	584525.516	208.20	00.00	NT
EW-3	31408.119	584535.484	217.58	02.78	TC R: 50m ARC 25.50m
EW-4	31408.186	584535.480	217.82	20.72	TC R: 50m ARC 25.50m
EW-5	31408.553	584534.270	205.82	24.97	CT L: 0.550m
EW-6	31408.305	584535.616	215.61	24.97	NT
EW-7	31408.655	584535.001	214.54	64.97	NT
EW-8	31408.901	584535.001	204.55	54.97	NT
EW-9	31408.505	584535.616	203.25	95.65	TC R: 50m ARC 25.50m
EW-10	31408.537	584534.471	203.25	94.10	CT L: 0.550m
EW-11	31408.230	584535.484	202.00	70.81	T

T.B.M. NO.	EASTING (m)	NORTHING (m)	A.M.D. LEVEL (m)	DESCRIPTION	DATE OF SURVEY
39	31406.66	584545.02	216.40	STAR POINT	1/12/2011
40	31406.03	584534.15	215.26	STAR POINT	4/12/2011
41	31406.66	584535.01	215.22	STAR POINT	4/12/2011
42	31406.42	584535.00	203.18	STAR POINT	1/12/2011
43	31406.33	584535.24	203.18	STAR POINT	1/12/2011
44	31406.10	584535.00	203.10	STAR POINT	4/12/2011
45	31405.41	584535.32	203.11	STAR POINT	4/12/2011
46	31405.01	584535.41	215.54	STAR POINT	20/12/2011
47	31405.56	584535.13	215.97	STAR POINT	20/12/2011
48	31405.28	584535.41	215.96	STAR POINT	1/12/2011
49	31405.17	584535.15	215.23	STAR POINT	1/12/2011
50	31405.10	584535.10	216.04	STAR POINT	1/12/2011
51	31404.22	584535.12	215.52	STAR POINT	1/12/2011
52	31404.00	584535.24	215.52	STAR POINT	1/12/2011
53	31403.53	584535.15	213.10	STAR POINT	1/12/2011
54	31403.10	584535.10	211.66	STAR POINT	1/12/2011
55	31403.11	584544.41	211.91	STAR POINT	1/12/2011
56	31403.01	584544.10	212.51	STAR POINT	1/12/2011
57	31403.04	584535.10	213.08	STAR POINT	1/12/2011
58	31402.11	584535.55	211.95	STAR POINT	1/12/2011

NOTE: ALL TBM ARE PLACED NEAR EXISTING SURFACE LEVEL

1	CONTOUR S, D AND A NOTES UPDATED, EXG. S.A. REVISION NOTED	G.R.	17.05.22
0	CONSTRUCTION ISSUE	G.R.	02.01.22
NEW	DESCRIPTION	APPROVED	DATE

T. MUSTAC
 P. MASEMANN
 G. ROMANICZ

H 1:1000
 0 15 30 60 90 120

merrifield
MAB gpc
verve
 Ground Floor, 207-213 Waverley Road,
 Melburn East VIC 3145
 TEL: 03 8773 4500 www.verveprojects.com
 © Verve Projects Pty Ltd.

HUME CITY COUNCIL
MERRIFIELD LIVING - SECTION E
BULK EARTHWORKS - STAGE 49-53
MICKLEHAM
LAYOUT PLAN
CONSTRUCTION
 366 F1 17040-49 EW201 1

Project : Merrifield Estate - Stage 49 (Level1)

Client : BMD Urban

Date : 16/01/2023

Location : Mickleham

Project No : 1120 0322-1 (S140)

SITE PLAN SKETCH—NOT TO SCALE



Field Density Test Results AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate Stage 49 (Level 1)	Report:	41
Location:	Mickleham		

Sample No	118	119	120		
Date Tested	19/01/2023	19/01/2023	19/01/2023		
Time Tested	AM	AM	AM		

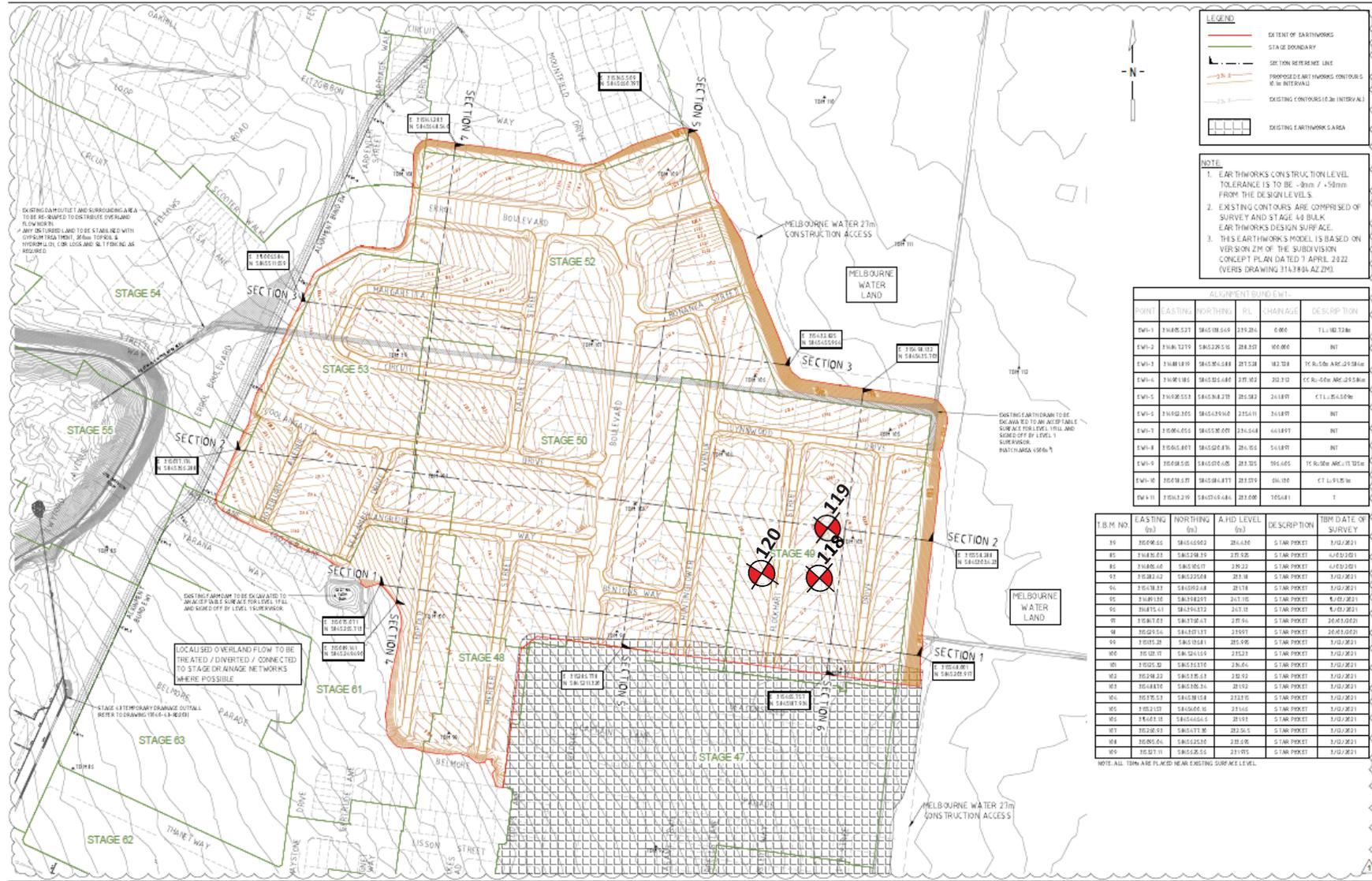
Test Location	Refer to Plan	Refer to Plan	Refer to Plan		
Level/Layer	4	4	4		
Layer Thickness	mm 200	mm 200	mm 200		
Test Depth	mm 175	mm 175	mm 175		
Field Wet Density	t/m ³ 1.84	t/m ³ 1.92	t/m ³ 1.95		
Field Moisture Content	% 25.3	% 22.8	% 23.6		
Material:	Imported Clay	Imported Clay	Imported Clay		

Oversize Material	WET, %	3.2	2.0	3.9	
Sieve Size	mm	19	19	19	
Peak Converted Wet Density	t/m ³	1.89	1.97	2.02	
Optimum Moisture Content	%	23.5	21	24	

Moisture Ratio	%	107.5	108.5	98.5	
Moisture Variation from OMC	%	1.5 Wetter	1.5 Wetter	-0.5 Drier	
Density Ratio	%	97.0	97.0	96.0	

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI41)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)

 NATA <small>WORLD RECOGNISED ACCREDITATION</small>	NATA Accredited Laboratory No. 20172 Accreditation for compliance with ISO/IEC 17025 - Testing	Approved Signatory:  Date: 06/02/2023	
---	---	---	--



LEGEND

- EXTENT OF EARTHWORKS
- STAGE BOUNDARY
- SECTION REFERENCE LINE
- PROPOSED EARTHWORKS CONTOURS (5M INTERVAL)
- EXISTING CONTOURS (0.3M INTERVAL)
- EXISTING EARTHWORKS AREA

NOTE

- EARTHWORKS CONSTRUCTION LEVEL TOLERANCE IS TO BE $\pm 30\text{mm} / \pm 50\text{mm}$ FROM THE DESIGN LEVELS.
- EXISTING CONTOURS ARE COMPOSED OF SURVEY AND STAGE 48 BULK EARTHWORKS DESIGN SURFACE.
- THIS EARTHWORKS DESIGN SURFACE IS BASED ON VERSION 21M OF THE SUBDIVISION CONCEPT PLAN DATED 7 APRIL 2022 (VERS DRAWING 31A180A AZ20)

ALIGNMENT BOUNDARY

POINT	EASTING	NORTHING	URL	CHANGEL	DESCRIPTION
EW-1	31408.527	584508.545	219.24	0.00	T.L. 10.130m
EW-2	31408.127	584525.516	218.20	100.00	INT
EW-3	31408.119	584535.484	217.58	102.78	T.C. R. 50m ARC 253.84m
EW-4	31408.186	584535.480	217.82	202.12	T.C. R. 50m ARC 253.84m
EW-5	31408.553	584534.270	215.82	203.97	T.L. 10.150m
EW-6	31408.305	584535.616	215.61	203.97	INT
EW-7	31408.655	584535.001	214.54	648.97	INT
EW-8	31408.901	584535.001	214.54	503.97	INT
EW-9	31408.505	584535.616	213.25	595.65	T.C. R. 50m ARC 253.84m
EW-10	31408.537	584534.471	213.25	504.10	T.L. 10.150m
EW-11	31408.230	584535.484	212.00	705.81	T

T.B.M. NO.	EASTING (m)	NORTHING (m)	A.M.D. LEVEL (m)	DESCRIPTION	DATE OF SURVEY
39	31408.66	584545.02	216.40	STAR POINT	1/12/2021
40	31408.01	584534.15	215.26	STAR POINT	6/12/2021
41	31408.66	584535.01	215.22	STAR POINT	6/12/2021
42	31408.43	584535.00	213.18	STAR POINT	1/12/2021
43	31408.33	584535.24	213.18	STAR POINT	1/12/2021
44	31408.10	584535.00	213.10	STAR POINT	6/12/2021
45	31408.43	584535.27	213.11	STAR POINT	6/12/2021
46	31408.01	584535.01	213.54	STAR POINT	20/12/2021
47	31408.56	584535.13	213.97	STAR POINT	20/12/2021
48	31408.38	584534.81	213.96	STAR POINT	1/12/2021
49	31408.17	584535.10	213.23	STAR POINT	1/12/2021
50	31408.10	584535.10	213.04	STAR POINT	1/12/2021
51	31408.22	584535.12	213.02	STAR POINT	1/12/2021
52	31408.00	584535.21	213.03	STAR POINT	1/12/2021
53	31408.13	584535.10	213.02	STAR POINT	1/12/2021
54	31408.10	584535.10	213.02	STAR POINT	1/12/2021
55	31408.10	584535.10	213.02	STAR POINT	1/12/2021
56	31408.11	584535.10	213.02	STAR POINT	1/12/2021
57	31408.11	584535.10	213.02	STAR POINT	1/12/2021
58	31408.11	584535.10	213.02	STAR POINT	1/12/2021
59	31408.11	584535.10	213.02	STAR POINT	1/12/2021

NOTE: ALL TBM ARE PLACED NEAR EXISTING SURFACE LEVEL.

DESIGNED BY	T. MUSTAC	DATE	11.05.22
CHECKED BY	P. MASEMANN	DATE	02.01.23
APPROVED BY	G. ROMANICZ	DATE	



Ground Floor, 207-213 Waverley Road,
Melburn East VIC 3145
TEL: 03 8273 4500 www.verveprojects.com
© Verve Projects Pty Ltd.

HUME CITY COUNCIL

**MERRIFIELD LIVING - SECTION E
BULK EARTHWORKS - STAGE 49-53
MICKLEHAM**

LAYOUT PLAN

CONSTRUCTION

366 F1 | 17040-49 | EW201 | 1

Project : Merrifield Estate - Stage 49 (Level1)	Client : BMD Urban	Date : 19/01/2023
Location : Mickleham	Project No : 1120 0322-1 (SI41)	SITE PLAN SKETCH—NOT TO SCALE



Field Density Test Results

AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate Stage 49 (Level 1)	Report:	42
Location:	Mickleham		
Sample No	121	122	123
Date Tested	20/01/2023	20/01/2023	20/01/2023
Time Tested	AM	AM	AM
Test Location	Refer to Plan	Refer to Plan	Refer to Plan
Level/Layer	7	7	7
Layer Thickness	mm 200	mm 200	mm 200
Test Depth	mm 175	mm 175	mm 175
Field Wet Density	t/m ³ 1.95	t/m ³ 1.99	t/m ³ 1.84
Field Moisture Content	% 24.3	% 23.0	% 25.2
Material:	Imported Clay	Imported Clay	Imported Clay
Oversize Material	WET, % 3.7	WET, % 5.1	WET, % 2.1
Sieve Size	mm 19	mm 19	mm 19
Peak Converted Wet Density	t/m ³ 1.99	t/m ³ 2.05	t/m ³ 1.91
Optimum Moisture Content	% 24.5	% 23.5	% 23.5
Moisture Ratio	% 99	% 98	% 107
Moisture Variation from OMC	% -0.5 Drier	% -0.5 Drier	% 2.0 Wetter
Density Ratio	% 97.5	% 96.5	% 96.0

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI42)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)

 NATA <small>WORLD RECOGNISED ACCREDITATION</small>	NATA Accredited Laboratory No. 20172 Accreditation for compliance with ISO/IEC 17025 - Testing	Approved Signatory:  Date: 06/02/2023	David Burns 06/02/2023
---	---	---	---------------------------



LEGEND

- EXTENT OF EARTHWORKS
- STAGE BOUNDARY
- SECTION REFERENCE LINE
- PROPOSED EARTHWORKS CONTOURS (5m INTERVAL)
- EXISTING CONTOURS (0.3m INTERVAL)
- EXISTING EARTHWORKS AREA

NOTE

- EARTHWORKS CONSTRUCTION LEVEL TOLERANCE IS TO BE $\pm 30\text{mm} / \pm 50\text{mm}$ FROM THE DESIGN LEVELS.
- EXISTING CONTOURS ARE COMPOSED OF SURVEY AND STAGE 48 BULK EARTHWORKS DESIGN SURFACE.
- THIS EARTHWORKS MODEL IS BASED ON VERSION 21M OF THE SUBDIVISION CONCEPT PLAN DATED 7 APRIL 2022 (VERS DRAWING 31A180A AZ20)

ALIGNMENT BOUNDARY

POINT	EASTING	NORTHING	URL	CHANGING	DESCRIPTION
EW-1	31408.527	584508.545	219.26	0.00	T.L. 10.12.0m
EW-2	31408.127	584525.516	208.00	100.00	INT
EW-3	31408.119	584535.484	207.58	102.08	T.C. R. 50m ARC 25.50m
EW-4	31408.186	584535.480	207.82	207.32	T.C. R. 50m ARC 25.50m
EW-5	31408.553	584534.270	205.82	203.97	T.L. 10.15.0m
EW-6	31408.305	584535.616	205.61	203.97	INT
EW-7	31408.655	584535.001	214.54	64.97	INT
EW-8	31408.301	584535.001	205.65	203.97	INT
EW-9	31408.505	584535.616	207.05	105.65	T.C. R. 50m ARC 25.50m
EW-10	31408.527	584534.471	207.05	104.10	T.L. 10.15.0m
EW-11	31408.220	584535.484	207.00	105.01	T

T.B.M. NO.

T.B.M. NO.	EASTING (m)	NORTHING (m)	A.M.D. LEVEL (m)	DESCRIPTION	DATE OF SURVEY
39	31408.66	584545.02	216.10	STAR POINT	1/12/2021
40	31408.01	584534.15	215.26	STAR POINT	6/12/2021
41	31408.66	584535.01	215.22	STAR POINT	6/12/2021
42	31408.42	584535.04	213.18	STAR POINT	1/12/2021
43	31408.22	584535.24	213.18	STAR POINT	1/12/2021
44	31408.10	584535.02	213.10	STAR POINT	6/12/2021
45	31408.41	584535.12	213.11	STAR POINT	6/12/2021
46	31408.01	584535.11	213.54	STAR POINT	20/12/2021
47	31408.56	584535.13	213.97	STAR POINT	20/12/2021
48	31408.28	584535.14	213.96	STAR POINT	1/12/2021
49	31408.17	584535.15	213.23	STAR POINT	1/12/2021
50	31408.10	584535.16	213.64	STAR POINT	1/12/2021
51	31408.22	584535.17	213.62	STAR POINT	1/12/2021
52	31408.10	584535.21	213.93	STAR POINT	1/12/2021
53	31408.13	584535.18	213.16	STAR POINT	1/12/2021
54	31408.10	584535.19	213.66	STAR POINT	1/12/2021
55	31408.11	584535.20	213.66	STAR POINT	1/12/2021
56	31408.11	584535.21	213.91	STAR POINT	1/12/2021
57	31408.11	584535.20	213.65	STAR POINT	1/12/2021
58	31408.04	584535.10	213.58	STAR POINT	1/12/2021
59	31408.11	584535.15	213.95	STAR POINT	1/12/2021

NOTE: ALL TBM ARE PLACED NEAR EXISTING SURFACE LEVEL.

DESIGNED BY	T. MUSTAC	DATE	11.05.22
CHECKED BY	P. MASEMANN	DATE	02.11.22
APPROVED BY	G. ROMANICZ	DATE	



HUME CITY COUNCIL

MERRIFIELD LIVING - SECTION E
BULK EARTHWORKS - STAGE 49-53
MICKLEHAM

LAYOUT PLAN

CONSTRUCTION

366 F1 17040-49 EW201 1

Project : Merrifield Estate - Stage 49 (Level1)	Client : BMD Urban	Date : 20/01/2023
Location : Mickleham	Project No : 1120 0322-1 (SI42)	SITE PLAN SKETCH—NOT TO SCALE



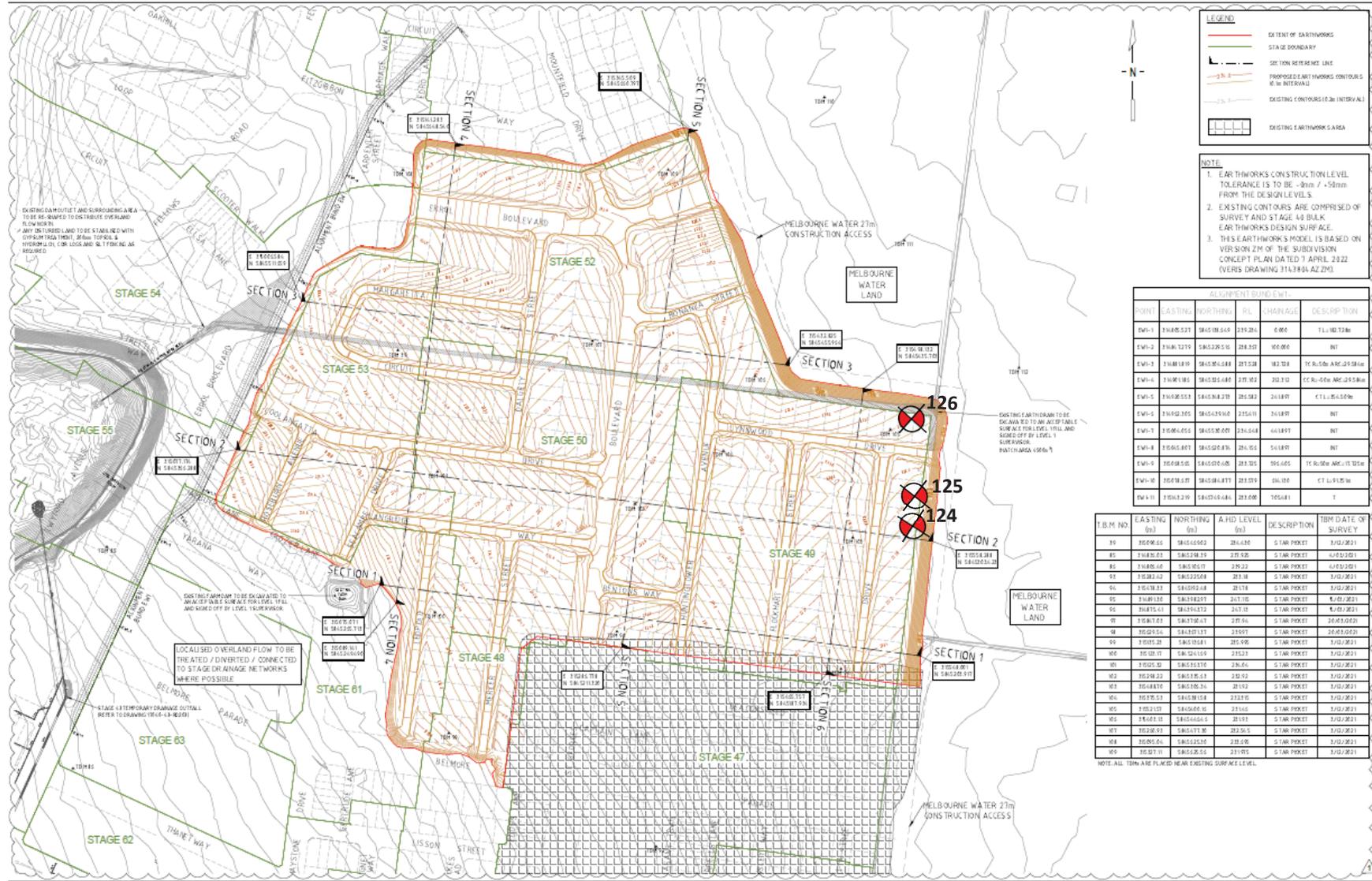
Field Density Test Results

AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate Stage 49 (Level 1)	Report:	43
Location:	Mickleham		
Sample No	124	125	126
Date Tested	23/01/2023	23/01/2023	23/01/2023
Time Tested	AM	AM	AM
Test Location	Refer to Plan	Refer to Plan	Refer to Plan
Level/Layer	8	8	8
Layer Thickness	mm 200	mm 200	mm 200
Test Depth	mm 175	mm 175	mm 175
Field Wet Density	t/m ³ 1.94	t/m ³ 1.83	t/m ³ 1.90
Field Moisture Content	% 23.6	% 25.1	% 24.3
Material:	Imported Clay	Imported Clay	Imported Clay
Oversize Material	WET, % 4.0	WET, % 3.6	WET, % 2.4
Sieve Size	mm 19	mm 19	mm 19
Peak Converted Wet Density	t/m ³ 1.99	t/m ³ 1.88	t/m ³ 1.94
Optimum Moisture Content	% 24.5	% 23	% 22.5
Moisture Ratio	% 96.5	% 109	% 108
Moisture Variation from OMC	% -0.5 Drier	% 2.0 Wetter	% 2.0 Wetter
Density Ratio	% 97.0	% 96.5	% 98.0

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI43)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)

 NATA <small>WORLD RECOGNISED ACCREDITATION</small>	NATA Accredited Laboratory No. 20172 Accreditation for compliance with ISO/IEC 17025 - Testing	Approved Signatory:  Date: 06/02/2023	David Burns 06/02/2023
---	---	---	---------------------------



POINT	EASTING	NORTHING	RL	CHARGES	DESCRIPTION
EW-1	31408.527	584508.545	219.26	0.00	T.L. 10.12.06
EW-2	31408.127	584525.516	218.33	100.00	INT
EW-3	31408.119	584535.484	217.58	102.18	T.C. R. 50m A.R. 25.50m
EW-4	31408.186	584535.488	217.82	20.12	T.C. R. 50m A.R. 25.50m
EW-5	31408.553	584534.270	215.82	24.97	CT L. 10.15.06
EW-6	31408.305	584535.636	215.61	34.87	INT
EW-7	31408.655	584535.001	214.54	64.97	INT
EW-8	31408.301	584535.828	215.65	34.97	INT
EW-9	31408.505	584535.636	215.25	105.65	T.C. R. 50m A.R. 25.50m
EW-10	31408.537	584534.471	213.25	104.10	CT L. 10.15.06
EW-11	31408.230	584535.484	212.08	70.81	T

T.B.M. NO.	EASTING (m)	NORTHING (m)	A.M.D. LEVEL (m)	DESCRIPTION	DATE OF SURVEY
39	31408.66	584545.02	216.10	STAR POINT	1/12/2021
40	31408.03	584534.15	215.26	STAR POINT	4/12/2021
41	31408.66	584535.01	215.22	STAR POINT	4/12/2021
42	31408.43	584533.08	213.18	STAR POINT	1/12/2021
43	31408.23	584533.24	213.18	STAR POINT	1/12/2021
44	31408.10	584532.07	212.10	STAR POINT	4/12/2021
45	31408.43	584533.22	212.11	STAR POINT	4/12/2021
46	31408.01	584532.01	212.54	STAR POINT	20/12/2021
47	31408.56	584321.13	215.97	STAR POINT	20/12/2021
48	31408.28	584531.81	215.96	STAR POINT	1/12/2021
49	31408.17	584531.50	215.23	STAR POINT	1/12/2021
50	31408.10	584531.37	216.04	STAR POINT	1/12/2021
51	31408.22	584531.52	215.52	STAR POINT	1/12/2021
52	31408.00	584531.24	215.52	STAR POINT	1/12/2021
53	31408.53	584531.58	213.10	STAR POINT	1/12/2021
54	31408.10	584531.50	213.10	STAR POINT	1/12/2021
55	31408.10	584531.50	213.10	STAR POINT	1/12/2021
56	31408.01	584531.50	213.10	STAR POINT	1/12/2021
57	31408.01	584531.50	213.10	STAR POINT	1/12/2021
58	31408.01	584531.50	213.10	STAR POINT	1/12/2021
59	31408.11	584531.55	213.95	STAR POINT	1/12/2021

NOTE: ALL TBM ARE PLACED NEAR EXISTING SURFACE LEVEL.

DESIGNED BY	T. MUSTAC	DATE	11.05.22
CHECKED BY	P. MASEMANN	DATE	02.11.22
APPROVED BY	G. ROMANICZ	DATE	



Ground Floor, 207-213 Waverley Road,
Melburn East VIC 3145
TEL: 03 8273 4500 www.verveprojects.com
© Verve Projects Pty Ltd.

HUME CITY COUNCIL

**MERRIFIELD LIVING - SECTION E
BULK EARTHWORKS - STAGE 49-53
MICKLEHAM**

LAYOUT PLAN

CONSTRUCTION

366 F1 | 17040-49 | EW201 | 1

Project : Merrifield Estate - Stage 49 (Level1)	Client : BMD Urban	Date : 23/01/2023	<p>A&Y ASSOCIATES GEOTECHNICAL ENGINEERING CONSULTANTS</p>
Location : Mickleham	Project No : 1120 0322-1 (SI43)	SITE PLAN SKETCH—NOT TO SCALE	

Field Density Test Results

AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate Stage 49 (Level 1)	Report:	44
Location:	Mickleham		

Sample No	127	128	129			
Date Tested	24/01/2023	24/01/2023	24/01/2023			
Time Tested	AM	AM	AM			

Test Location	Refer to Plan	Refer to Plan	Refer to Plan			
Level/Layer	6	6	6			
Layer Thickness	mm 200	mm 200	mm 200			
Test Depth	mm 175	mm 175	mm 175			
Field Wet Density	t/m ³ 1.91	t/m ³ 1.96	t/m ³ 1.98			
Field Moisture Content	% 23.7	% 22.1	% 21.3			
Material:	Imported Clay	Imported Clay	Imported Clay			

Oversize Material	WET, %	2.0	3.6	5.2		
Sieve Size	mm	19	19	19		
Peak Converted Wet Density	t/m ³	1.97	2.02	2.02		
Optimum Moisture Content	%	22	22.5	22		

Moisture Ratio	%	107.5	98.5	97		
Moisture Variation from OMC	%	1.5	-0.5	-0.5		
Density Ratio	%	97.0	97.0	97.5		

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI44)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)



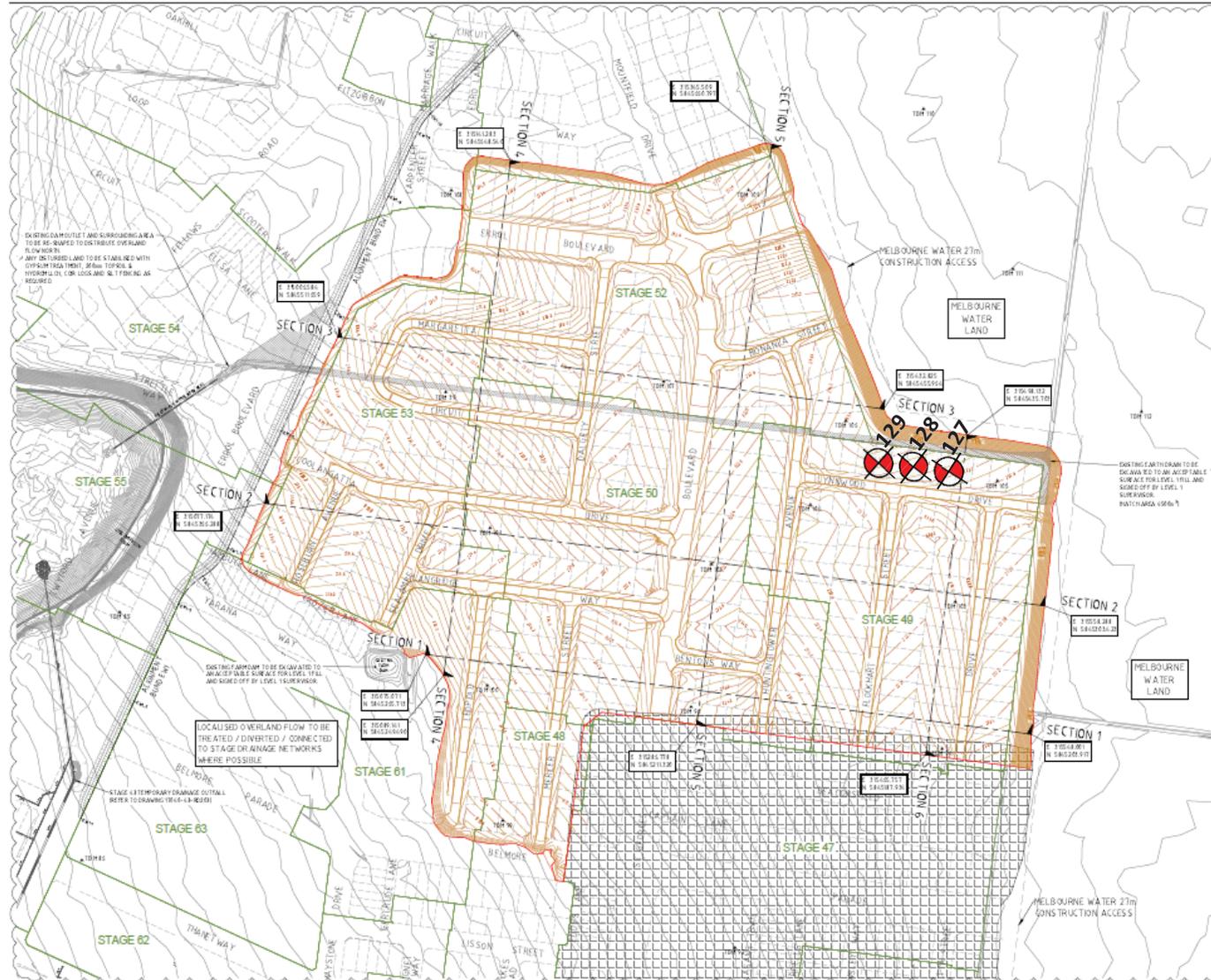
NATA Accredited Laboratory No. 20172
Accreditation for compliance with ISO/IEC 17025 - Testing

Approved Signatory:



David Burns

Date: 1/02/2023



LEGEND

- EXTENT OF EARTHWORKS
- STAGE BOUNDARY
- SECTION REFERENCE LINE
- PROPOSED EARTHWORKS CONTOURS (5M INTERVAL)
- EXISTING CONTOURS (0.3M INTERVAL)
- EXISTING EARTHWORKS AREA

NOTE

- EARTHWORKS CONSTRUCTION LEVEL TOLERANCE IS TO BE $\pm 30\text{mm} / \pm 50\text{mm}$ FROM THE DESIGN LEVELS.
- EXISTING CONTOURS ARE COMPOSED OF SURVEY AND STAGE 48 BULK EARTHWORKS DESIGN SURFACE.
- THIS EARTHWORKS MODEL IS BASED ON VERSION 21M OF THE SUBDIVISION CONCEPT PLAN DATED 7 APRIL 2022 (VERS DRAWING 31A180A AZ20)

ALIGNMENT BOUNDARY

POINT	EASTING	NORTHING	URL	CHANGEL	DESCRIPTION
EW-1	31408.527	584508.545	219.24	0.00	T.L. 10.12.0m
EW-2	31408.127	584525.516	218.20	100.00	INT
EW-3	31408.119	584535.484	217.58	102.08	T.C. R. 50m ARC 25.50m
EW-4	31408.186	584535.488	217.82	202.12	T.C. R. 50m ARC 25.50m
EW-5	31408.553	584534.270	215.82	203.97	CT L. 10.15.0m
EW-6	31408.305	584535.616	215.61	203.97	INT
EW-7	31408.655	584535.001	214.54	648.97	INT
EW-8	31408.301	584535.828	215.65	503.97	INT
EW-9	31408.535	584535.635	215.25	595.65	T.C. R. 50m ARC 25.50m
EW-10	31408.537	584534.471	213.29	504.10	CT L. 10.15.0m
EW-11	31408.230	584535.484	212.08	705.81	T

T.B.M. NO.

T.B.M. NO.	EASTING (m)	NORTHING (m)	A.M.D. LEVEL (m)	DESCRIPTION	DATE OF SURVEY
39	31406.66	584545.02	216.40	STAR POINT	1/12/2021
40	31406.63	584534.15	215.26	STAR POINT	6/12/2021
41	31406.66	584535.01	215.22	STAR POINT	6/12/2021
42	31406.63	584535.08	215.18	STAR POINT	1/12/2021
43	31406.77	584535.24	215.18	STAR POINT	1/12/2021
44	31406.80	584535.20	215.10	STAR POINT	6/12/2021
45	31406.83	584535.17	215.11	STAR POINT	6/12/2021
46	31406.81	584535.15	215.04	STAR POINT	20/12/2021
47	31406.56	584535.13	215.07	STAR POINT	20/12/2021
48	31405.28	584535.41	215.96	STAR POINT	1/12/2021
49	31405.17	584535.15	215.23	STAR POINT	1/12/2021
50	31405.10	584535.10	216.04	STAR POINT	1/12/2021
51	31404.22	584535.12	215.52	STAR POINT	1/12/2021
52	31404.00	584535.21	215.53	STAR POINT	1/12/2021
53	31403.53	584535.15	213.10	STAR POINT	1/12/2021
54	31403.10	584535.10	211.66	STAR POINT	1/12/2021
55	31403.11	584544.43	211.91	STAR POINT	1/12/2021
56	31403.03	584541.30	212.15	STAR POINT	1/12/2021
57	31403.04	584535.10	213.08	STAR POINT	1/12/2021
58	31402.11	584535.55	211.95	STAR POINT	1/12/2021

NOTE: ALL TBM ARE PLACED NEAR EXISTING SURFACE LEVEL

DESIGNED BY	T. MUSTAC	DATE	11.05.22
CHECKED BY	P. MASEMANN	DATE	02.11.22
APPROVED BY	G. ROMANICZ	DATE	



Ground Floor, 207-213 Waverley Road,
Melburn East VIC 3145
TEL: 03 8273 4500 www.verveprojects.com
© Verve Projects Pty Ltd.

HUME CITY COUNCIL

**MERRIFIELD LIVING - SECTION E
BULK EARTHWORKS - STAGE 49-53
MICKLEHAM**

LAYOUT PLAN

CONSTRUCTION

366 F1 | 17040-49 | EW201 | 1

Project : Merrifield Estate - Stage 49 (Level1)	Client : BMD Urban	Date : 24/01/2023
Location : Mickleham	Project No : 1120 0322-1 (S144)	SITE PLAN SKETCH—NOT TO SCALE



Field Density Test Results AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate - Stage 49 (Level 1)	Report:	45
Location:	Mickleham		

Sample No	130	131	132		
Date Tested	25/01/2023	25/01/2023	25/01/2023		
Time Tested	AM	AM	PM		

Test Location	Refer to Plan	Refer to Plan	Refer to Plan		
Level/Layer	3	4	4		
Layer Thickness	mm 200	200	200		
Test Depth	mm 175	175	175		
Field Wet Density	t/m ³ 1.89	1.90	1.94		
Field Moisture Content	% 23.1	22.8	21.1		
Material:	Imported Clay	Imported Clay	Imported Clay		

Oversize Material	WET, %	3.0	0.0	5.0	
Sieve Size	mm	19	19	19	
Peak Converted Wet Density	t/m ³	1.94	1.95	1.98	
Optimum Moisture Content	%	21.5	23.5	22	

Moisture Ratio	%	107.5	97	96	
Moisture Variation from OMC	%	2.0 Wetter	-0.5 Drier	-1.0 Drier	
Density Ratio	%	97.0	97.5	97.5	

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI45)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)



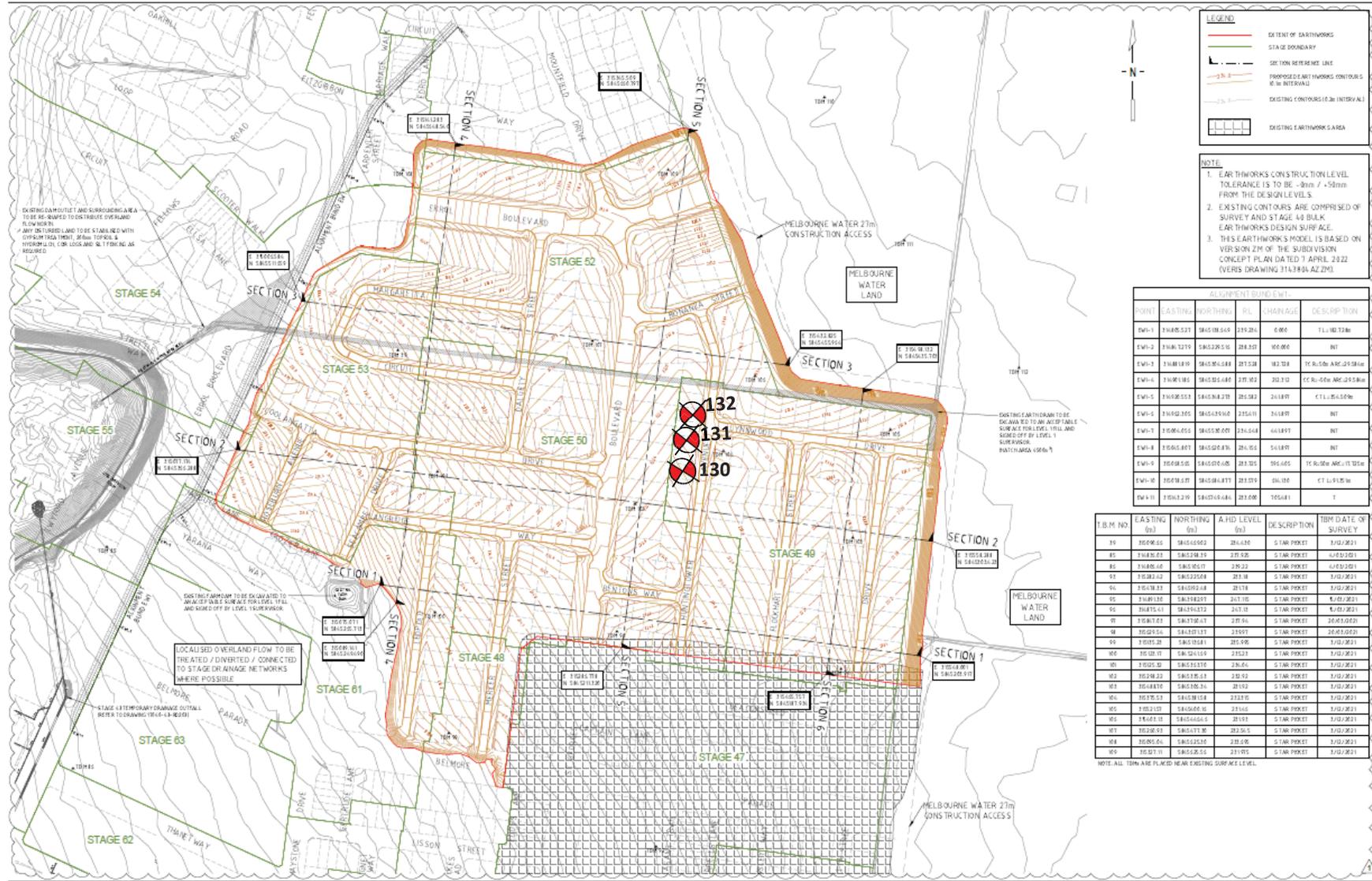
NATA Accredited Laboratory No. 20172
Accreditation for compliance with ISO/IEC 17025 - Testing

Approved Signatory:



David Burns

Date: 21/02/2023



LEGEND

- EXTENT OF EARTHWORKS
- STAGE BOUNDARY
- SECTION REFERENCE LINE
- PROPOSED EARTHWORKS CONTOURS (5m INTERVAL)
- EXISTING CONTOURS (0.3m INTERVAL)
- EXISTING EARTHWORKS AREA

NOTE

- EARTHWORKS CONSTRUCTION LEVEL TOLERANCE IS TO BE $\pm 30mm / \pm 50mm$ FROM THE DESIGN LEVELS.
- EXISTING CONTOURS ARE COMPOSED OF SURVEY AND STAGE 48 BULK EARTHWORKS DESIGN SURFACE.
- THIS EARTHWORKS MODEL IS BASED ON VERSION 27M OF THE SUBDIVISION CONCEPT PLAN DATED 7 APRIL 2022 (VERS DRAWING 31A180A AZ20)

ALIGNMENT BOUNDARY

POINT	EASTING	NORTHING	URL	CHANGING	DESCRIPTION
EW-1	31408.527	584508.545	219.24	0.00	T.L. 10.12.0m
EW-2	31408.127	584525.516	218.20	100.00	INT
EW-3	31408.119	584535.484	217.58	102.08	T.C. R. 50m ARC 253.0m
EW-4	31408.186	584535.480	217.82	202.12	T.C. R. 50m ARC 253.0m
EW-5	31408.553	584534.270	215.82	203.97	T.L. 10.15.0m
EW-6	31408.305	584535.616	215.61	203.97	INT
EW-7	31408.655	584535.001	214.54	648.97	INT
EW-8	31408.301	584535.001	215.65	503.97	INT
EW-9	31408.505	584535.616	213.25	595.65	T.C. R. 50m ARC 253.0m
EW-10	31408.527	584534.471	213.25	596.10	T.L. 10.15.0m
EW-11	31408.220	584535.484	212.00	705.81	T

T.B.M. NO.

T.B.M. NO.	EASTING (m)	NORTHING (m)	A.M.D. LEVEL (m)	DESCRIPTION	DATE OF SURVEY
39	31406.66	584545.02	216.40	STAR POINT	1/12/2021
40	31406.01	584534.15	215.26	STAR POINT	6/12/2021
41	31406.66	584535.01	215.22	STAR POINT	6/12/2021
42	31406.42	584535.00	213.18	STAR POINT	1/12/2021
43	31406.22	584535.24	213.18	STAR POINT	1/12/2021
44	31406.10	584535.00	213.10	STAR POINT	6/12/2021
45	31405.41	584535.32	213.11	STAR POINT	6/12/2021
46	31405.01	584535.41	213.54	STAR POINT	20/12/2021
47	31405.56	584535.13	213.97	STAR POINT	20/12/2021
48	31405.28	584534.81	213.96	STAR POINT	1/12/2021
49	31405.17	584535.10	213.23	STAR POINT	1/12/2021
50	31405.10	584535.10	213.64	STAR POINT	1/12/2021
51	31404.22	584535.21	213.52	STAR POINT	1/12/2021
52	31404.00	584535.21	213.52	STAR POINT	1/12/2021
53	31404.00	584535.21	213.52	STAR POINT	1/12/2021
54	31403.53	584535.10	213.10	STAR POINT	1/12/2021
55	31403.10	584535.10	213.64	STAR POINT	1/12/2021
56	31403.11	584535.64	213.91	STAR POINT	1/12/2021
57	31403.01	584535.10	213.52	STAR POINT	1/12/2021
58	31403.04	584535.10	213.58	STAR POINT	1/12/2021
59	31402.11	584535.55	213.95	STAR POINT	1/12/2021

NOTE: ALL TBM ARE PLACED NEAR EXISTING SURFACE LEVEL.

DESIGNED BY	T. MUSTAC	DATE	17.05.22
CHECKED BY	P. MASEMANN	DATE	02.01.23
APPROVED BY	G. ROMANICZ	DATE	



Ground Floor, 207-213 Waverley Road,
Melburn East VIC 3145
TEL: 03 8273 4500 www.verveprojects.com
© Verve Projects Pty Ltd.

HUME CITY COUNCIL

**MERRIFIELD LIVING - SECTION E
BULK EARTHWORKS - STAGE 49-53
MICKLEHAM**

LAYOUT PLAN

CONSTRUCTION

366 F1 | 17040-49 | EW201 | 1

Project : Merrifield Estate - Stage 49 (Level1)	Client : BMD Urban	Date : 25/01/2023
Location : Mickleham	Project No : 1120 0322-1 (S145)	SITE PLAN SKETCH—NOT TO SCALE



Field Density Test Results

AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate - Stage 49 (Level 1)	Report:	46
Location:	Mickleham		

Sample No	133	134	135			
Date Tested	30/01/2023	30/01/2023	30/01/2023			
Time Tested	AM	AM	PM			

Test Location	Refer to Plan	Refer to Plan	Refer to Plan			
Level/Layer	FSL	FSL	FSL			
Layer Thickness	mm 200	mm 200	mm 200			
Test Depth	mm 175	mm 175	mm 175			
Field Wet Density	t/m ³ 1.82	t/m ³ 1.80	t/m ³ 1.83			
Field Moisture Content	% 26.4	% 25.7	% 26.9			
Material:	Imported Clay	Imported Clay	Imported Clay			

Oversize Material	WET, %	0.0	0.0	0.0		
Sieve Size	mm	19	19	19		
Peak Converted Wet Density	t/m ³	1.91	1.87	1.92		
Optimum Moisture Content	%	24.5	24	25.5		

Moisture Ratio	%	108	107	105.5		
Moisture Variation from OMC	%	1.5	2.0	1.5		
Density Ratio	%	95.5	96.0	95.5		

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI46)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)



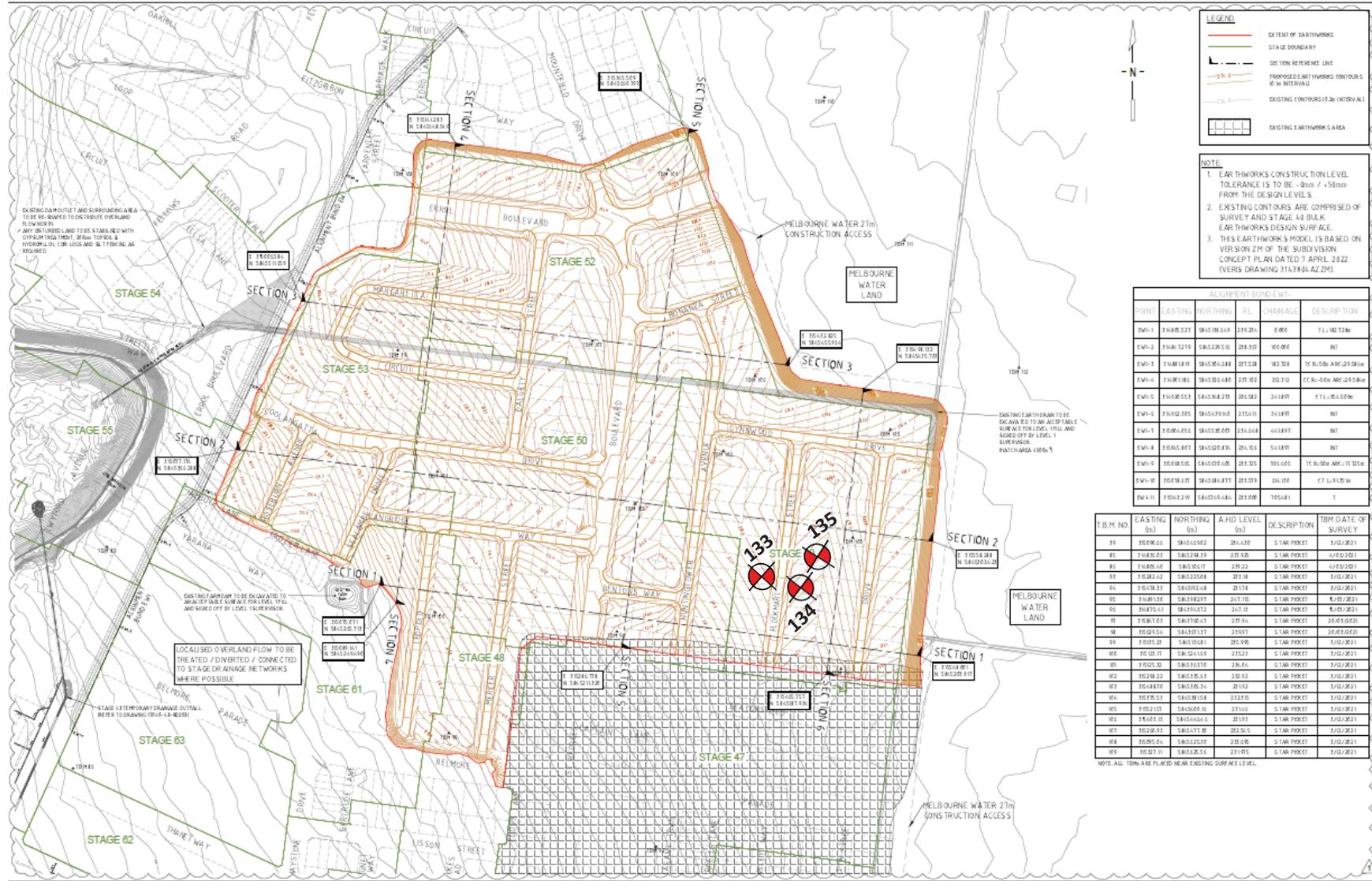
NATA Accredited Laboratory No. 20172
Accreditation for compliance with ISO/IEC 17025 - Testing

Approved Signatory:



David Burns

Date: 20/02/2023



ALIGNMENT BOUNDARY

POINT	EASTING	NORTHING	URL	CHANGING	DESCRIPTION
EW-1	31408.527	584508.545	219.24	0.00	T.L. 10.13m
EW-2	31408.127	584525.516	218.20	10.00	INT
EW-3	31408.119	584535.484	217.58	10.28	T.C. R. 50m A.R. 25.50m
EW-4	31408.186	584535.480	217.82	20.21	T.C. R. 50m A.R. 25.50m
EW-5	31408.553	584534.270	215.82	20.87	CT L. 10.150m
EW-6	31408.305	584535.616	215.61	20.87	INT
EW-7	31408.655	584535.001	214.54	16.97	INT
EW-8	31408.901	584535.001	214.54	16.97	INT
EW-9	31408.505	584535.616	213.25	19.65	T.C. R. 50m A.R. 25.50m
EW-10	31408.527	584534.471	213.25	16.10	CT L. 10.150m
EW-11	31408.220	584535.484	212.00	20.81	T

T.B.M. NO.	EASTING (m)	NORTHING (m)	A.H.D. LEVEL (m)	DESCRIPTION	DATE OF SURVEY
39	31406.66	584545.02	216.10	STAR POINT	1/12/2021
40	31406.01	584534.15	215.26	STAR POINT	1/12/2021
41	31406.66	584535.01	215.22	STAR POINT	1/12/2021
42	31406.62	584535.00	215.18	STAR POINT	1/12/2021
43	31406.22	584535.24	215.18	STAR POINT	1/12/2021
44	31406.22	584535.24	215.18	STAR POINT	1/12/2021
45	31406.22	584535.24	215.18	STAR POINT	1/12/2021
46	31406.22	584535.24	215.18	STAR POINT	1/12/2021
47	31406.22	584535.24	215.18	STAR POINT	1/12/2021
48	31406.22	584535.24	215.18	STAR POINT	1/12/2021
49	31406.22	584535.24	215.18	STAR POINT	1/12/2021
50	31406.22	584535.24	215.18	STAR POINT	1/12/2021
51	31406.22	584535.24	215.18	STAR POINT	1/12/2021
52	31406.22	584535.24	215.18	STAR POINT	1/12/2021
53	31406.22	584535.24	215.18	STAR POINT	1/12/2021
54	31406.22	584535.24	215.18	STAR POINT	1/12/2021
55	31406.22	584535.24	215.18	STAR POINT	1/12/2021
56	31406.22	584535.24	215.18	STAR POINT	1/12/2021
57	31406.22	584535.24	215.18	STAR POINT	1/12/2021
58	31406.22	584535.24	215.18	STAR POINT	1/12/2021
59	31406.22	584535.24	215.18	STAR POINT	1/12/2021

NOTE: ALL TBM ARE PLACED NEAR EXISTING SURFACE LEVEL.

1	CONTOUR S, D AND A NOTES UPDATED, EXC. S.A. REVISION NOTED	G.R.	17.05.22
2	CONSTRUCTION ISSUE	G.R.	02.01.23
NEW	DESCRIPTION	APPROVED	DATE

DESIGNED BY	T. MUSTAC
DESIGNED BY	P. MASEMANN
DESIGNED BY	G. ROMANICZ

HUME CITY COUNCIL

MERRIFIELD LIVING - SECTION E
BULK EARTHWORKS - STAGE 49-53
MICKLEHAM

LAYOUT PLAN

CONSTRUCTION

366 F1

17040-49

EW201

1

Project : Merrifield Estate - Stage 49 (Level1)

Client : BMD Urban

Date : 30/01/2023

Location : Mickleham

Project No : 1120 0322-1 (SI46)

SITE PLAN SKETCH—NOT TO SCALE



Field Density Test Results

AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate - Stage 49 (Level 1)	Report:	47
Location:	Mickleham		

Sample No	136	137	138			
Date Tested	09/02/2023	09/02/2023	09/02/2023			
Time Tested	AM	AM	AM			

Test Location	Refer to Plan	Refer to Plan	Refer to Plan			
Level/Layer	10	10	11			
Layer Thickness	mm 200	mm 200	mm 200			
Test Depth	mm 175	mm 175	mm 175			
Field Wet Density	t/m ³ 1.85	t/m ³ 1.81	t/m ³ 1.87			
Field Moisture Content	% 24.1	% 26.3	% 24.0			
Material:	Imported Clay	Imported Clay	Imported Clay			

Oversize Material	WET, %	3.1	3.1	3.1		
Sieve Size	mm	19	19	19		
Peak Converted Wet Density	t/m ³	1.89	1.84	1.84		
Optimum Moisture Content	%	22.5	24.5	22.5		

Moisture Ratio	%	107	107.5	106.5		
Moisture Variation from OMC	%	1.5	2.0	1.5		
Density Ratio	%	97.5	98.5	101.0		

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI47)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)



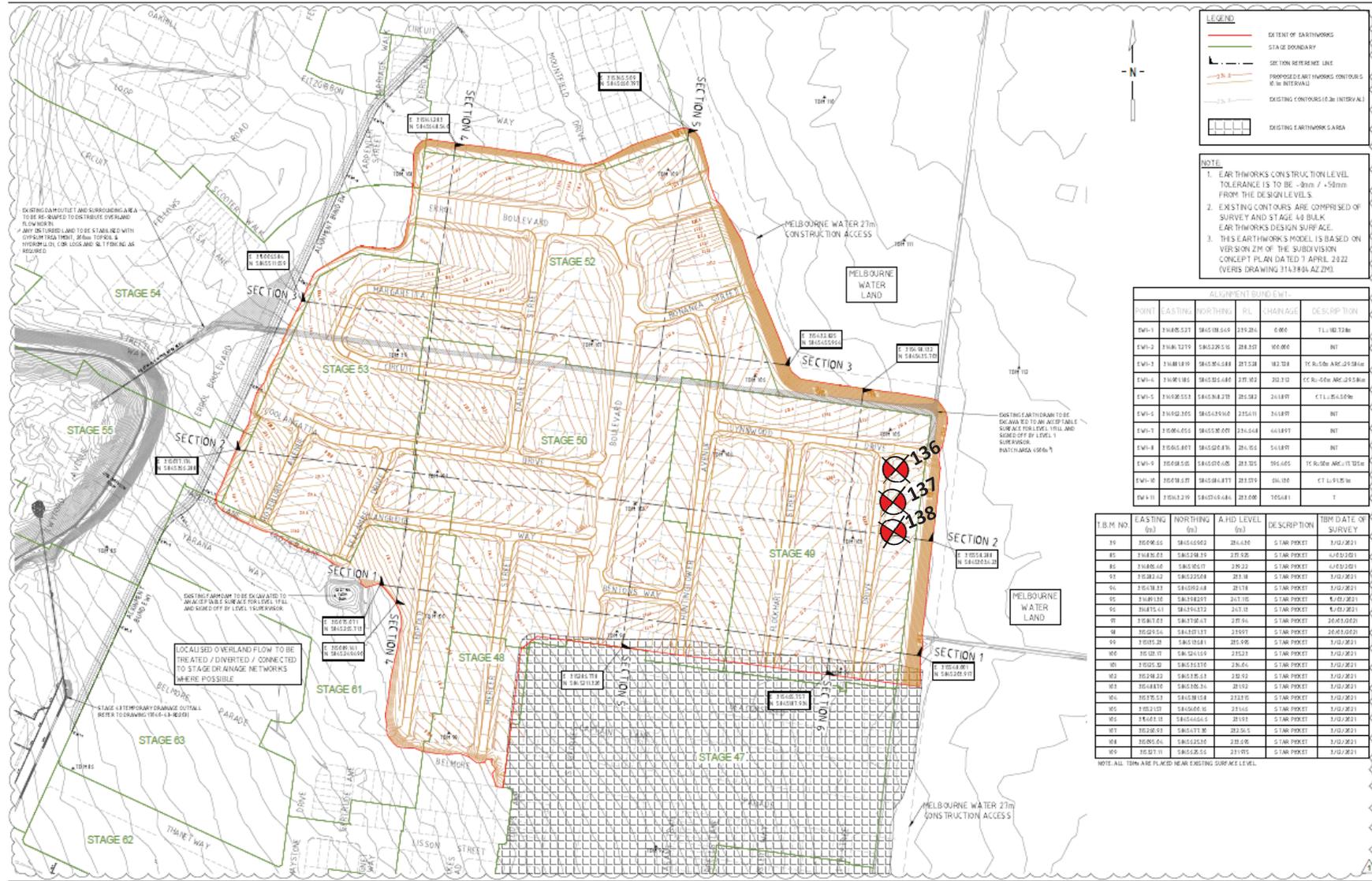
NATA Accredited Laboratory No. 20172
Accreditation for compliance with ISO/IEC 17025 - Testing

Approved Signatory:



David Burns

Date: 17/02/2023



LEGEND

- EXTENT OF EARTHWORKS
- STAGE BOUNDARY
- SECTION REFERENCE LINE
- PROPOSED EARTHWORKS CONTOURS (5m INTERVAL)
- EXISTING CONTOURS (0.3m INTERVAL)
- EXISTING EARTHWORKS AREA

NOTE

- EARTHWORKS CONSTRUCTION LEVEL TOLERANCE IS TO BE $\pm 30\text{mm} / \pm 50\text{mm}$ FROM THE DESIGN LEVELS.
- EXISTING CONTOURS ARE COMPOSED OF SURVEY AND STAGE 48 BULK EARTHWORKS DESIGN SURFACE.
- THIS EARTHWORKS MODEL IS BASED ON VERSION 21M OF THE SUBDIVISION CONCEPT PLAN DATED 7 APRIL 2022 (VERS DRAWING 31A180A AZ20)

ALIGNMENT BOUNDARY

POINT	EASTING	NORTHING	URL	CHANGING	DESCRIPTION
EW-1	31408.527	584508.545	219.26	0.00	T.L. 10.12.0m
EW-2	31408.127	584525.516	218.20	10.00	INT
EW-3	31408.119	584535.484	217.58	10.00	T.C. 10.50m ABL 25.00m
EW-4	31408.186	584535.488	217.82	20.00	T.C. 10.50m ABL 25.00m
EW-5	31408.553	584534.270	215.82	20.00	CT L 10.15.0m
EW-6	31408.305	584535.616	215.61	20.00	INT
EW-7	31408.655	584535.001	214.54	60.00	INT
EW-8	31408.901	584535.001	214.55	50.00	INT
EW-9	31408.505	584535.616	213.25	50.00	T.C. 10.50m ABL 25.00m
EW-10	31408.527	584534.471	213.25	50.00	CT L 10.15.0m
EW-11	31408.210	584535.484	212.00	70.00	T

T.B.M. NO.

T.B.M. NO.	EASTING (m)	NORTHING (m)	A.M.D. LEVEL (m)	DESCRIPTION	DATE OF SURVEY
39	31406.66	584545.02	216.10	STAR POINT	1/12/2021
40	31406.01	584534.15	215.26	STAR POINT	6/12/2021
41	31406.66	584535.01	215.22	STAR POINT	6/12/2021
42	31406.42	584535.00	213.18	STAR POINT	1/12/2021
43	31406.22	584535.24	213.18	STAR POINT	1/12/2021
44	31406.10	584535.00	213.10	STAR POINT	6/12/2021
45	31405.43	584535.00	213.18	STAR POINT	1/12/2021
46	31405.22	584535.24	213.18	STAR POINT	1/12/2021
47	31405.10	584535.00	213.10	STAR POINT	6/12/2021
48	31405.43	584535.00	213.18	STAR POINT	1/12/2021
49	31405.22	584535.24	213.18	STAR POINT	1/12/2021
50	31405.10	584535.00	213.10	STAR POINT	6/12/2021
51	31405.43	584535.00	213.18	STAR POINT	1/12/2021
52	31405.22	584535.24	213.18	STAR POINT	1/12/2021
53	31405.10	584535.00	213.10	STAR POINT	6/12/2021
54	31405.43	584535.00	213.18	STAR POINT	1/12/2021
55	31405.22	584535.24	213.18	STAR POINT	1/12/2021
56	31405.10	584535.00	213.10	STAR POINT	6/12/2021
57	31405.43	584535.00	213.18	STAR POINT	1/12/2021
58	31405.22	584535.24	213.18	STAR POINT	1/12/2021
59	31405.10	584535.00	213.10	STAR POINT	6/12/2021

NOTE: ALL TBM ARE PLACED NEAR EXISTING SURFACE LEVEL

1	CONTOUR S, D AND A NOTES UPDATED, EXC. S.A. REVISION NOTED	G.R.	17.05.22
2	CONSTRUCTION ISSUE	G.R.	02.01.23
NEW	DESCRIPTION	APPROVED	DATE

DESIGNED BY	T. MUSTAC
DESIGNED BY	P. MASEMANN
DESIGNED BY	G. ROMANICZ

HUME CITY COUNCIL

MERRIFIELD LIVING - SECTION E
BULK EARTHWORKS - STAGE 49-53
MICKLEHAM

LAYOUT PLAN

CONSTRUCTION

366 F1 17040-49 EW201 1

Project : Merrifield Estate - Stage 49 (Level1)

Client : BMD Urban

Date : 09/02/2023

Location : Mickleham

Project No : 1120 0322-1 (S147)

SITE PLAN SKETCH—NOT TO SCALE



Field Density Test Results

AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate - Stage 49 (Level 1)	Report:	48
Location:	Mickleham		

Sample No	139	140	141			
Date Tested	10/02/2023	10/02/2023	10/02/2023			
Time Tested	AM	AM	AM			

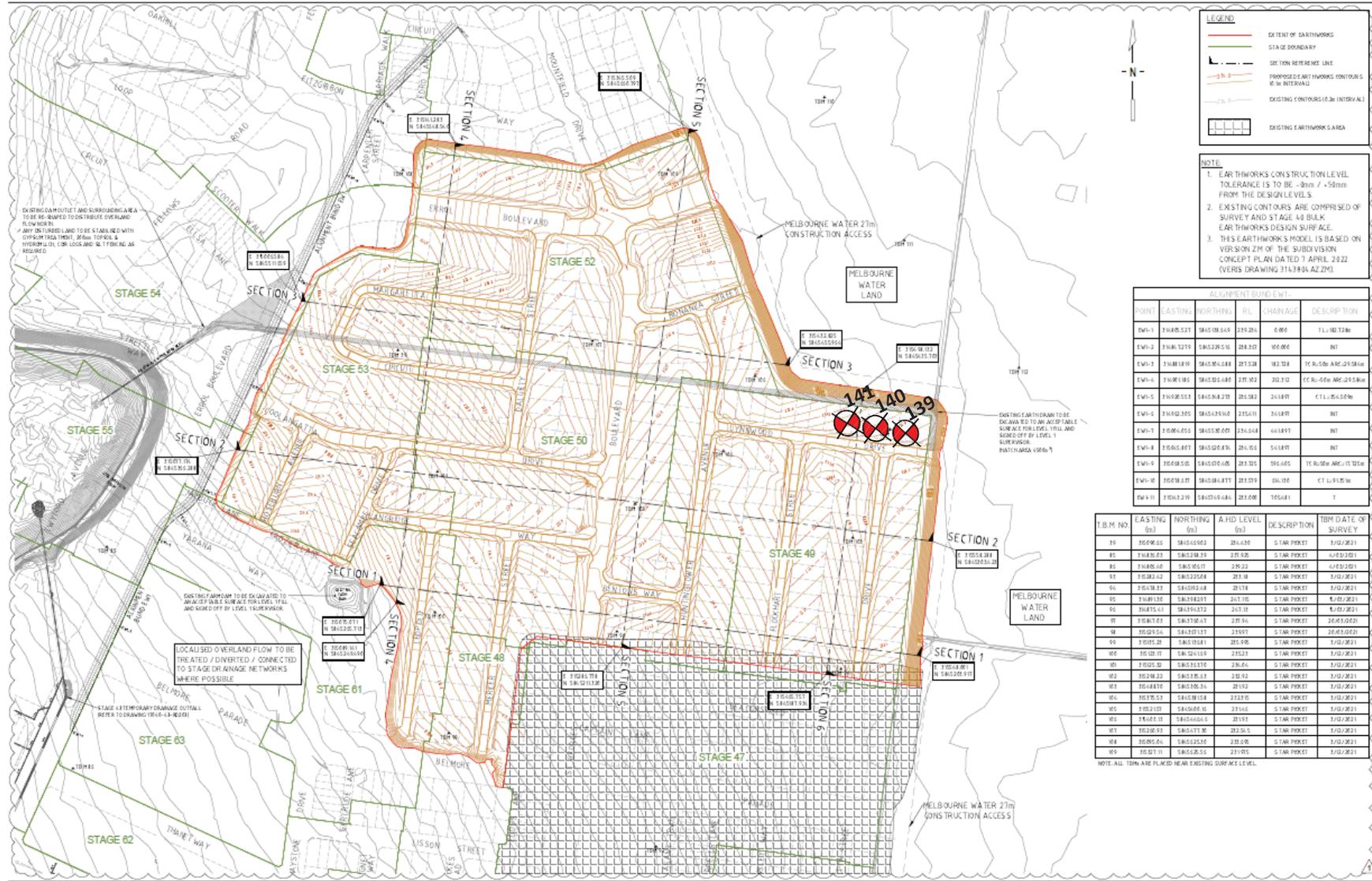
Test Location	Refer to Plan	Refer to Plan	Refer to Plan			
Level/Layer	12	13	13			
Layer Thickness	mm 200	200	200			
Test Depth	mm 175	175	175			
Field Wet Density	t/m ³ 2.02	1.92	1.94			
Field Moisture Content	% 19.3	22.4	20.6			
Material:	Imported Clay	Imported Clay	Imported Clay			

Oversize Material	WET, %	6.1	4.6	4.6		
Sieve Size	mm	19	19	19		
Peak Converted Wet Density	t/m ³	2.06	1.96	1.97		
Optimum Moisture Content	%	19.5	23	21		

Moisture Ratio	%	99	97.5	98		
Moisture Variation from OMC	%	-0.5	-0.5	-0.5		
Density Ratio	%	97.5	97.0	98.0		

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI48)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)

 <small>WORLD RECOGNISED ACCREDITATION</small>	NATA Accredited Laboratory No. 20172 Accreditation for compliance with ISO/IEC 17025 - Testing	Approved Signatory:	 David Burns
		Date:	17/02/2023



ALIGNMENT BOUND EWT

POINT	EASTING	NORTHING	URL	CHANGING	DESCRIPTION
EW-1	31408.527	584508.545	219.26	0.00	T.L. 10.12.0m
EW-2	31408.127	584525.516	208.00	00.00	INT
EW-3	31408.119	584535.484	207.58	02.04	T.C. R. 50m A.R. 2.53m
EW-4	31408.186	584535.480	207.82	20.32	T.C. R. 50m A.R. 2.53m
EW-5	31408.553	584534.270	205.82	20.87	CT L. 10.15.0m
EW-6	31408.305	584535.636	205.61	20.87	INT
EW-7	31408.655	584535.001	214.54	64.97	INT
EW-8	31408.901	584535.001	205.65	20.87	INT
EW-9	31408.505	584535.636	207.05	05.65	T.C. R. 50m A.R. 2.53m
EW-10	31408.537	584534.471	203.09	06.10	CT L. 10.15.0m
EW-11	31408.230	584535.484	202.00	20.81	T

T.B.M. NO.	EASTING (m)	NORTHING (m)	A.M.D. LEVEL (m)	DESCRIPTION	DATE OF SURVEY
39	31406.66	584545.02	216.40	STAR POINT	1/12/2021
40	31406.03	584534.15	215.56	STAR POINT	6/12/2021
41	31406.66	584535.01	215.22	STAR POINT	6/12/2021
42	31406.42	584535.04	213.18	STAR POINT	1/12/2021
43	31406.33	584535.24	213.18	STAR POINT	1/12/2021
44	31406.10	584535.24	213.18	STAR POINT	6/12/2021
45	31405.41	584535.24	213.18	STAR POINT	6/12/2021
46	31405.56	584535.13	215.97	STAR POINT	20/12/2021
47	31405.28	584535.41	215.96	STAR POINT	1/12/2021
48	31405.17	584535.15	215.23	STAR POINT	1/12/2021
49	31405.10	584535.10	216.04	STAR POINT	1/12/2021
50	31404.22	584535.12	215.52	STAR POINT	1/12/2021
51	31404.00	584535.24	215.93	STAR POINT	1/12/2021
52	31403.53	584535.15	213.16	STAR POINT	1/12/2021
53	31403.10	584535.10	214.66	STAR POINT	1/12/2021
54	31403.11	584544.41	214.91	STAR POINT	1/12/2021
55	31406.91	584541.30	213.25	STAR POINT	1/12/2021
56	31405.04	584535.10	213.58	STAR POINT	1/12/2021
57	31405.11	584535.55	214.95	STAR POINT	1/12/2021

NOTE: ALL TBM ARE PLACED NEAR EXISTING SURFACE LEVEL

1	CONTOUR S, D AND A NOTES UPDATED, EXC. S.A. REVISION NOTED	G.R.	17.05.22
2	CONSTRUCTION ISSUE	G.R.	02.01.22
NEW	DESCRIPTION	APPROVED	DATE

T. MUSTAC
 P. MASEMANN
 G. ROMANICZ

H 1:1000
 0 15 30 60 90 120

merrifield
MAB gpc
verve
 Ground Floor, 207-213 Waverley Road,
 Melburn East VIC 3145
 TEL: 03 8773 4500 www.projects.com
 © Verve Projects Pty Ltd.

HUME CITY COUNCIL
MERRIFIELD LIVING - SECTION E
BULK EARTHWORKS - STAGE 49-53
MICKLEHAM
LAYOUT PLAN
CONSTRUCTION
 366 F1 17040-49 EW201 1

Project : Merrifield Estate - Stage 49 (Level1)	Client : BMD Urban	Date : 10/02/2023
Location : Mickleham	Project No : 1120 0322-1 (SI48)	SITE PLAN SKETCH—NOT TO SCALE



Field Density Test Results

AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate - Stage 49 (Level 1)	Report:	49
Location:	Mickleham		

Sample No	142	143	144			
Date Tested	13/02/2023	13/02/2023	13/02/2023			
Time Tested	PM	PM	PM			

Test Location	Refer to Plan	Refer to Plan	Refer to Plan			
Level/Layer	14	FSL	FSL			
Layer Thickness	mm 200	200	200			
Test Depth	mm 175	175	175			
Field Wet Density	t/m ³ 1.92	1.92	1.85			
Field Moisture Content	% 23.5	24.1	25.8			
Material:	Imported Clay	Imported Clay	Imported Clay			

Oversize Material	WET, %	3.2	2.0	0.0		
Sieve Size	mm	19	19	19		
Peak Converted Wet Density	t/m ³	1.97	1.97	1.88		
Optimum Moisture Content	%	24	25	24		

Moisture Ratio	%	98	96.5	107.5		
Moisture Variation from OMC	%	-0.5 Drier	-1.0 Drier	2.0 Wetter		
Density Ratio	%	97.0	97.0	98.0		

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI49)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)



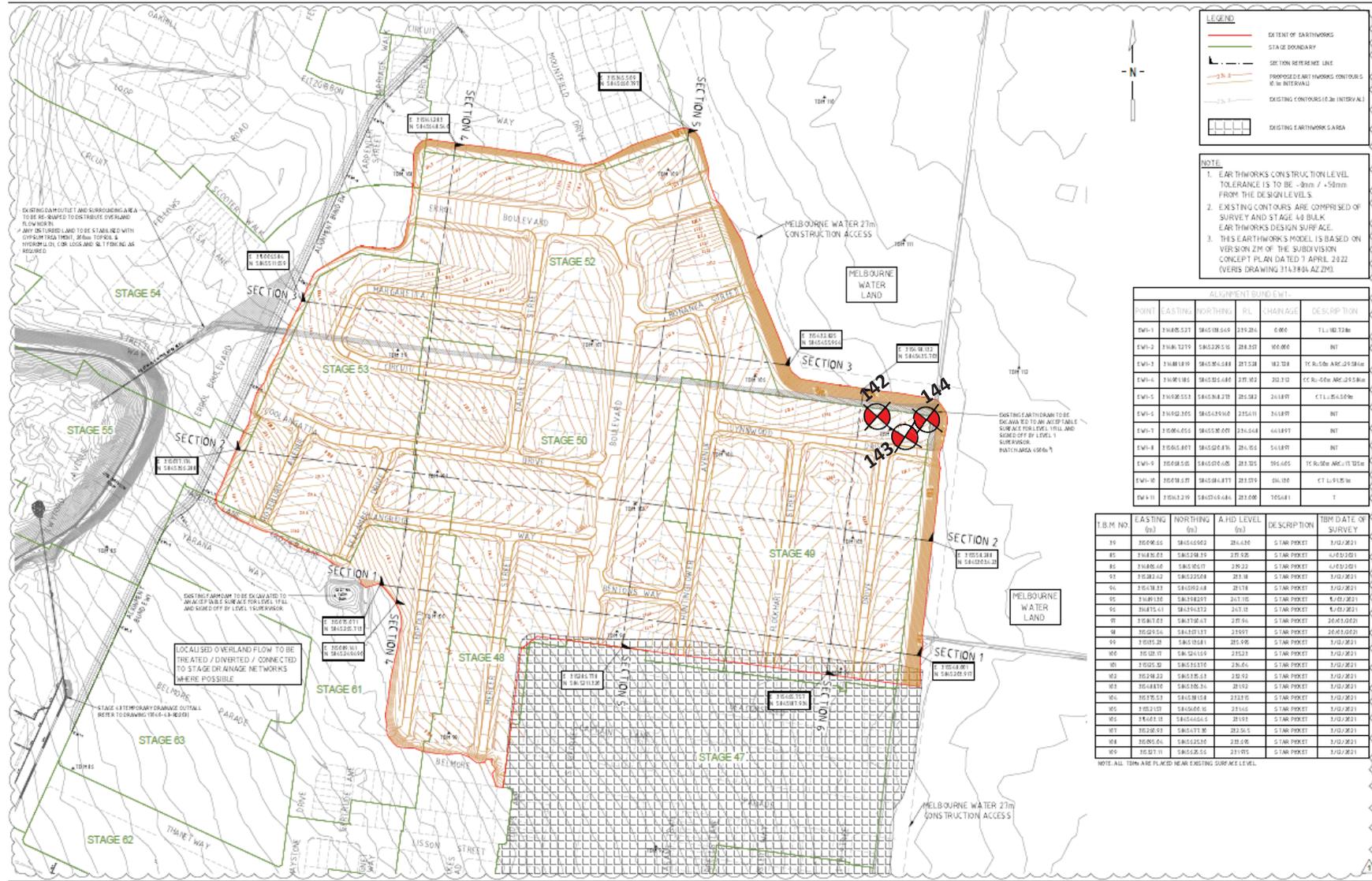
NATA Accredited Laboratory No. 20172
Accreditation for compliance with ISO/IEC 17025 - Testing

Approved Signatory:



David Burns

Date: 20/02/2023



POINT	EASTING	NORTHING	ELEV.	CHARACT.	DESCRIPTION
EW-1	31408.527	584508.545	219.26	6000	T.L. 10.12.06
EW-2	31408.1279	584525.916	208.00	10000	INT
EW-3	31408.1819	584535.648	207.58	82.08	T.C. R. 50m ANG. 25.58m
EW-4	31408.186	584535.648	207.82	20.31	T.C. R. 50m ANG. 25.58m
EW-5	31408.553	584534.270	205.82	20.87	CT L. 10.15.06
EW-6	31408.385	584535.648	205.61	30.87	INT
EW-7	31408.655	584535.648	214.54	64.87	INT
EW-8	31408.381	584535.648	205.65	30.87	INT
EW-9	31408.505	584535.648	207.05	95.65	T.C. R. 50m ANG. 17.35m
EW-10	31408.537	584534.471	203.09	50.16	CT L. 10.15.06
EW-11	31408.230	584535.648	202.08	70.81	T

T.B.M. NO.	EASTING (m)	NORTHING (m)	A.H.D. LEVEL (m)	DESCRIPTION	DATE OF SURVEY
39	31408.66	584545.82	216.40	STAR POINT	1/12/2021
40	31408.63	584534.15	215.58	STAR POINT	6/12/2021
41	31408.66	584535.07	215.22	STAR POINT	6/12/2021
42	31408.63	584535.08	215.18	STAR POINT	1/12/2021
43	31408.73	584535.24	215.18	STAR POINT	1/12/2021
44	31408.80	584535.20	215.16	STAR POINT	6/12/2021
45	31408.83	584535.32	215.11	STAR POINT	6/12/2021
46	31408.81	584535.21	215.54	STAR POINT	20/12/2021
47	31408.56	584535.13	215.97	STAR POINT	20/12/2021
48	31408.38	584535.18	215.96	STAR POINT	1/12/2021
49	31408.17	584535.15	215.23	STAR POINT	1/12/2021
50	31408.10	584535.10	216.04	STAR POINT	1/12/2021
51	31408.22	584535.12	215.52	STAR POINT	1/12/2021
52	31408.00	584535.21	215.93	STAR POINT	1/12/2021
53	31408.53	584535.15	213.16	STAR POINT	1/12/2021
54	31408.10	584535.10	214.66	STAR POINT	1/12/2021
55	31408.13	584535.14	214.91	STAR POINT	1/12/2021
56	31408.04	584535.10	215.25	STAR POINT	1/12/2021
57	31408.04	584535.10	215.08	STAR POINT	1/12/2021
58	31408.11	584535.15	214.95	STAR POINT	1/12/2021

NOTE: ALL TBM ARE PLACED NEAR EXISTING SURFACE LEVEL.

DESIGNED BY	T. MUSTAC	DATE	11.05.22
CHECKED BY	P. MASEMANN	DATE	02.11.22
APPROVED BY	G. ROMANICZ	DATE	



Ground Floor, 207-213 Waverley Road,
Melburn East VIC 3145
TEL : 03 8773 5300 www.verveprojects.com
© Verve Projects Pty Ltd.

HUME CITY COUNCIL

**MERRIFIELD LIVING - SECTION E
BULK EARTHWORKS - STAGE 49-53
MICKLEHAM**

LAYOUT PLAN

CONSTRUCTION

366 F1 | 17040-49 | EW201 | 1

Project : Merrifield Estate - Stage 49 (Level1)	Client : BMD Urban	Date : 13/02/2023
Location : Mickleham	Project No : 1120 0322-1 (S149)	SITE PLAN SKETCH—NOT TO SCALE



Field Density Test Results AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate - Stage 49 (Level 1)	Report:	50
Location:	Mickleham		

Sample No	145	146	147			
Date Tested	14/02/2023	14/02/2023	14/02/2023			
Time Tested	PM	PM	PM			

Test Location	Refer to Plan	Refer to Plan	Refer to Plan			
Level/Layer	9	14	14			
Layer Thickness	mm 200	mm 200	mm 200			
Test Depth	mm 175	mm 175	mm 175			
Field Wet Density	t/m ³ 1.83	t/m ³ 1.90	t/m ³ 1.86			
Field Moisture Content	% 23.2	% 21.7	% 24.9			
Material:	Imported Clay	Imported Clay	Imported Clay			

Oversize Material	WET, %	0.0	0.0	0.0		
Sieve Size	mm	19	19	19		
Peak Converted Wet Density	t/m ³	1.86	1.94	1.89		
Optimum Moisture Content	%	24	22.5	25.5		

Moisture Ratio	%	96.5	96.5	97.5		
Moisture Variation from OMC	%	-1.0	-1.0	-0.5		
Density Ratio	%	98.5	98.0	99.0		

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI50)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)



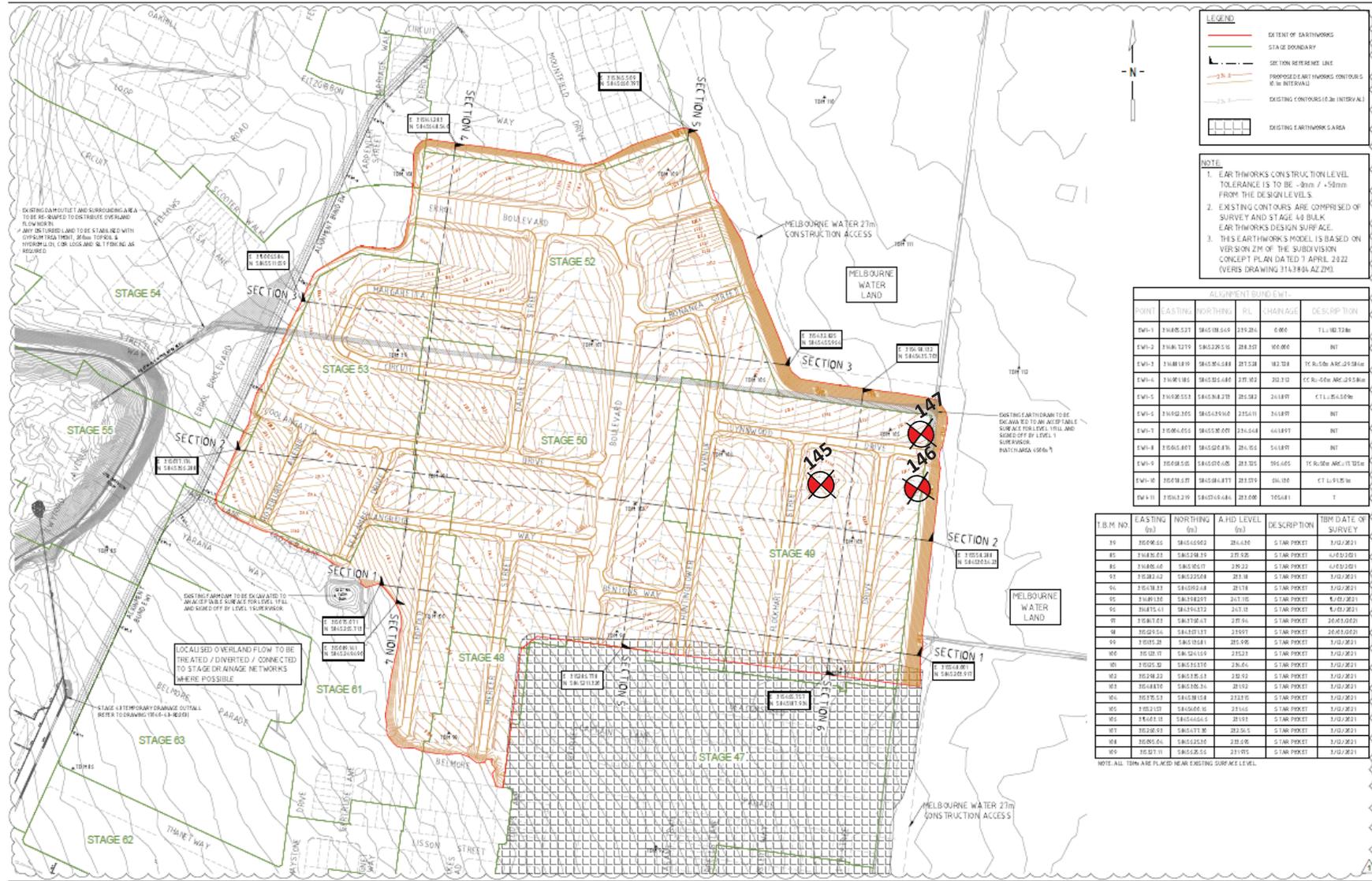
NATA Accredited Laboratory No. 20172
Accreditation for compliance with ISO/IEC 17025 - Testing

Approved Signatory:



David Burns

Date: 20/02/2023



LEGEND

- Extent of Earthworks
- Stage Boundary
- Section Reference Line
- Proposed Earthworks Contours (5m Interval)
- Existing Contours (0.3m Interval)
- Existing Earthwork Area

NOTE

- Earthworks construction level tolerance is to be $\pm 30\text{mm} / \pm 50\text{mm}$ from the design levels.
- Existing contours are comprised of survey and stage 48 bulk earthworks design surface.
- This earthworks model is based on version 2M of the subdivision concept plan dated 7 April 2022 (VERS DRAWING 314384 AZ20)

ALIGNMENT BOUNDARY

POINT	EASTING	NORTHING	URL	CHANGING	DESCRIPTION
EW-1	31408.527	584508.545	219.26	0.00	T.L. 142.32m
EW-2	31408.127	584525.516	218.20	100.00	INT
EW-3	31408.119	584535.484	217.58	102.78	T.C. R. 50m ARC 253.8m
EW-4	31408.186	584535.480	217.82	202.12	T.C. R. 50m ARC 253.8m
EW-5	31408.553	584534.270	215.82	243.97	CT L. 145.50m
EW-6	31408.305	584535.616	215.61	243.97	INT
EW-7	31408.655	584535.001	214.54	643.97	INT
EW-8	31408.901	584532.826	213.55	543.97	INT
EW-9	31408.505	584535.616	213.25	595.65	T.C. R. 50m ARC 253.8m
EW-10	31408.537	584534.471	213.25	595.10	CT L. 145.50m
EW-11	31408.230	584535.484	212.00	705.81	T

T.B.M. NO.

T.B.M. NO.	EASTING (m)	NORTHING (m)	A.M.D. LEVEL (m)	DESCRIPTION	DATE OF SURVEY
39	31406.66	584545.02	216.10	STAR POINT	1/12/2021
40	31406.03	584534.15	215.26	STAR POINT	6/12/2021
41	31406.66	584535.01	215.22	STAR POINT	6/12/2021
42	31406.43	584533.04	213.18	STAR POINT	1/12/2021
43	31406.33	584532.44	213.18	STAR POINT	1/12/2021
44	31406.10	584532.07	213.10	STAR POINT	6/12/2021
45	31405.01	584532.41	212.54	STAR POINT	20/12/2021
46	31405.56	584532.13	212.97	STAR POINT	20/12/2021
47	31405.28	584531.81	212.96	STAR POINT	1/12/2021
48	31405.17	584531.50	212.23	STAR POINT	1/12/2021
49	31405.10	584531.30	212.04	STAR POINT	1/12/2021
50	31404.22	584531.52	212.52	STAR POINT	1/12/2021
51	31404.00	584531.21	212.52	STAR POINT	1/12/2021
52	31403.53	584531.50	212.10	STAR POINT	1/12/2021
53	31403.10	584531.00	211.66	STAR POINT	1/12/2021
54	31403.11	584531.64	211.91	STAR POINT	1/12/2021
55	31402.91	584531.30	212.15	STAR POINT	1/12/2021
56	31402.64	584532.10	212.08	STAR POINT	1/12/2021
57	31402.11	584532.55	211.95	STAR POINT	1/12/2021

NOTE: ALL TBM ARE PLACED NEAR EXISTING SURFACE LEVEL

NO.	DESCRIPTION	APPROVED	DATE
1	CONTOUR S, D AND A NOTES UPDATED, EXG. S.A. REVISION NOTED	G.R.	17.05.22
2	CONSTRUCTION ISSUE	G.R.	02.01.23
NEW	DESCRIPTION	APPROVED	DATE

DESIGNED BY	T. MUSTAC
DESIGNED BY	P. MASEMANN
DESIGNED BY	G. ROMANICZ

HUME CITY COUNCIL

MERRIFIELD LIVING - SECTION E
BULK EARTHWORKS - STAGE 49-53
MICKLEHAM

LAYOUT PLAN

CONSTRUCTION

366 F1 17040-49 EW201 1

Project : Merrifield Estate - Stage 49 (Level1)	Client : BMD Urban	Date : 14/02/2023
Location : Mickleham	Project No : 1120 0322-1 (S150)	SITE PLAN SKETCH—NOT TO SCALE



Field Density Test Results AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate - Stage 49 (Level 1)	Report:	51
Location:	Mickleham		

Sample No	148	149	150			
Date Tested	15/02/2023	15/02/2023	15/02/2023			
Time Tested	PM	PM	PM			

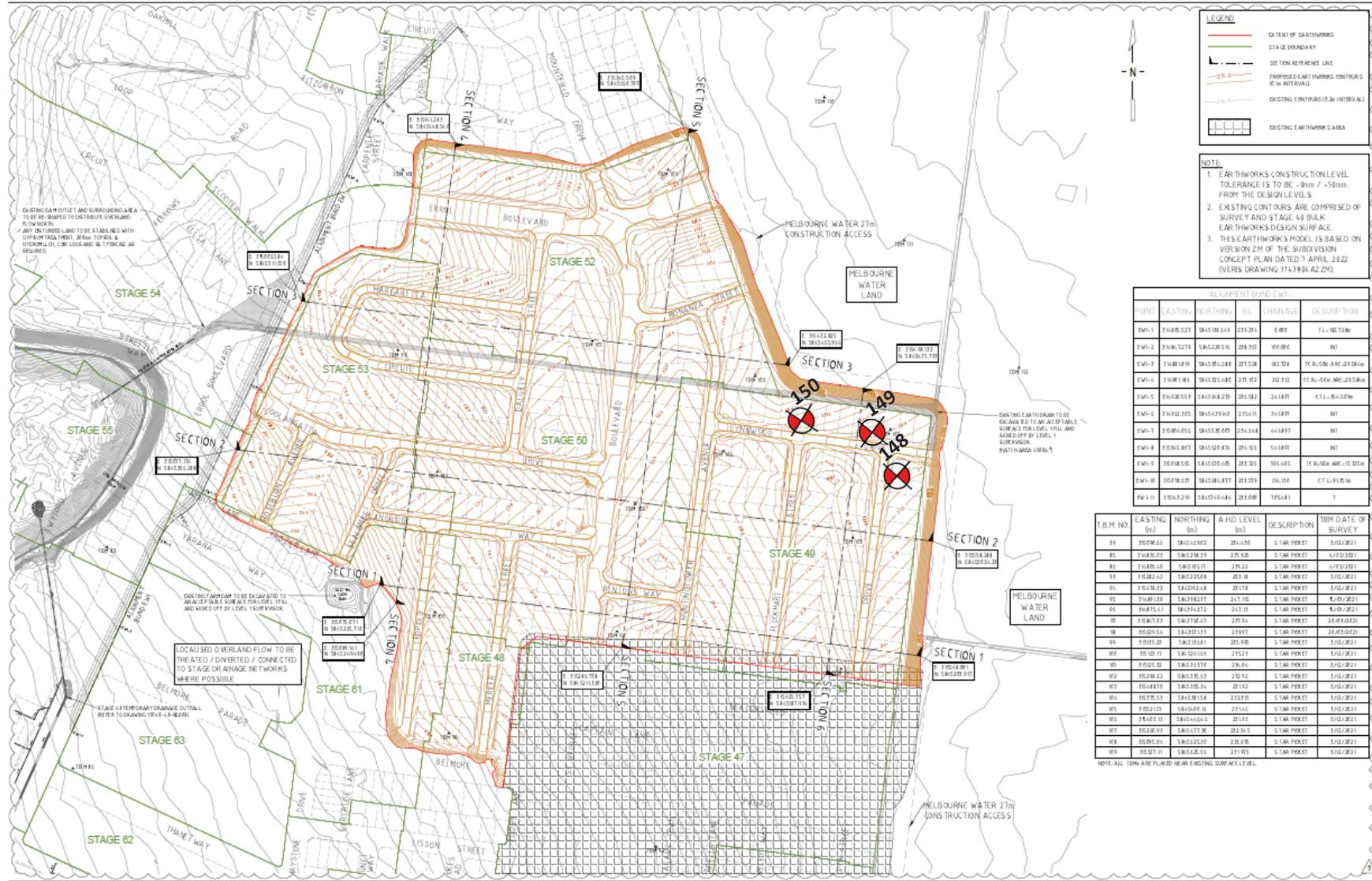
Test Location	Refer to Plan	Refer to Plan	Refer to Plan			
Level/Layer	10	15	15			
Layer Thickness	mm 200	200	200			
Test Depth	mm 175	175	175			
Field Wet Density	t/m ³ 1.87	1.93	1.95			
Field Moisture Content	% 22.2	25.3	22.3			
Material:	Imported Clay	Imported Clay	Imported Clay			

Oversize Material	WET, %	0.0	0.0	0.0		
Sieve Size	mm	19	19	19		
Peak Converted Wet Density	t/m ³	1.96	2.02	2.03		
Optimum Moisture Content	%	23	26	23		

Moisture Ratio	%	96.5	97	97		
Moisture Variation from OMC	%	-1.0 Drier	-1.0 Drier	-1.0 Drier		
Density Ratio	%	95.5	96.0	96.0		

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI51)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)

 <p>NATA WORLD RECOGNISED ACCREDITATION</p>	<p>NATA Accredited Laboratory No. 20172 Accreditation for compliance with ISO/IEC 17025 - Testing</p>	<p>Approved Signatory: </p> <p>David Burns Date: 20/02/2023</p>
---	---	--



POINT	EASTING	NORTHING	RED.	CHANG. AC.	DESCRIPTION
EW-1	31408.527	584508.545	219.24	0.00	T.L. 10.12.0m
EW-2	31408.127	584525.516	218.20	100.00	INT
EW-3	31408.119	584535.484	217.58	102.78	T.C. R. 50m ARC 25.50m
EW-4	31408.186	584535.480	217.82	202.72	T.C. R. 50m ARC 25.50m
EW-5	31408.553	584534.270	215.82	243.97	CT L. 10.15.0m
EW-6	31408.305	584535.616	215.61	243.97	INT
EW-7	31408.655	584535.001	214.54	643.97	INT
EW-8	31408.301	584535.001	215.65	543.97	INT
EW-9	31408.505	584535.616	213.25	595.65	T.C. R. 50m ARC 25.50m
EW-10	31408.527	584534.471	213.25	595.10	CT L. 10.15.0m
EW-11	31408.220	584535.484	212.00	705.81	T

T.B.M. NO.	EASTING (m)	NORTHING (m)	A.M.D. LEVEL (m)	DESCRIPTION	DATE OF SURVEY
39	31406.66	584545.02	216.40	STAR POINT	1/12/2021
40	31406.01	584534.15	215.26	STAR POINT	6/12/2021
41	31406.66	584535.01	215.22	STAR POINT	6/12/2021
42	31406.42	584535.08	213.18	STAR POINT	1/12/2021
43	31406.22	584535.24	213.18	STAR POINT	1/12/2021
44	31406.10	584535.02	213.10	STAR POINT	6/12/2021
45	31405.41	584535.32	212.11	STAR POINT	6/12/2021
46	31405.01	584535.10	212.54	STAR POINT	20/12/2021
47	31405.56	584535.13	212.97	STAR POINT	20/12/2021
48	31405.28	584534.81	212.96	STAR POINT	1/12/2021
49	31405.17	584534.50	212.23	STAR POINT	1/12/2021
50	31405.10	584534.30	212.64	STAR POINT	1/12/2021
51	31404.22	584535.21	212.52	STAR POINT	1/12/2021
52	31404.00	584535.21	212.52	STAR POINT	1/12/2021
53	31403.53	584534.58	212.10	STAR POINT	1/12/2021
54	31403.10	584534.60	211.66	STAR POINT	1/12/2021
55	31403.11	584534.64	211.91	STAR POINT	1/12/2021
56	31403.01	584534.70	212.25	STAR POINT	1/12/2021
57	31403.04	584534.50	212.08	STAR POINT	1/12/2021
58	31402.11	584534.55	211.95	STAR POINT	1/12/2021

NOTE: ALL TBM ARE PLACED NEAR EXISTING SURFACE LEVEL.

DESIGNED BY	T. MUSTAC	DATE	11.05.22
CHECKED BY	P. MASEMANN	DATE	02.11.22
APPROVED BY	G. ROMANICZ	DATE	



HUME CITY COUNCIL

MERRIFIELD LIVING - SECTION E
BULK EARTHWORKS - STAGE 49-53
MICKLEHAM

LAYOUT PLAN

CONSTRUCTION

366 F1

17040-49

EW201

1

Project : Merrifield Estate - Stage 49 (Level1)	Client : BMD Urban	Date : 15/02/2023
Location : Mickleham	Project No : 1120 0322-1 (SI51)	SITE PLAN SKETCH—NOT TO SCALE



Field Density Test Results

AS1289.5.7.1

Client:	BMD Urban	Job No:	BMD2207
Project:	Merrifield Estate - Stage 49 (Level 1)	Report:	52
Location:	Mickleham		

Sample No	151	152	153			
Date Tested	17/02/2023	17/02/2023	17/02/2023			
Time Tested	PM	PM	PM			

Test Location	Refer to Plan	Refer to Plan	Refer to Plan			
Level/Layer	FSL	FSL	FSL			
Layer Thickness	mm 200	mm 200	mm 200			
Test Depth	mm 175	mm 175	mm 175			
Field Wet Density	t/m ³ 1.95	t/m ³ 2.00	t/m ³ 1.97			
Field Moisture Content	% 21.7	% 19.1	% 21.1			
Material:	Imported Clay	Imported Clay	Imported Clay			

Oversize Material	WET, %	4.1	6.3	4.9		
Sieve Size	mm	19	19	19		
Peak Converted Wet Density	t/m ³	1.99	2.05	2.01		
Optimum Moisture Content	%	22	19.5	22		

Moisture Ratio	%	98.5	98	96		
Moisture Variation from OMC	%	0.0	-0.5	-1.0		
Density Ratio	%	97.5	96.5	97.5		

Specification:	95% STD	Test Selection:	N/A
Notes:	Ref : 1120 0322-1 (SI52)		
Test Method	AS1289 5.8.1, 5.7.1, 2.1.1, 1.1	Sampling Method:	AS 1289 1.2.1 6.4(b)

 NATA <small>WORLD RECOGNISED ACCREDITATION</small>	NATA Accredited Laboratory No. 20172 Accreditation for compliance with ISO/IEC 17025 - Testing	Approved Signatory:	 David Burns Date: 22/02/2023
---	---	---------------------	--



LEGEND

- EXTENT OF EARTHWORKS
- STAGE BOUNDARY
- SECTION REFERENCE LINE
- PROPOSED EARTHWORKS CONTOURS (5m INTERVAL)
- EXISTING CONTOURS (0.3m INTERVAL)
- EXISTING EARTHWORKS AREA

NOTE

- EARTHWORKS CONSTRUCTION LEVEL TOLERANCE IS TO BE $\pm 30\text{mm} / \pm 50\text{mm}$ FROM THE DESIGN LEVELS.
- EXISTING CONTOURS ARE COMPOSED OF SURVEY AND STAGE 48 BULK EARTHWORKS DESIGN SURFACE.
- THIS EARTHWORKS DESIGN IS BASED ON VERSION 21M OF THE SUBDIVISION CONCEPT PLAN DATED 7 APRIL 2022 (VERS DRAWING 31A180A AZ20)

ALIGNMENT BOUNDARY

POINT	EASTING	NORTHING	URL	CHANGING	DESCRIPTION
EW-1	31408.527	584508.545	219.26	0.00	T.L. 10.13m
EW-2	31408.127	584525.516	218.20	10.00	INT
EW-3	31408.119	584535.484	217.58	10.18	T.C. R. 50m A.R. 25.50m
EW-4	31408.186	584535.488	217.82	20.12	T.C. R. 50m A.R. 25.50m
EW-5	31408.553	584534.270	215.82	20.87	CT L. 10.150m
EW-6	31408.385	584535.636	215.61	20.87	INT
EW-7	31408.655	584535.001	214.54	16.97	INT
EW-8	31408.901	584535.001	213.55	16.97	INT
EW-9	31408.505	584535.636	213.25	16.65	T.C. R. 50m A.R. 25.50m
EW-10	31408.537	584534.471	213.25	16.10	CT L. 10.150m
EW-11	31408.230	584535.484	212.08	20.81	T

T.B.M. NO.	EASTING (m)	NORTHING (m)	A.H.D. LEVEL (m)	DESCRIPTION	DATE OF SURVEY
39	31408.66	584545.02	216.10	STAR POINT	1/12/2021
40	31408.01	584534.15	215.26	STAR POINT	6/12/2021
41	31408.66	584535.01	215.22	STAR POINT	6/12/2021
42	31408.42	584535.08	213.18	STAR POINT	1/12/2021
43	31408.22	584535.24	213.18	STAR POINT	1/12/2021
44	31408.10	584535.02	213.10	STAR POINT	6/12/2021
45	31408.43	584535.12	213.11	STAR POINT	6/12/2021
46	31408.01	584535.21	213.54	STAR POINT	20/12/2021
47	31408.56	584535.13	213.97	STAR POINT	20/12/2021
48	31408.28	584535.41	213.96	STAR POINT	1/12/2021
49	31408.17	584535.15	213.23	STAR POINT	1/12/2021
50	31408.10	584535.10	213.64	STAR POINT	1/12/2021
51	31408.22	584535.12	213.52	STAR POINT	1/12/2021
52	31408.00	584535.21	213.53	STAR POINT	1/12/2021
53	31408.53	584535.15	213.16	STAR POINT	1/12/2021
54	31408.10	584535.10	213.64	STAR POINT	1/12/2021
55	31408.01	584545.41	213.91	STAR POINT	1/12/2021
56	31408.01	584541.30	213.25	STAR POINT	1/12/2021
57	31408.04	584535.10	213.08	STAR POINT	1/12/2021
58	31408.11	584535.55	211.95	STAR POINT	1/12/2021

NOTE: ALL TBM ARE PLACED NEAR EXISTING SURFACE LEVEL.

DESIGNED BY	T. MUSTAC	DATE	17.02.23
CHECKED BY	P. MASEMANN	DATE	02.03.23
APPROVED BY	G. ROMANICZ	DATE	



Ground Floor, 207-213 Waverley Road,
Melburn East VIC 3145
TEL: 03 8773 3300 www.verveprojects.com
© Verve Projects Pty Ltd.

HUME CITY COUNCIL

**MERRIFIELD LIVING - SECTION E
BULK EARTHWORKS - STAGE 49-53
MICKLEHAM**

LAYOUT PLAN

CONSTRUCTION

366 F1 | 17040-49 | EW201 | 1

Project : Merrifield Estate - Stage 49 (Level1)	Client : BMD Urban	Date : 17/02/2023
Location : Mickleham	Project No : 1120 0322-1 (SI52)	SITE PLAN SKETCH—NOT TO SCALE

