DRAPERS CIVIL
CONTRACTING PTY LTD

THE QUAY 2 ESTATE
STAGE 3

1505-1535 SURF COAST HWY
TORQUAY

Report On

LEVEL 1
SURVEILLANCE
& COMPACTION CONTROL
OF EARTHWORKS

Carried Out
By

GEOTECHNICAL
LABORATORIES

Project No.: 1917/039

GEOTECHNICAL LABORATORIES
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

23rd October 2017
Project No.:1917/039

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

Dear Sir,

RE: The Quay 2 Estate Stage 3 – 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 November 2016 to the 25th of March 2017 where a commercial 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. 3R2 Version A.

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 November 2016 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.

The material is best described as a **CLAY fill, 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 fifty 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 hilf density ratio not less than 95 percent of the maximum hilf density value as determined by the Standard Hilf Rapid Compaction Method in accordance with AS 1289 5.7.1.

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 21st of November 2016 to the 25th of May 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 3

1505-1535 SURF COAST HWY
TORQUAY

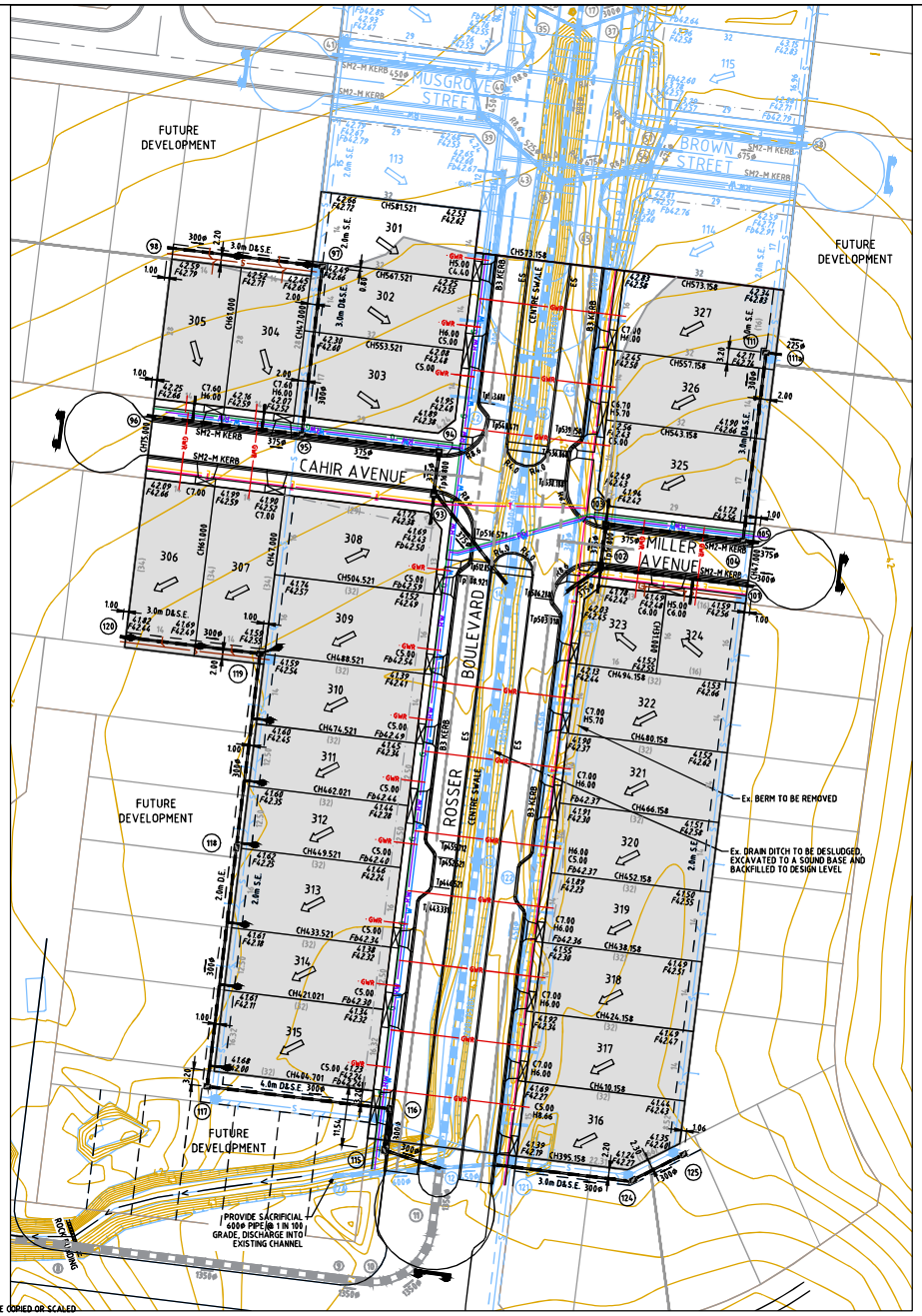
Report On

LEVEL 1
SURVEILLANCE
& COMPACTION CONTROL
OF EARTHWORKS

Carried Out
By

GEOTECHNICAL LABORATORIES

APPENDIX A



0 5 10 20
Scale 1:500 @ A1

LEGEND

45.0 — EXISTING SURFACE CONTOURS (0.20m INT.)
45.5

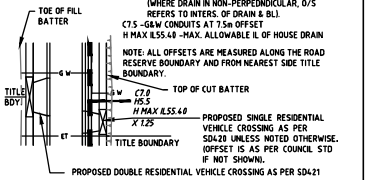
OVERALL DIRECTION TO LEGAL POINT OF DISCHARGE

OVERLAND FLOW PATH & DIRECTION

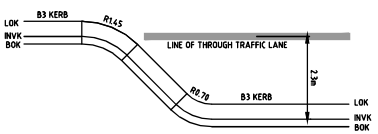
FILL IN EXCESS OF 200mm

DESCRIPTION OF ABBREV.
X 1.25 -EDGE OF VEHICLE CROSSING AT 1.25m OFFSET (ONLY SHOWN WHERE NON-STD.)
HS.5 -PROPERTY DRAIN AT 5.5m OFFSET (WHERE DRAIN IN NON-PERPENDICULAR, O/S REFERS TO INTERS. OF DRAIN & BL).
C7.5 -G&W CONDUITS AT 7.5m OFFSET
H MAX IL55.40 -MAX. ALLOWABLE IL OF HOUSE DRAIN

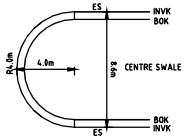
NOTE: ALL OFFSETS ARE MEASURED ALONG THE ROAD RESERVE BOUNDARY AND FROM NEAREST SIDE TITLE BOUNDARY.



TYPICAL NOTATIONS - EXAMPLE:
NOT TO SCALE



TYPICAL PARALLEL PARKING BAY DETAIL
NOT TO SCALE



TYPICAL CENTRE SWALE DETAIL
NOT TO SCALE

WARNING
BEWARE OF UNDERGROUND SERVICES
THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

PRELIMINARY PLAN ONLY
NOT APPROVED FOR CONSTRUCTION

H:\21437\STAGE 3\CAD\DWG SET\ROAD AND DRAINAGE\21437_3R2.DWG

VERSION	REMARKS		
A	PRELIMINARY ISSUE	XX.XX.XX	JZ

LEGEND

DRAIN, PROPERTY INLET & PIT
EX DRAIN & PIT
HOUSE DRAIN
SEWER AND MAINTENANCE HOLE
EX SEWER AND MAINTENANCE HOLE
WATER MAIN
EX WATER MAIN, VALVE & HYDRANT
GAS MAIN
EX GAS MAIN, VALVE
TELSTRA SERVICES & PITS
EX TELSTRA SERVICES & PITS
RECYCLED WATER
EX RECYCLED WATER
ELECTRICAL U.G. SERVICES
EX ELECTRICAL U.G. SERVICES
ELECTRICAL SERVICE & PIT
EX ELECTRICAL ASSETS
EX ELECTRICAL OVERHEADS
GAS & WATER CONDUITS
TOP OF BATTER
TOE OF BATTER
EX FENCE
EX WALL OR BUILDING
STREET SIGN
DRAINAGE PIT No.
TBM

F FINISHED SURFACE AFTER CUTTING OR FILLING
Fb TOP OF PROPOSED BATTER
P PROPOSED PAVEMENT OR FOOTPATH SURFACE
IL EXISTING OR PROPOSED INVERT LEVEL OF PIPE OR OPEN DRAIN
TP TANGENT POINT
CH CHAINAGE
PSM

DRAWN BY	NARENDER.K	DESIGNED BY	J.ZHOU
MELWAY	493 D12	CHECKED BY	
DATUM	AHD	AUTHORISED BY	S.RAVIDA

REEDS CONSULTING

SURF COAST SHIRE
THE QUAY 2 ESTATE
STAGE 3
LAYOUT PLAN

DRAWING No.	VERSION
3R2	A
REFERENCE	
21437E/3	
SHEET	
3 OF	

GEOTECHNICAL LABORATORIES
ACN 102 571 077
Factory 1/8-10 Catalina Drive, Tullamarine Vic 3043
PO Box 184 Keilor VIC 3036
PH: (03) 9335 1225 Fax: (03) 9335 1775

DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 1916/002

LOCATION: DRAPERS - The Quay 2 Estate Stage 3

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m³)	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m³)	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)
21/11/16	1	***Refer to #1916/003 for approx. test site locations.***	2.03	13.0	98.0	2.07	15.5	175	2.5 Drier	82.5	0	0	800
21/11/16	2		2.03	13.0	104.0	1.96	16.0	175	3.0 Drier	80.5	0	0	800
21/11/16	3		2.11	13.0	101.5	2.08	17.0	175	3.5 Drier	78.5	0	0	800
21/11/16	4		2.03	14.5	102.0	1.99	18.0	175	3.0 Drier	82.0	0	0	800
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-

NOTES: Onsite Sandy Clay Fill

Test sites located - Geolab Procedure 4, Part 4.4.

Compaction specimens sampled after compaction.

Start Time: 8:40am Finish Time: 9:00am

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.

Moisture Content: AS 1289 2.1.1

Soil Layer thickness: 200mm

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)

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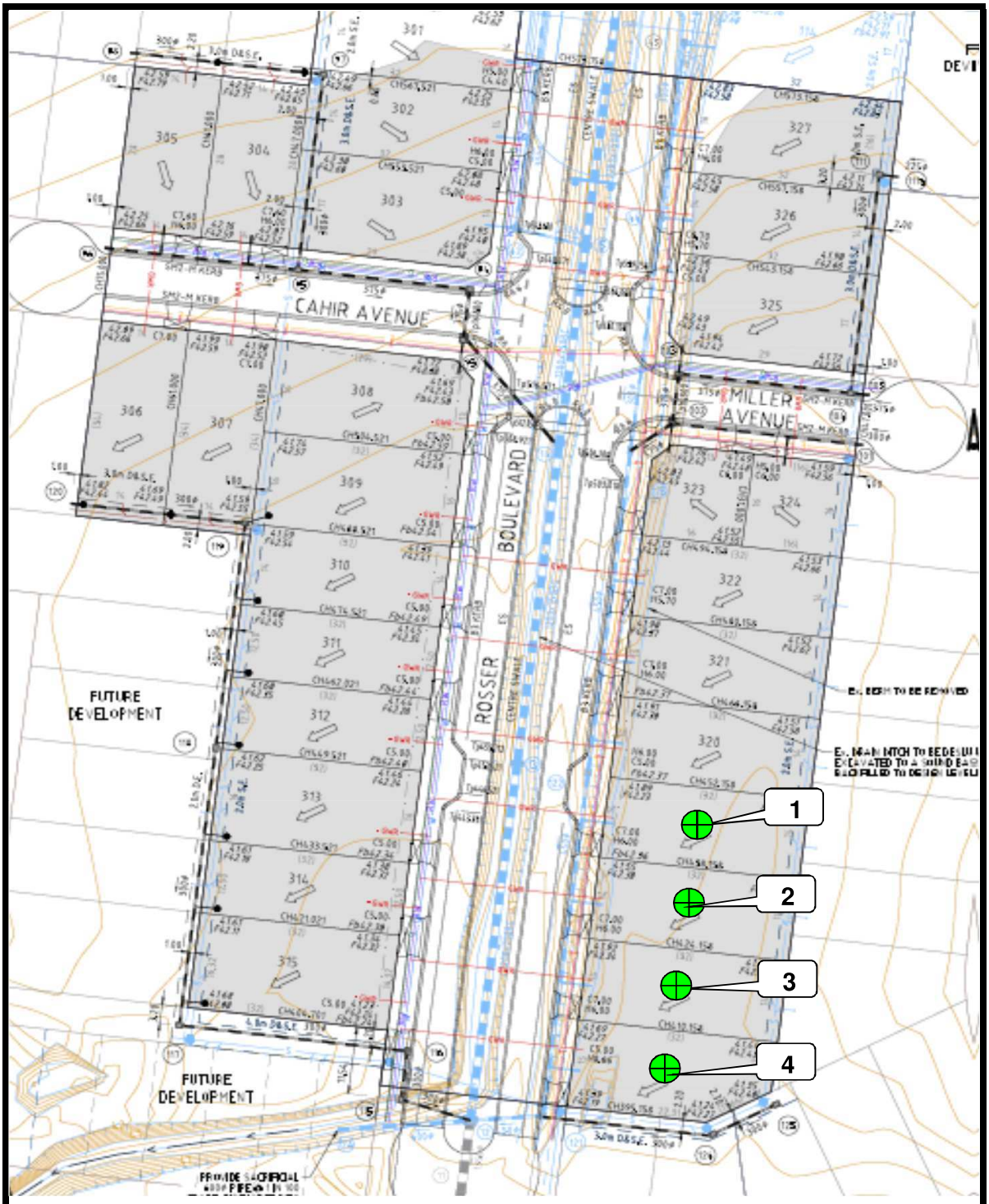
NATA Accredited Laboratory Number 14561

SAM LOZA

(Approved Signatory)

Issue Date: 20/12/2016



GEOTECHNICAL LABORATORIES

GEOTECHNICAL LABORATORIES
ACN 102 571 077
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	**DATE: 21/11/16**	**JOB No.: 1916/003**
LOCATION: The Quay Estate Stage 3	**OPERATOR: JC**	**CHECKED: JC**
Sketch indicating approx. compaction test locations	**SCALE: NTS**	**FIGURE No: -**

GEOTECHNICAL LABORATORIES
ACN 102 571 077
Factory 1/8-10 Catalina Drive, Tullamarine Vic 3043
PO Box 184 Keilor VIC 3036
PH: (03) 9335 1225 Fax: (03) 9335 1775

DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 1916/004

LOCATION: DRAPERS - Quay Estate Stage 3

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m³)	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m³)	STANDARD OPTIMUM MOISTURE CONTENT (%)	PROBE DEPTH SETTING (mm)	VARIATION FROM OPTIMUM MOISTURE CONTENT (%)	MOISTURE RATIO (%)	WET +19mm (%)	WET +37.5mm (%)	APPROX. DEPTH BELOW FINISH LEVEL (mm)
29/11/16	1	***Refer to #1916/005 for approx. test site locations.***	2.01	12.5	96.5	2.08	12.5	175	0.0 Drier	98.0	0	0	800
29/11/16	2		2.02	14.5	95.0	2.13	14.0	175	0.0 Wetter	101.5	0	0	800
29/11/16	3		2.15	12.0	103.0	2.08	12.5	175	0.5 Drier	96.5	0	0	800
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-

NOTES: Onsite Sandy Clay Fill

Test sites located - Geolab Procedure 4, Part 4.4.

Compaction specimens sampled after compaction.

Start Time: 8:38am Finish Time: 8:48am

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

Soil Layer thickness: 200mm

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)

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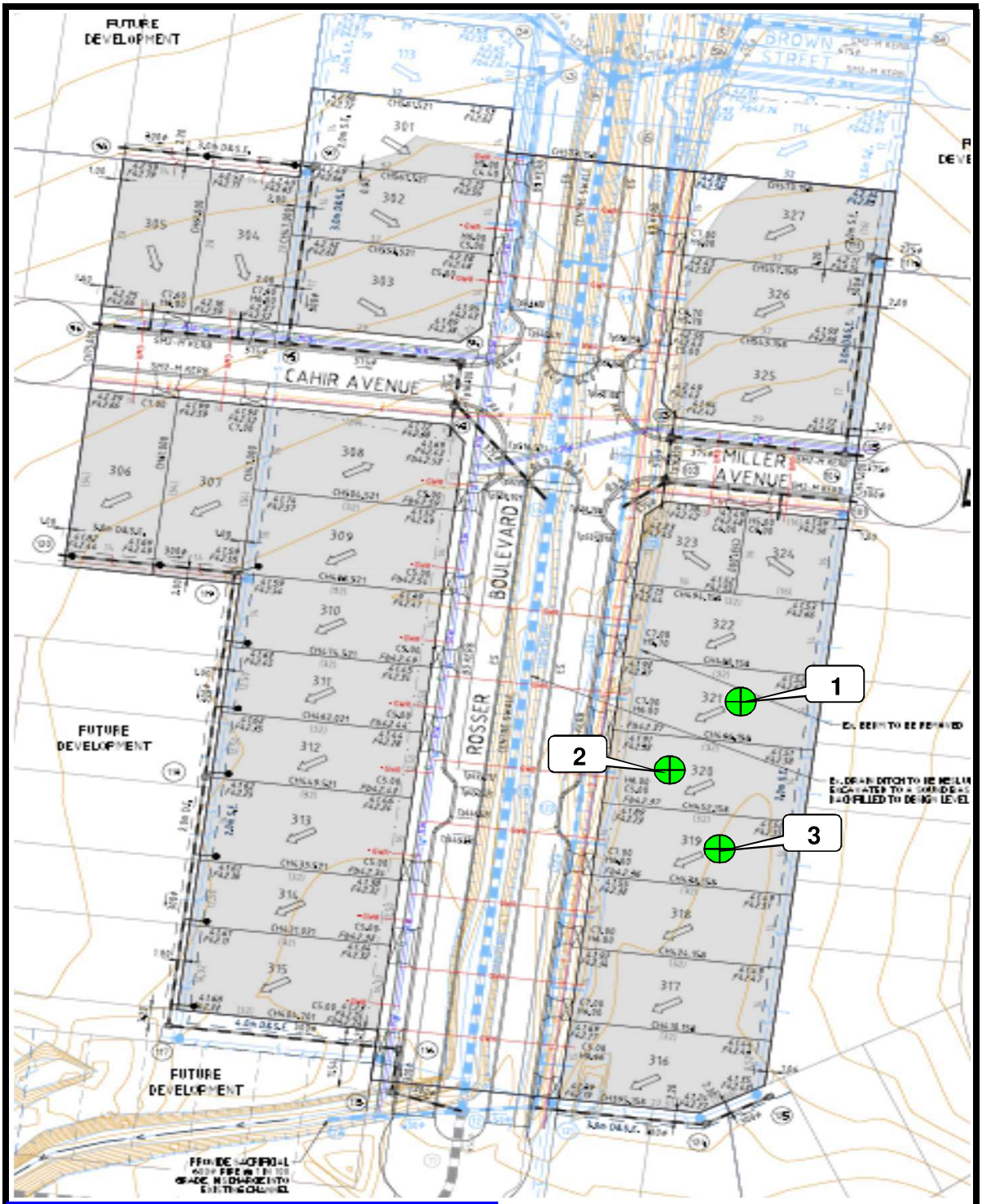
SAM LOZA

(Approved Signatory)

Issue Date: 22/12/2016



GEOTECHNICAL LABORATORIES

GEOTECHNICAL LABORATORIES
ACN 102 571 077
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	**DATE: 29/11/16**	**JOB No.: 1916/005**
LOCATION: The Quay Estate Stage 3	**OPERATOR: VR**	**CHECKED: CA**
Sketch indicating approx. compaction test locations	**SCALE: NTS**	**FIGURE No: -**

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ACN 102 571 077
Factory 1/8-10 Catalina Drive, Tullamarine Vic 3043
PO Box 184 Keilor VIC 3036
PH: (03) 9335 1225 Fax: (03) 9335 1775

DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 1916/008

LOCATION: DRAPERS - The Quay Estate Stage 3

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m³)	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m³)	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)
2/12/16	1	***Refer to #1916/009 for approx. test site locations.***	2.13	16.0	101.0	2.11	16.0	175	0.0 Drier	100.0	0	0	200
2/12/16	2		2.01	16.0	96.5	2.07	15.5	175	0.0 Wetter	101.5	0	0	200
2/12/16	3		2.07	19.0	103.5	2.01	19.0	175	0.0 Drier	100.0	0	0	200
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-

NOTES: Onsite Sandy Clay Fill

Test sites located - Geolab Procedure 4, Part 4.4.

Compaction specimens sampled after compaction.

Start Time: 1:07pm Finish Time: 1:22pm

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

Soil Layer thickness: 200mm

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)

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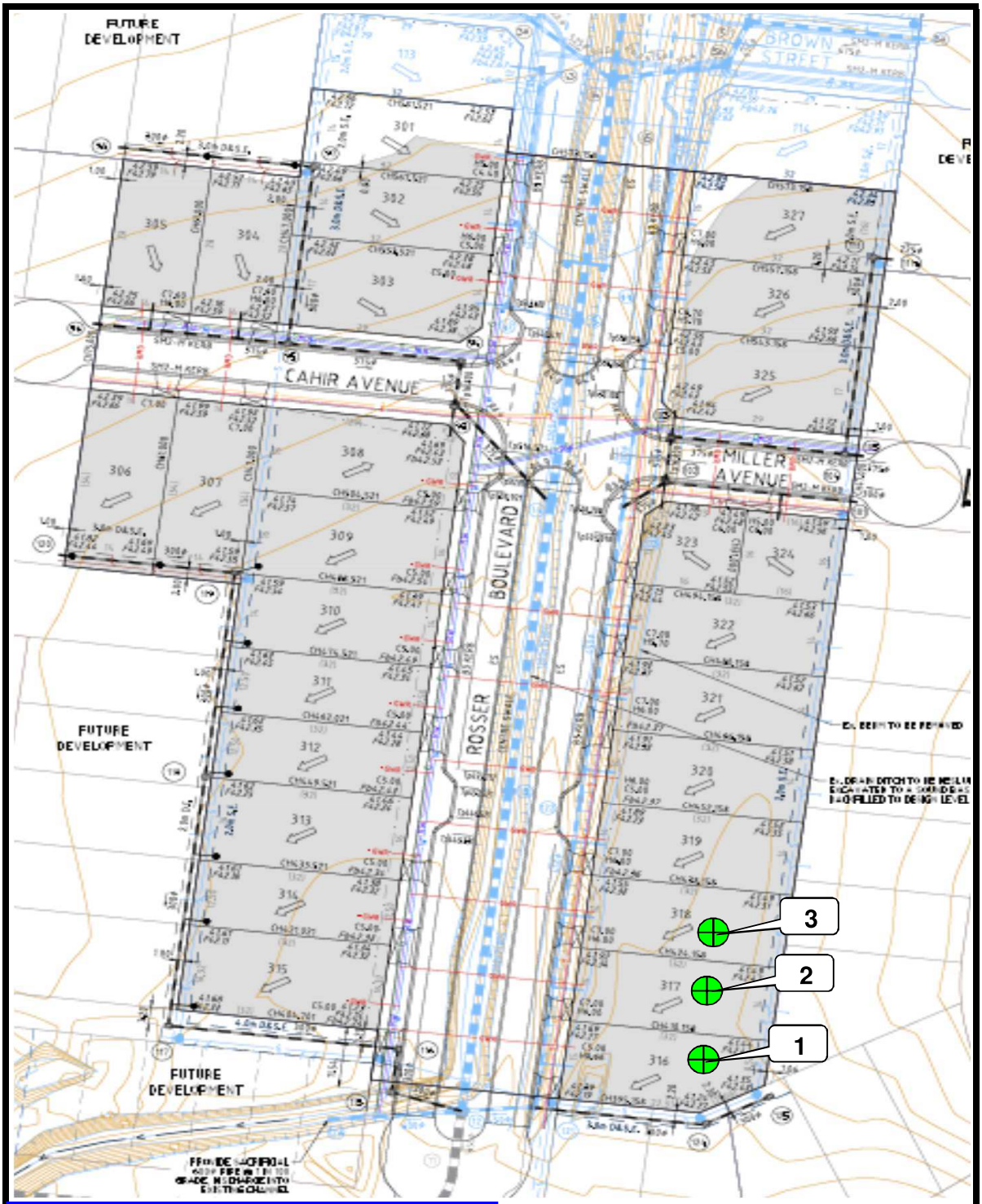
SAM LOZA

(Approved Signatory)

Issue Date: 21/12/2016



GEOTECHNICAL LABORATORIES

GEOTECHNICAL LABORATORIES
ACN 102 571 077
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	**DATE: 2/12/16**	**JOB No.: 1916/009**
LOCATION: The Quay Estate Stage 3	**OPERATOR: VR**	**CHECKED: JC**
Sketch indicating approx. compaction test locations	**SCALE: NTS**	**FIGURE No: -**

GEOTECHNICAL LABORATORIES
ACN 102 571 077
Factory 1/8-10 Catalina Drive, Tullamarine Vic 3043
PO Box 184 Keilor VIC 3036
PH: (03) 9335 1225 Fax: (03) 9335 1775

DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 1916/015

LOCATION: DRAPERS - Quay Estate Torquay

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m³)	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m³)	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)
8/12/16	1	*Refer to #1916/016 for approx. test site locations.*	1.98	15.5	98.5	✠ 2.01	17.5	175	2.5 Drier	87.0	8	0	400
8/12/16	2		2.10	15.0	107.5	1.96	17.5	175	2.5 Drier	87.0	0	0	400
8/12/16	3		1.98	15.0	98.5	2.01	17.0	175	2.5 Drier	86.5	0	0	400
8/12/16	4		2.24	12.0	107.5	✠ 2.08	14.0	175	2.0 Drier	87.0	11	0	400
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-

NOTES: Onsite Sandy Clay Fill

Test sites located - Geolab Procedure 4, Part 4.3.

Compaction specimens sampled after compaction.

Start Time: 9:44am Finish Time: 10:04am

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

Soil Layer thickness: 200mm

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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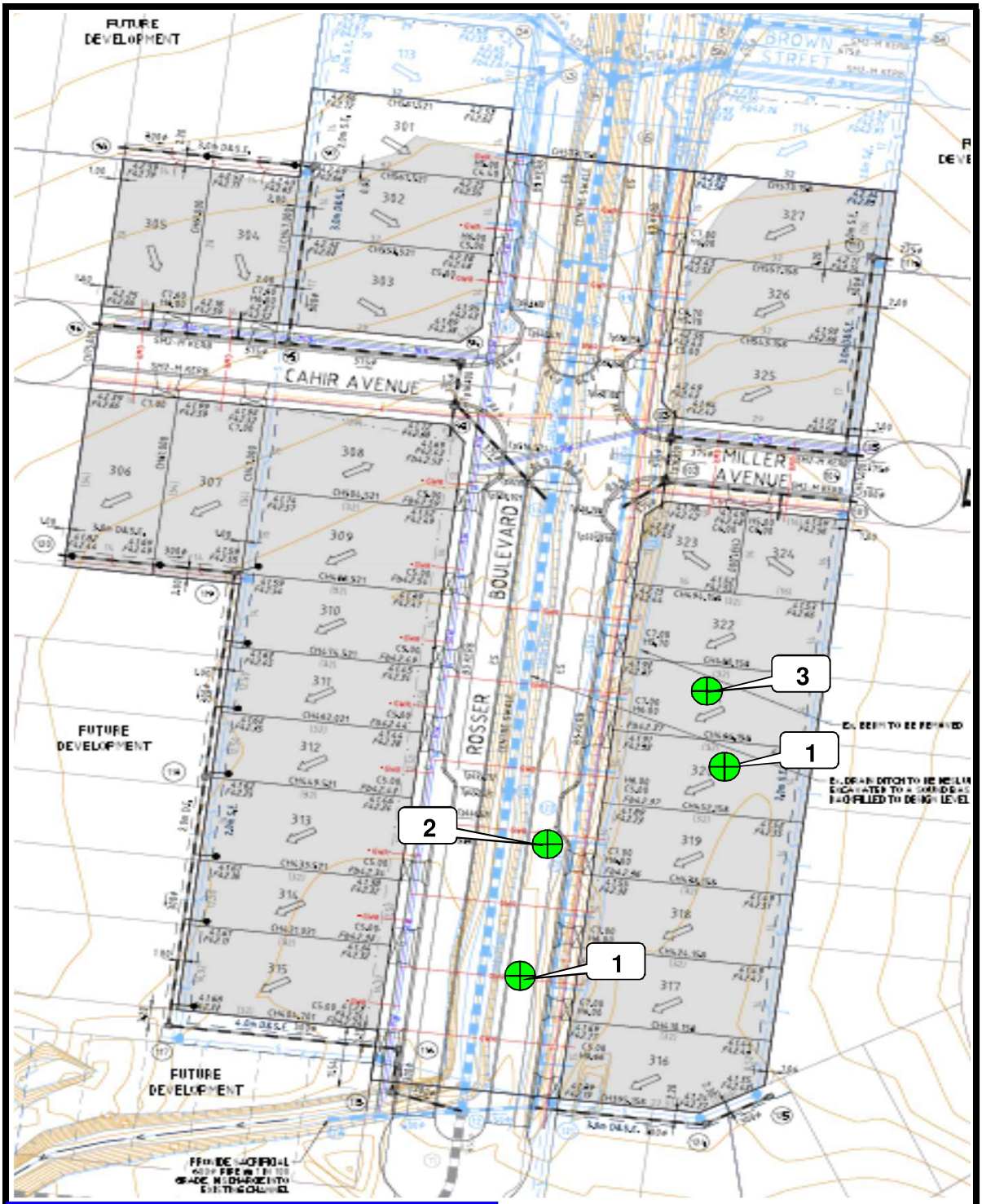
SAM LOZA

(Approved Signatory)

Issue Date: 18/1/2017



GEOTECHNICAL LABORATORIES

GEOTECHNICAL LABORATORIES
ACN 102 571 077
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	**DATE: 8/12/16**	**JOB No.: 1916/016**
LOCATION: The Quay Estate Stage 3	**OPERATOR: VR**	**CHECKED: PG**
Sketch indicating approx. compaction test locations	**SCALE: NTS**	**FIGURE No: -**

GEOTECHNICAL LABORATORIES
ACN 102 571 077
Factory 1/8-10 Catalina Drive, Tullamarine Vic 3043
PO Box 184 Keilor VIC 3036
PH: (03) 9335 1225 Fax: (03) 9335 1775

DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 1916/017

LOCATION: DRAPERS - Quay Estate Stage 3

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m³)	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m³)	STANDARD OPTIMUM MOISTURE CONTENT (%)	PROBE DEPTH SETTING (mm)	VARIATION FROM OPTIMUM MOISTURE CONTENT (%)	MOISTURE RATIO (%)	WET +19mm (%)	WET +37.5mm (%)	APPROX. DEPTH BELOW FINISH LEVEL (mm)
12/12/16	1	*Refer to #1916/018 for approx. test site locations.*	2.00	20.5	96.5	✠ 2.08	21.0	175	0.5 Drier	97.5	16	0	200
12/12/16	2		2.06	17.5	100.0	✠ 2.07	20.0	175	2.5 Drier	88.5	18	0	200
12/12/16	3		2.05	20.0	99.5	✠ 2.07	20.0	175	0.0 Drier	100.0	8	0	200
12/12/16	4		2.04	20.0	98.5	2.08	20.0	175	0.0 Wetter	101.0	0	0	200
12/12/16	5		2.09	20.0	100.0	✠ 2.09	20.0	175	0.0 Drier	100.0	7	0	200
12/12/16	6		2.11	22.0	104.0	2.04	22.0	175	0.0 Drier	100.0	0	0	200

NOTES: Onsite Clay Fill

Test sites located - Geolab Procedure 4, Part 4.4.

Compaction specimens sampled after compaction.

Start Time: 8:55am Finish Time: 9:22am

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

Soil Layer thickness: 200mm

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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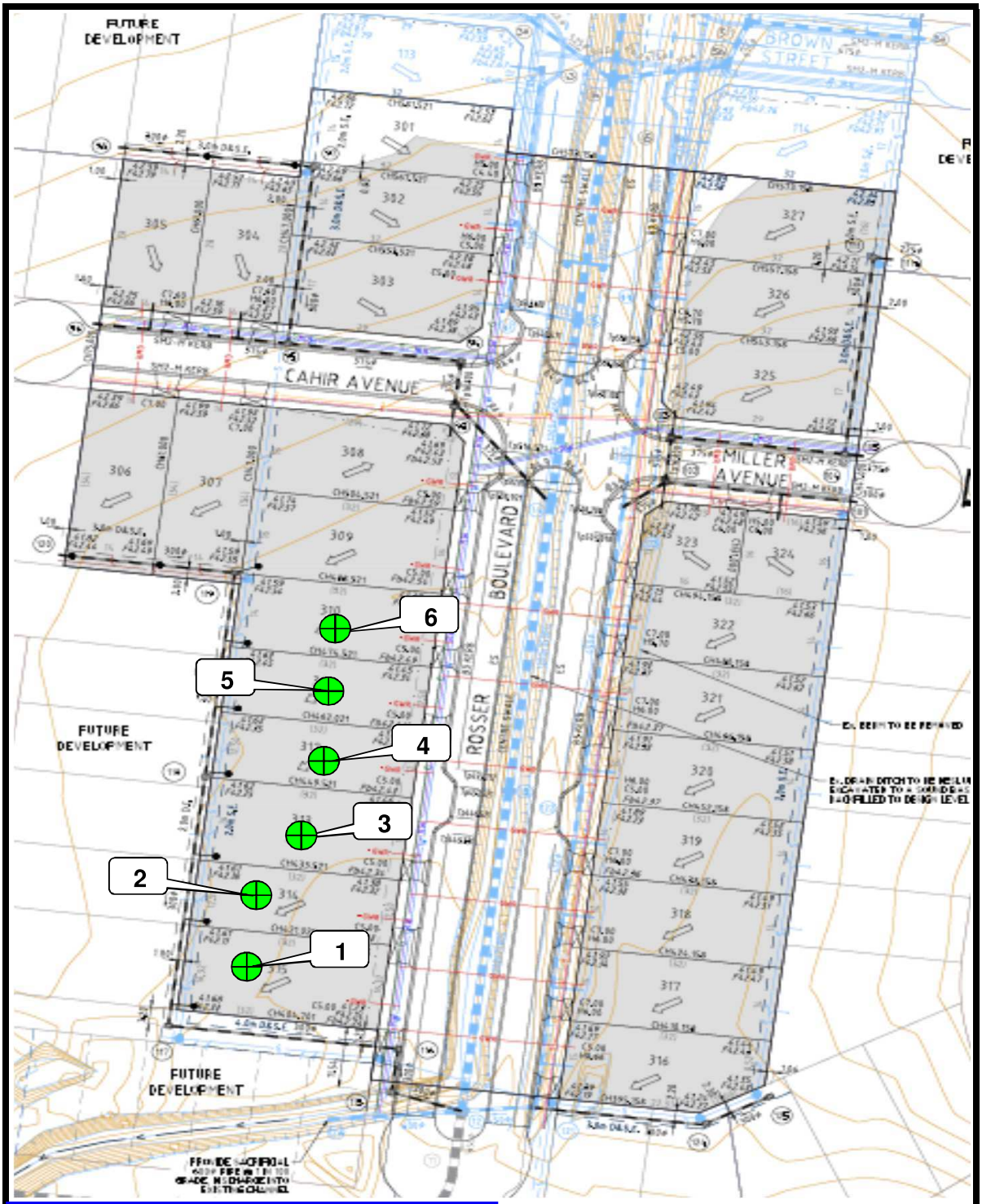
NATA Accredited Laboratory Number 14561

SAM LOZA

(Approved Signatory)

Issue Date: 19/1/2017



GEOTECHNICAL LABORATORIES

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ACN 102 571 077
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	**DATE: 12/12/16**	**JOB No.: 1916/018**
LOCATION: The Quay Estate Stage 3	**OPERATOR: VR**	**CHECKED: CA**
Sketch indicating approx. compaction test locations	**SCALE: NTS**	**FIGURE No: -**

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ACN 102 571 077
Factory 1/8-10 Catalina Drive, Tullamarine Vic 3043
PO Box 184 Keilor VIC 3036
PH: (03) 9335 1225 Fax: (03) 9335 1775

DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 1916/019

LOCATION: DRAPERS - Quay Estate Stage 3

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m³)	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m³)	STANDARD OPTIMUM MOISTURE CONTENT (%)	PROBE DEPTH SETTING (mm)	VARIATION FROM OPTIMUM MOISTURE CONTENT (%)	MOISTURE RATIO (%)	WET +19mm (%)	WET +37.5mm (%)	APPROX. DEPTH BELOW FINISH LEVEL (mm)
10/12/16	1	***Refer to #1916/020 for approx. test site locations.***	1.96	21.5	95.5	✠ 2.05	21.0	175	0.5 Wetter	102.5	8	0	400
10/12/16	2		1.99	22.5	103.0	1.93	22.5	175	0.0 Drier	100.0	0	0	400
10/12/16	3		2.02	21.5	100.5	✠ 2.01	22.0	175	0.5 Drier	98.0	9	0	400
10/12/16	4		2.00	15.5	98.5	✠ 2.03	18.0	175	2.5 Drier	86.0	10	0	400
10/12/16	5		2.09	18.0	104.0	✠ 2.02	20.0	175	1.5 Drier	91.5	5	0	400
10/12/16	6		1.99	17.5	104.5	1.91	21.5	175	4.0 Drier	81.5	0	0	400

NOTES: Onsite Sandy Clay Fill

Test sites located - Geolab Procedure 4, Part 4.4.

Compaction specimens sampled after compaction.

Start Time: 7:30am Finish Time: 8:07am

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

Soil Layer thickness: 200mm

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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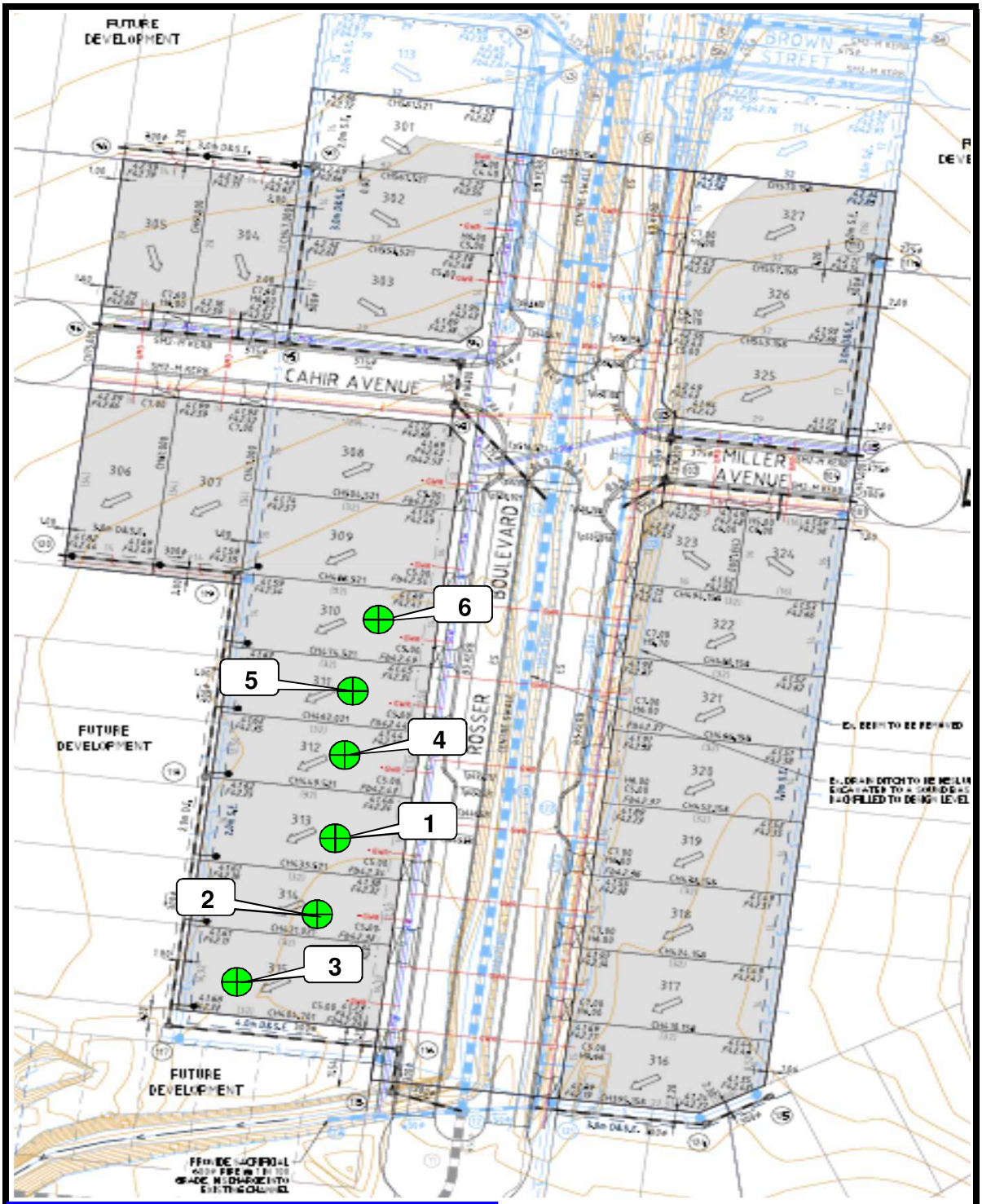
(Approved Signatory)

Issue Date: 19/1/2017



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ACN 102 571 077
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	**DATE: 10/12/16**	**JOB No.: 1916/020**
LOCATION: The Quay Estate Stage 3	**OPERATOR: VR**	**CHECKED: CA**
Sketch indicating approx. compaction test locations	**SCALE: NTS**	**FIGURE No: -**

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DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 1916/023A

LOCATION: DRAPERS - Quay Estate Stage 3

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m³)	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m³)	STANDARD OPTIMUM MOISTURE CONTENT (%)	PROBE DEPTH SETTING (mm)	VARIATION FROM OPTIMUM MOISTURE CONTENT (%)	MOISTURE RATIO (%)	WET +19mm (%)	WET +37.5mm (%)	APPROX. DEPTH BELOW FINISH LEVEL (mm)
14/12/16	1	***Refer to #1916/024 for approx. test site locations.***	1.99	18.5	97.0	2.05	19.5	175	0.5 Drier	96.5	0	0	400
14/12/16	2		2.20	17.5	104.5	✠ 2.10	19.0	175	1.5 Drier	91.5	18	0	400
14/12/16	3		2.15	16.0	103.5	✠ 2.07	19.0	175	3.0 Drier	84.0	19	0	400
14/12/16	4		1.98	18.0	98.5	2.01	20.0	175	2.0 Drier	90.5	0	0	400
14/12/16	5		2.04	19.5	104.0	1.97	22.0	175	2.5 Drier	89.0	0	0	400
14/12/16	6		2.06	19.5	103.5	1.99	20.5	175	0.5 Drier	96.5	0	0	400

NOTES: Onsite Sandy Clay Fill

Test sites located - Geolab Procedure 4, Part 4.4.

Compaction specimens sampled after compaction.

Start Time: 8:53am Finish Time: 9:21am

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.

This report supersedes report #1916/023

Soil Layer thickness: 200mm

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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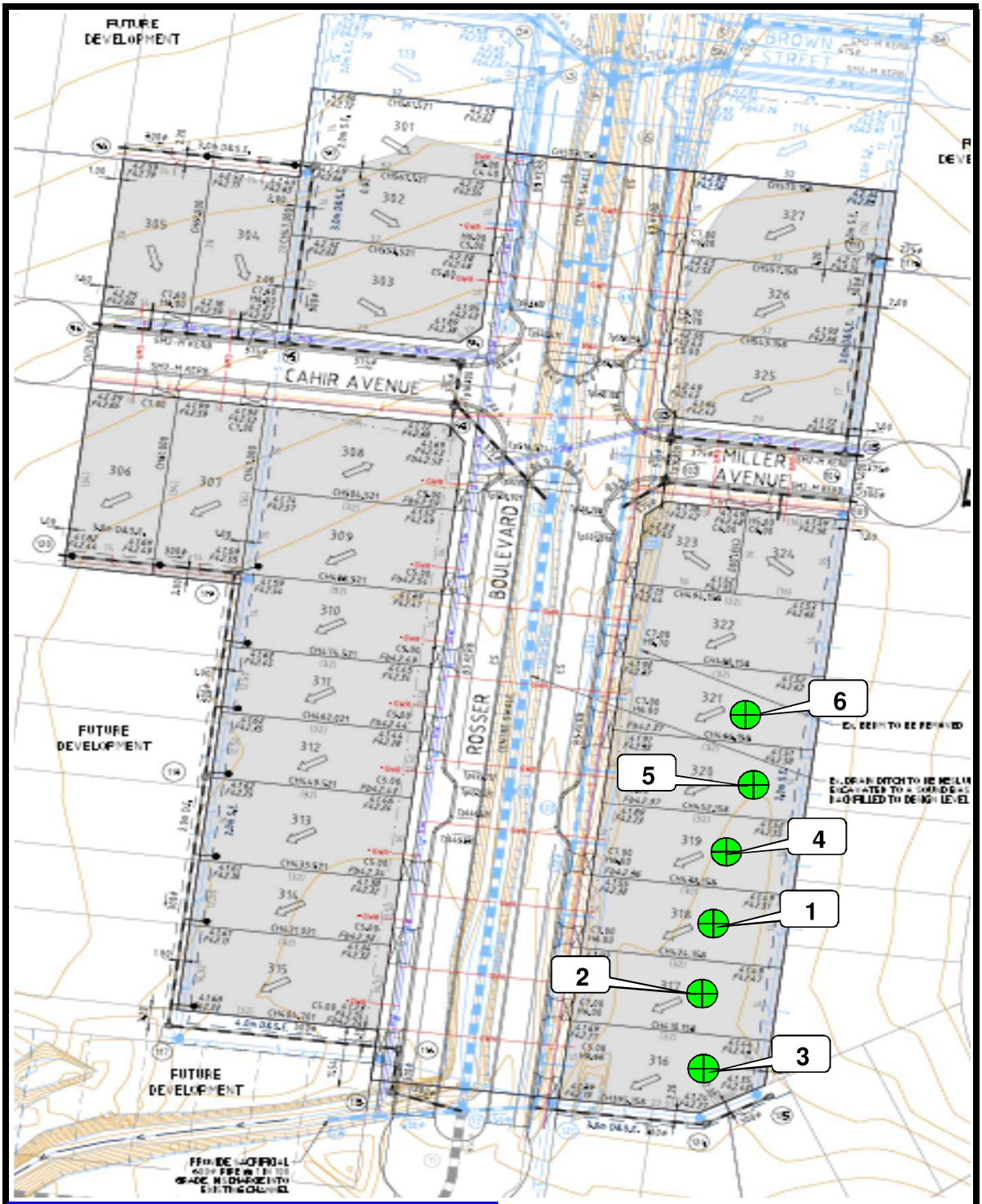

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ACN 102 571 077
Factory 1/8-10 Catalina Drive, Tullamarine Vic 3043
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PH: (03) 9335 1225 Fax: (03) 9335 1775

CLIENT: DRAPERS	**DATE: 14/12/16**	**JOB No.: 1916/024**
LOCATION: The Quay Estate Stage 3	**OPERATOR: VR**	**CHECKED: CA**
Sketch indicating approx. compaction test locations	**SCALE: NTS**	**FIGURE No: -**

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DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 1916/027

LOCATION: DRAPERS - Quay Estate Stage 2

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m³)	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m³)	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)
16/12/16	1	***Refer to #1916/028 for approx. test site locations.***	1.92	21.5	97.0	1.98	22.0	175	0.5 Drier	96.5	0	0	400
16/12/16	2		2.04	21.0	100.0	2.04	20.5	175	0.0 Wetter	101.0	0	0	400
16/12/16	3		1.98	24.5	100.5	1.96	24.0	175	0.5 Wetter	102.0	0	0	400
16/12/16	4		2.04	24.5	99.5	2.04	24.5	175	0.0 Drier	100.0	0	0	400
16/12/16	5		2.07	18.0	99.5	2.08	18.5	175	0.0 Drier	98.5	0	0	400
16/12/16	6		1.98	21.5	97.5	2.03	21.0	175	0.5 Wetter	102.5	0	0	400

NOTES: Onsite Clay Fill

Test sites located - Geolab Procedure 4, Part 4.4.

Compaction specimens sampled after compaction.

Start Time: 1:10pm Finish Time: 1:37pm

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

Soil Layer thickness: 200mm

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)

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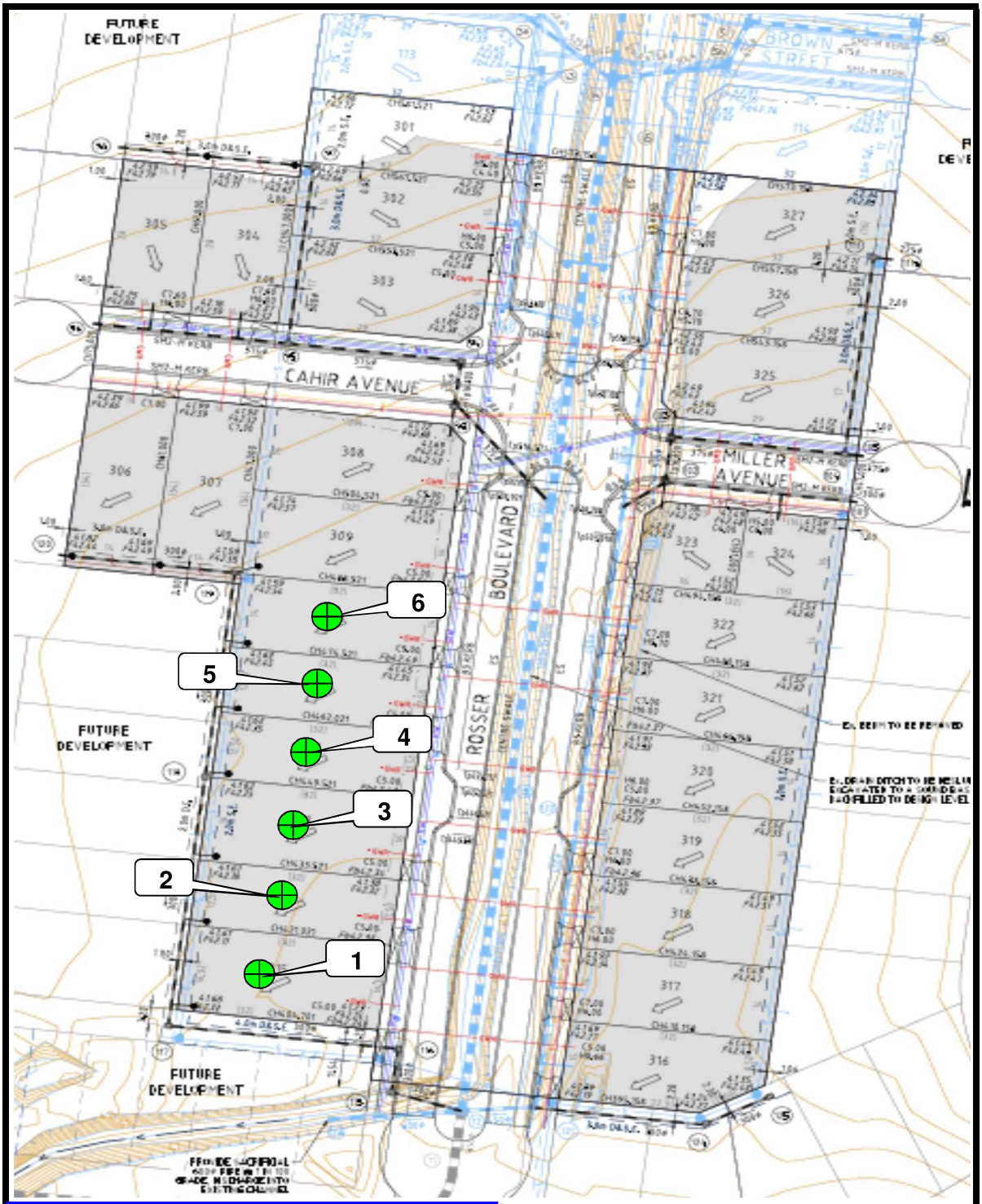

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ACN 102 571 077
Factory 1/8-10 Catalina Drive, Tullamarine Vic 3043
PO Box 184 Keilor VIC 3036
PH: (03) 9335 1225 Fax: (03) 9335 1775

CLIENT: DRAPERS	DATE: 16/12/16	JOB No.: 1916/028
LOCATION: The Quay Estate Stage 3	OPERATOR: VR	CHECKED: PG
Sketch indicating approx. compaction test locations	SCALE: NTS	FIGURE No: -

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Factory 1/8-10 Catalina Drive, Tullamarine Vic 3043
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PH: (03) 9335 1225 Fax: (03) 9335 1775

DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 1916/029

LOCATION: DRAPERS - The Quay 2 Estate Stage 3

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m³)	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m³)	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)
19/12/16	1	*Refer to #1916/030 for approx. test site locations.*	1.93	22.5	103.0	1.87	25.5	175	2.5 Drier	89.5	0	0	0
19/12/16	2		1.90	17.5	97.0	1.96	19.5	175	1.5 Drier	91.5	0	0	0
19/12/16	3		1.87	19.5	98.0	1.91	22.5	175	3.0 Drier	87.5	0	0	0
19/12/16	4		2.05	23.5	104.5	1.96	27.0	175	3.0 Drier	88.0	0	0	0
19/12/16	5		2.00	23.5	104.0	✠ 1.92	28.5	175	5.0 Drier	82.5	10	0	0
19/12/16	6		1.91	22.0	101.5	1.88	23.0	175	1.0 Drier	96.0	0	0	0

NOTES: Onsite Clay Fill

Test sites located - Geolab Procedure 4, Part 4.4.

Compaction specimens sampled after compaction.

Start Time: 11:02am Finish Time: 11:58am

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

Soil Layer thickness: 200mm

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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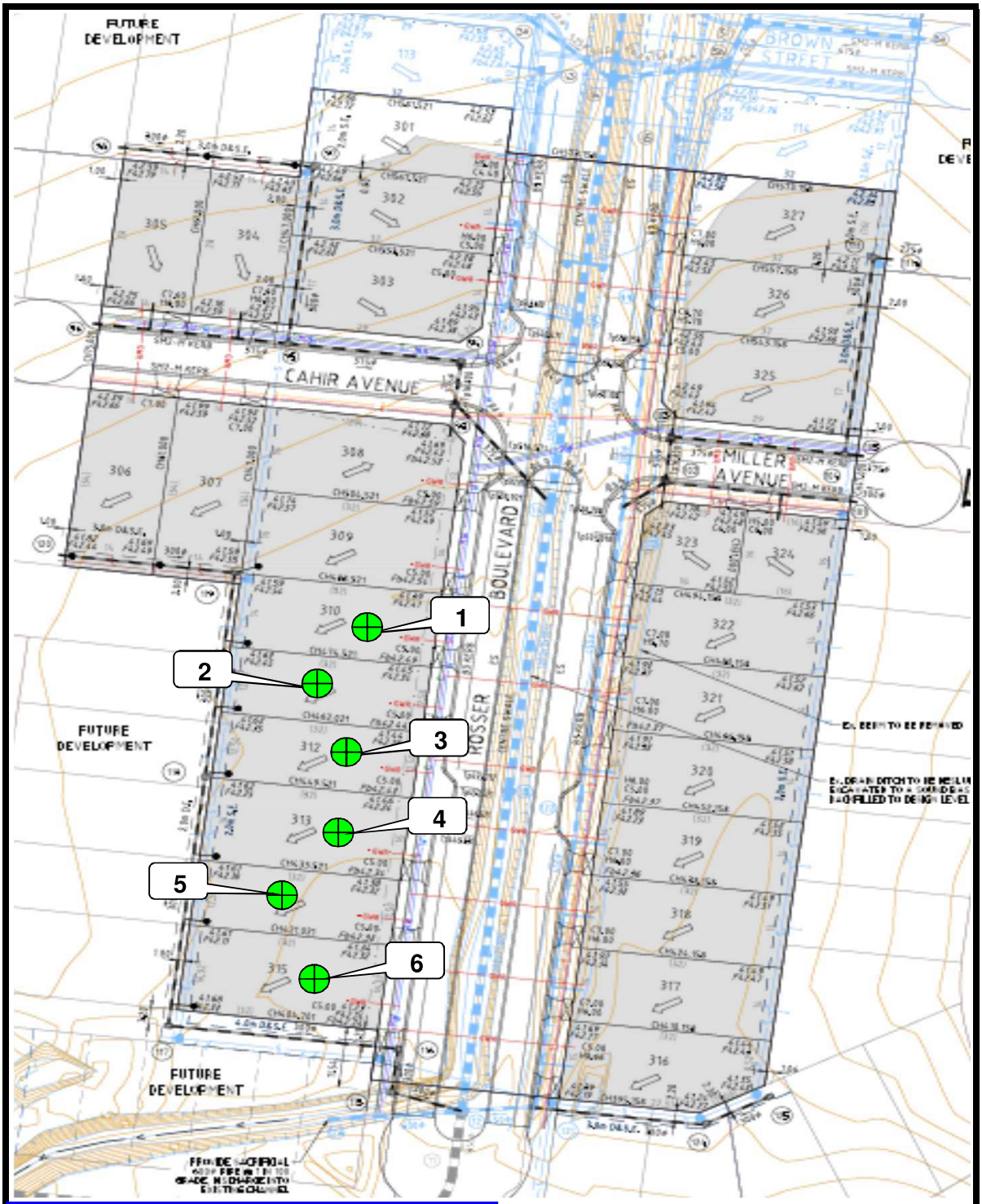

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ACN 102 571 077
Factory 1/8-10 Catalina Drive, Tullamarine Vic 3043
PO Box 184 Keilor VIC 3036
PH: (03) 9335 1225 Fax: (03) 9335 1775

CLIENT: DRAPERS	**DATE: 19/12/16**	**JOB No.: 1916/030**
LOCATION: The Quay Estate Stage 3	**OPERATOR: VR**	**CHECKED: CA**
Sketch indicating approx. compaction test locations	**SCALE: NTS**	**FIGURE No: -**

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Factory 1/8-10 Catalina Drive, Tullamarine Vic 3043
PO Box 184 Keilor VIC 3036
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DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 1916/031

LOCATION: DRAPERS - The Quay 2 Estate Stage 3

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m³)	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m³)	STANDARD OPTIMUM MOISTURE CONTENT (%)	PROBE DEPTH SETTING (mm)	VARIATION FROM OPTIMUM MOISTURE CONTENT (%)	MOISTURE RATIO (%)	WET +19mm (%)	WET +37.5mm (%)	APPROX. DEPTH BELOW FINISH LEVEL (mm)
10/01/17	1	***Refer to #1916/032 for approx. test site locations.***	2.14	19.5	103.5	2.07	20.0	175	0.0 Drier	99.0	0	0	0
10/01/17	2		2.02	17.0	95.5	2.11	16.5	175	0.0 Wetter	101.5	0	0	0
10/01/17	3		1.98	17.5	102.0	1.94	20.0	175	2.5 Drier	87.0	0	0	0
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-

NOTES: Onsite Clay Fill

Test sites located - Geolab Procedure 4, Part 4.3.

Compaction specimens sampled after compaction.

Start Time: 10:25am Finish Time: 10:42am

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.

Moisture Content: AS 1289 2.1.1

Soil Layer thickness: 200mm

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)

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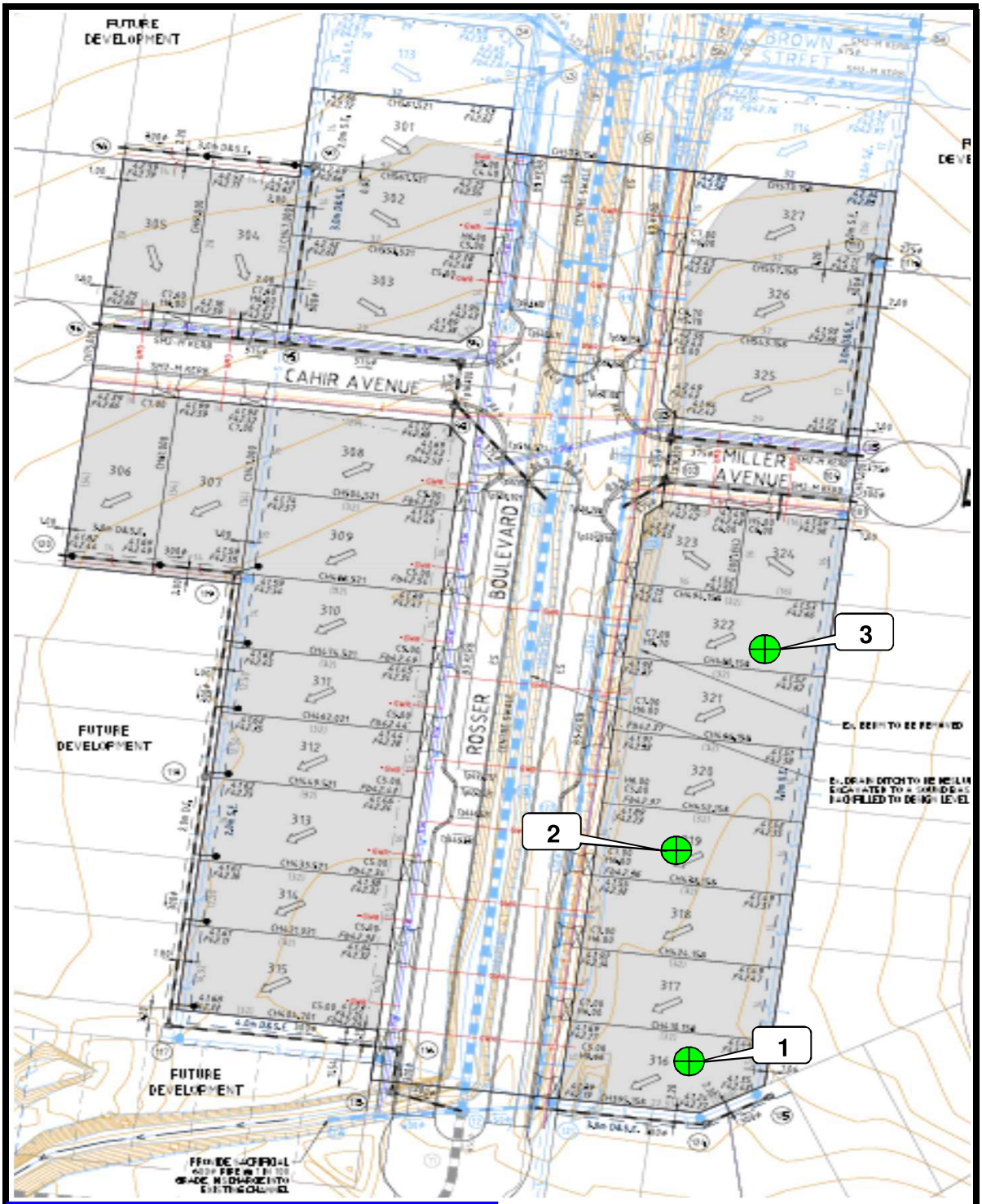

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ACN 102 571 077
Factory 1/8-10 Catalina Drive, Tullamarine Vic 3043
PO Box 184 Keilor VIC 3036
PH: (03) 9335 1225 Fax: (03) 9335 1775

CLIENT: DRAPERS	DATE: 10/01/17	JOB No.: 1916/032
LOCATION: The Quay 2 Estate Stage 3	OPERATOR: BE	CHECKED: CA
Sketch indicating approx. compaction test locations	SCALE: NTS	FIGURE No: -

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Factory 1/8-10 Catalina Drive, Tullamarine Vic 3043
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DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 1916/041

LOCATION: DRAPERS - The Quay 2 Estate Stage 3

DATE OF TESTS	TEST NUM.	TEST LOCATION	FIELD WET DENSITY (t/m³)	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m³)	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)
18/01/17	1	***Refer to #1916/042 for approx. test site locations.***	2.14	15.0	99.0	2.15	15.5	175	0.0 Drier	98.5	0	0	600
18/01/17	2		1.96	10.0	95.0	2.06	12.5	175	2.5 Drier	80.5	0	0	600
18/01/17	3		2.04	16.0	100.5	2.03	16.5	175	0.5 Drier	97.0	0	0	400
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-

NOTES: Onsite Sandy Clay Fill

Test sites located - Geolab Procedure 4, Part 4.4.

Compaction specimens sampled after compaction.

Start Time: 11:40am Finish Time: 12.06pm

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

Soil Layer thickness: 200mm

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)

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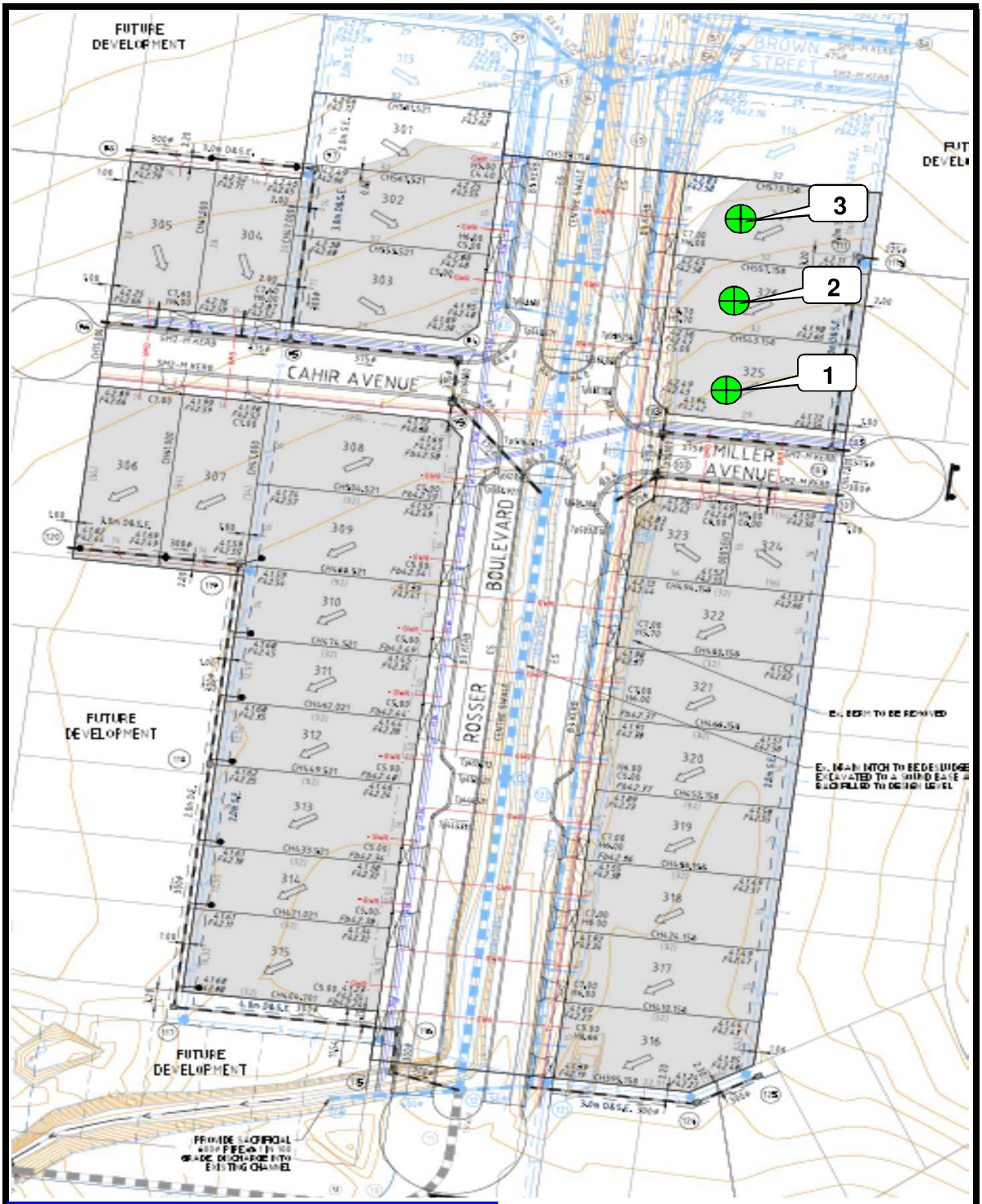

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ACN 102 571 077
Factory 1/8-10 Catalina Drive, Tullamarine Vic 3043
PO Box 184 Keilor VIC 3036
PH: (03) 9335 1225 Fax: (03) 9335 1775

CLIENT: DRAPERS	**DATE: 18/01/17**	**JOB No.: 1916/042**
LOCATION: The Quay 2 Estate Stage 3	**OPERATOR: BE**	**CHECKED: CA**
Sketch indicating approx. compaction test locations	**SCALE: NTS**	**FIGURE No: -**

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PH: (03) 9335 1225

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/m³)	FIELD MOISTURE CONTENT (%)	HILF DENSITY RATIO STANDARD (%)	STANDARD PCWD OR APCWD (t/m³)	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	*Refer to #1916/108 for approx. test site locations.*	2.04	17.0	100.5	2.03	18.0	175	0.5 Drier	96.0	0	0	400
25/05/17	2		1.94	22.0	96.5	2.01	22.0	175	0.0 Drier	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	0
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-

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.

Moisture Content: AS 1289 2.1.1

Soil Layer thickness: 200mm

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)

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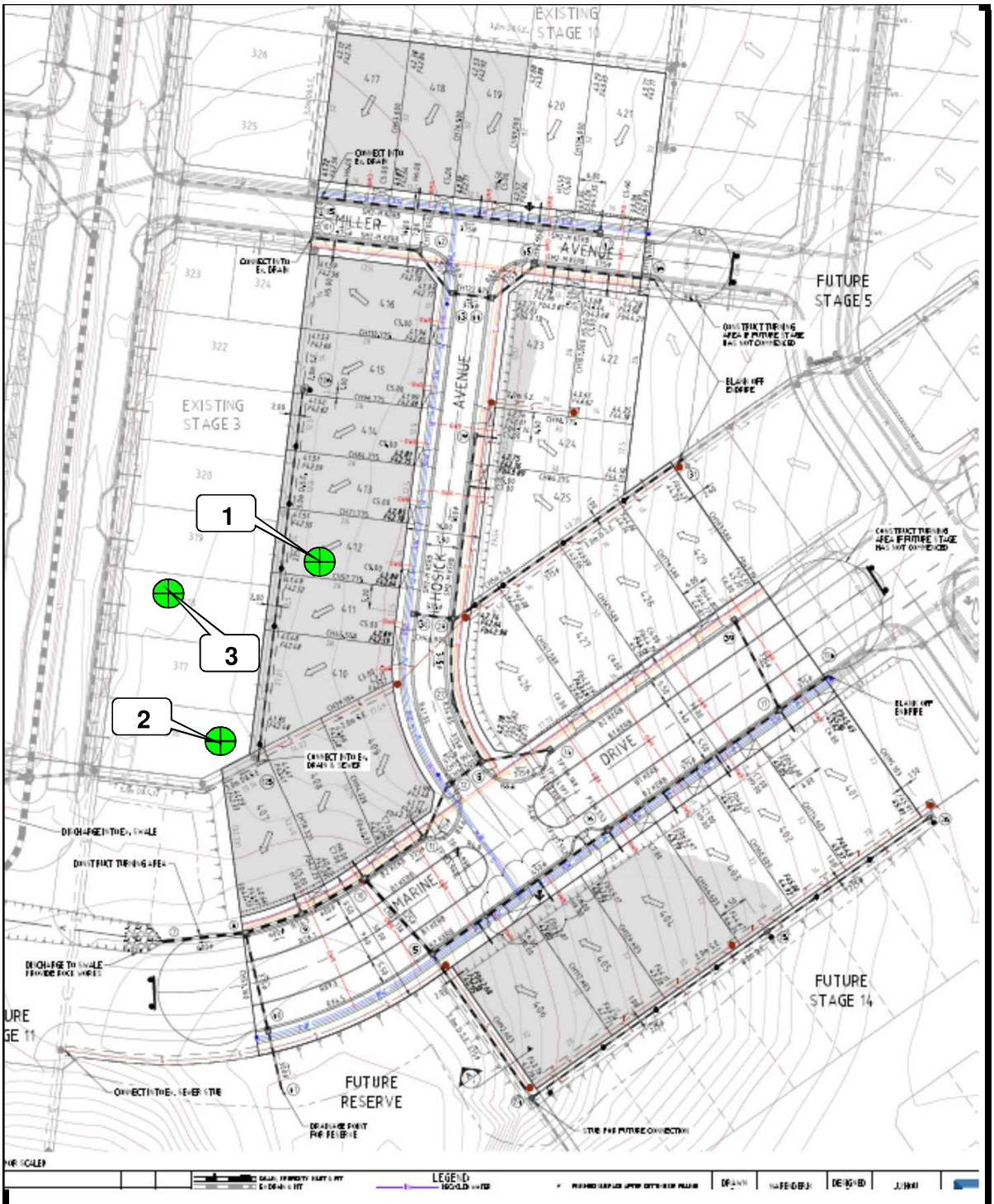
Issue Date: 1/6/2017



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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	**DATE: 25/5/17**	**JOB No.: 1916/108**
LOCATION: The Quay 2 Estate Stage 3+4	**OPERATOR: JC**	**CHECKED: EG**
Sketch indicating approx. compaction test locations	**SCALE: NTS**	**FIGURE No: -**