Reference
No.: 1917-053

LEVEL ONE

SURVEILLANCE

AND INSPECTION REPORT

Carried Out
By

GEOTECHNICAL LABORATORIES

PREPARED FOR: -

DRAPERS CIVIL CONTRACTING PTY LTD

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Appendices

Client Name: Drapers Civil Contracting Pty Ltd

Project Name: The Quay 2 Estate Stage 5B

Date: 24th of May 2018

Author: Mr. Sam Loza

Reference No.: 1917-053

Revision: 0

Project Manager: Mr. Matthew Jackman

1. 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 12th of February 2018 to the 13th of February 2018 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.

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

2. Site Preparation

Site inspections were undertaken on the 12th of February 2018 confirming that selected 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.

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

3. Fill Material

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

The fill material is best described as a CLAY, brown, grey-brown, medium plasticity, slightly silty, slightly moist to moist with basalt gravel and cobbles.

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

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

4. Fill Construction Procedure

The following plant (but not always limited to) were engaged in the fill placement process:

- Dump trucks and / or highway trucks
- A watercart
- A sheepsfoot compactor (815)

The sheepsfoot compactor placed material in horizontal loose layers of approximately 200mm-250mm. The sheepsfoot compactor also performed compaction of the clay fill operating in a criss-cross pattern.

The moisture condition of the fill was closely monitored and moisture conditioning procedures were applied to bring the material closer to its Standard Optimum Moisture Content (AS 1289 5.7.1).

5. Compaction Control Testing

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

A total of three compaction tests were performed on the fill construction. Results are presented in Appendix B of this report.

6. Testing Frequency

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

Acceptance of fill layers for compaction was based on the requirements of ***AS 3798 - 2007 Table 5.1 Item 1. Residential.*** As a result, the compliance criteria adopted by Geotechnical Laboratories was a 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.

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

No moisture criteria was specified.

7. Statement of Compliance

So far as can be determined, 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 on the 13th of February 2018 can be categorised as CONTROLLED FILL in accordance with AS 2870-2011.

8. Limitations and Liability of this Report

This report has been produced for and remains the property of Drapers Civil Contracting Pty Ltd.

The release of this report to a third party will only occur if Geotechnical Laboratories Pty Ltd has received, in writing, the authority to do so by our client.

Geotechnical Laboratories Pty Ltd will not engage in any third-party communication regarding this report.

Where information has been supplied by the client or third party, the assumption is made that this is correct. Geotechnical Laboratories Pty Ltd will not be held responsible for any inaccuracies supplied.

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

For & on behalf of
Geotechnical Laboratories Pty Ltd.

Sam Loza
Laboratory Manager.

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APPENDIX A

S DRAWING IS NOT TO BE COPIED OR SCALED

F	LOT 523 CROSSING AMENDED	26.07.17	JZ
E	LOT 534 CROSSING AMENDED	02.06.17	JZ
D	LOT 520 CROSSING AMENDED & CONDUITS PROVIDED FOR LOT F	22.05.17	AN
C	CONSTRUCTION ISSUE	11.04.17	JZ
B	COUNCIL COMMENTS	24.03.17	JZ
RSION	REMARKS		

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
LIGHT ⊗ POLE ○ PIT EX ELECTRICAL ASSETS
EX ELECTRICAL OVERHEADS
GAS & WATER CONDUITS
TOP OF BATTER
TOE OF BATTER

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
STREET SIGN
DRAINAGE PIT No.
TBM
EX FENCE
EX WALL OR BUILDING

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

LEVEL ONE

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AND INSPECTION REPORT

APPENDIX B

GEOTECHNICAL LABORATORIES
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DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 1916/201

LOCATION: DRAPERS - The Quay 2 Estate, Stage 5B

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)
13/02/18	1	***Refer to #1916/202 for approx. test site locations.***	1.95	24.5	100.5	1.94	24.0	175	0.5 Wetter	103.0	0	0	0
13/02/18	2		2.16	20.0	108.0	2.00	20.0	175	0.0 Drier	100.0	0	0	0
13/02/18	3		1.99	22.0	101.0	1.98	21.5	175	0.5 Wetter	102.5	0	0	0
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-

NOTES: Onsite Clayey Fill

Test sites located - Geolab Procedure 4, Part 4.4.

Compaction specimens sampled after compaction.

Start Time: 9.20am Finish Time: 9.35am

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

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)

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NATA ACCREDITED FOR TECHNICAL COMPETENCE

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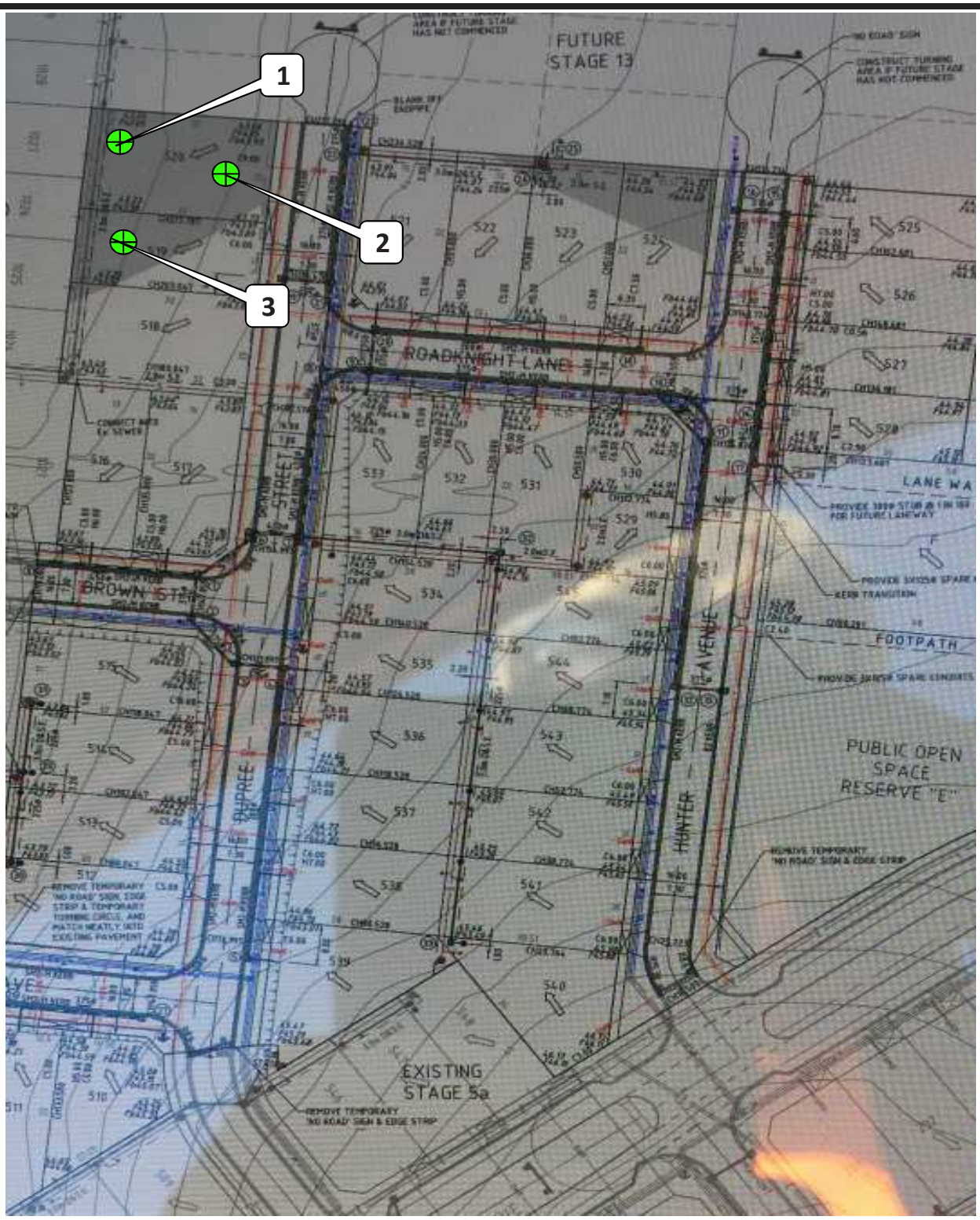
NATA Accredited Laboratory Number 14561

SAM LOZA

(Approved Signatory)

Issue Date:15/2/2018



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CLIENT: DRAPERS	**DATE: 13/2/18**	**JOB No.: 1916/202**
LOCATION: The Quay 2 Estate Stage 5B	**OPERATOR: NM**	**CHECKED: EG**
Sketch indicating compaction test locations	**SCALE: NTS**	**FIGURE No: -**