

DRAPERS CIVIL
CONTRACTING PTY LTD

THE QUAY 2 ESTATE
STAGE 4

1505-1535 SURF COAST HWY
TORQUAY

Report On

LEVEL 1
SURVEILLANCE
& COMPACTION CONTROL
OF EARTHWORKS

*Carried Out
By*



Project No.: 1917/040



Factory 1/8-10 Catalina Dve, Tullamarine, Vic 3043
PO Box 2693, Gladstone Park, Vic, 3043
ABN 51 102 571 077
PH (03) 9335-1225

9th November 2017
Project No.:1917/040

Drapers Civil Contracting Pty Ltd
PO Box 287
Belmont, Vic 3216
Attention: - Mr. Matthew Jackman

Dear Sir,

RE: The Quay 2 Estate Stage 4 – Earthworks

Introduction & Scope

At the request of Drapers Civil Contracting Pty Ltd, Geotechnical Laboratories has carried out inspection and testing of the above-mentioned site from the 18th of May 2017 to the 30th of June 2017 where a residential development is being constructed. Inspection and testing of stripping, material quality and compaction control tests were carried out to comply with the requirements of AS 3798 Appendix B, Level 1.

The following documentation was submitted to Geotechnical Laboratories by Drapers Civil Contracting Pty Ltd and was used to determine compliance of earthworks in conjunction with the requirements of AS 3798 – 2007 (See Appendix A).

(1). Standard Faceplan Layout Drawing No. 4R2 Version D.

General site works involved the placement of fill, using on-site derived materials, to bring the fill regions to the required finished levels as indicated on the construction drawings.

Site Preparation

Site inspections were undertaken on the 18th of May 2017 confirming that areas to be filled were completely stripped of topsoil prior to filling. The brown silty topsoils had been stockpiled around the site for later removal off-site.

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

Material

It is understood that the fill material used was sourced from on-site, primarily from road boxing and service trench excavations. Additional material was also sourced from nearby Armstrong and Zeally Sands Estates.

The fill material is best described as a **CLAY, slightly silty, brown, orange-brown, slightly moist to moist, with fine to course grained sand and occasional gravels.**

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

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

Compaction of Fill Material

A sheepsfoot compactor placed the material in horizontal loose layers of approximately 250mm–300mm. The sheepsfoot compactor also performed compaction of the fill material using a criss cross pattern where possible.

The moisture condition of the fill was closely monitored and moisture conditioning procedures were applied to bring the material closer to its Standard Optimum Moisture Content (AS 1289 5.7.1). Moisture conditioning was carried out using a water cart and mixing with the grader prior to rolling.

Compaction Testing

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

A total of forty compaction tests were performed on the constructed allotment fill. Results are presented in Appendix A of this report.

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

Acceptance of fill layers for compaction was based on the requirements of **AS 3798 - 2007 Table 5.1 Item 1. Residential**. As a result, the compliance criteria adopted by Geotechnical Laboratories was a hlf density ratio not less than 95 percent of the maximum hlf density value as determined by the Standard Hlf Rapid Compaction Method in accordance with AS 1289 5.7.1.

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

No moisture criteria was specified.

Remarks

So far as can be determined, Drapers Civil Contracting Pty Ltd has satisfactorily complied with the compaction and construction processes required for the structural filling of this site. As such, structural filling placed on this site by Drapers Civil Contracting Pty Ltd from the 19th of May 2017 to the 30th of June 2017 can be categorised as CONTROLLED FILL in accordance with AS 2870-2011.

Note: Test results and controlled fill certification relates only to fill placed by Drapers Civil Contracting Pty Ltd and for earthworks completed at the time of testing. Any previous or subsequent earthworks will require a separate evaluation.

Yours Faithfully,
GEOTECHNICAL LABORATORIES.



Sam Loza.
Laboratory Manager.

DRAPERS CIVIL
CONTRACTING PTY LTD

THE QUAY 2 ESTATE
STAGE 4

1505-1535 SURF COAST HWY
TORQUAY

Report On

LEVEL 1
SURVEILLANCE
& COMPACTION CONTROL
OF EARTHWORKS

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APPENDIX A



GEOTECHNICAL LABORATORIES
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 PO Box 2693 Gladstone Park Vic 3043
 PH: (03) 9335 1225

DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 1916/099

LOCATION: DRAPERS - The Quay 2 Estate, Stage 4

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m ³)	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m ³)	STANDARD OPTIMUM MOISTURE CONTENT (%)	PROBE DEPTH SETTING (mm)	VARIATION FROM OPTIMUM MOISTURE CONTENT (%)	MOISTURE RATIO (%)	WET +19mm (%)	WET +37.5mm (%)	APPROX. DEPTH BELOW FINISH LEVEL (mm)	
19/05/17	1	<i>Refer to #1916/100 for approx. test site locations.</i>	2.00	19.0	98.0	2.04	19.0	175	0.0	Drier	99.0	-	-	400
19/05/17	2		2.15	15.0	101.0	2.13	14.5	175	0.5	Wetter	103.0	-	-	800
19/05/17	3		1.98	17.5	100.5	1.97	20.0	175	3.0	Drier	86.0	-	-	600
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NOTES: Onsite Clay Fill

Test sites located - Geolab Procedure 4, Part 4.4

Compaction specimens sampled after compaction.

Start Time: 11.15am Finish Time: 11.35am

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

Soil Layer thickness: 200mm

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

Field Density, Nuclear Gauge: AS 1289 5.8.1

Materials Sampled : AS 1289 1.2.1 Clause 6.4(b)

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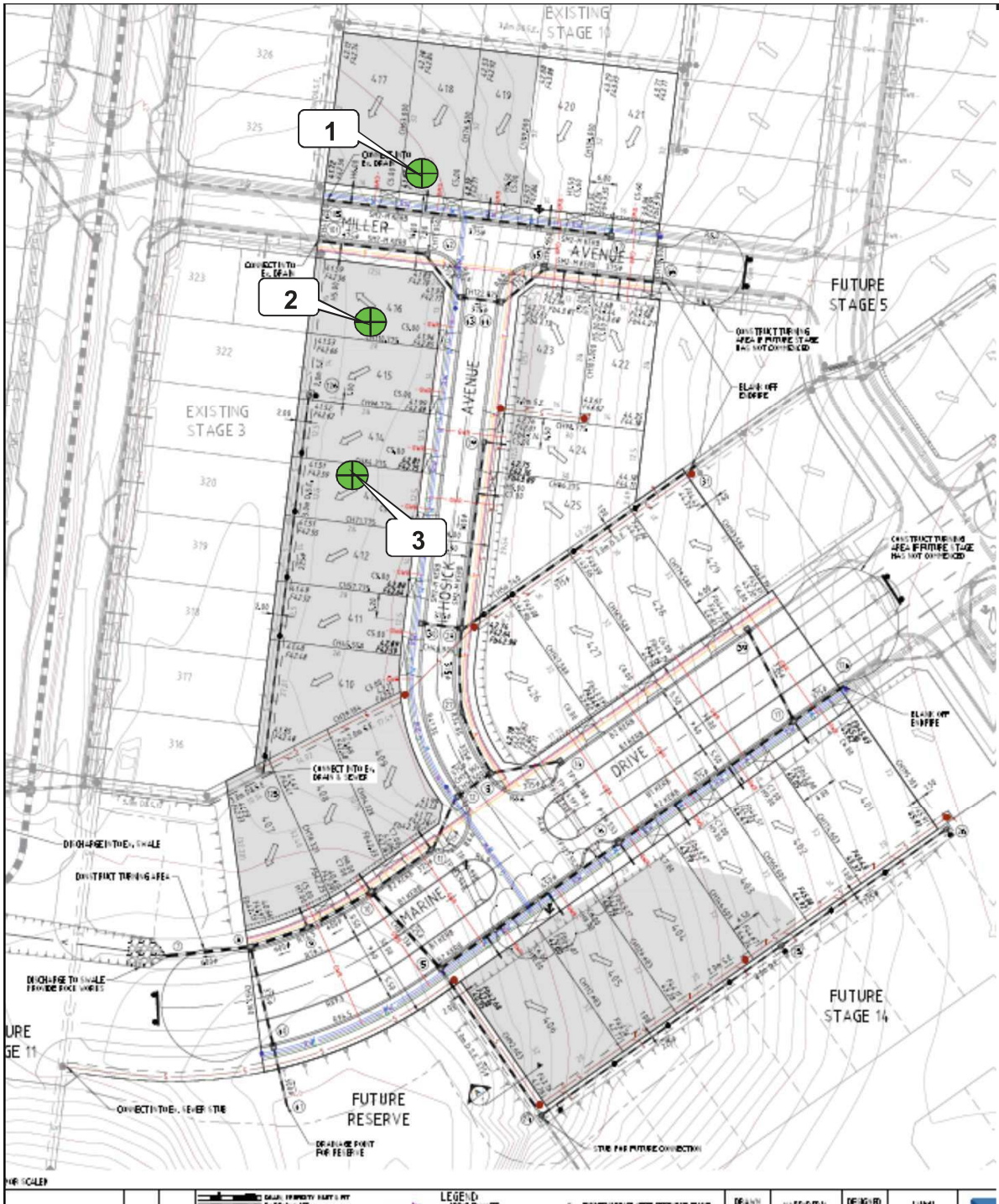
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NATA Accredited Laboratory Number 14561

SAM LOZA

(Approved Signatory)

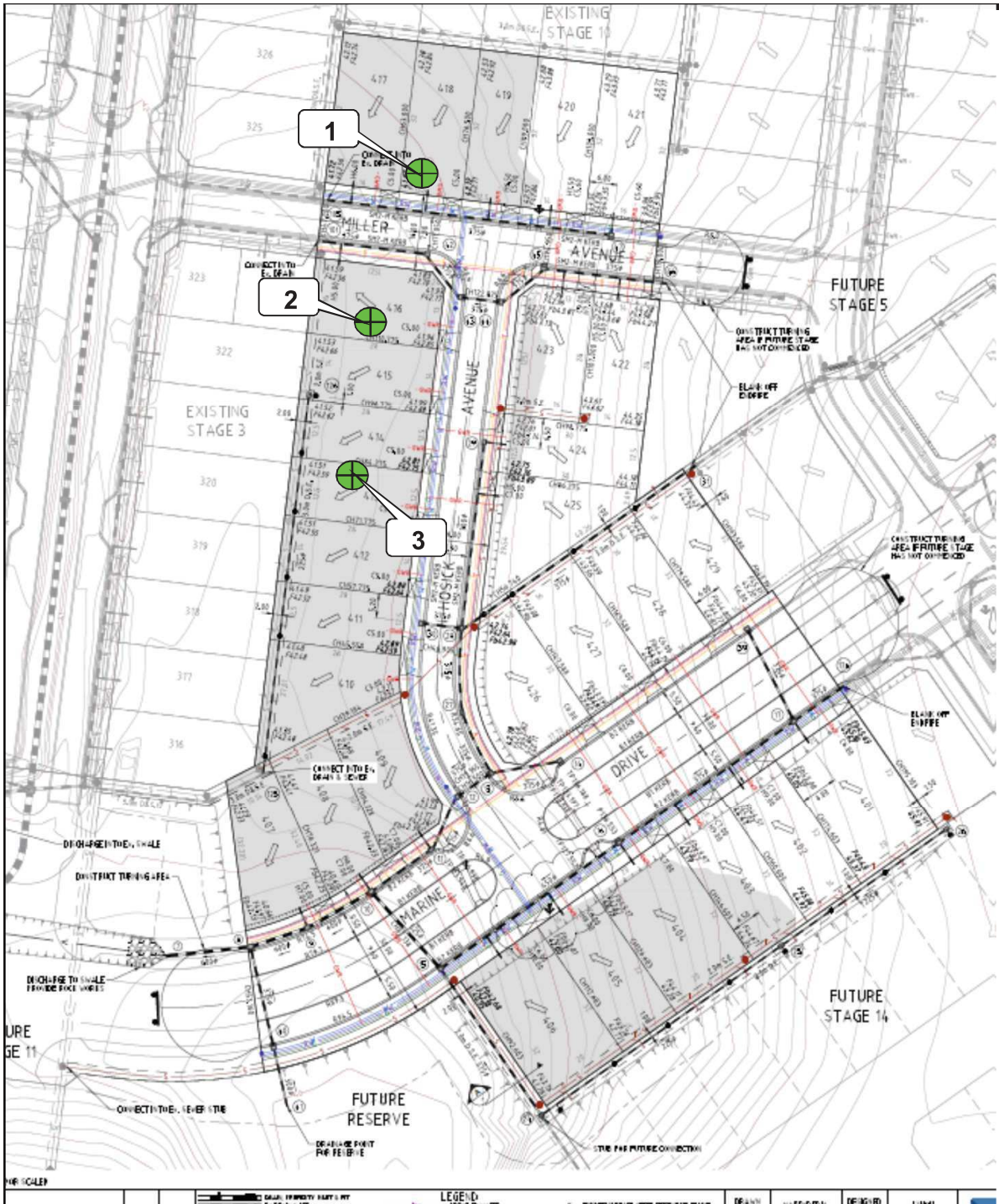
Issue Date: 26/5/2017



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 PH: (03) 9335 1225 Fax: (03) 9335 1775

CLIENT: DRAPERS LOCATION: The Quay 2 Estate Stage 4 Sketch indicating approx. compaction test locations	DATE: 19/5/17	JOB No.: 1916/100
	OPERATOR: JC	CHECKED: EG
	SCALE: NTS	FIGURE No.: -



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CLIENT: DRAPERS LOCATION: The Quay 2 Estate Stage 4 Sketch indicating approx. compaction test locations	DATE: 19/5/17	JOB No.: 1916/100
	OPERATOR: JC	CHECKED: EG
	SCALE: NTS	FIGURE No.: -



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DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 1916/107
 LOCATION: DRAPERS - The Quay 2 Estate Stage 3 + 4

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m ³)	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m ³)	STANDARD OPTIMUM MOISTURE CONTENT (%)	PROBE DEPTH SETTING (mm)	VARIATION FROM OPTIMUM MOISTURE CONTENT (%)	MOISTURE RATIO (%)	WET +19mm (%)	WET +37.5mm (%)	APPROX. DEPTH BELOW FINISH LEVEL (mm)
25/05/17	1	<i>Refer to #1916/108 for approx. test site locations.</i>	2.04	17.0	100.5	2.03	18.0	175	0.5	96.0	0	0	400
25/05/17	2		1.94	22.0	96.5	2.01	22.0	175	0.0	100.0	0	0	200
25/05/17	3		1.94	24.0	101.0	1.91	26.5	175	2.5	Drier	90.5	0	0
-	-	-	-	-	-	-	-	-	-	-	-	-	-
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NOTES: Onsite Clay Fill

Test sites located - Geolab Procedure 4, Part 4.4

Compaction specimens sampled after compaction.
 Start Time: 10.35am Finish Time: 10.51 am

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

Soil Layer thickness: 200mm

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

Field Density, Nuclear Gauge: AS 1289 5.8.1

Materials Sampled : AS 1289 1.2.1 Clause 6.4(b)



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Issue Date: 1/6/2017



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DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 1916/109

LOCATION: DRAPERS - The Quay 2 Estate Stage 4

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m ³)	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m ³)	STANDARD OPTIMUM MOISTURE CONTENT (%)	PROBE DEPTH SETTING (mm)	VARIATION FROM OPTIMUM MOISTURE CONTENT (%)	MOISTURE RATIO (%)	WET +19mm (%)	WET +37.5mm (%)	APPROX. DEPTH BELOW FINISH LEVEL (mm)
26/05/17	1	<i>Refer to #1916/110 for approx. test site locations.</i>	2.08	26.0	102.5	2.03	25.5	175	0.5 Wetter	102.0	0	0	400
26/05/17	2		1.96	26.0	99.0	1.98	24.5	175	1.5 Wetter	105.0	0	0	400
26/05/17	3		1.95	20.0	104.0	1.87	21.5	175	1.5 Drier	93.5	0	0	200
-	-	-	-	-	-	-	-	-	-	-	-	-	-
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NOTES: Onsite Clay Fill

Test sites located - Geolab Procedure 4, Part 4.4

Compaction specimens sampled after compaction.

Start Time: 1.35pm Finish Time: 1.55pm

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

Soil Layer thickness: 200mm

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

Field Density, Nuclear Gauge: AS 1289 5.8.1

Materials Sampled : AS 1289 1.2.1 Clause 6.4(b)



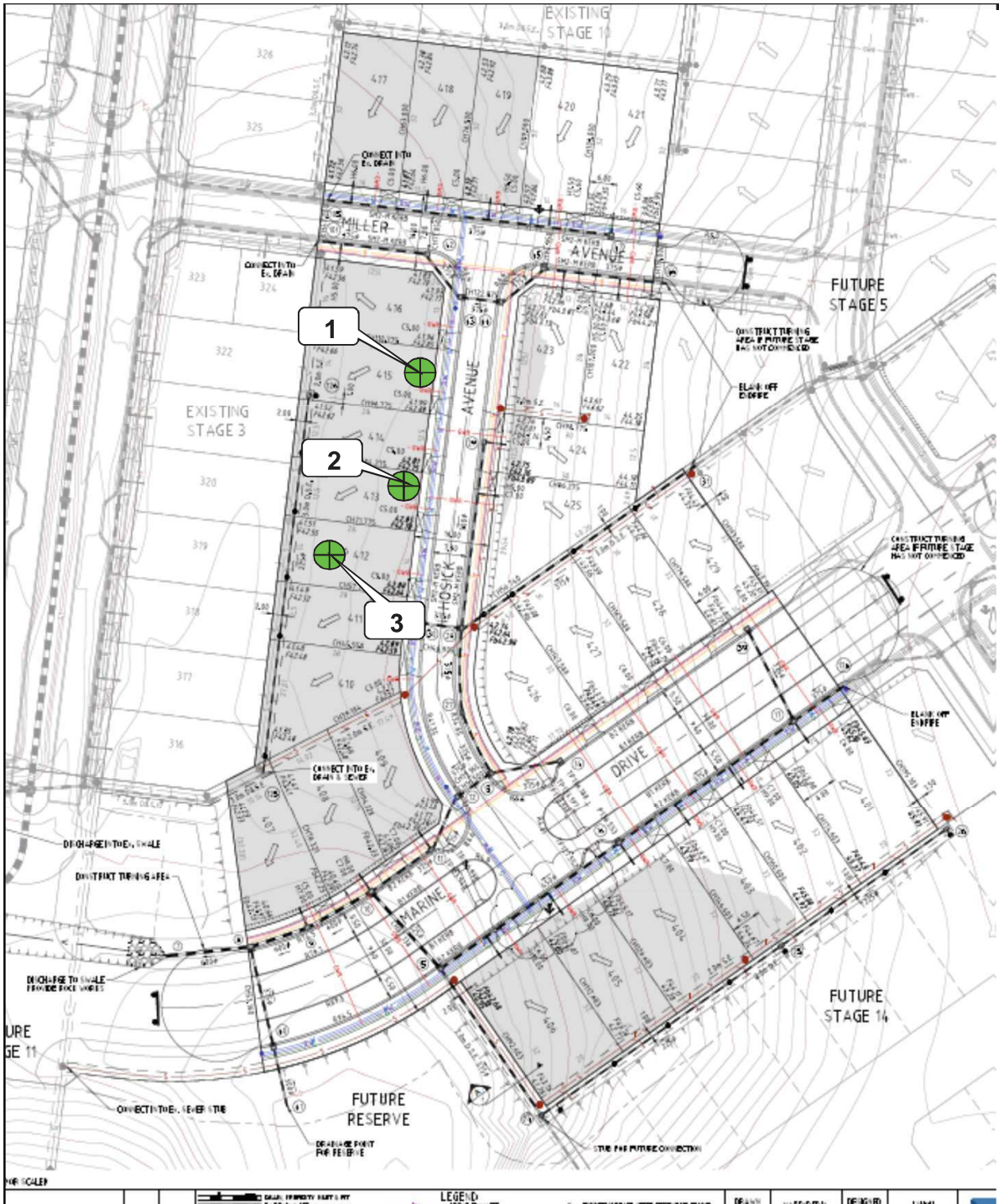
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Issue Date: 2/6/2017



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CLIENT: DRAPERS LOCATION: The Quay 2 Estate Stage 4 Sketch indicating approx. compaction test locations	DATE: 26/5/17	JOB No.: 1916/110
	OPERATOR: JC	CHECKED: EG
	SCALE: NTS	FIGURE No.: -



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DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 1916/119

LOCATION: DRAPERS - The Quay 2 Estate Stage 4

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m ³)	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m ³)	STANDARD OPTIMUM MOISTURE CONTENT (%)	PROBE DEPTH SETTING (mm)	VARIATION FROM OPTIMUM MOISTURE CONTENT (%)	MOISTURE RATIO (%)	WET +19mm (%)	WET +37.5mm (%)	APPROX. DEPTH BELOW FINISH LEVEL (mm)	
6/06/17	1	<i>Refer to #1916/120 for approx. test site locations.</i>	2.05	27.5	102.0	2.02	28.0	175	0.5 Drier	98.0	0	0	0	
6/06/17	2		2.09	21.0	105.5	1.98	23.5	175	2.5 Drier	89.5	0	0	0	
6/06/17	3		2.06	21.5	102.5	2.01	20.5	175	1.0 Wetter	106.0	0	0	0	
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NOTES: Clay Fill Ex. Onsite
 Test sites located - Geolab Procedure 4, Part 4.4
 Start Time: 9.00am Finish Time: 9.20am
 Compaction specimens sampled after compaction.


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


Soil Layer thickness: 200mm

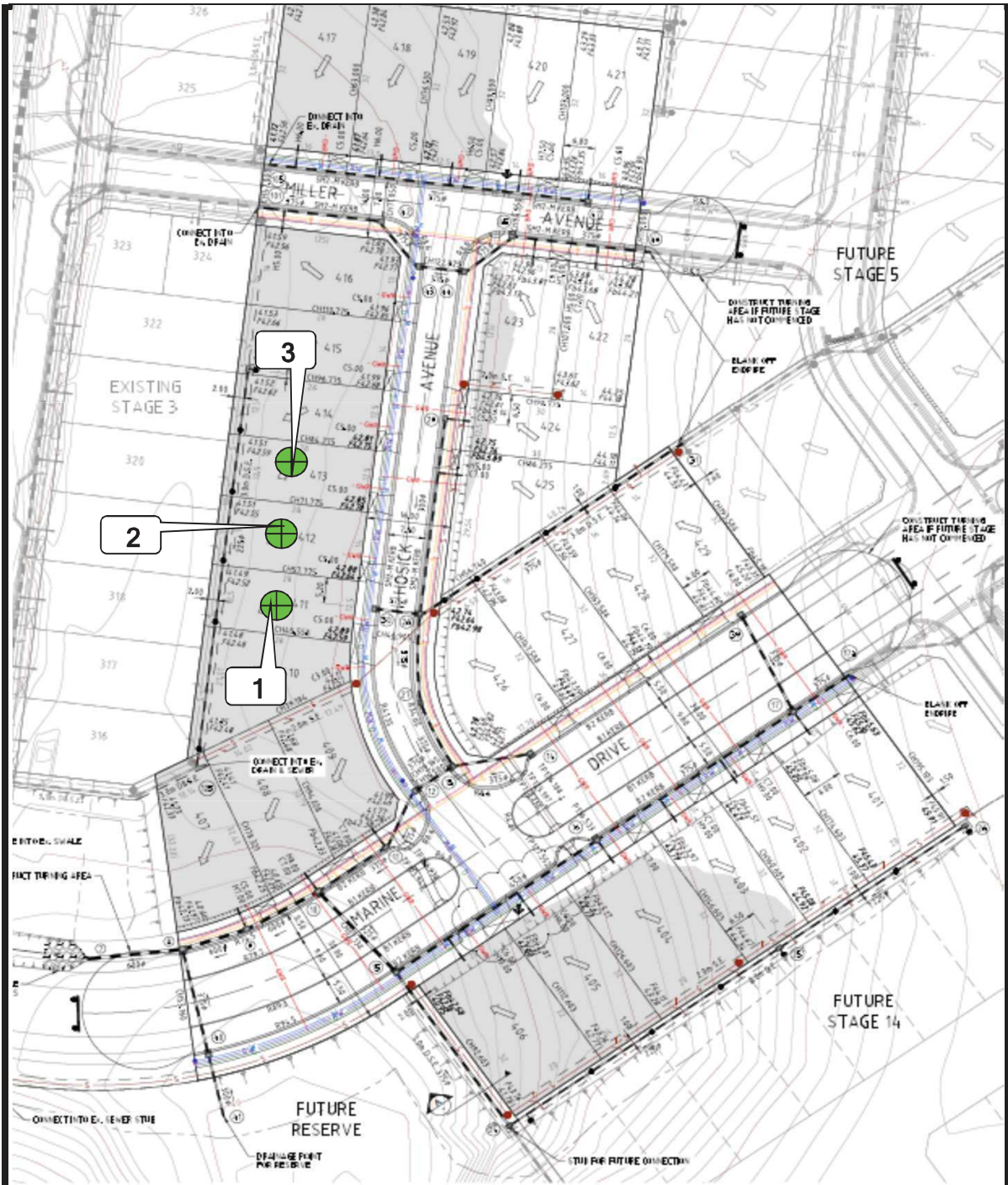
Hilf Density Ratio and Hilf Moisture Variation, Hilf Adjusted (APCWD) & Peak (PCWD) Converted Wet Density AS 1289 5.7.1

Field Density, Nuclear Gauge: AS 1289 5.8.1

Materials Sampled : AS 1289 1.2.1 Clause 6.4(b)


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SAM LOZA
 (Approved Signatory)
 Issue Date: 15/6/2017



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CLIENT: DRAPERS

LOCATION: The Quay 2 Estate Stage 4

Sketch indicating approx. compaction test locations

DATE: 6/6/17

JOB No.: 1916/120

OPERATOR: SL + M CHECKED: EG

SCALE: NTS



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DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 1916/121
 LOCATION: DRAPERS - The Quay 2 Estate Stage 4

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m ³)	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m ³)	STANDARD OPTIMUM MOISTURE CONTENT (%)	PROBE DEPTH SETTING (mm)	VARIATION FROM OPTIMUM MOISTURE CONTENT (%)	MOISTURE RATIO (%)	WET +19mm (%)	WET +37.5mm (%)	APPROX. DEPTH BELOW FINISH LEVEL (mm)	
8/06/17	1	<i>Refer to #1916/122 for approx. test site locations.</i>	2.05	21.0	105.0	1.95	23.0	175	2.0	Drier	90.5	0	0	0
8/06/17	2		2.00	22.0	102.0	1.96	24.0	175	2.0	Drier	92.0	0	0	0
8/06/17	3		2.10	21.5	106.0	1.98	24.0	175	2.5	Drier	90.0	0	0	0
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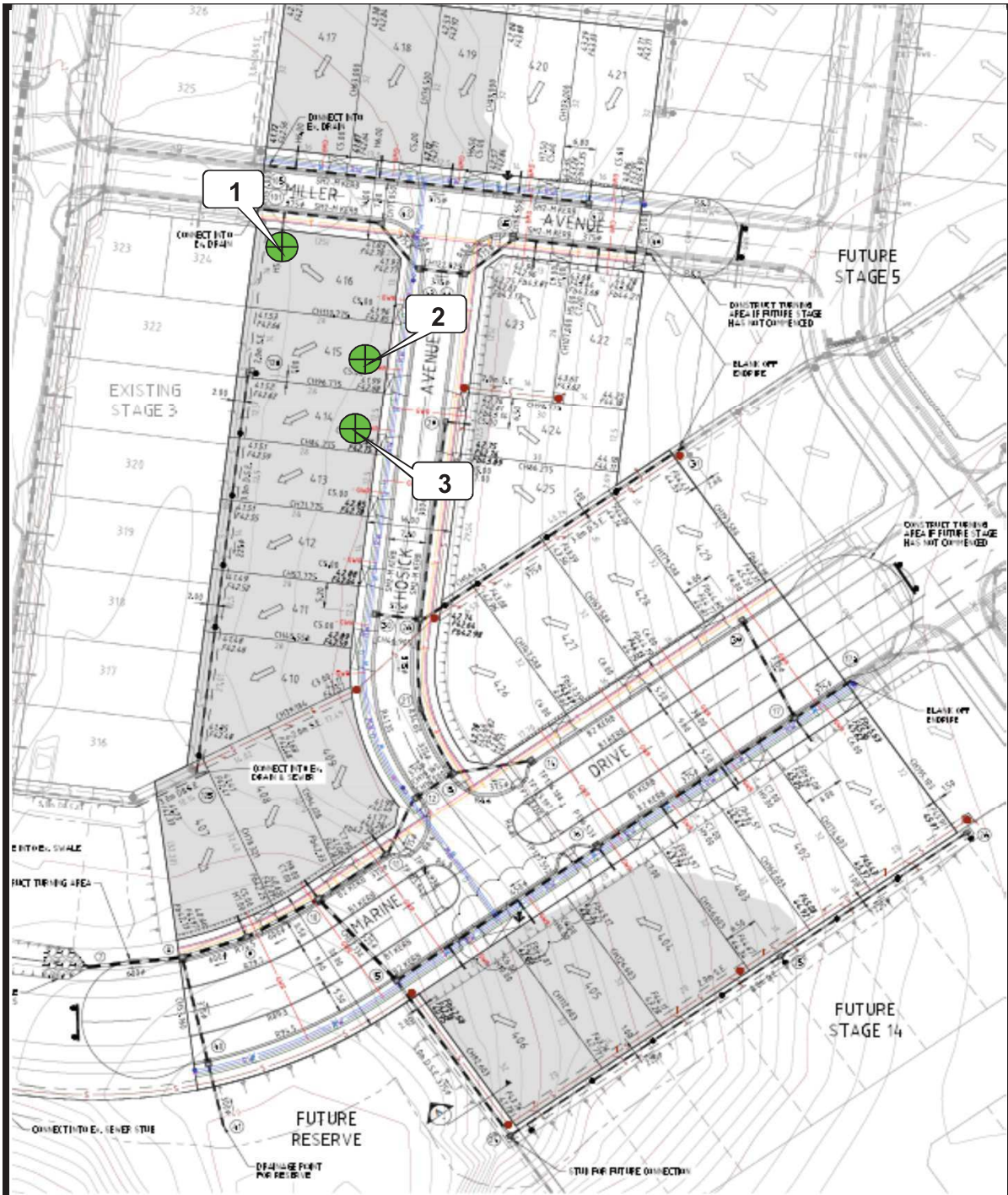
NOTES: Onsite Clay Fill
 Test sites located - Geolab Procedure 4, Part 4.4
 Start Time: 12.10pm Finish Time: 12.30pm
 Compaction specimens sampled after compaction.

A Hilf Rapid Compaction test was carried out on a sample taken from each Field Density location to obtain the Compaction Parameters tabulated on this Report.
 Soil Layer thickness: 200mm
 Hilf Density Ratio and Hilf Moisture Variation, Hilf Adjusted (APCWD) & Peak (PCWD) Converted Wet Density AS 1289 5.7.1
 Moisture Content: AS 1289 2.1.1
 Compaction Test: AS 1289 5.7.1
 Field Density, Nuclear Gauge: AS 1289 5.8.1
 Materials Sampled : AS 1289 1.2.1 Clause 6.4(b)


 SAM LOZA
 (Approved Signatory)
 Issue Date: 16/6/2017



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CLIENT: DRAPERS

LOCATION: The Quay 2 Estate Stage 4

Sketch indicating approx. compaction test locations

DATE: 8/6/17

OPERATOR: JC

SCALE: NTS

JOB No.: 1916/122

CHECKED: EG



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DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 1916/123

LOCATION: DRAPERS - The Quay Estate Stage 4

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m ³)	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m ³)	STANDARD OPTIMUM MOISTURE CONTENT (%)	PROBE DEPTH SETTING (mm)	VARIATION FROM OPTIMUM MOISTURE CONTENT (%)	MOISTURE RATIO (%)	WET +19mm (%)	WET +37.5mm (%)	APPROX. DEPTH BELOW FINISH LEVEL (mm)
15/06/17	1	<i>Refer to #1916/124 for approx. test site locations.</i>	2.07	20.5	100.5	2.05	21.0	175	0.5	96.5	0	0	400
15/06/17	2		2.09	19.5	101.0	2.07	19.5	175	0.0	101.0	0	0	600
15/06/17	3		2.17	15.5	100.0	2.16	15.0	175	0.5	103.0	0	0	1000
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NOTES: Onsite Clay Fill

Test sites located - Geolab Procedure 4, Part 4.4

Compaction specimens sampled after compaction.
 Start Time: 9.20am Finish Time: 9.42am

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

Soil Layer thickness: 200mm

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

Field Density, Nuclear Gauge: AS 1289 5.8.1

Materials Sampled : AS 1289 1.2.1 Clause 6.4(b)

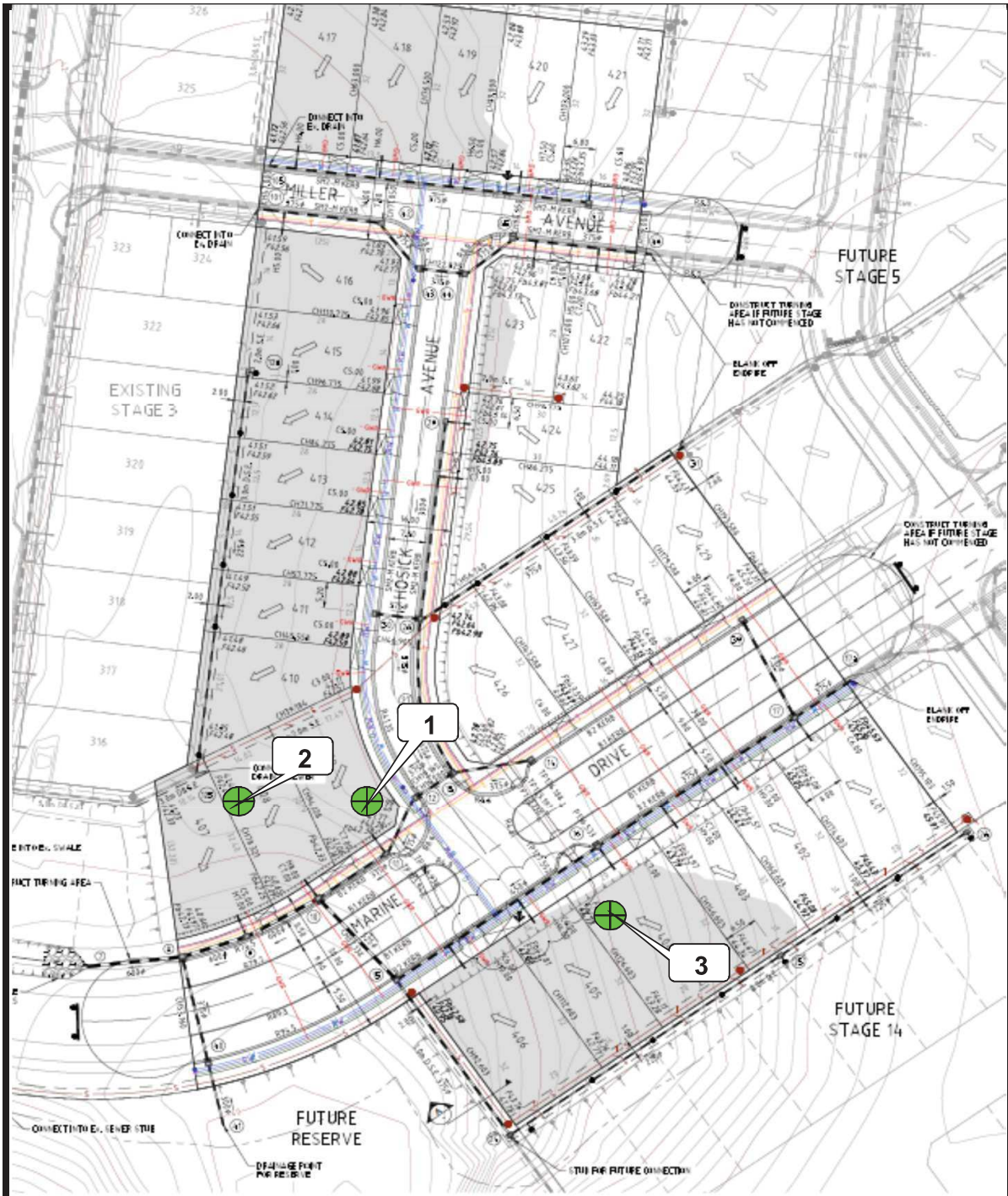


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Issue Date: 19/6/2017



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CLIENT: DRAPERS

DATE: 15/6/17

JOB No.: 1916/124

LOCATION: The Quay 2 Estate Stage 4

OPERATOR: JC

CHECKED: EG

Sketch indicating approx. compaction test locations

SCALE: NTS



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DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 1916/125

LOCATION: DRAPERS - The Quay 2 Estate Stage 4

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m ³)	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m ³)	STANDARD OPTIMUM MOISTURE CONTENT (%)	PROBE DEPTH SETTING (mm)	VARIATION FROM OPTIMUM MOISTURE CONTENT (%)	MOISTURE RATIO (%)	WET +19mm (%)	WET +37.5mm (%)	APPROX. DEPTH BELOW FINISH LEVEL (mm)
13/06/17	1	<i>Refer to #1916/126 for approx. test site locations.</i>	1.97	21.0	95.5	* 2.06	21.5	175	0.5	97.5	5	0	1200
13/06/17	2		2.04	22.0	98.0	2.08	20.0	175	1.5	108.5	0	0	1000
13/06/17	3		2.04	23.0	101.0	2.01	23.0	175	0.0	99.0	0	0	800
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
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NOTES: Onsite Clay Fill

Test sites located - Geolab Procedure 4, Part 4.4

Compaction specimens sampled after compaction.

Start Time: 12.45pm Finish Time: 1.10pm

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

Soil Layer thickness: 200mm

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

Field Density, Nuclear Gauge: AS 1289 5.8.1

Materials Sampled : AS 1289 1.2.1 Clause 6.4(b)

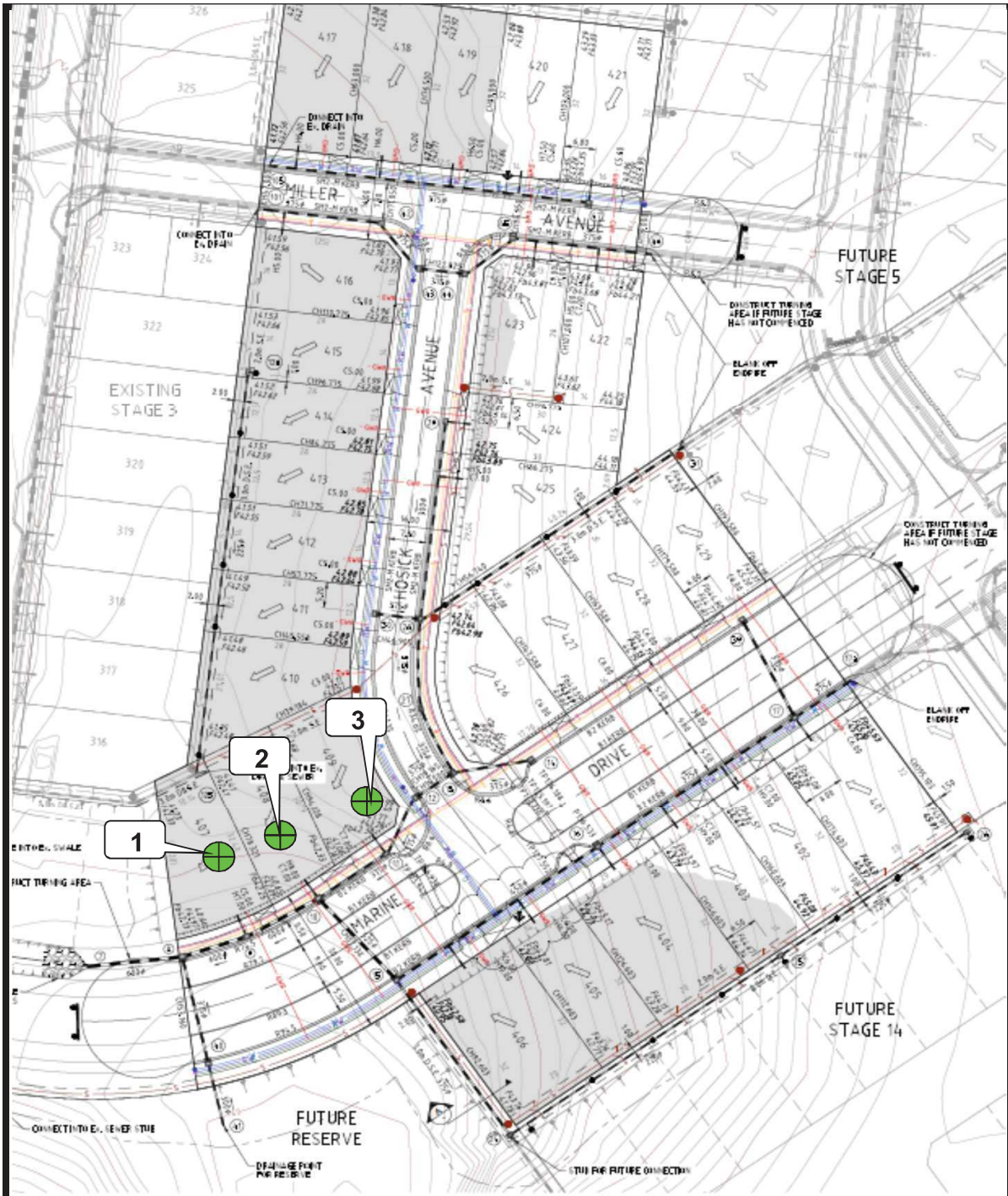
* Indicates APCWD

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 SAM LOZA
 Issue Date: 20/6/2017



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Factory 1/8-10 Catalina Drive, Tullamarine Vic 3043
PO Box 184 Keilor VIC 3036
PH: (03) 9335 1225 Fax: (03) 9335 1775

CLIENT: DRAPERS

LOCATION: The Quay 2 Estate Stage 4

Sketch indicating approx. compaction test locations

DATE: 13/6/17

OPERATOR: JC

SCALE: NTS

JOB No.: 1916/126

CHECKED: EG



GEOTECHNICAL LABORATORIES
 ACN 102 571 077
 Factory 1/8-10 Catalina Drive, Tullamarine Vic 3043
 PO Box 2693 Gladstone Park Vic 3043
 PH: (03) 9335 1225

DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 1916/127

LOCATION: DRAPERS - The Quay 2 Estate Stage 4

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m ³)	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m ³)	STANDARD OPTIMUM MOISTURE CONTENT (%)	PROBE DEPTH SETTING (mm)	VARIATION FROM OPTIMUM MOISTURE CONTENT (%)	MOISTURE RATIO (%)	WET +19mm (%)	WET +37.5mm (%)	APPROX. DEPTH BELOW FINISH LEVEL (mm)
16/06/17	1	<i>Refer to #1916/128 for approx. test site locations.</i>	2.08	16.5	98.5	2.11	16.5	175	0.0	100.0	0	0	0
16/06/17	2		2.15	16.5	99.5	2.16	16.0	175	0.0	101.5	0	0	200
16/06/17	3		2.14	16.0	99.5	2.14	15.5	175	0.0	101.5	0	0	600
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NOTES: Clay Fill Ex. Armstrong Creek

Test sites located - Geolab Procedure 4, Part 4.4

Compaction specimens sampled after compaction.
 Start Time: 10.10am Finish Time: 10.30am


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

Soil Layer thickness: 200mm

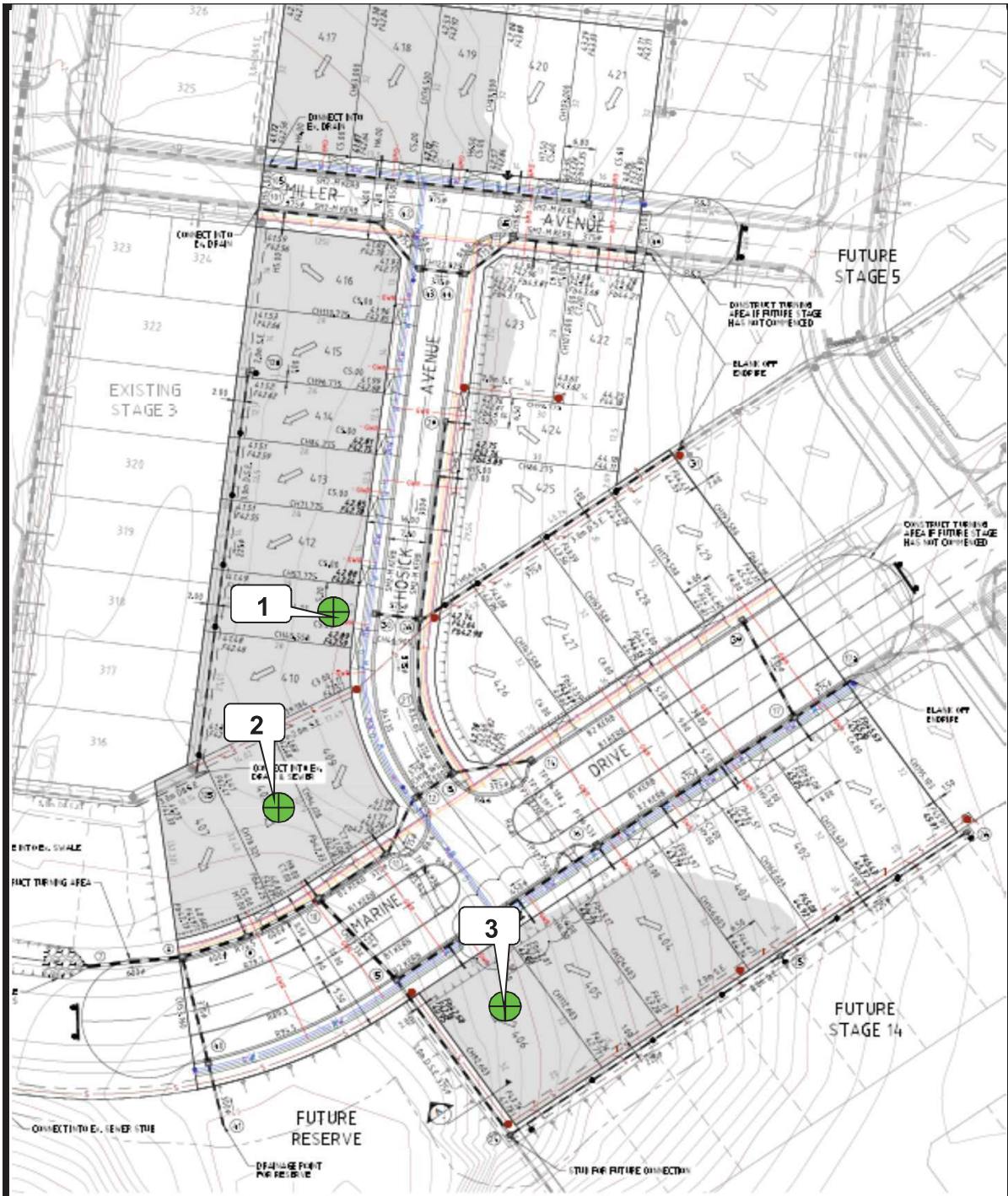
Hilf Density Ratio and Hilf Moisture Variation ,Hilf Adjusted (APCWD) & Peak (PCWD) Converted Wet Density AS 1289 5.7.1

Field Density, Nuclear Gauge: AS 1289 5.8.1

Materials Sampled : AS 1289 1.2.1 Clause 6.4(b)


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 SAM LOZA
 (Approved Signatory)
 Issue Date: 22/6/2017



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PH: (03) 9335 1225 Fax: (03) 9335 1775

CLIENT: DRAPERS

LOCATION: The Quay 2 Estate Stage 4

Sketch indicating approx. compaction test locations

DATE: 16/6/17

OPERATOR: JC

SCALE: NTS

JOB No.: 1916/128

CHECKED: EG



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DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 1916/129

LOCATION: DRAPERS- The Quay 2 Estate Stage 4

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m ³)	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m ³)	STANDARD OPTIMUM MOISTURE CONTENT (%)	PROBE DEPTH SETTING (mm)	VARIATION FROM OPTIMUM MOISTURE CONTENT (%)	MOISTURE RATIO (%)	WET +19mm (%)	WET +37.5mm (%)	APPROX. DEPTH BELOW FINISH LEVEL (mm)
19/06/17	1	<i>Refer to #1916/130 for approx. test site locations.</i>	2.06	18.5	97.5	2.11	18.0	175	0.0 Wetter	101.5	0	0	1000
19/06/17	2		2.06	18.5	98.0	2.10	17.5	175	0.5 Wetter	104.0	0	0	1000
19/06/17	3		2.20	17.0	103.0	2.14	17.0	175	0.0 Drier	100.0	0	0	800
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NOTES: Onsite Clay Fill

Test sites located - Geolab Procedure 4, Part 4.4.

Compaction specimens sampled after compaction.

Start Time: 10.30am Finish Time: 11.00am

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

Soil Layer thickness: 200mm

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

Field Density, Nuclear Gauge: AS 1289 5.8.1

Materials Sampled : AS 1289 1.2.1 Clause 6.4(b)

Moisture Content: AS 1289 2.1.1

Compaction Test: AS 1289 5.7.1

Converted Wet Density AS 1289 5.7.1

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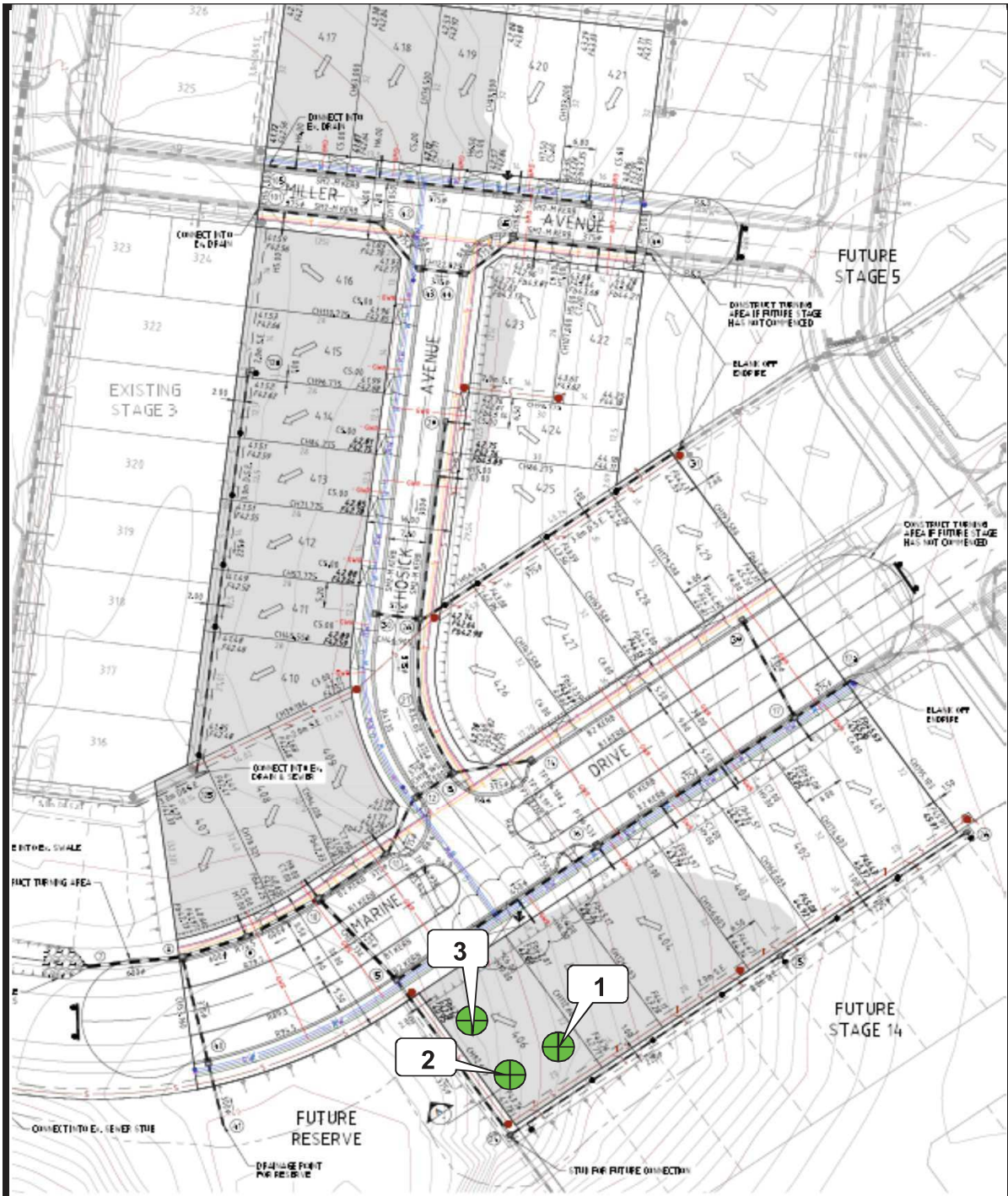


NATA Accredited Laboratory Number 14561

SAM LOZA

(Approved Signatory)

Issue Date: 26/6/2017



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PH: (03) 9335 1225 Fax: (03) 9335 1775

CLIENT: DRAPERS

LOCATION: The Quay 2 Estate Stage 4

Sketch indicating approx. compaction test locations

DATE: 19/6/17

OPERATOR: JC

SCALE: NTS

JOB No.: 1916/130

CHECKED: EG



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DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 1916/133

LOCATION: DRAPERS - The Quay 2 Estate Stage 4

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m ³)	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m ³)	STANDARD OPTIMUM MOISTURE CONTENT (%)	PROBE DEPTH SETTING (mm)	VARIATION FROM OPTIMUM MOISTURE CONTENT (%)	MOISTURE RATIO (%)	WET +19mm (%)	WET +37.5mm (%)	APPROX. DEPTH BELOW FINISH LEVEL (mm)	
21/06/17	1	<i>Refer to #1916/134 for approx. test site locations.</i>	1.94	25.5	97.5	2.00	26.5	175	1.0	Drier	97.0	0	0	600
21/06/17	2		1.98	24.5	98.5	2.01	24.5	175	0.0	Drier	99.0	0	0	400
21/06/17	3		1.96	23.5	100.0	1.96	25.0	175	1.0	Drier	95.0	0	0	200
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

NOTES: Imported Clay Fill Ex. Armstrong Creek

Test sites located - Geolab Procedure 4, Part 4.4

Compaction specimens sampled after compaction.

Start Time: 10.02am Finish Time: 10.21am

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

Soil Layer thickness: 200mm

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

Field Density, Nuclear Gauge: AS 1289 5.8.1

Materials Sampled : AS 1289 1.2.1 Clause 6.4(b)

Moisture Content: AS 1289 2.1.1

Compaction Test: AS 1289 5.7.1

Converted Wet Density AS 1289 5.7.1

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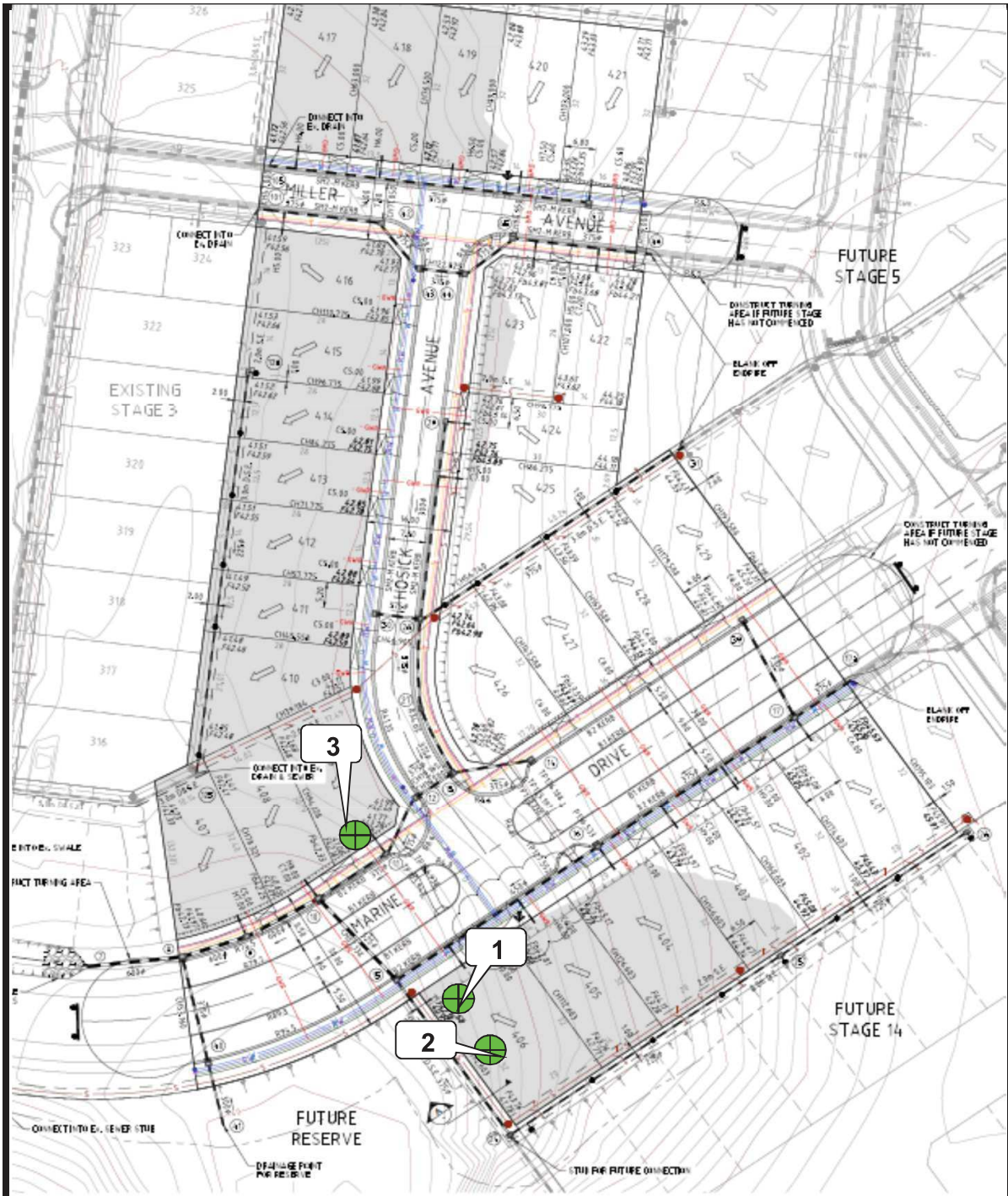


NATA Accredited Laboratory Number 14561

SAM LOZA

(Approved Signatory)

Issue Date: 26/6/2017



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PH: (03) 9335 1225 Fax: (03) 9335 1775

CLIENT: DRAPERS

LOCATION: The Quay 2 Estate Stage 4

Sketch indicating approx. compaction test locations

DATE: 21/6/17

JOB No.: 1916/134

OPERATOR: JC

CHECKED: EG

SCALE: NTS



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DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 1916/137

LOCATION: DRAPERS - The Quay 2 Estate Stage 4

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m ³)	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m ³)	STANDARD OPTIMUM MOISTURE CONTENT (%)	PROBE DEPTH SETTING (mm)	VARIATION FROM OPTIMUM MOISTURE CONTENT (%)	MOISTURE RATIO (%)	WET +19mm (%)	WET +37.5mm (%)	APPROX. DEPTH BELOW FINISH LEVEL (mm)	
23/06/17	1	<i>Refer to #1916/138 for approx. test site locations.</i>	2.11	19.0	102.5	2.05	19.0	175	0.0	Drier	100.0	0	0	0
23/06/17	2		1.96	24.0	97.5	2.01	23.5	175	0.0	Wetter	101.0	0	0	0
23/06/17	3		2.00	22.5	100.5	1.99	22.5	175	0.0	Drier	100.0	0	0	200
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

NOTES: Imported Clay Fill Ex. Armstrong Estate

Test sites located - Geolab Procedure 4, Part 4.4

Compaction specimens sampled after compaction.
 Start Time: 10.24am Finish Time: 10.45am

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

Soil Layer thickness: 200mm

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

Field Density, Nuclear Gauge: AS 1289 5.8.1

Materials Sampled : AS 1289 1.2.1 Clause 6.4(b)



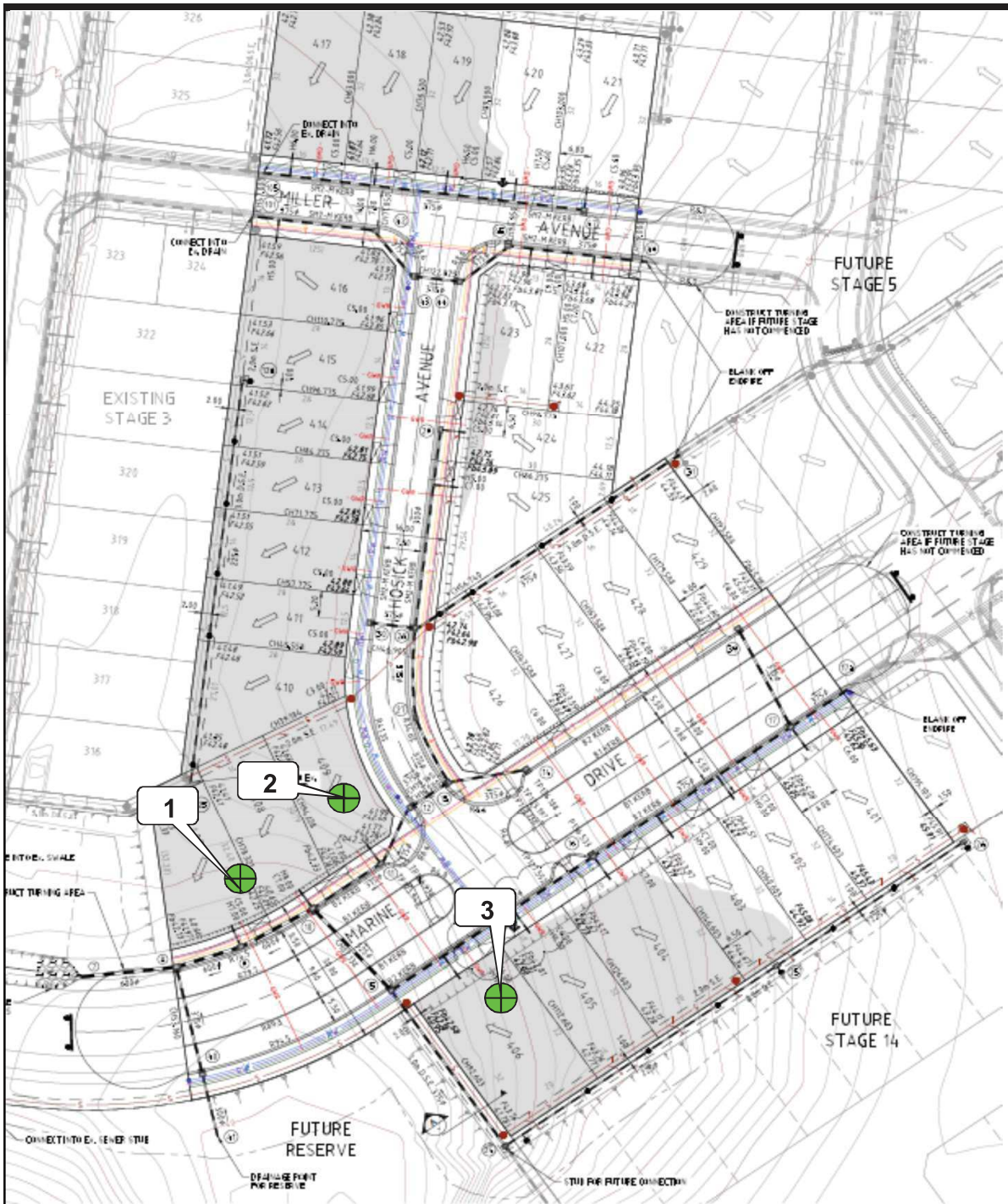
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Issue Date: 3/7/2017



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PH: (03) 9335 1225 Fax: (03) 9335 1775

CLIENT: DRAPERS

LOCATION: The Quay 2 Estate Stage 4

Sketch indicating approx. compaction test locations

DATE: 23/6/17

OPERATOR: JC

SCALE: NTS

JOB No.: 1916/138

CHECKED: EG



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DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 1916/139

LOCATION: DRAPERS - The Quay 2 Estate Stage 4

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m ³)	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m ³)	STANDARD OPTIMUM MOISTURE CONTENT (%)	PROBE DEPTH SETTING (mm)	VARIATION FROM OPTIMUM MOISTURE CONTENT (%)	MOISTURE RATIO (%)	WET +19mm (%)	WET +37.5mm (%)	APPROX. DEPTH BELOW FINISH LEVEL (mm)
26/06/17	1	<i>Refer to #1916/140 for approx. test site locations.</i>	2.07	18.5	102.5	2.01	19.5	175	1.0 Drier	95.0	0	0	1600
26/06/17	2		2.29	13.5	106.5	2.15	14.0	175	0.5 Drier	95.0	0	0	1200
26/06/17	3		2.06	19.0	102.5	2.00	19.5	175	0.5 Drier	96.5	0	0	1200
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NOTES: Imported Clay Fill

Test sites located - Geolab Procedure 4, Part 4.4

Compaction specimens sampled after compaction.
 Start Time: 10.55am Finish Time: 11.20am

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

Soil Layer thickness: 200mm

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

Field Density, Nuclear Gauge: AS 1289 5.8.1

Materials Sampled : AS 1289 1.2.1 Clause 6.4(b)

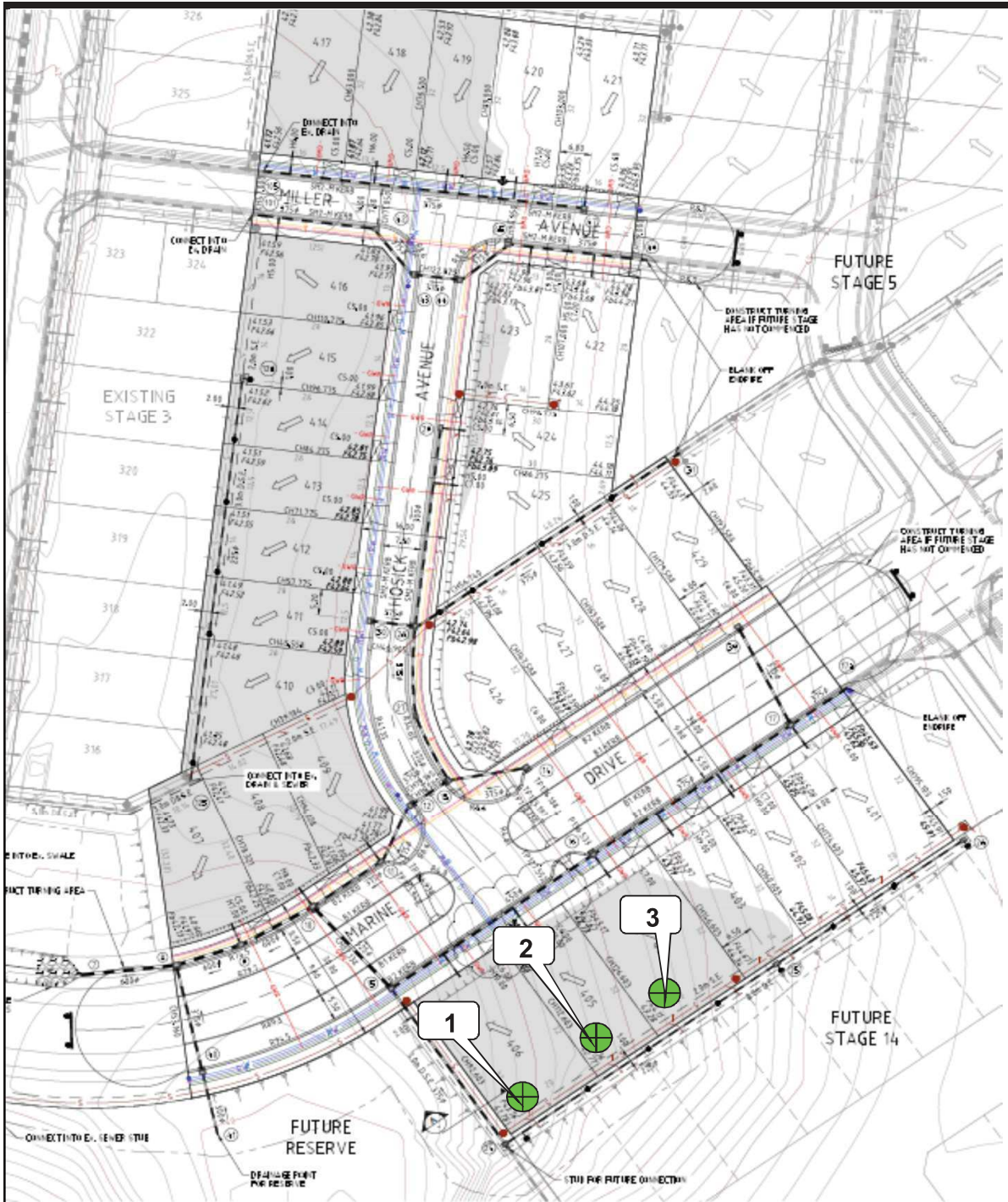


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SAM LOZA
 (Approved Signatory)

Issue Date: 3/7/2017



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PH: (03) 9335 1225 Fax: (03) 9335 1775

CLIENT: DRAPERS

LOCATION: The Quay 2 Estate Stage 4

Sketch indicating approx. compaction test locations

DATE: 26/6/17

JOB No.: 1916/140

OPERATOR: JC

CHECKED: EG

SCALE: NTS



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 ACN 102 571 077
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DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 1916/144

LOCATION: DRAPERS - The Quay 2 Estate Stage 4

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m ³)	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m ³)	STANDARD OPTIMUM MOISTURE CONTENT (%)	PROBE DEPTH SETTING (mm)	VARIATION FROM OPTIMUM MOISTURE CONTENT (%)	MOISTURE RATIO (%)	WET +19mm (%)	WET +37.5mm (%)	APPROX. DEPTH BELOW FINISH LEVEL (mm)	
28/06/17	1	<i>Refer to #1916/145 for approx. test site locations.</i>	2.20	15.5	106.5	2.06	16.5	175	1.0	Drier	94.5	0	0	600
28/06/17	2		2.10	13.0	101.5	2.07	14.5	175	1.5	Drier	90.5	0	0	200
28/06/17	3		2.22	16.0	104.5	2.13	16.0	175	0.0	Drier	100.0	0	0	0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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NOTES: Onsite Clay Fill

Test sites located - Geolab Procedure 4, Part 4.4

Compaction specimens sampled after compaction.

Start Time: 10.00am Finish Time: 10.27am

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

Soil Layer thickness: 200mm

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

Field Density, Nuclear Gauge: AS 1289 5.8.1

Materials Sampled : AS 1289 1.2.1 Clause 6.4(b)



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SAM LOZA

(Approved Signatory)

Issue Date: 6/7/2017



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PH: (03) 9335 1225 Fax: (03) 9335 1775

CLIENT: DRAPERS

LOCATION: The Quay 2 Estate Stage 4

Sketch indicating approx. compaction test locations

DATE: 28/6/17

JOB No.: 1916/145

OPERATOR: JC

CHECKED: EG

SCALE: NTS



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DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 1916/148

LOCATION: DRAPERS - The Quay 2 Estate Stage 4

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m ³)	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m ³)	STANDARD OPTIMUM MOISTURE CONTENT (%)	PROBE DEPTH SETTING (mm)	VARIATION FROM OPTIMUM MOISTURE CONTENT (%)	MOISTURE RATIO (%)	WET +19mm (%)	WET +37.5mm (%)	APPROX. DEPTH BELOW FINISH LEVEL (mm)
30/06/17	1	<i>Refer to #1916/149 for approx. test site locations.</i>	2.01	20.0	95.5	* 2.10	19.0	175	0.5 Wetter	104.0	12	0	0
30/06/17	2		2.06	17.5	99.0	2.08	17.5	175	0.0 Wetter	101.5	0	0	400
30/06/17	3		2.11	16.5	103.0	2.05	18.0	175	1.5 Drier	91.0	0	0	200
-	-	-	-	-	-	-	-	-	-	-	-	-	-
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NOTES: Onsite Clay Fill

Test sites located - Geolab Procedure 4, Part 4.4

Compaction specimens sampled after compaction.

Start Time: 11.25am Finish Time: 11.49am

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

Moisture Content: AS 1289 2.1.1

Compaction Test: AS 1289 5.7.1

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

Field Density, Nuclear Gauge: AS 1289 5.8.1

Materials Sampled : AS 1289 1.2.1 Clause 6.4(b)

* Indicates APCWD

❖



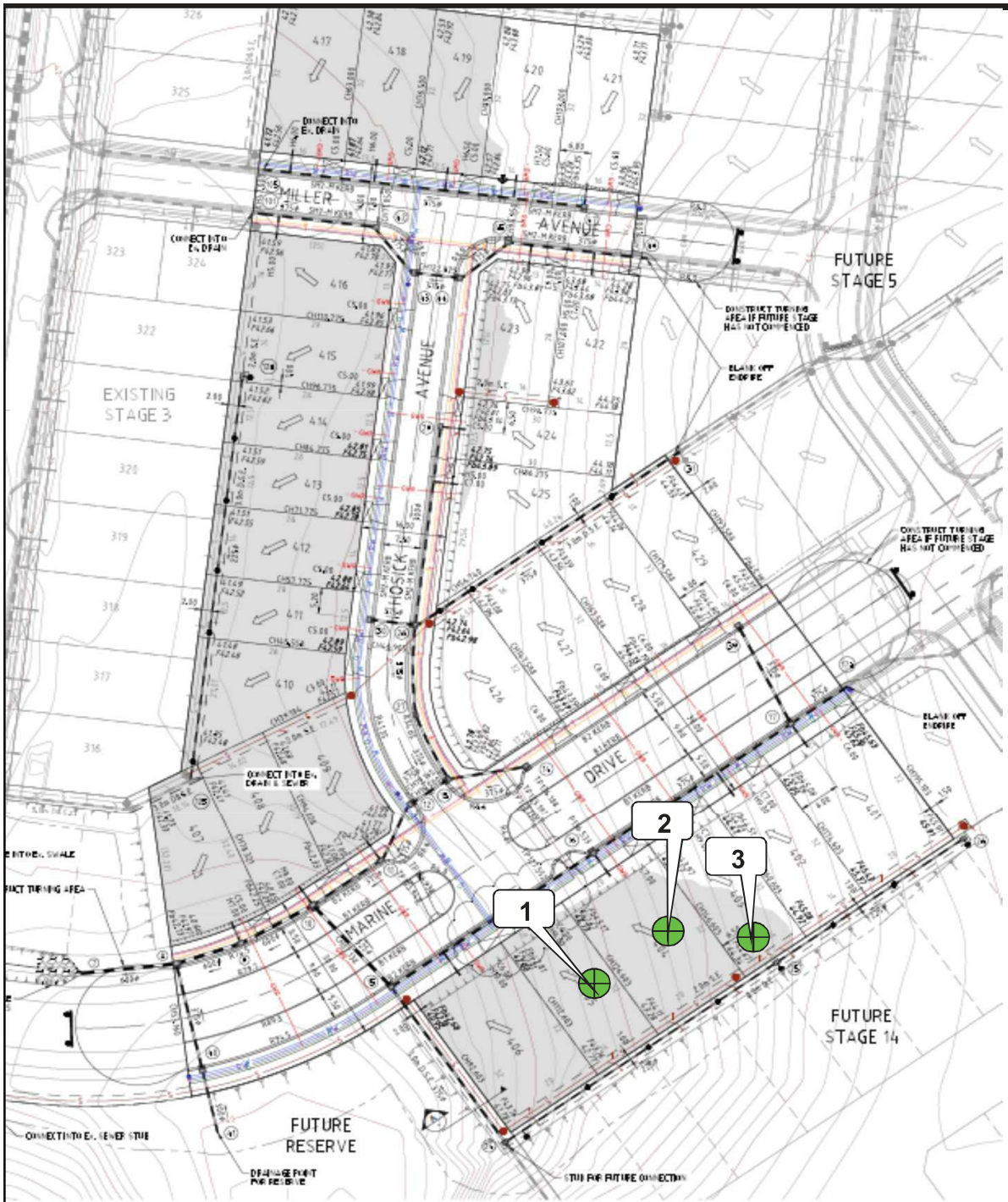
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SAM LOZA

(Approved Signatory)

Issue Date: 12/7/2017



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 PO Box 184 Keilor VIC 3036
 PH: (03) 9335 1225 Fax: (03) 9335 1775

CLIENT: DRAPERS

LOCATION: The Quay 2 Estate Stage 4

Sketch indicating approx. compaction test locations

DATE: 30/6/17

JOB No.: 1916/149

OPERATOR: JC

CHECKED: EG

SCALE: NTS