

Testing & Inspection Report

Merrifield Estate – Stage 37 & 38

Ref: 14874/P/621

Prepared for
BMD Urban Pty Ltd

27 February 2019

Contact Information

Construction Sciences Pty Ltd

ABN 74128806735

60-64 Vella Drive
Sunshine West, Victoria 3020 AustraliaTelephone: 03 9364 9301
Facsimile: +61 3 5444 4812
International: +61 3 9364 9301

melbourne@ConstructionSciences.com.au

www.ConstructionSciences.net

Document Information

Prepared for	BMD Urban Pty Ltd
Project Name	Merrifield Estate – Stage 37 & 38
File Reference	Testing & Inspection Report
Job Reference	14874/P/621
Date	27 February 2019

Document Control

Version	Date	Prepared By	Prepared (Initial)	Reviewed By	Reviewed (Initial)
1	29/01/2019	Mathew Grech	M.G	Robert Harris	R.H
2	27/02/2019	Mathew Grech	M.G	Robert Harris	R.H
3					

© Construction Sciences 2019. Copyright in the whole and every part of this document belongs to Construction Sciences and may not be used, sold, transferred, copied or reproduced in whole or in part in any manner or form or in or on any media to any person other than by agreement with Construction Sciences.

This document is produced by Construction Sciences solely for the benefit and use by the client in accordance with the terms of the engagement. Construction Sciences does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by any third party on the content of this document.

Table of Contents

1	INTRODUCTION	4
2	EARTHWORK SPECIFICATIONS	4
3	SITE INSPECTION & TESTING	5
3.1	Existing Surface Assessments	5
3.2	Fill Placement	5
3.3	Compaction Control Testing	5
4	GENERAL STATEMENT OF COMPLIANCE	8
5	LIMIT OF LIABILITY	8

Tables

Table 3-1	Summary of all Field Density Test Results	5
Table 3-2	Summary of passed Field Density Test Results	6
Table 3-3	Summary of Density Testing	6

Appendices

Appendix A.....	2 Pages
------------------------	----------------

Site Location Plan

- Site Plan - Stage 37
- Site Plan - Stage 38

Appendix B.....	29 Pages
------------------------	-----------------

Testing Results

- Hilf Density Locations
- Hilf Density Ratio (%)

1 INTRODUCTION

Construction Sciences was commissioned by BMD Urban Pty Ltd to provide inspection and testing services for the Merrifield Estate Development – Stage 37 and Stage 38 project located at Mickleham, Victoria.

This report represents the results of inspection activities, compaction control, and laboratory testing carried out for the placement of fill material for testing undertaken between the 16th and 19th of November 2018 for the Merrifield Estate Development – Stage 38 (As shown in the attached site location plan in Appendix A). No testing was required for Stage 37 as this area was cut to fill, all fill collected was sourced to Stage 38.

All works were carried out in accordance with:

- AS 1289 “*Methods of Testing Soils for Engineering Purposes*”.
- AS3798-2007 “*Guidelines on earthworks for commercial & residential developments*”

The material used as fill in the earthworks was sourced from the existing on site materials sourced from Stage 37 of the project.

A total of approximately 34,905m³ of compacted fill has been placed on stage 38 over the duration of the development. The fill volume has been determined from site supervision records and supported information provided by BMD.

2 EARTHWORK SPECIFICATIONS

The earthworks are to be carried out in general accordance with AS3798-2007 ‘*Guidelines on earthworks for commercial & residential developments*’.

The specification requirements were that fill materials are to be placed and compacted to a density ratio of not less than 95% standard compaction as determined by AS 1289 “*Methods of Testing Soils for Engineering Purposes*”.

3 SITE INSPECTION & TESTING

3.1 Existing Surface Assessments

Prior to commencement of filling, Construction Sciences confirmed that all unsuitable and weaker material such as top soil, silt, uncontrolled or loose soil, organic effected material and other wet areas had been appropriately stripped in accordance with AS 3798-2007. The exposed surface after removal of unsuitable material was compacted and checked for soft areas by proof rolling.

Where no movement or vertical deflection was detected, the stripped surface was assessed to be suitable for the placement of fill.

3.2 Fill Placement

All fill material on site was thoroughly inspected by Construction Sciences site representative to ensure it meets the “**suitable material**” requirements outlined in AS3798-2007.

The fill material typically comprised of:

- Gravelly Clay, Medium plasticity, Brown

Placement of fill was carried out using the following plant:

- 1* Excavator
- 1* Sheep-foot compactor.
- 1* Grader
- 1* Water Cart

The fill material was spread in near-horizontal layers and compacted in successive layers using a sheep-foot compactor. Material was tested at a maximum compacted thickness of 300mm

3.3 Compaction Control Testing

Compaction control tests were carried out at regular intervals throughout the placement of fill in accordance with the minimum test frequency recommendations included in AS3798-2007 ‘*Guidelines on Earthworks for commercial and residential developments*’.

The in-situ density tests were conducted using a nuclear density/moisture meter in accordance with AS 1289 5.8.1 “*Determination of field density and field moisture content of a soil a nuclear surface moisture-density gauge*”.

Disturbed samples taken from each density test site were tested at Construction Sciences’ NATA accredited soil laboratory, using the Hilf rapid compaction method, in accordance with AS 1289.5.7.1.

A total of eighty (80) field density tests were carried out throughout the earthworks as shown in the below tables. Of the eighty (80) tests undertaken, four (4) tests did not meet the requirement of a 95% standard compaction (highlighted in yellow). These seventy-six (76) tests equates to one test to approximately every 459.3m³ of fill.

Table 3-1 Summary of all Field Density Test Results

Test Numbers	Mean Density (%)	Standard Deviation (%)
80	99.1	2.920

Table 3-2 Summary of passed Field Density Test Results

Test Numbers	Mean Density (%)	Standard Deviation (%)
76	99.4	2.739

All density test results carried out in the engineered fill material are included in Appendix B. A summary of test results is presented in below in Table 3-2.

Table 3-3 Summary of Density Testing

No	Sample Number	Report Number	Date	Density Ratio (%)
1	14874/S/271258	14874/R/93835-1	16/11/2018	106.0
2	14874/S/271259	14874/R/93835-1	16/11/2018	97.5
3	14874/S/271260	14874/R/93835-1	16/11/2018	103.0
4	14874/S/271261	14874/R/93835-1	16/11/2018	102.5
5	14874/S/271262	14874/R/93835-1	16/11/2018	99.0
6	14874/S/271263	14874/R/93835-1	16/11/2018	98.0
7	14874/S/271264	14874/R/93835-1	16/11/2018	96.5
8	14874/S/271265	14874/R/93835-1	16/11/2018	98.5
9	14874/S/271266	14874/R/93835-1	16/11/2018	99.5
10	14874/S/271267	14874/R/93835-1	16/11/2018	98.5
11	14874/S/271268	14874/R/93835-1	16/11/2018	102.5
12	14874/S/271269	14874/R/93835-1	16/11/2018	101.0
13	14874/S/271270	14874/R/93835-1	16/11/2018	102.0
14	14874/S/271271	14874/R/93835-1	16/11/2018	97.5
15	14874/S/271272	14874/R/93835-1	16/11/2018	93.5
16	14874/S/271273	14874/R/93835-1	16/11/2018	96.0
17	14874/S/271274	14874/R/93835-1	16/11/2018	96.0
18	14874/S/271275	14874/R/93835-1	16/11/2018	95.5
19	14874/S/271276	14874/R/93835-1	16/11/2018	96.0
20	14874/S/271277	14874/R/93835-1	16/11/2018	96.0
21	14874/S/272538	14874/R/94614-2	19/11/2018	102.0
22	14874/S/272539	14874/R/94614-2	19/11/2018	102.0
23	14874/S/272540	14874/R/94614-2	19/11/2018	103.0
24	14874/S/272541	14874/R/94614-2	19/11/2018	102.5
25	14874/S/272542	14874/R/94614-2	19/11/2018	101.0
26	14874/S/272543	14874/R/94614-2	19/11/2018	99.5
27	14874/S/272544	14874/R/94614-2	19/11/2018	95.5
28	14874/S/272545	14874/R/94614-2	19/11/2018	96.0
29	14874/S/272546	14874/R/94614-2	19/11/2018	98.5
30	14874/S/272547	14874/R/94614-2	19/11/2018	97.5
31	14874/S/272548	14874/R/94614-2	19/11/2018	100.0
32	14874/S/272549	14874/R/94614-2	19/11/2018	101.0
33	14874/S/272550	14874/R/94614-2	19/11/2018	99.0
34	14874/S/272551	14874/R/94614-2	19/11/2018	98.5
35	14874/S/272552	14874/R/94614-2	19/11/2018	98.0

36	14874/S/272553	14874/R/94614-2	19/11/2018	97.5
37	14874/S/272554	14874/R/94614-2	19/11/2018	94.0
38	14874/S/272555	14874/R/94614-2	19/11/2018	94.0
39	14874/S/272556	14874/R/94614-2	19/11/2018	96.5
40	14874/S/272557	14874/R/94614-2	19/11/2018	97.0
41	14874/S/272558	14874/R/94614-2	19/11/2018	99.5
42	14874/S/272559	14874/R/94614-2	19/11/2018	101.0
43	14874/S/272560	14874/R/94614-2	19/11/2018	96.5
44	14874/S/272561	14874/R/94614-2	19/11/2018	96.0
45	14874/S/272562	14874/R/94614-2	19/11/2018	101.5
46	14874/S/272563	14874/R/94614-2	19/11/2018	101.5
47	14874/S/272564	14874/R/94614-2	19/11/2018	96.5
48	14874/S/272565	14874/R/94614-2	19/11/2018	97.0
49	14874/S/272566	14874/R/94614-2	19/11/2018	98.0
50	14874/S/272567	14874/R/94614-2	19/11/2018	98.5
51	14874/S/272568	14874/R/94614-2	19/11/2018	97.5
52	14874/S/272569	14874/R/94614-2	19/11/2018	102.5
53	14874/S/272570	14874/R/94614-2	19/11/2018	95.5
54	14874/S/272571	14874/R/94614-2	19/11/2018	100.5
55	14874/S/272572	14874/R/94614-2	19/11/2018	97.0
56	14874/S/272573	14874/R/94614-2	19/11/2018	101.5
57	14874/S/272574	14874/R/94614-2	19/11/2018	94.5
58	14874/S/272575	14874/R/94614-2	19/11/2018	103.5
59	14874/S/272576	14874/R/94614-2	19/11/2018	99.0
60	14874/S/272577	14874/R/94614-2	19/11/2018	99.0
61	14874/S/272578	14874/R/94614-2	19/11/2018	98.0
62	14874/S/272579	14874/R/94614-2	19/11/2018	103.0
63	14874/S/272580	14874/R/94614-2	19/11/2018	100.0
64	14874/S/272581	14874/R/94614-2	19/11/2018	98.0
65	14874/S/272582	14874/R/94614-2	19/11/2018	98.0
66	14874/S/272583	14874/R/94614-2	19/11/2018	96.5
67	14874/S/272584	14874/R/94614-2	19/11/2018	95.5
68	14874/S/272585	14874/R/94614-2	19/11/2018	99.5
69	14874/S/272586	14874/R/94614-2	19/11/2018	95.0
70	14874/S/272587	14874/R/94614-2	19/11/2018	96.0
71	14874/S/273462	14874/R/94714-1	19/11/2018	104.5
72	14874/S/273463	14874/R/94714-1	19/11/2018	104.0
73	14874/S/273464	14874/R/94714-1	19/11/2018	104.5
74	14874/S/273465	14874/R/94714-1	19/11/2018	103.5
75	14874/S/273466	14874/R/94714-1	19/11/2018	100.5
76	14874/S/273467	14874/R/94714-1	19/11/2018	102.5
77	14874/S/273468	14874/R/94714-1	19/11/2018	100.5
78	14874/S/273469	14874/R/94714-1	19/11/2018	103.0
79	14874/S/273470	14874/R/94714-1	19/11/2018	102.0
80	14874/S/273471	14874/R/94714-1	19/11/2018	101.0

Results	Mean Density (%)	Standard Deviation (%)	Lowest Result	Highest Result
80	99.1	2.920	93.5	106.0
Passed Results	Mean Density (%)	Standard Deviation (%)	Lowest Result	Highest Result
76	99.4	2.739	95.0	106.0

4 GENERAL STATEMENT OF COMPLIANCE

It is considered that the placement of fill material at the Merrifield Estate Development – Stage 38 was carried out in accordance with AS3798-2007 “*Guidelines on earthworks for commercial and residential developments*”. It is concluded that the fill was compacted to a density ratio not less than the specified requirement.

5 LIMIT OF LIABILITY

This report has been produced for, and is the property of our client BMD Urban Pty Ltd.

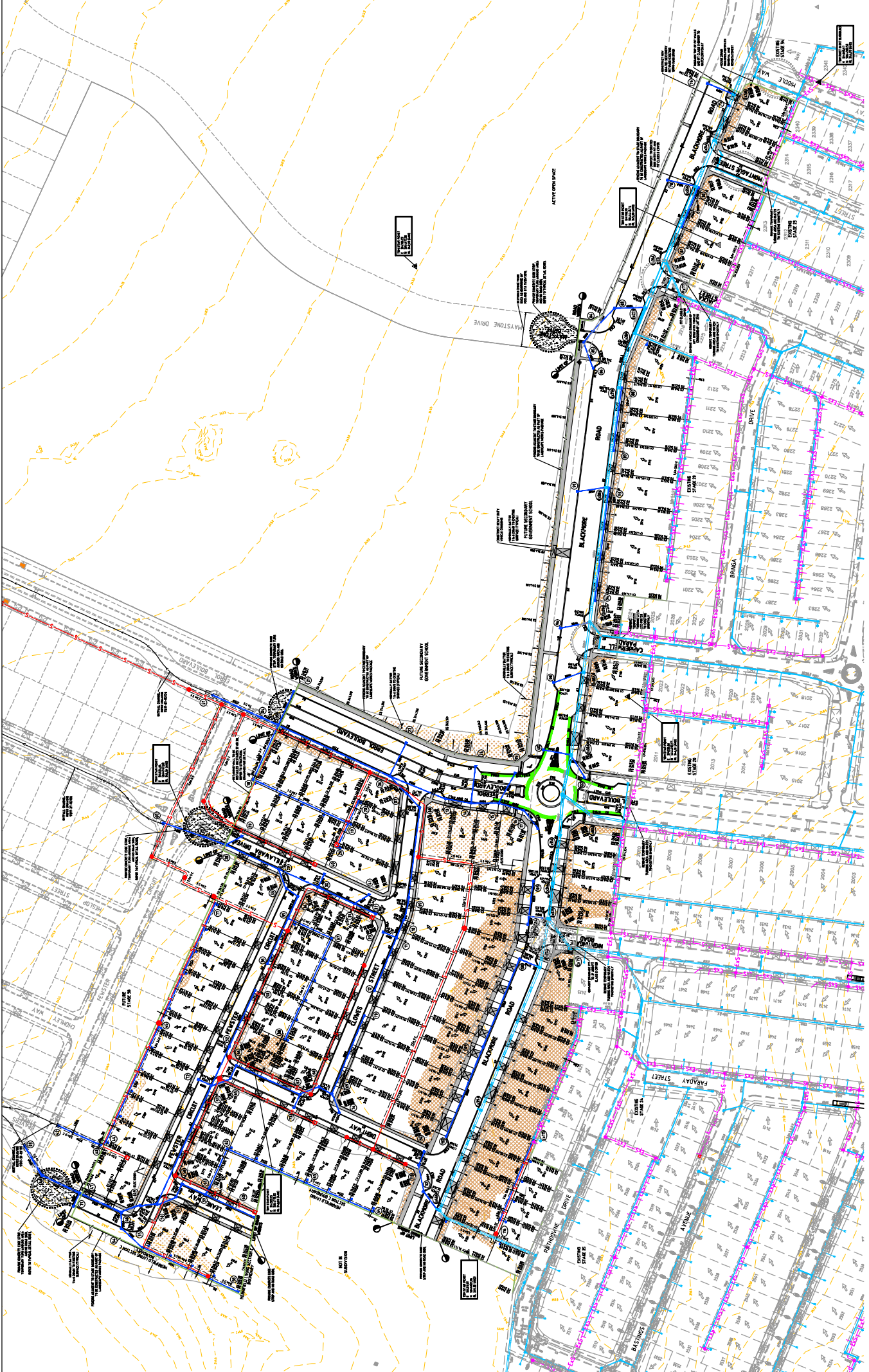
Construction Sciences accepts no liability to any third party, and will not enter into any communication with a third party regarding this report.

Appendix A

2 Pages

Site Location Plan

- Stage 37
- Stage 38

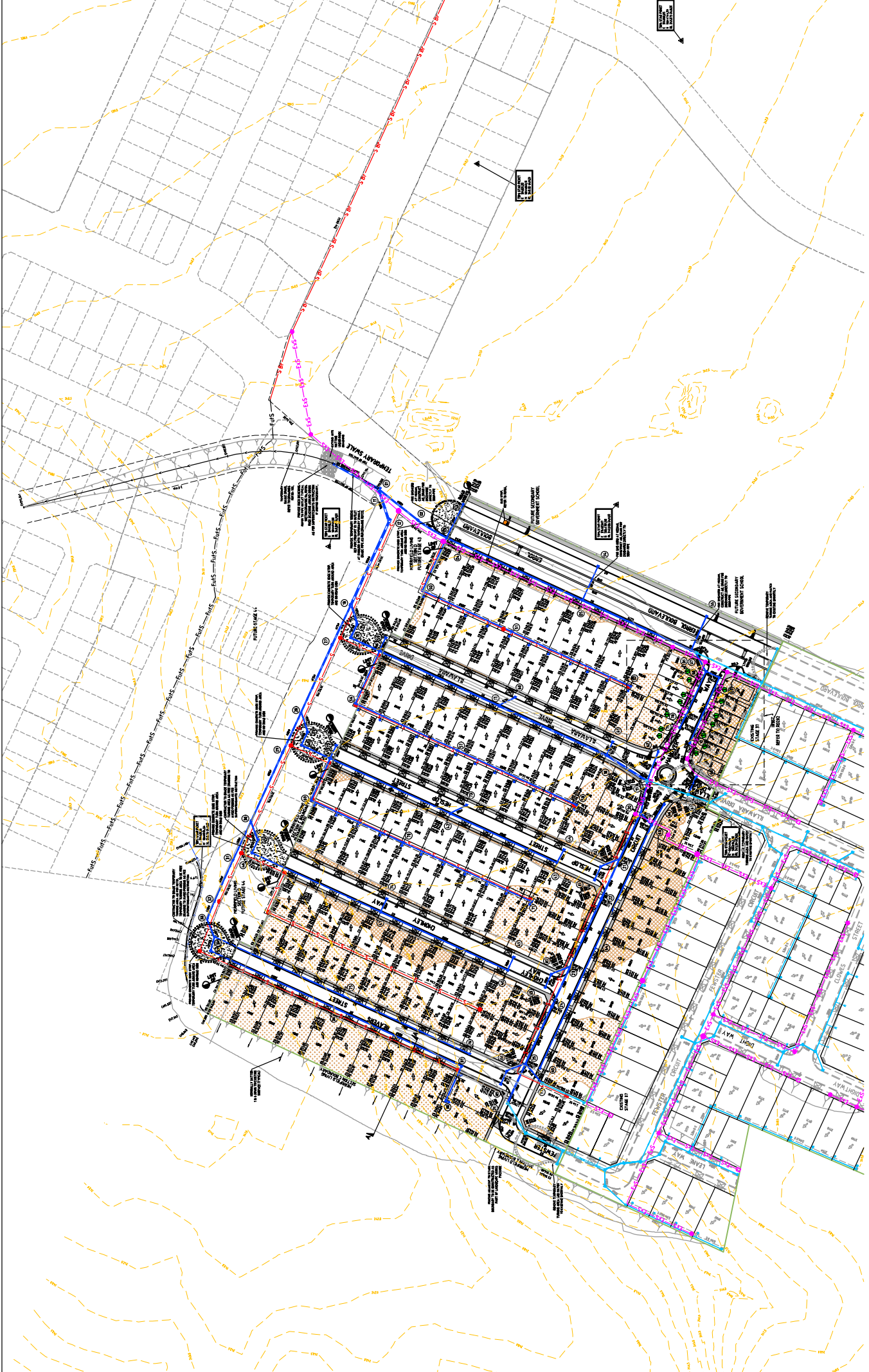


OVERALL LAYOUT PLAN
MERRIFIELD LIVING - SECTION C STAGE 37
MICKLEHAM

PROJECT: 10017-37
VERSION: A
DRAWN: DC
CHECKED: DC
SHEET NO: 1 OF 1
PLEASE NOTE: THIS PLAN SHOULD NOT BE USED AS
A TECHNICAL DRAWING OR FOR CONSTRUCTION
PURPOSES



H 1:1000 0 20 40 60 80
@ A1



OVERALL LAYOUT PLAN
MERRIFIELD LIVING - SECTION C STAGE 38
MICKLEHAM

PROJECT: 000738
VERSION: 000716
DRAWN: A
CHECKED: DC
SHEET NO: 1 OF 1
PLEASE NOTE: THIS PLAN SHOULD NOT BE USED AS
A TECHNICAL DRAWING OR FOR CONSTRUCTION
PURPOSES



H 1:1000 0 10 20 40 60 80
@ A1

Verve Projects Pty Ltd
Level 1 173 Burke Road
Glen Iris VIC 3146
T 03 8573 1500
verveprojects.com



Appendix B

29 Pages

HILF Density Testing

- **Hilf Density Locations**
- **Hilf Density Ratio (%)**

Site Location Sketch

MELBOURNE

Client: BMD Urban Pty Ltd

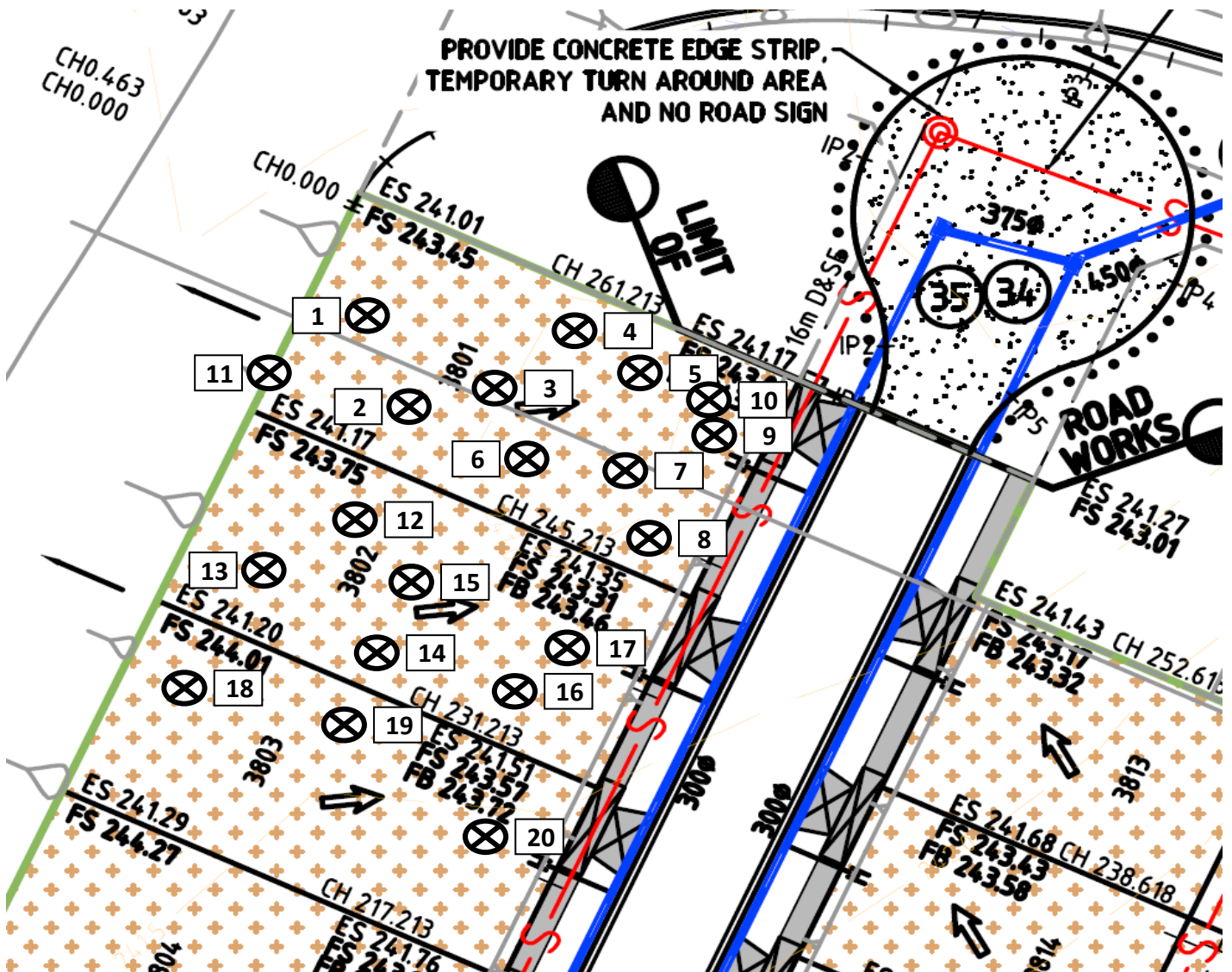
Job No. 14874/P/621

Test Request No. T/50219

Date Tested: 16/11/2018

Test site locations only
NOT TO SCALE

↑
North



LOT REPORT - WET DENSITY RATIO

Client:	BMD Urban Pty Ltd	Report Number:	14874/R/93835-1
Client Address:	PO BOX 1128, CAMBERWELL	Project Number:	14874/P/621
Project:	Merrifield Estate	Lot Number:	
Location:	Merrifield	Internal Test Request:	14874/T/50219
Supplied To:	n/a	Client Reference/s:	Stage 38 HILF Tests
Area Description:		Report Date / Page:	21/11/2018 Page 1 of 6

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
------------------	--

Sample Number	14874/S/271258	14874/S/271259	14874/S/271260	14874/S/271261
ID / Client ID	-	-	-	-
Lot Number	-	-	-	-
Date / Time Tested	16/11/2018 14:00	16/11/2018 14:00	16/11/2018 14:00	16/11/2018 14:00
Material Source	Onsite	Onsite	Onsite	Onsite
Material Type	Insitu	Insitu	Insitu	Insitu
Sampling Method	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b
Depths: Test / Nom / Actual (mm)	275 / 300 / 300	275 / 300 / 300	275 / 300 / 300	275 / 300 / 300
Standard or Modified	Standard	Standard	Standard	Standard
Layer Number	10	9	8	7
Location Number	1	2	3	4
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize (%)	0	0	0	0
Compaction Sample Number	14874/S/271258	14874/S/271259	14874/S/271260	14874/S/271261
Sample Description	insitu	Insitu	insitu	insitu
Moisture Test Results:				
Field Moisture Content (%)	19.8	18.1	18.1	13.4
Adjusted / Moisture Variation (%)	2.5	4.0	2.5	4.0
Optimum Moisture Content (%)	22.5	22.0	21.0	17.5
Moisture Variation from OMC	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)
Moisture Ratio (%)	89.0	82.0	87.0	76.5
Density Test Results:				
Field Wet Density (t/m ³)	2.01	1.97	1.93	1.92
Adj/Peak Conv Wet Density (t/m ³)	1.90	2.02	1.87	1.87
Density Ratio Required (%)	95	95	95	95
Hilf Density Ratio (%)	106.0	97.5	103.0	102.5

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.
Accredited for compliance with ISO/IEC 17025 - Testing

Accreditation Number: 1986
Corporate Site Number: 14874



Approved Signatory: Daniel Boyd
Form ID: W5ASRepSum Rev 4

LOT REPORT - WET DENSITY RATIO

Client:	BMD Urban Pty Ltd	Report Number:	14874/R/93835-1
Client Address:	PO BOX 1128, CAMBERWELL	Project Number:	14874/P/621
Project:	Merrifield Estate	Lot Number:	
Location:	Merrifield	Internal Test Request:	14874/T/50219
Supplied To:	n/a	Client Reference/s:	Stage 38 HILF Tests
Area Description:		Report Date / Page:	21/11/2018 Page 2 of 6

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
------------------	--

Sample Number	14874/S/271262	14874/S/271263	14874/S/271264	14874/S/271265
ID / Client ID	-	-	-	-
Lot Number	-	-	-	-
Date / Time Tested	16/11/2018 14:00	16/11/2018 14:00	16/11/2018 14:00	16/11/2018 14:00
Material Source	Onsite	Onsite	Onsite	Onsite
Material Type	Insitu	Insitu	Insitu	Insitu
Sampling Method	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b
Depths: Test / Nom / Actual (mm)	275 / 300 / 300	275 / 300 / 300	275 / 300 / 300	275 / 300 / 300
Standard or Modified	Standard	Standard	Standard	Standard
Layer Number	6	5	4	3
Location Number	5	6	7	8
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize (%)	11	0	0	0
Compaction Sample Number	14874/S/271262	14874/S/271263	14874/S/271264	14874/S/271265
Sample Description	Insitu	Insitu	Insitu	Insitu
Moisture Test Results:				
Field Moisture Content (%)	15.5	16.5	17.0	17.5
Adjusted / Moisture Variation (%)	2.0	2.5	2.0	2.5
Optimum Moisture Content (%)	18.0	19.0	19.0	20.5
Moisture Variation from OMC	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)
Moisture Ratio (%)	86.5	87.5	90.0	86.0
Density Test Results:				
Field Wet Density (t/m³)	1.91	1.92	1.99	1.92
Adj/Peak Conv Wet Density (t/m³)	1.93	1.96	2.06	1.95
Density Ratio Required (%)	95	95	95	95
Hilf Density Ratio (%)	99.0	98.0	96.5	98.5

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.
Accredited for compliance with ISO/IEC 17025 - Testing

Accreditation Number: 1986
Corporate Site Number: 14874



Approved Signatory: Daniel Boyd
Form ID: W5ASRepSum Rev 4

LOT REPORT - WET DENSITY RATIO

Client:	BMD Urban Pty Ltd	Report Number:	14874/R/93835-1
Client Address:	PO BOX 1128, CAMBERWELL	Project Number:	14874/P/621
Project:	Merrifield Estate	Lot Number:	
Location:	Merrifield	Internal Test Request:	14874/T/50219
Supplied To:	n/a	Client Reference/s:	Stage 38 HILF Tests
Area Description:		Report Date / Page:	21/11/2018 Page 3 of 6

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
------------------	--

Sample Number	14874/S/271266	14874/S/271267	14874/S/271268	14874/S/271269
ID / Client ID	-	-	-	-
Lot Number	-	-	-	-
Date / Time Tested	16/11/2018 14:00	16/11/2018 14:00	16/11/2018 14:00	16/11/2018 14:00
Material Source	Onsite	Onsite	Onsite	Onsite
Material Type	Insitu	Insitu	Insitu	Insitu
Sampling Method	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b
Depths: Test / Nom / Actual (mm)	275 / 300 / 300	275 / 300 / 300	275 / 300 / 300	275 / 300 / 300
Standard or Modified	Standard	Standard	Standard	Standard
Layer Number	2	1	10	9
Location Number	9	10	11	12
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize (%)	0	0	0	0
Compaction Sample Number	14874/S/271266	14874/S/271267	14874/S/271268	14874/S/271269
Sample Description	Insitu	Insitu	insitu	Insitu
Moisture Test Results:				
Field Moisture Content (%)	19.0	17.0	12.5	11.4
Adjusted / Moisture Variation (%)	2.5	2.5	2.5	4.5
Optimum Moisture Content (%)	21.5	19.5	15.0	16.0
Moisture Variation from OMC	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)
Moisture Ratio (%)	88.5	88.0	82.0	71.0
Density Test Results:				
Field Wet Density (t/m ³)	1.97	1.94	2.05	1.95
Adj/Peak Conv Wet Density (t/m ³)	1.98	1.98	2.00	1.94
Density Ratio Required (%)	95	95	95	95
Hilf Density Ratio (%)	99.5	98.5	102.5	101.0

Remarks

	The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025 - Testing		
	Accreditation Number:	1986	
	Corporate Site Number:	14874	
	Approved Signatory: Daniel Boyd		Form ID: W5ASRepSum Rev 4

LOT REPORT - WET DENSITY RATIO

Client:	BMD Urban Pty Ltd	Report Number:	14874/R/93835-1
Client Address:	PO BOX 1128, CAMBERWELL	Project Number:	14874/P/621
Project:	Merrifield Estate	Lot Number:	
Location:	Merrifield	Internal Test Request:	14874/T/50219
Supplied To:	n/a	Client Reference/s:	Stage 38 HILF Tests
Area Description:		Report Date / Page:	21/11/2018 Page 4 of 6

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
------------------	--

Sample Number	14874/S/271270	14874/S/271271	14874/S/271272	14874/S/271273
ID / Client ID	-	-	-	-
Lot Number	-	-	-	-
Date / Time Tested	16/11/2018 14:00	16/11/2018 14:00	16/11/2018 14:00	16/11/2018 14:00
Material Source	Onsite	Onsite	Onsite	Onsite
Material Type	Insitu	Insitu	Insitu	Insitu
Sampling Method	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b
Depths: Test / Nom / Actual (mm)	275 / 300 / 300	275 / 300 / 300	275 / 300 / 300	275 / 300 / 300
Standard or Modified	Standard	Standard	Standard	Standard
Layer Number	8	7	6	5
Location Number	13	14	15	16
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize (%)	0	0	0	0
Compaction Sample Number	14874/S/271270	14874/S/271271	14874/S/271272	14874/S/271273
Sample Description	insitu	Insitu	Insitu	insitu
Moisture Test Results:				
Field Moisture Content (%)	16.4	17.0	17.4	17.6
Adjusted / Moisture Variation (%)	5.0	2.5	2.0	2.0
Optimum Moisture Content (%)	21.5	19.5	19.5	19.5
Moisture Variation from OMC	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)
Moisture Ratio (%)	76.5	86.5	89.5	89.5
Density Test Results:				
Field Wet Density (t/m ³)	1.93	1.92	1.93	1.91
Adj/Peak Conv Wet Density (t/m ³)	1.89	1.97	2.07	1.99
Density Ratio Required (%)	95	95	95	95
Hilf Density Ratio (%)	102.0	97.5	93.5	96.0

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.
Accredited for compliance with ISO/IEC 17025 - Testing

Accreditation Number: 1986
Corporate Site Number: 14874



Approved Signatory: Daniel Boyd
Form ID: W5ASRepSum Rev 4

LOT REPORT - WET DENSITY RATIO

Client:	BMD Urban Pty Ltd	Report Number:	14874/R/93835-1
Client Address:	PO BOX 1128, CAMBERWELL	Project Number:	14874/P/621
Project:	Merrifield Estate	Lot Number:	
Location:	Merrifield	Internal Test Request:	14874/T/50219
Supplied To:	n/a	Client Reference/s:	Stage 38 HILF Tests
Area Description:		Report Date / Page:	21/11/2018 Page 5 of 6

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
------------------	--

Sample Number	14874/S/271274	14874/S/271275	14874/S/271276	14874/S/271277
ID / Client ID	-	-	-	-
Lot Number	-	-	-	-
Date / Time Tested	16/11/2018 14:00	16/11/2018 14:00	16/11/2018 14:00	16/11/2018 14:00
Material Source	Onsite	Onsite	Onsite	Onsite
Material Type	Insitu	Insitu	Insitu	Insitu
Sampling Method	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b
Depths: Test / Nom / Actual (mm)	275 / 300 / 300	275 / 300 / 300	275 / 300 / 300	275 / 300 / 300
Standard or Modified	Standard	Standard	Standard	Standard
Layer Number	4	3	2	1
Location Number	17	18	19	20
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize (%)	0	0	0	0
Compaction Sample Number	14874/S/271274	14874/S/271275	14874/S/271276	14874/S/271277
Sample Description	Insitu	Insitu	Insitu	Insitu
Moisture Test Results:				
Field Moisture Content (%)	13.8	15.6	20.0	20.9
Adjusted / Moisture Variation (%)	3.0	2.5	3.0	2.0
Optimum Moisture Content (%)	16.5	18.0	23.0	23.0
Moisture Variation from OMC	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)
Moisture Ratio (%)	83.0	86.0	87.0	90.5
Density Test Results:				
Field Wet Density (t/m³)	1.91	1.93	1.90	1.93
Adj/Peak Conv Wet Density (t/m³)	1.99	2.02	1.99	2.00
Density Ratio Required (%)	95	95	95	95
Hilf Density Ratio (%)	96.0	95.5	96.0	96.0

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.
Accredited for compliance with ISO/IEC 17025 - Testing

Accreditation Number: 1986
Corporate Site Number: 14874



Approved Signatory: Daniel Boyd
Form ID: W5ASRepSum Rev 4

LOT REPORT - WET DENSITY RATIO

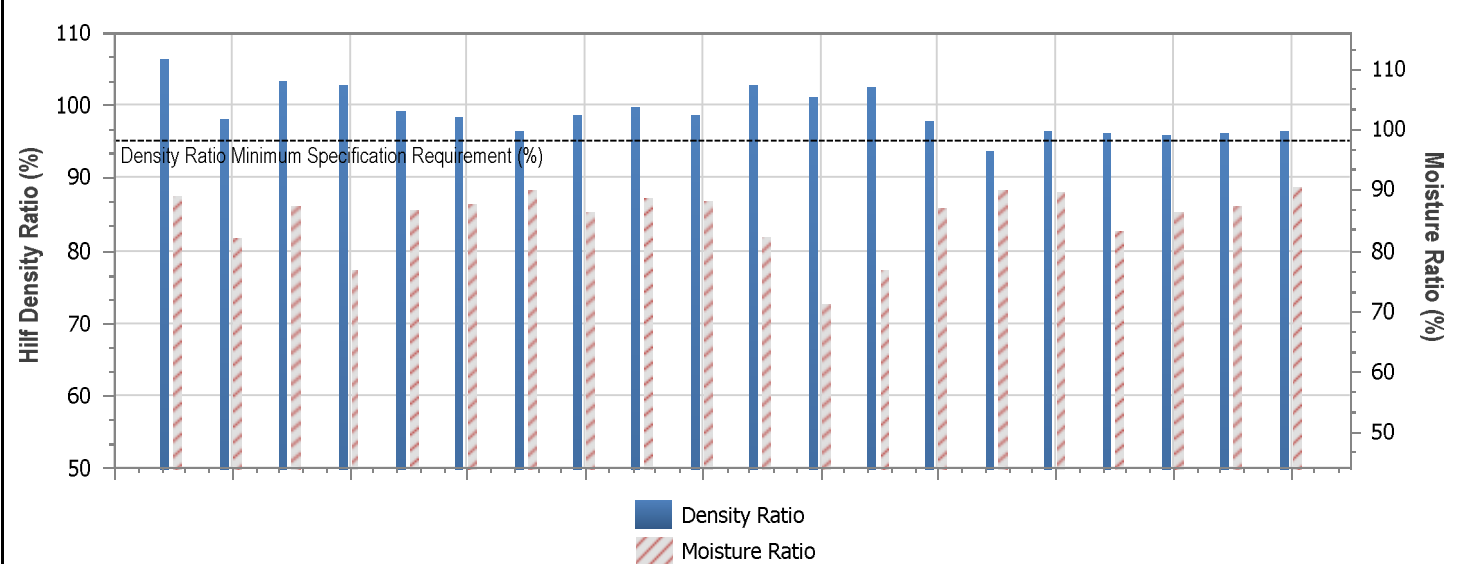
Client:	BMD Urban Pty Ltd	Report Number:	14874/R/93835-1
Client Address:	PO BOX 1128, CAMBERWELL	Project Number:	14874/P/621
Project:	Merrifield Estate	Lot Number:	
Location:	Merrifield	Internal Test Request:	14874/T/50219
Supplied To:	n/a	Client Reference/s:	Stage 38 HILF Tests
Area Description:		Report Date / Page:	21/11/2018 Page 6 of 6

Test Procedures:	
Statistical Analysis Test Method:	Lot Average (Lot average calculations are not covered by endorsement)

Nuclear Gauge Calibration Details

Calibration Number	-	Material Source	-
Calibration Last Updated	-	Material Type	-
Nominated Calibration Layer Depth (mm)	-		-

LOT TEST RESULT SUMMARY



Tests in Lot = 20	Lot Minimum	Lot Maximum	Lot Mean	Standard Deviation
Moisture Ratio (%)	70.8	90.5	85.1	5.209
Hilf Density Ratio (%)	93.4	106.2	98.8	3.221

Lot Number: -
Mean Density Ratio (%): 98.8
Mean Moisture Ratio (%): 85.1

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.
Accredited for compliance with ISO/IEC 17025 - Testing

Accreditation Number: 1986
Corporate Site Number: 14874



Approved Signatory: Daniel Boyd
Form ID: W5ASRepSum Rev 4

MELBOURNE

Site Location Sketch

Client: BMD Urban Pty Ltd

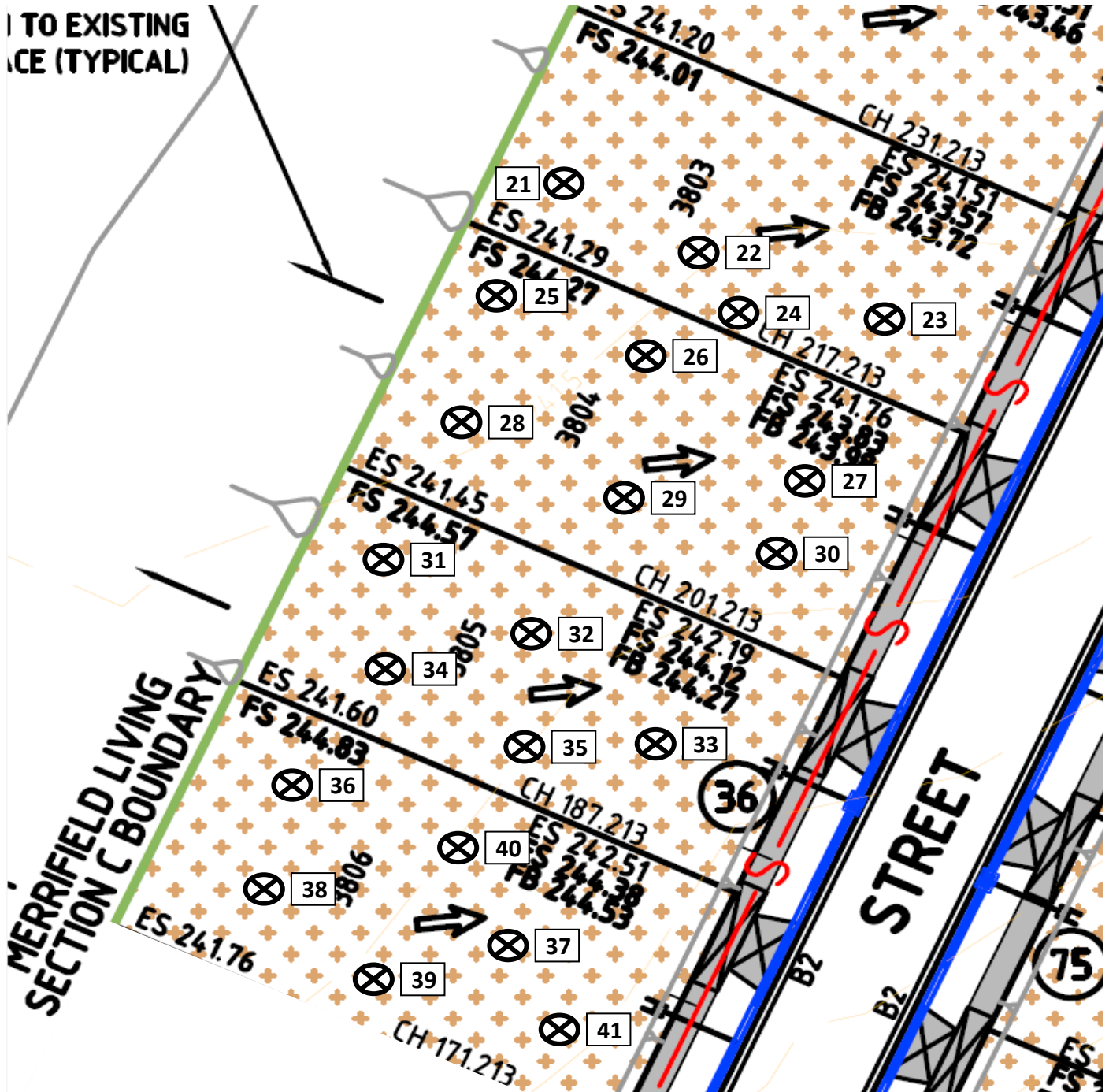
Job No. 14874/P/621

Test Request No. T/50367

Date Tested: 19/11/2018

Test site locations only
NOT TO SCALE

↑
North



Site Location Sketch

MELBOURNE

Client: BMD Urban Pty Ltd

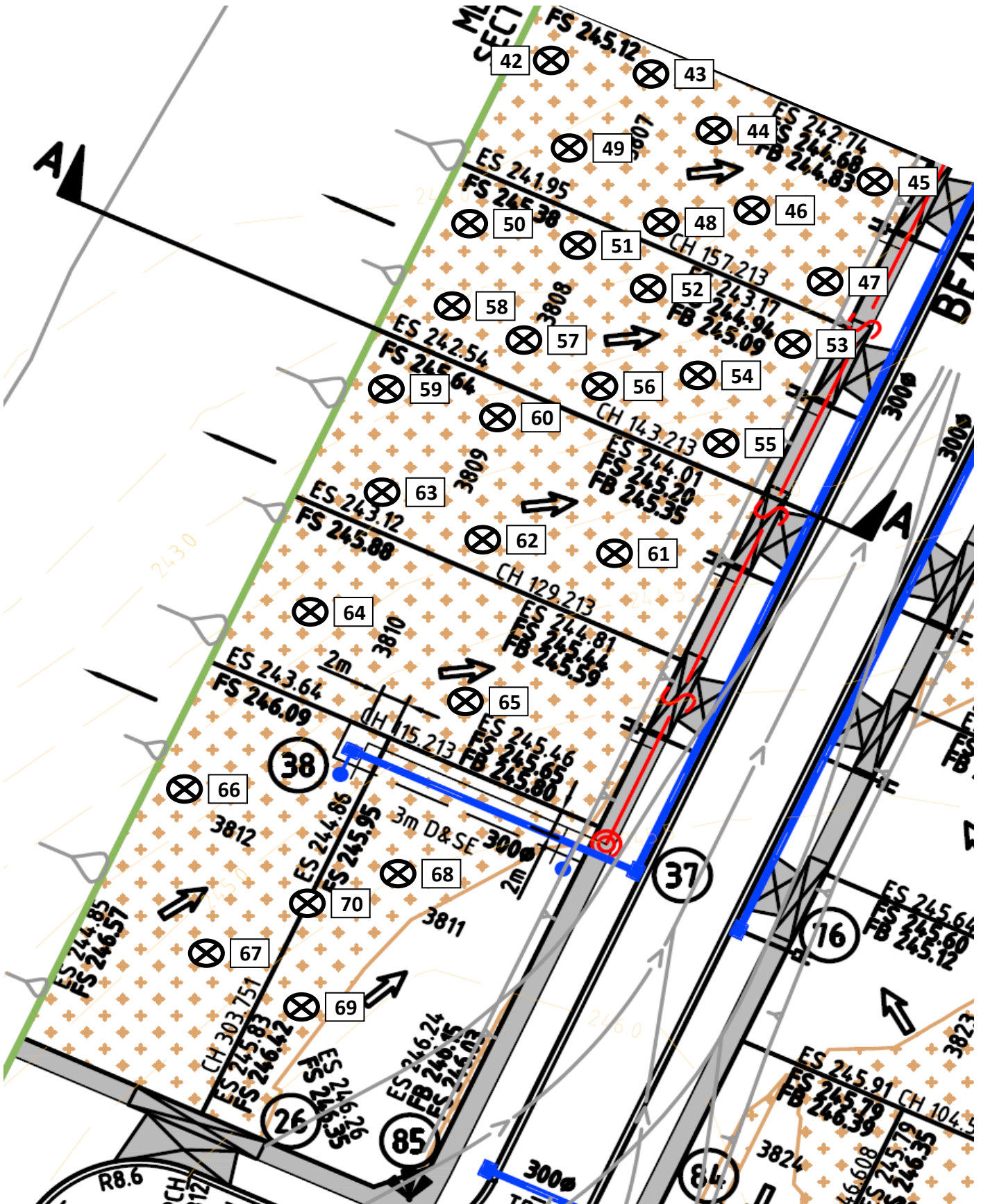
Job No. 14874/P/621

Test Request No. T/50367

Date Tested: 19/11/2018

Test site locations only
NOT TO SCALE

↑
North



LOT REPORT - WET DENSITY RATIO

Client:	BMD Urban Pty Ltd	Report Number:	14874/R/94614-2
Client Address:	PO BOX 1128, CAMBERWELL	Project Number:	14874/P/621
Project:	Merrifield Estate - Stage 38	Lot Number:	Stage 38
Location:	Merrifield	Internal Test Request:	14874/T/50367
Supplied To:	n/a	Client Reference/s:	Stage 38 HILF Tests (21 - 70)
Area Description:		Report Date / Page:	30/01/2019 Page 1 of 14

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
------------------	--

Sample Number	14874/S/272538	14874/S/272539	14874/S/272540	14874/S/272541
ID / Client ID	Refer to Map	Refer to Map	Refer to Map	Refer to Map
Lot Number	Stage 38	Stage 38	Stage 38	Stage 38
Date / Time Tested	19/11/2018 09:30	19/11/2018 09:30	19/11/2018 09:30	19/11/2018 09:30
Material Source	Onsite	Onsite	Onsite	Onsite
Material Type	Insitu	Insitu	Insitu	Insitu
Sampling Method	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b
Depths: Test / Nom / Actual (mm)	275 / 300 / 300	275 / 300 / 300	275 / 300 / 300	275 / 300 / 300
Standard or Modified	Standard	Standard	Standard	Standard
Layer Number	10	9	8	7
Location Number	21	22	23	24
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize (%)	0	0	0	0
Compaction Sample Number	14874/S/272538	14874/S/272539	14874/S/272540	14874/S/272541
Sample Description	Insitu	insitu	Insitu	Insitu
Moisture Test Results:				
Field Moisture Content (%)	15.1	18.7	19.2	16.3
Adjusted / Moisture Variation (%)	4.5	4.5	4.5	7.0
Optimum Moisture Content (%)	20.0	23.5	24.0	23.5
Moisture Variation from OMC	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)
Moisture Ratio (%)	76.0	80.0	80.5	69.5
Density Test Results:				
Field Wet Density (t/m ³)	1.98	1.96	1.91	1.90
Adj/Peak Conv Wet Density (t/m ³)	1.94	1.92	1.85	1.86
Density Ratio Required (%)	95	95	95	95
Hilf Density Ratio (%)	102.0	102.0	103.0	102.5

Remarks	Re-Issued Report Replaces Report No 14874/R/94614-1.
---------	--

	The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025 - Testing		
	Accreditation Number:	1986	
	Corporate Site Number:	14874	
	Approved Signatory: Daniel Boyd		Form ID: W5ASRepSum Rev 4

LOT REPORT - WET DENSITY RATIO

Client:	BMD Urban Pty Ltd	Report Number:	14874/R/94614-2
Client Address:	PO BOX 1128, CAMBERWELL	Project Number:	14874/P/621
Project:	Merrifield Estate - Stage 38	Lot Number:	Stage 38
Location:	Merrifield	Internal Test Request:	14874/T/50367
Supplied To:	n/a	Client Reference/s:	Stage 38 HILF Tests (21 - 70)
Area Description:		Report Date / Page:	30/01/2019 Page 2 of 14

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
------------------	--

Sample Number	14874/S/272542	14874/S/272543	14874/S/272544	14874/S/272545
ID / Client ID	Refer to Map	Refer to Map	Refer to Map	Refer to Map
Lot Number	Stage 38	Stage 38	Stage 38	Stage 38
Date / Time Tested	19/11/2018 09:30	19/11/2018 09:30	19/11/2018 09:30	19/11/2018 09:30
Material Source	Onsite	Onsite	Onsite	Onsite
Material Type	Insitu	Insitu	Insitu	Insitu
Sampling Method	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b
Depths: Test / Nom / Actual (mm)	275 / 300 / 300	275 / 300 / 300	275 / 300 / 300	275 / 300 / 300
Standard or Modified	Standard	Standard	Standard	Standard
Layer Number	6	5	4	3
Location Number	25	26	27	28
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize (%)	0	0	0	0
Compaction Sample Number	14874/S/272542	14874/S/272543	14874/S/272544	14874/S/272545
Sample Description	Insitu	Insitu	Insitu	Insitu
Moisture Test Results:				
Field Moisture Content (%)	18.9	17.5	11.2	14.1
Adjusted / Moisture Variation (%)	2.5	2.5	3.0	3.0
Optimum Moisture Content (%)	21.5	20.0	14.5	17.5
Moisture Variation from OMC	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)
Moisture Ratio (%)	87.5	86.5	78.0	81.0
Density Test Results:				
Field Wet Density (t/m ³)	2.01	1.96	1.93	1.94
Adj/Peak Conv Wet Density (t/m ³)	1.99	1.96	2.02	2.02
Density Ratio Required (%)	95	95	95	95
Hilf Density Ratio (%)	101.0	99.5	95.5	96.0

Remarks	Re-Issued Report Replaces Report No 14874/R/94614-1.
---------	--

	The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025 - Testing		
	Accreditation Number:	1986	
	Corporate Site Number:	14874	
	Approved Signatory: Daniel Boyd		Form ID: W5ASRepSum Rev 4

LOT REPORT - WET DENSITY RATIO

Client:	BMD Urban Pty Ltd	Report Number:	14874/R/94614-2
Client Address:	PO BOX 1128, CAMBERWELL	Project Number:	14874/P/621
Project:	Merrifield Estate - Stage 38	Lot Number:	Stage 38
Location:	Merrifield	Internal Test Request:	14874/T/50367
Supplied To:	n/a	Client Reference/s:	Stage 38 HILF Tests (21 - 70)
Area Description:		Report Date / Page:	30/01/2019 Page 3 of 14

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
------------------	--

Sample Number	14874/S/272546	14874/S/272547	14874/S/272548	14874/S/272549
ID / Client ID	Refer to Map	Refer to Map	Refer to Map	Refer to Map
Lot Number	Stage 38	Stage 38	Stage 38	Stage 38
Date / Time Tested	19/11/2018 09:30	19/11/2018 09:30	19/11/2018 09:30	19/11/2018 09:30
Material Source	Onsite	Onsite	Onsite	Onsite
Material Type	Insitu	Insitu	Insitu	Insitu
Sampling Method	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b
Depths: Test / Nom / Actual (mm)	275 / 300 / 300	275 / 300 / 300	275 / 300 / 300	275 / 300 / 300
Standard or Modified	Standard	Standard	Standard	Standard
Layer Number	2	1	10	9
Location Number	29	30	31	32
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize (%)	0	0	0	0
Compaction Sample Number	14874/S/272546	14874/S/272547	14874/S/272548	14874/S/272549
Sample Description	insitu	insitu	Insitu	Insitu
Moisture Test Results:				
Field Moisture Content (%)	16.3	15.5	14.4	16.7
Adjusted / Moisture Variation (%)	4.0	2.5	5.0	4.5
Optimum Moisture Content (%)	20.5	18.0	19.5	21.5
Moisture Variation from OMC	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)
Moisture Ratio (%)	80.5	86.5	74.0	77.5
Density Test Results:				
Field Wet Density (t/m ³)	1.92	1.93	1.93	1.94
Adj/Peak Conv Wet Density (t/m ³)	1.95	1.98	1.93	1.92
Density Ratio Required (%)	95	95	95	95
Hilf Density Ratio (%)	98.5	97.5	100.0	101.0

Remarks	Re-Issued Report Replaces Report No 14874/R/94614-1.
---------	--

	The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025 - Testing		
	Accreditation Number:	1986	
	Corporate Site Number:	14874	
	Approved Signatory: Daniel Boyd		Form ID: W5ASRepSum Rev 4

LOT REPORT - WET DENSITY RATIO

Client:	BMD Urban Pty Ltd	Report Number:	14874/R/94614-2
Client Address:	PO BOX 1128, CAMBERWELL	Project Number:	14874/P/621
Project:	Merrifield Estate - Stage 38	Lot Number:	Stage 38
Location:	Merrifield	Internal Test Request:	14874/T/50367
Supplied To:	n/a	Client Reference/s:	Stage 38 HILF Tests (21 - 70)
Area Description:		Report Date / Page:	30/01/2019 Page 4 of 14

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
------------------	--

Sample Number	14874/S/272550	14874/S/272551	14874/S/272552	14874/S/272553
ID / Client ID	Refer to Map	Refer to Map	Refer to Map	Refer to Map
Lot Number	Stage 38	Stage 38	Stage 38	Stage 38
Date / Time Tested	19/11/2018 09:30	19/11/2018 09:30	19/11/2018 09:30	19/11/2018 09:30
Material Source	Onsite	Onsite	Onsite	Onsite
Material Type	Insitu	Insitu	Insitu	Insitu
Sampling Method	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b
Depths: Test / Nom / Actual (mm)	275 / 300 / 300	275 / 300 / 300	275 / 300 / 300	275 / 300 / 300
Standard or Modified	Standard	Standard	Standard	Standard
Layer Number	8	7	6	5
Location Number	33	34	35	36
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize (%)	0	0	0	0
Compaction Sample Number	14874/S/272550	14874/S/272551	14874/S/272552	14874/S/272553
Sample Description	Insitu	Insitu	INSITU	Insitu
Moisture Test Results:				
Field Moisture Content (%)	19.2	19.0	14.6	14.9
Adjusted / Moisture Variation (%)	2.5	3.0	2.5	2.5
Optimum Moisture Content (%)	22.0	22.0	17.5	17.5
Moisture Variation from OMC	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)
Moisture Ratio (%)	87.5	87.0	84.0	85.0
Density Test Results:				
Field Wet Density (t/m ³)	1.91	1.91	1.95	1.93
Adj/Peak Conv Wet Density (t/m ³)	1.94	1.93	1.99	1.98
Density Ratio Required (%)	95	95	95	95
Hilf Density Ratio (%)	99.0	98.5	98.0	97.5

Remarks	Re-Issued Report Replaces Report No 14874/R/94614-1.
---------	--

	The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025 - Testing		
	Accreditation Number:	1986	
	Corporate Site Number:	14874	
	Approved Signatory: Daniel Boyd		Form ID: W5ASRepSum Rev 4

LOT REPORT - WET DENSITY RATIO

Client:	BMD Urban Pty Ltd	Report Number:	14874/R/94614-2
Client Address:	PO BOX 1128, CAMBERWELL	Project Number:	14874/P/621
Project:	Merrifield Estate - Stage 38	Lot Number:	Stage 38
Location:	Merrifield	Internal Test Request:	14874/T/50367
Supplied To:	n/a	Client Reference/s:	Stage 38 HILF Tests (21 - 70)
Area Description:		Report Date / Page:	30/01/2019 Page 5 of 14

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
------------------	--

Sample Number	14874/S/272554	14874/S/272555	14874/S/272556	14874/S/272557
ID / Client ID	Refer to Map	Refer to Map	Refer to Map	Refer to Map
Lot Number	Stage 38	Stage 38	Stage 38	Stage 38
Date / Time Tested	19/11/2018 09:30	19/11/2018 09:30	19/11/2018 09:30	19/11/2018 09:30
Material Source	Onsite	Onsite	Onsite	Onsite
Material Type	Insitu	Insitu	Insitu	Insitu
Sampling Method	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b
Depths: Test / Nom / Actual (mm)	275 / 300 / 300	275 / 300 / 300	275 / 300 / 300	275 / 300 / 300
Standard or Modified	Standard	Standard	Standard	Standard
Layer Number	4	3	2	1
Location Number	37	38	39	40
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize (%)	0	0	0	0
Compaction Sample Number	14874/S/272554	14874/S/272555	14874/S/272556	14874/S/272557
Sample Description	Insitu	Insitu	Insitu	insitu
Moisture Test Results:				
Field Moisture Content (%)	15.1	16.6	18.0	14.3
Adjusted / Moisture Variation (%)	2.5	2.5	2.5	0.0
Optimum Moisture Content (%)	17.5	19.5	21.0	14.5
Moisture Variation from OMC	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)
Moisture Ratio (%)	87.0	86.0	86.5	99.5
Density Test Results:				
Field Wet Density (t/m³)	1.91	1.91	1.91	1.90
Adj/Peak Conv Wet Density (t/m³)	2.03	2.03	1.99	1.96
Density Ratio Required (%)	95	95	95	95
Hilf Density Ratio (%)	94.0	94.0	96.5	97.0

Remarks	Re-Issued Report Replaces Report No 14874/R/94614-1.
---------	--

	The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025 - Testing		
	Accreditation Number:	1986	
	Corporate Site Number:	14874	
	Approved Signatory: Daniel Boyd		Form ID: W5ASRepSum Rev 4

LOT REPORT - WET DENSITY RATIO

Client:	BMD Urban Pty Ltd	Report Number:	14874/R/94614-2
Client Address:	PO BOX 1128, CAMBERWELL	Project Number:	14874/P/621
Project:	Merrifield Estate - Stage 38	Lot Number:	Stage 38
Location:	Merrifield	Internal Test Request:	14874/T/50367
Supplied To:	n/a	Client Reference/s:	Stage 38 HILF Tests (21 - 70)
Area Description:		Report Date / Page:	30/01/2019 Page 6 of 14

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
------------------	--

Sample Number	14874/S/272558	14874/S/272559	14874/S/272560	14874/S/272561
ID / Client ID	Refer to Map	Refer to Map	Refer to Map	Refer to Map
Lot Number	Stage 38	Stage 38	Stage 38	Stage 38
Date / Time Tested	19/11/2018 09:30	19/11/2018 09:30	19/11/2018 09:30	19/11/2018 09:30
Material Source	Onsite	Onsite	Onsite	Onsite
Material Type	Insitu	Insitu	Insitu	Insitu
Sampling Method	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b
Depths: Test / Nom / Actual (mm)	275 / 300 / 300	275 / 300 / 300	275 / 300 / 300	275 / 300 / 300
Standard or Modified	Standard	Standard	Standard	Standard
Layer Number	10	9	8	7
Location Number	41	42	43	44
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize (%)	0	0	0	0
Compaction Sample Number	14874/S/272558	14874/S/272559	14874/S/272560	14874/S/272561
Sample Description	Insitu	Insitu	Insitu	Insitu
Moisture Test Results:				
Field Moisture Content (%)	13.7	14.8	17.1	16.9
Adjusted / Moisture Variation (%)	3.0	3.0	0.5	2.0
Optimum Moisture Content (%)	16.5	18.0	18.0	19.0
Moisture Variation from OMC	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)
Moisture Ratio (%)	83.0	82.5	96.0	89.0
Density Test Results:				
Field Wet Density (t/m ³)	2.04	2.01	1.98	1.96
Adj/Peak Conv Wet Density (t/m ³)	2.05	1.99	2.05	2.04
Density Ratio Required (%)	95	95	95	95
Hilf Density Ratio (%)	99.5	101.0	96.5	96.0

Remarks	Re-Issued Report Replaces Report No 14874/R/94614-1.
---------	--

	The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025 - Testing		
	Accreditation Number:	1986	
	Corporate Site Number:	14874	
	Approved Signatory: Daniel Boyd		Form ID: W5ASRepSum Rev 4

LOT REPORT - WET DENSITY RATIO

Client:	BMD Urban Pty Ltd	Report Number:	14874/R/94614-2
Client Address:	PO BOX 1128, CAMBERWELL	Project Number:	14874/P/621
Project:	Merrifield Estate - Stage 38	Lot Number:	Stage 38
Location:	Merrifield	Internal Test Request:	14874/T/50367
Supplied To:	n/a	Client Reference/s:	Stage 38 HILF Tests (21 - 70)
Area Description:		Report Date / Page:	30/01/2019 Page 7 of 14

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
------------------	--

Sample Number	14874/S/272562	14874/S/272563	14874/S/272564	14874/S/272565
ID / Client ID	Refer to Map	Refer to Map	Refer to Map	Refer to Map
Lot Number	Stage 38	Stage 38	Stage 38	Stage 38
Date / Time Tested	19/11/2018 09:30	19/11/2018 09:30	19/11/2018 09:30	19/11/2018 09:30
Material Source	Onsite	Onsite	Onsite	Onsite
Material Type	Insitu	Insitu	Insitu	Insitu
Sampling Method	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b
Depths: Test / Nom / Actual (mm)	275 / 300 / 300	275 / 300 / 300	275 / 300 / 300	275 / 300 / 300
Standard or Modified	Standard	Standard	Standard	Standard
Layer Number	6	5	4	3
Location Number	45	46	47	48
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize (%)	0	0	0	0
Compaction Sample Number	14874/S/272562	14874/S/272563	14874/S/272564	14874/S/272565
Sample Description	Insitu	Insitu	Insitu	Insitu
Moisture Test Results:				
Field Moisture Content (%)	17.8	21.0	15.0	21.8
Adjusted / Moisture Variation (%)	2.0	1.5	3.0	3.0
Optimum Moisture Content (%)	20.0	22.5	18.0	25.0
Moisture Variation from OMC	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)
Moisture Ratio (%)	89.5	93.0	83.5	87.0
Density Test Results:				
Field Wet Density (t/m³)	2.00	2.02	1.93	1.91
Adj/Peak Conv Wet Density (t/m³)	1.97	1.99	1.99	1.97
Density Ratio Required (%)	95	95	95	95
Hilf Density Ratio (%)	101.5	101.5	96.5	97.0

Remarks	Re-Issued Report Replaces Report No 14874/R/94614-1.
---------	--

	The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025 - Testing		
	Accreditation Number:	1986	
	Corporate Site Number:	14874	
	Approved Signatory: Daniel Boyd		Form ID: W5ASRepSum Rev 4

LOT REPORT - WET DENSITY RATIO

Client:	BMD Urban Pty Ltd	Report Number:	14874/R/94614-2
Client Address:	PO BOX 1128, CAMBERWELL	Project Number:	14874/P/621
Project:	Merrifield Estate - Stage 38	Lot Number:	Stage 38
Location:	Merrifield	Internal Test Request:	14874/T/50367
Supplied To:	n/a	Client Reference/s:	Stage 38 HILF Tests (21 - 70)
Area Description:		Report Date / Page:	30/01/2019 Page 8 of 14

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
------------------	--

Sample Number	14874/S/272566	14874/S/272567	14874/S/272568	14874/S/272569
ID / Client ID	Refer to Map	Refer to Map	Refer to Map	Refer to Map
Lot Number	Stage 38	Stage 38	Stage 38	Stage 38
Date / Time Tested	19/11/2018 09:30	19/11/2018 09:30	19/11/2018 09:30	19/11/2018 09:30
Material Source	Onsite	Onsite	Onsite	Onsite
Material Type	Insitu	Insitu	Insitu	Insitu
Sampling Method	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b
Depths: Test / Nom / Actual (mm)	275 / 300 / 300	275 / 300 / 300	275 / 300 / 300	275 / 300 / 300
Standard or Modified	Standard	Standard	Standard	Standard
Layer Number	2	1	10	9
Location Number	49	50	51	52
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize (%)	0	0	0	0
Compaction Sample Number	14874/S/272566	14874/S/272567	14874/S/272568	14874/S/272569
Sample Description	Insitu	Insitu	Insitu	insitu
Moisture Test Results:				
Field Moisture Content (%)	17.0	15.9	17.2	21.8
Adjusted / Moisture Variation (%)	2.5	3.0	2.5	0.5
Optimum Moisture Content (%)	19.5	19.0	20.0	22.0
Moisture Variation from OMC	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)
Moisture Ratio (%)	86.5	83.5	87.0	98.0
Density Test Results:				
Field Wet Density (t/m ³)	1.92	1.92	1.95	2.01
Adj/Peak Conv Wet Density (t/m ³)	1.96	1.95	2.00	1.96
Density Ratio Required (%)	95	95	95	95
Hilf Density Ratio (%)	98.0	98.5	97.5	102.5

Remarks	Re-Issued Report Replaces Report No 14874/R/94614-1.
---------	--

	The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025 - Testing		
	Accreditation Number:	1986	
	Corporate Site Number:	14874	
	Approved Signatory: Daniel Boyd		Form ID: W5ASRepSum Rev 4

LOT REPORT - WET DENSITY RATIO

Client:	BMD Urban Pty Ltd	Report Number:	14874/R/94614-2
Client Address:	PO BOX 1128, CAMBERWELL	Project Number:	14874/P/621
Project:	Merrifield Estate - Stage 38	Lot Number:	Stage 38
Location:	Merrifield	Internal Test Request:	14874/T/50367
Supplied To:	n/a	Client Reference/s:	Stage 38 HILF Tests (21 - 70)
Area Description:		Report Date / Page:	30/01/2019 Page 9 of 14

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
------------------	--

Sample Number	14874/S/272570	14874/S/272571	14874/S/272572	14874/S/272573
ID / Client ID	Refer to Map	Refer to Map	Refer to Map	Refer to Map
Lot Number	Stage 38	Stage 38	Stage 38	Stage 38
Date / Time Tested	19/11/2018 09:30	19/11/2018 09:30	19/11/2018 09:30	19/11/2018 09:30
Material Source	Onsite	Onsite	Onsite	Onsite
Material Type	Insitu	Insitu	Insitu	Insitu
Sampling Method	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b
Depths: Test / Nom / Actual (mm)	275 / 300 / 300	275 / 300 / 300	275 / 300 / 300	275 / 300 / 300
Standard or Modified	Standard	Standard	Standard	Standard
Layer Number	8	7	6	5
Location Number	53	54	55	56
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize (%)	0	0	0	0
Compaction Sample Number	14874/S/272570	14874/S/272571	14874/S/272572	14874/S/272573
Sample Description	Insitu	insitu	Insitu	insitu
Moisture Test Results:				
Field Moisture Content (%)	12.8	11.5	15.6	16.9
Adjusted / Moisture Variation (%)	3.0	0.5	2.5	1.0
Optimum Moisture Content (%)	15.5	12.0	18.5	18.0
Moisture Variation from OMC	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)
Moisture Ratio (%)	81.5	94.5	85.0	95.0
Density Test Results:				
Field Wet Density (t/m ³)	1.99	2.00	1.93	1.97
Adj/Peak Conv Wet Density (t/m ³)	2.08	1.99	1.99	1.94
Density Ratio Required (%)	95	95	95	95
Hilf Density Ratio (%)	95.5	100.5	97.0	101.5

Remarks	Re-Issued Report Replaces Report No 14874/R/94614-1.
---------	--

 The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025 - Testing Accreditation Number: 1986 Corporate Site Number: 14874	 Approved Signatory: Daniel Boyd Form ID: W5ASRepSum Rev 4
--	--

LOT REPORT - WET DENSITY RATIO

Client:	BMD Urban Pty Ltd	Report Number:	14874/R/94614-2
Client Address:	PO BOX 1128, CAMBERWELL	Project Number:	14874/P/621
Project:	Merrifield Estate - Stage 38	Lot Number:	Stage 38
Location:	Merrifield	Internal Test Request:	14874/T/50367
Supplied To:	n/a	Client Reference/s:	Stage 38 HILF Tests (21 - 70)
Area Description:		Report Date / Page:	30/01/2019 Page 10 of 14

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
------------------	--

Sample Number	14874/S/272574	14874/S/272575	14874/S/272576	14874/S/272577
ID / Client ID	Refer to Map	Refer to Map	Refer to Map	Refer to Map
Lot Number	Stage 38	Stage 38	Stage 38	Stage 38
Date / Time Tested	19/11/2018 09:30	19/11/2018 09:30	19/11/2018 09:30	19/11/2018 09:30
Material Source	Onsite	Onsite	Onsite	Onsite
Material Type	Insitu	Insitu	Insitu	Insitu
Sampling Method	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b
Depths: Test / Nom / Actual (mm)	275 / 300 / 300	275 / 300 / 300	275 / 300 / 300	275 / 300 / 300
Standard or Modified	Standard	Standard	Standard	Standard
Layer Number	4	3	2	1
Location Number	57	58	59	60
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize (%)	0	0	0	0
Compaction Sample Number	14874/S/272574	14874/S/272575	14874/S/272576	14874/S/272577
Sample Description	Insitu	insitu	insitu	Insitu
Moisture Test Results:				
Field Moisture Content (%)	12.8	21.4	14.8	13.4
Adjusted / Moisture Variation (%)	2.5	3.0	2.5	2.5
Optimum Moisture Content (%)	15.5	24.5	17.5	16.0
Moisture Variation from OMC	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)
Moisture Ratio (%)	83.0	87.0	85.5	84.5
Density Test Results:				
Field Wet Density (t/m ³)	1.93	1.94	1.94	1.95
Adj/Peak Conv Wet Density (t/m ³)	2.05	1.87	1.96	1.97
Density Ratio Required (%)	95	95	95	95
Hilf Density Ratio (%)	94.5	103.5	99.0	99.0

Remarks	Re-Issued Report Replaces Report No 14874/R/94614-1.
---------	--

	The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025 - Testing		
	Accreditation Number:	1986	
	Corporate Site Number:	14874	
	Approved Signatory: Daniel Boyd		
	Form ID: W5ASRepSum Rev 4		

LOT REPORT - WET DENSITY RATIO

Client:	BMD Urban Pty Ltd	Report Number:	14874/R/94614-2
Client Address:	PO BOX 1128, CAMBERWELL	Project Number:	14874/P/621
Project:	Merrifield Estate - Stage 38	Lot Number:	Stage 38
Location:	Merrifield	Internal Test Request:	14874/T/50367
Supplied To:	n/a	Client Reference/s:	Stage 38 HILF Tests (21 - 70)
Area Description:		Report Date / Page:	30/01/2019 Page 11 of 14

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
------------------	--

Sample Number	14874/S/272578	14874/S/272579	14874/S/272580	14874/S/272581
ID / Client ID	Refer to Map	Refer to Map	Refer to Map	Refer to Map
Lot Number	Stage 38	Stage 38	Stage 38	Stage 38
Date / Time Tested	19/11/2018 09:30	19/11/2018 09:30	19/11/2018 09:30	19/11/2018 09:30
Material Source	Onsite	Onsite	Onsite	Onsite
Material Type	Insitu	Insitu	Insitu	Insitu
Sampling Method	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b
Depths: Test / Nom / Actual (mm)	275 / 300 / 300	275 / 300 / 300	275 / 300 / 300	275 / 300 / 300
Standard or Modified	Standard	Standard	Standard	Standard
Layer Number	10	9	8	7
Location Number	61	62	63	64
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize (%)	0	0	0	0
Compaction Sample Number	14874/S/272578	14874/S/272579	14874/S/272580	14874/S/272581
Sample Description	insitu	insitu	Insitu	Insitu
Moisture Test Results:				
Field Moisture Content (%)	21.7	21.8	14.0	13.0
Adjusted / Moisture Variation (%)	0.0	0.5	3.0	3.5
Optimum Moisture Content (%)	22.0	22.5	17.0	16.5
Moisture Variation from OMC	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)
Moisture Ratio (%)	99.5	97.0	82.0	79.5
Density Test Results:				
Field Wet Density (t/m ³)	1.95	1.95	1.96	1.95
Adj/Peak Conv Wet Density (t/m ³)	1.99	1.89	1.96	1.99
Density Ratio Required (%)	95	95	95	95
Hilf Density Ratio (%)	98.0	103.0	100.0	98.0

Remarks	Re-Issued Report Replaces Report No 14874/R/94614-1.
---------	--

	The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025 - Testing		
	Accreditation Number:	1986	
	Corporate Site Number:	14874	
	Approved Signatory: Daniel Boyd		Form ID: W5ASRepSum Rev 4

LOT REPORT - WET DENSITY RATIO

Client:	BMD Urban Pty Ltd	Report Number:	14874/R/94614-2
Client Address:	PO BOX 1128, CAMBERWELL	Project Number:	14874/P/621
Project:	Merrifield Estate - Stage 38	Lot Number:	Stage 38
Location:	Merrifield	Internal Test Request:	14874/T/50367
Supplied To:	n/a	Client Reference/s:	Stage 38 HILF Tests (21 - 70)
Area Description:		Report Date / Page:	30/01/2019 Page 12 of 14

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
------------------	--

Sample Number	14874/S/272582	14874/S/272583	14874/S/272584	14874/S/272585
ID / Client ID	Refer to Map	Refer to Map	Refer to Map	Refer to Map
Lot Number	Stage 38	Stage 38	Stage 38	Stage 38
Date / Time Tested	19/11/2018 09:30	19/11/2018 09:30	19/11/2018 09:30	19/11/2018 09:30
Material Source	Onsite	Onsite	Onsite	Onsite
Material Type	Insitu	Insitu	Insitu	Insitu
Sampling Method	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b
Depths: Test / Nom / Actual (mm)	275 / 300 / 300	275 / 300 / 300	275 / 300 / 300	275 / 300 / 300
Standard or Modified	Standard	Standard	Standard	Standard
Layer Number	6	5	4	3
Location Number	65	66	67	68
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize (%)	0	0	0	0
Compaction Sample Number	14874/S/272582	14874/S/272583	14874/S/272584	14874/S/272585
Sample Description	Insitu	Insitu	Insitu	insitu
Moisture Test Results:				
Field Moisture Content (%)	11.2	11.8	11.5	11.4
Adjusted / Moisture Variation (%)	2.5	2.5	3.5	2.0
Optimum Moisture Content (%)	13.5	14.5	15.0	13.0
Moisture Variation from OMC	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)
Moisture Ratio (%)	83.0	82.5	76.0	86.5
Density Test Results:				
Field Wet Density (t/m ³)	1.92	1.92	1.91	1.94
Adj/Peak Conv Wet Density (t/m ³)	1.96	1.99	2.00	1.95
Density Ratio Required (%)	95	95	95	95
Hilf Density Ratio (%)	98.0	96.5	95.5	99.5

Remarks	Re-Issued Report Replaces Report No 14874/R/94614-1.
---------	--

	The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025 - Testing		
	Accreditation Number:	1986	
	Corporate Site Number:	14874	
	Approved Signatory: Daniel Boyd		Form ID: W5ASRepSum Rev 4

LOT REPORT - WET DENSITY RATIO

Client:	BMD Urban Pty Ltd	Report Number:	14874/R/94614-2
Client Address:	PO BOX 1128, CAMBERWELL	Project Number:	14874/P/621
Project:	Merrifield Estate - Stage 38	Lot Number:	Stage 38
Location:	Merrifield	Internal Test Request:	14874/T/50367
Supplied To:	n/a	Client Reference/s:	Stage 38 HILF Tests (21 - 70)
Area Description:		Report Date / Page:	30/01/2019 Page 13 of 14

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
------------------	--

Sample Number	14874/S/272586	14874/S/272587		
ID / Client ID	Refer to Map	Refer to Map		
Lot Number	Stage 38	Stage 38		
Date / Time Tested	19/11/2018 09:30	19/11/2018 09:30		
Material Source	Onsite	Onsite		
Material Type	Insitu	Insitu		
Sampling Method	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b		
Depths: Test / Nom / Actual (mm)	275 / 300 / 300	275 / 300 / 300		
Standard or Modified	Standard	Standard		
Layer Number	2	1		
Location Number	69	70		
Test Fraction (mm)	< 19.0 mm	< 19.0 mm		
Sample Oversize (%)	0	0		
Compaction Sample Number	14874/S/272586	14874/S/272587		
Sample Description	Insitu	Insitu		
Moisture Test Results:				
Field Moisture Content (%)	12.2	13.1		
Adjusted / Moisture Variation (%)	2.5	2.5		
Optimum Moisture Content (%)	14.5	16.0		
Moisture Variation from OMC	(Drier than OMC)	(Drier than OMC)		
Moisture Ratio (%)	83.5	83.0		
Density Test Results:				
Field Wet Density (t/m ³)	1.92	1.91		
Adj/Peak Conv Wet Density (t/m ³)	2.02	1.99		
Density Ratio Required (%)	95	95		
Hilf Density Ratio (%)	95.0	96.0		

Remarks	Re-Issued Report Replaces Report No 14874/R/94614-1.
---------	--

 The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025 - Testing Accreditation Number: 1986 Corporate Site Number: 14874	 Approved Signatory: Daniel Boyd Form ID: W5ASRepSum Rev 4
--	--

LOT REPORT - WET DENSITY RATIO

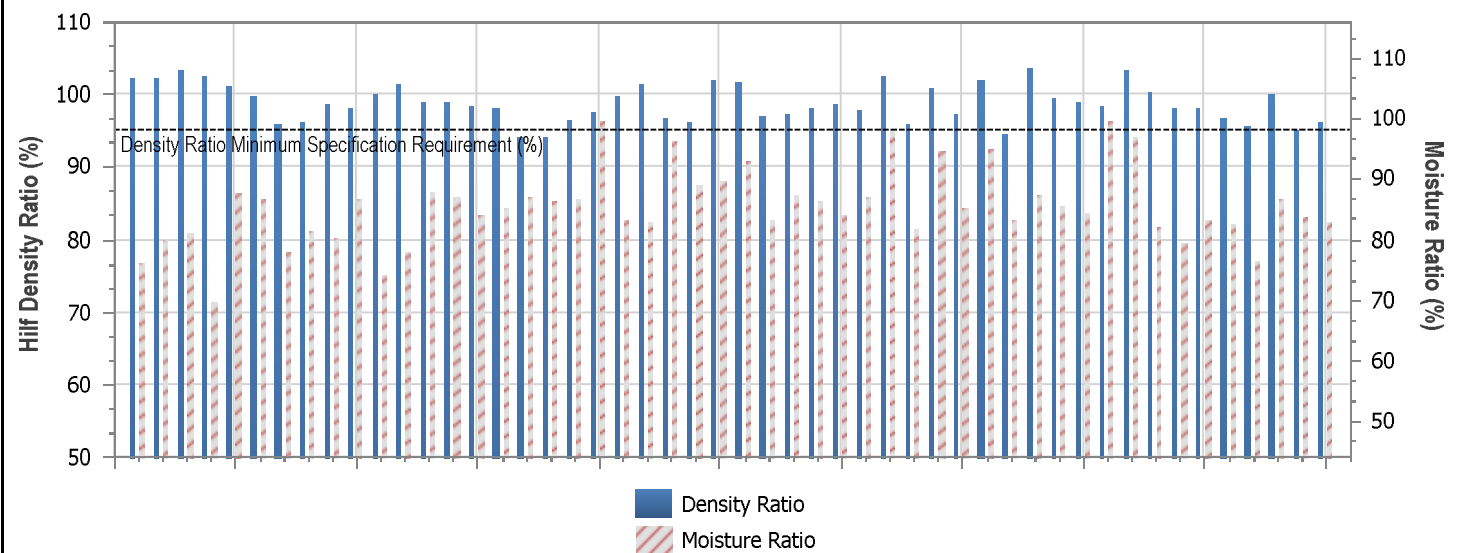
Client:	BMD Urban Pty Ltd	Report Number:	14874/R/94614-2
Client Address:	PO BOX 1128, CAMBERWELL	Project Number:	14874/P/621
Project:	Merrifield Estate - Stage 38	Lot Number:	Stage 38
Location:	Merrifield	Internal Test Request:	14874/T/50367
Supplied To:	n/a	Client Reference/s:	Stage 38 HILF Tests (21 - 70)
Area Description:		Report Date / Page:	30/01/2019 Page 14 of 14

Test Procedures:	
Statistical Analysis Test Method:	Lot Average (Lot average calculations are not covered by endorsement)

Nuclear Gauge Calibration Details

Calibration Number	-	Material Source	-
Calibration Last Updated	-	Material Type	-
Nominated Calibration Layer Depth (mm)	-		-

LOT TEST RESULT SUMMARY



Tests in Lot = 50	Lot Minimum	Lot Maximum	Lot Mean	Standard Deviation
Moisture Ratio (%)	69.7	99.5	85.3	6.345
HILF Density Ratio (%)	94.0	103.4	98.6	2.582

Lot Number: Stage 38
 Mean Density Ratio (%): 98.6
 Mean Moisture Ratio (%): 85.3

Remarks	Re-Issued Report Replaces Report No 14874/R/94614-1.
---------	--



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.
Accredited for compliance with ISO/IEC 17025 - Testing

Accreditation Number: 1986
 Corporate Site Number: 14874



Approved Signatory: Daniel Boyd
 Form ID: W5ASRepSum Rev 4

Site Location Sketch

MELBOURNE

Test site locations only
NOT TO SCALE

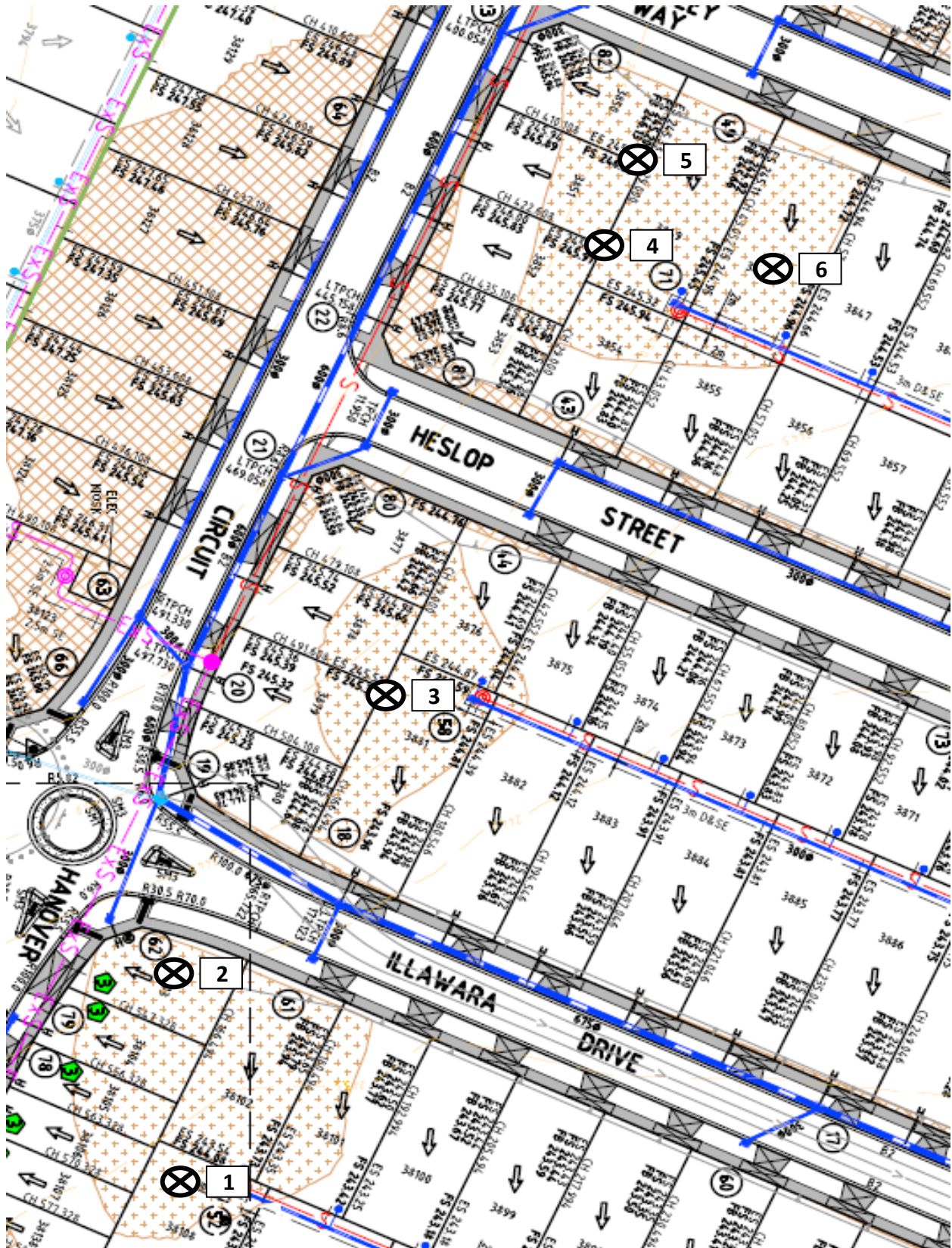
North →

Client: BMD Urban Pty Ltd

Job No. 14874/P/621

Test Request No. T/50472

Date Tested: 19/11/2018



Site Location Sketch

MELBOURNE

Client: BMD Urban Pty Ltd

Job No. 14874/P/621

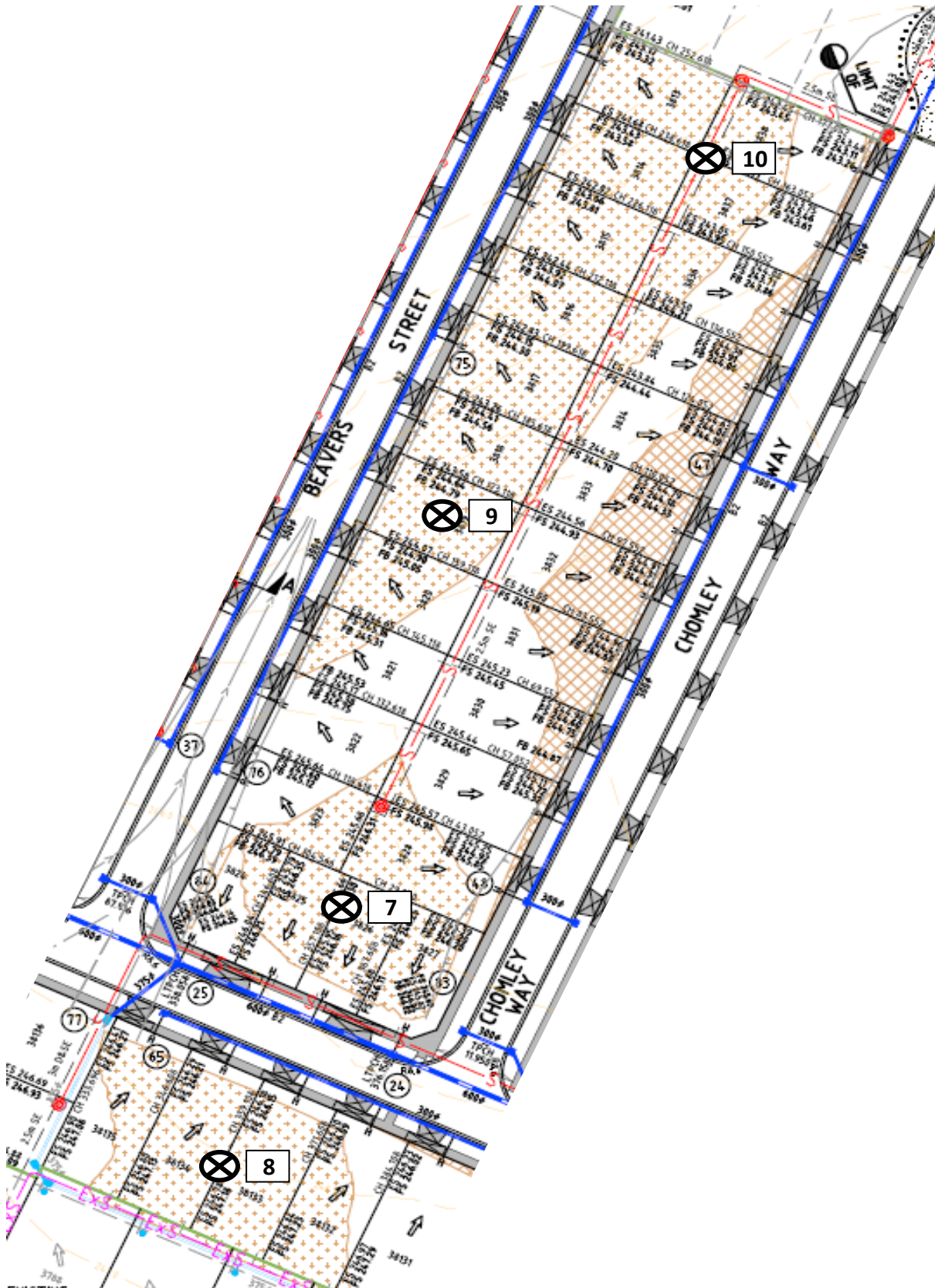
Test Request No. T/50472

Date Tested: 19/11/2018

Test site locations only

NOT TO SCALE

↑
North



LOT REPORT - WET DENSITY RATIO

Client:	BMD Urban Pty Ltd	Report Number:	14874/R/94714-1
Client Address:	PO BOX 1128, CAMBERWELL	Project Number:	14874/P/621
Project:	Merrifield Estate - Stage 38	Lot Number:	
Location:	Merrifield	Internal Test Request:	14874/T/50472
Supplied To:	n/a	Client Reference/s:	Lot Fill
Area Description:	Fill Area	Report Date / Page:	27/11/2018 Page 1 of 4

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
------------------	--

Sample Number	14874/S/273462	14874/S/273463	14874/S/273464	14874/S/273465
ID / Client ID	Refer to Map	Refer to Map	Refer to Map	Refer to Map
Lot Number	-	-	-	-
Date / Time Tested	19/11/2018	19/11/2018	19/11/2018	19/11/2018
Material Source	Onsite	Onsite	Onsite	Onsite
Material Type	Clay	Clay	Clay	Clay
Sampling Method	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b
Depths: Test / Nom / Actual (mm)	275 / 300 / 300	275 / 300 / 300	275 / 300 / 300	275 / 300 / 300
Standard or Modified	Standard	Standard	Standard	Standard
Layer Number	1	2	3	4
Location Number	1	2	3	4
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize (%)	0	0	0	0
Compaction Sample Number	14874/S/273462	14874/S/273463	14874/S/273464	14874/S/273465
Sample Description	Clay	Clay	Clay	Clay
Moisture Test Results:				
Field Moisture Content (%)	15.9	16.5	18.3	15.9
Adjusted / Moisture Variation (%)	4.0	3.0	2.5	4.0
Optimum Moisture Content (%)	20.0	19.5	21.0	20.0
Moisture Variation from OMC	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)
Moisture Ratio (%)	79.0	84.5	88.0	80.5
Density Test Results:				
Field Wet Density (t/m ³)	2.06	2.06	2.06	2.05
Adj/Peak Conv Wet Density (t/m ³)	1.97	1.98	1.97	1.99
Density Ratio Required (%)	95	95	95	95
Hill Density Ratio (%)	104.5	104.0	104.5	103.5

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.
Accredited for compliance with ISO/IEC 17025 - Testing

Accreditation Number: 1986
Corporate Site Number: 14874



Approved Signatory: Daniel Boyd
Form ID: W5ASRepSum Rev 4

LOT REPORT - WET DENSITY RATIO

Client:	BMD Urban Pty Ltd	Report Number:	14874/R/94714-1
Client Address:	PO BOX 1128, CAMBERWELL	Project Number:	14874/P/621
Project:	Merrifield Estate - Stage 38	Lot Number:	
Location:	Merrifield	Internal Test Request:	14874/T/50472
Supplied To:	n/a	Client Reference/s:	Lot Fill
Area Description:	Fill Area	Report Date / Page:	27/11/2018 Page 2 of 4

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
------------------	--

Sample Number	14874/S/273466	14874/S/273467	14874/S/273468	14874/S/273469
ID / Client ID	Refer to Map	Refer to Map	Refer to Map	Refer to Map
Lot Number	-	-	-	-
Date / Time Tested	19/11/2018	19/11/2018	19/11/2018	19/11/2018
Material Source	Onsite	Onsite	Onsite	Onsite
Material Type	Clay	Clay	Clay	Clay
Sampling Method	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b
Depths: Test / Nom / Actual (mm)	275 / 300 / 300	275 / 300 / 300	275 / 300 / 300	275 / 300 / 300
Standard or Modified	Standard	Standard	Standard	Standard
Layer Number	1	2	3	4
Location Number	5	6	7	8
Test Fraction (mm)	< 19.0 mm	< 19.0 mm	< 19.0 mm	< 19.0 mm
Sample Oversize (%)	0	0	0	0
Compaction Sample Number	14874/S/273466	14874/S/273467	14874/S/273468	14874/S/273469
Sample Description	CLAY	Clay	Clay	Clay
Moisture Test Results:				
Field Moisture Content (%)	16.6	16.8	16.1	16.4
Adjusted / Moisture Variation (%)	2.5	2.5	2.0	3.0
Optimum Moisture Content (%)	19.0	19.5	18.0	19.5
Moisture Variation from OMC	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)	(Drier than OMC)
Moisture Ratio (%)	88.0	87.0	88.5	84.5
Density Test Results:				
Field Wet Density (t/m³)	2.04	2.06	2.07	2.05
Adj/Peak Conv Wet Density (t/m³)	2.03	2.01	2.06	1.99
Density Ratio Required (%)	95	95	95	95
Hill Density Ratio (%)	100.5	102.5	100.5	103.0

Remarks

	The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025 - Testing		
	Accreditation Number:	1986	
	Corporate Site Number:	14874	
	Approved Signatory: Daniel Boyd		
	Form ID: W5ASRepSum Rev 4		

LOT REPORT - WET DENSITY RATIO

Client:	BMD Urban Pty Ltd	Report Number:	14874/R/94714-1
Client Address:	PO BOX 1128, CAMBERWELL	Project Number:	14874/P/621
Project:	Merrifield Estate - Stage 38	Lot Number:	
Location:	Merrifield	Internal Test Request:	14874/T/50472
Supplied To:	n/a	Client Reference/s:	Lot Fill
Area Description:	Fill Area	Report Date / Page:	27/11/2018 Page 3 of 4

Test Procedures:	AS1289.5.7.1, AS1289.5.8.1, AS1289.2.1.1
------------------	--

Sample Number	14874/S/273470	14874/S/273471		
ID / Client ID	Refer to Map	Refer to Map		
Lot Number	-	-		
Date / Time Tested	19/11/2018	19/11/2018		
Material Source	Onsite	Onsite		
Material Type	Clay	Clay		
Sampling Method	AS1289.1.2.1 Cl 6.4b	AS1289.1.2.1 Cl 6.4b		
Depths: Test / Nom / Actual (mm)	275 / 300 / 300	275 / 300 / 300		
Standard or Modified	Standard	Standard		
Layer Number	3	2		
Location Number	9	10		
Test Fraction (mm)	< 19.0 mm	< 19.0 mm		
Sample Oversize (%)	0	0		
Compaction Sample Number	14874/S/273470	14874/S/273471		
Sample Description	Clay	Clay		
Moisture Test Results:				
Field Moisture Content (%)	16.5	15.5		
Adjusted / Moisture Variation (%)	3.0	2.5		
Optimum Moisture Content (%)	19.5	18.0		
Moisture Variation from OMC	(Drier than OMC)	(Drier than OMC)		
Moisture Ratio (%)	84.0	86.0		
Density Test Results:				
Field Wet Density (t/m ³)	2.06	2.05		
Adj/Peak Conv Wet Density (t/m ³)	2.02	2.03		
Density Ratio Required (%)	95	95		
Hilf Density Ratio (%)	102.0	101.0		

Remarks

 The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025 - Testing Accreditation Number: 1986 Corporate Site Number: 14874	 Approved Signatory: Daniel Boyd Form ID: W5ASRepSum Rev 4
---	--

LOT REPORT - WET DENSITY RATIO

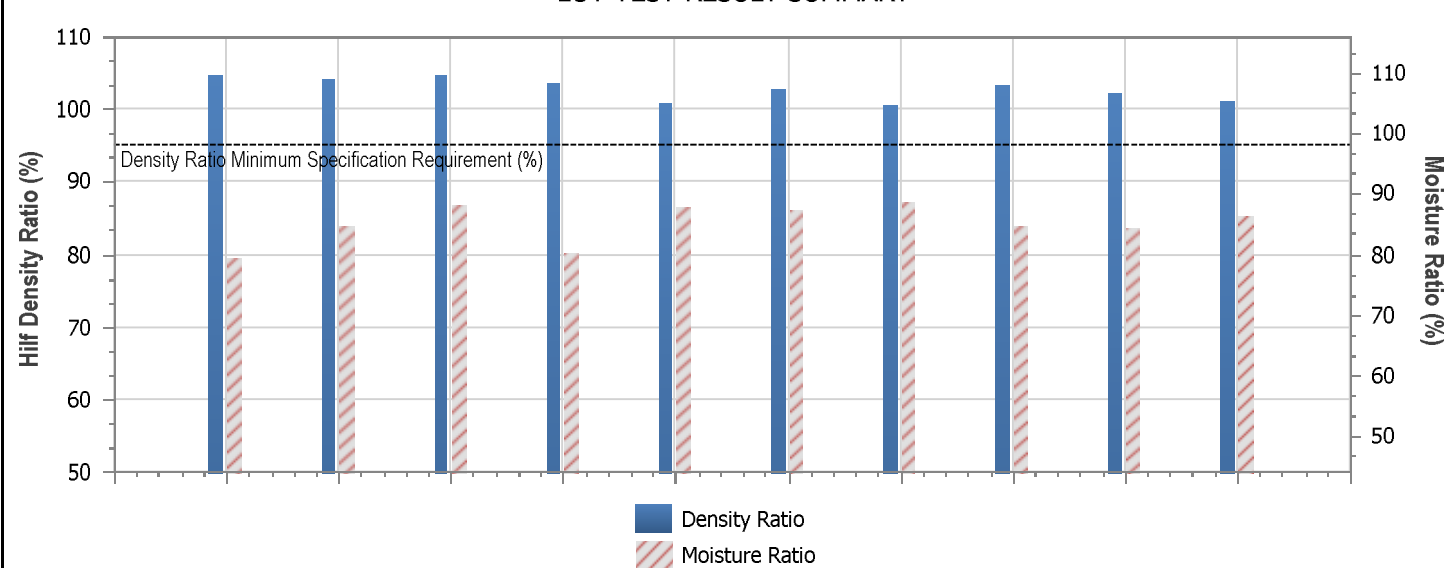
Client:	BMD Urban Pty Ltd	Report Number:	14874/R/94714-1
Client Address:	PO BOX 1128, CAMBERWELL	Project Number:	14874/P/621
Project:	Merrifield Estate - Stage 38	Lot Number:	
Location:	Merrifield	Internal Test Request:	14874/T/50472
Supplied To:	n/a	Client Reference/s:	Lot Fill
Area Description:	Fill Area	Report Date / Page:	27/11/2018 Page 4 of 4

Test Procedures:	
Statistical Analysis Test Method:	Lot Average (Lot average calculations are not covered by endorsement)

Nuclear Gauge Calibration Details

Calibration Number	-	Material Source	-
Calibration Last Updated	-	Material Type	-
Nominated Calibration Layer Depth (mm)	-		-

LOT TEST RESULT SUMMARY



Tests in Lot = 10	Lot Minimum	Lot Maximum	Lot Mean	Standard Deviation
Moisture Ratio (%)	79.1	88.5	85.0	3.202
Half Density Ratio (%)	100.3	104.6	102.6	1.574

Lot Number: -
 Mean Density Ratio (%): 102.6
 Mean Moisture Ratio (%): 85.0

Remarks



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.
 Accredited for compliance with ISO/IEC 17025 - Testing

Accreditation Number: 1986
 Corporate Site Number: 14874



Approved Signatory: Daniel Boyd
 Form ID: W5ASRepSum Rev 4