DRAPERS CIVIL
CONTRACTING PTY LTD

SANCTUARY ESTATE
STAGE 1

ARMSTRONG CREEK

Report On

LEVEL 1
SURVEILLANCE
& COMPACTION CONTROL
OF ALLOTMENT FILLING

Carried Out
By

GEOTECHNICAL LABORATORIES

Project No.: 1886/081

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

2nd November 2017
Project No.:1886/081

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

Dear Sir,

RE: Sanctuary Estate Stage 1 – Allotment Filling

Introduction & Scope

At the request of Drapers Civil Contracting Pty Ltd, Geotechnical Laboratories has carried out inspection and testing of the above-mentioned site on the 12th of July 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. M110512-01 Rev.01.

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

Site Preparation

Site inspections were undertaken on the 12th of July 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 excavations, mainly service trenches and road boxing.

The material is best described as **CLAY fill, brown, grey-brown, slightly moist to moist, medium plasticity with fine grained sand.**

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 4.3.

Compaction of Fill Material

A sheepsfoot compactor placed material in horizontal loose layers of approximately 250mm to 300mm. The sheepsfoot compactor also performed compaction of the clay fill operating in 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 compactor prior to sheepsfoot 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 three compaction tests were performed on the allotment filling. 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.

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 on the 12th of July 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

SANCTUARY ESTATE
STAGE 1

ARMSTRONG CREEK

Report On

LEVEL 1
SURVEILLANCE
& COMPACTION CONTROL
OF ALLOTMENT FILLING

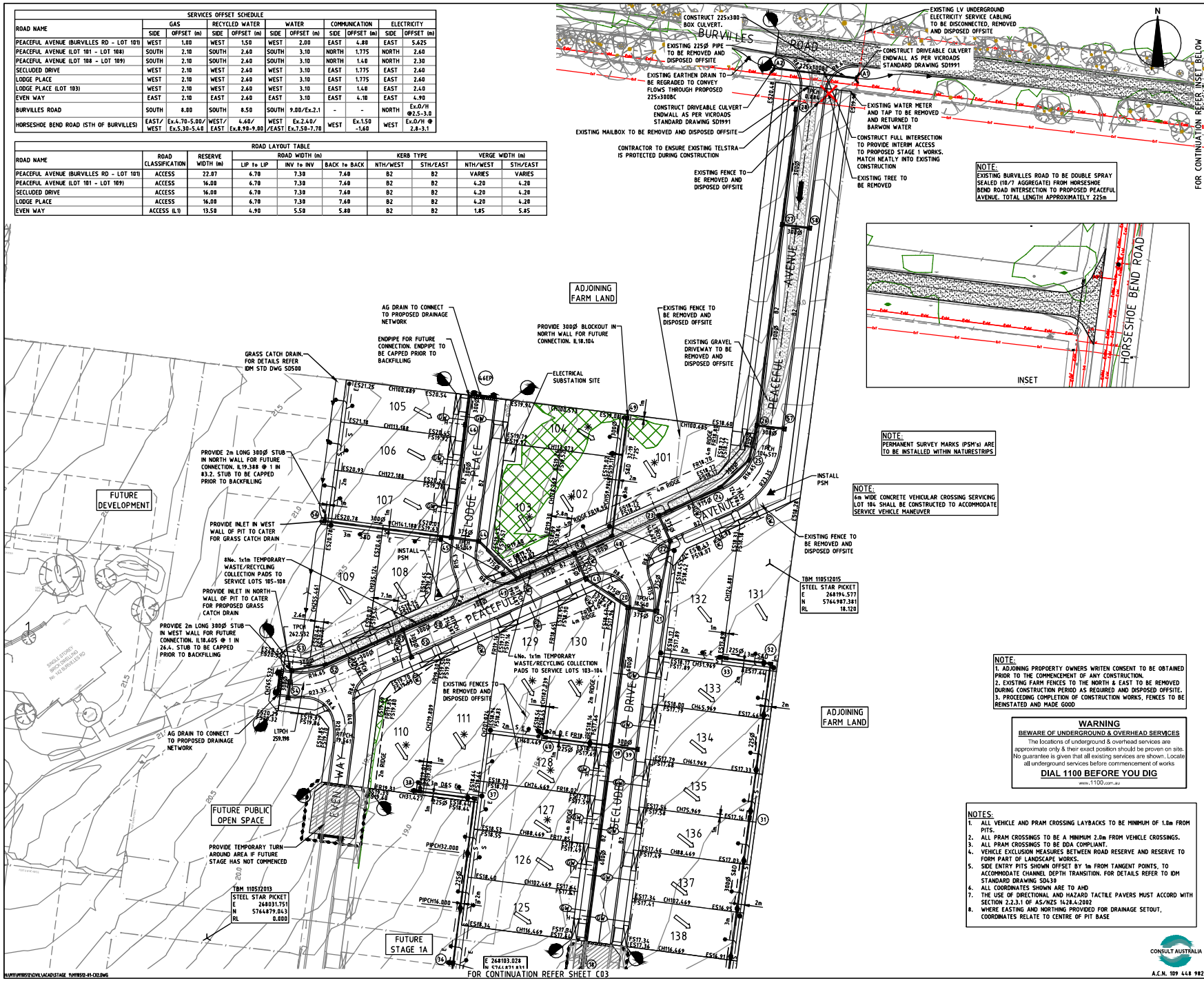
Carried Out
By

GEOTECHNICAL LABORATORIES

APPENDIX A

SERVICES OFFSET SCHEDULE										
ROAD NAME	GAS		RECYCLED WATER		WATER		COMMUNICATION		ELECTRICITY	
	SIDE	OFFSET (m)	SIDE	OFFSET (m)	SIDE	OFFSET (m)	SIDE	OFFSET (m)	SIDE	OFFSET (m)
PEACEFUL AVENUE (BURVILLES RD - LOT 101)	WEST	1.80	WEST	1.50	WEST	2.00	EAST	4.80	EAST	5.625
PEACEFUL AVENUE (LOT 101 - LOT 108)	SOUTH	2.10	SOUTH	2.60	SOUTH	3.10	NORTH	1.775	NORTH	2.60
PEACEFUL AVENUE (LOT 108 - LOT 109)	SOUTH	2.10	SOUTH	2.60	SOUTH	3.10	NORTH	1.40	NORTH	2.30
SECLUDED DRIVE	WEST	2.10	WEST	2.60	WEST	3.10	EAST	1.775	EAST	2.60
LODGE PLACE	WEST	2.10	WEST	2.60	WEST	3.10	EAST	1.775	EAST	2.60
LODGE PLACE (LOT 103)	WEST	2.10	WEST	2.60	WEST	3.10	EAST	1.40	EAST	2.40
EVEN WAY	EAST	2.10	EAST	2.60	EAST	3.10	EAST	4.10	EAST	4.90
BURVILLES ROAD	SOUTH	8.80	SOUTH	8.50	SOUTH	9.00/Ex.2.1	-	-	NORTH	Ex.0/H @2.5-3.0
HORSESHOE BEND ROAD (STH OF BURVILLES)	EAST/ WEST	Ex.4.70-5.00/ Ex.5.30-5.40	WEST/ EAST	4.40/ Ex.8.90-9.00	WEST /EAST	Ex.2.40/ Ex.7.50-7.70	WEST	Ex.1.50 -1.60	WEST	Ex.0/H @ 2.8-3.1

ROAD LAYOUT TABLE									
ROAD NAME	ROAD CLASSIFICATION	RESERVE WIDTH (m)	ROAD WIDTH (m)			KERB TYPE		VERGE WIDTH (m)	
			LIP to LIP	INV to INV	BACK to BACK	NTH/WEST	STH/EAST	NTH/WEST	STH/EAST
PEACEFUL AVENUE (BURVILLES RD - LOT 101)	ACCESS	22.07	6.70	7.30	7.60	B2	B2	VARIES	VARIES
PEACEFUL AVENUE (LOT 101 - LOT 109)	ACCESS	16.00	6.70	7.30	7.60	B2	B2	4.20	4.20
SECLUDED DRIVE	ACCESS	16.00	6.70	7.30	7.60	B2	B2	4.20	4.20
LODGE PLACE	ACCESS	16.00	6.70	7.30	7.60	B2	B2	4.20	4.20
EVEN WAY	ACCESS (L1)	13.50	4.90	5.50	5.80	B2	B2	1.85	5.85



LEGEND

- Electricity (Underground)
- Gas
- Optic
- Recycled Water
- Telstra
- Water
- Stormwater Drain, Pit and Property Inlet
- Swale Drain
- Sewer, Maintenance Structures and Property Connection
- House Drain
- Gas & Water Conduits
- Tactile Paver - Directional
- Tactile Paver - Hazard
- Existing Electricity (Underground)
- Existing Electricity (Overhead)
- Existing Gas
- Existing Telstra
- Existing Water
- **Existing Stormwater Drain**
- Existing Sewer
- Existing House Drain
- Existing Tree to Remain
- Existing Tree to be Removed
- Existing Swale Drain
- Existing Surface Level
- Finished Building Line Level
- Finished Ridge Line Level
- Top of Retaining Wall
- Bottom of Retaining Wall
- Retaining Wall
- Intersection Threshold Treatment
- Structural Fill > 200mm Deep
- Ex. Structural Fill > 200mm Deep
- Proposed Driveway
- Allotment to be graded evenly in direction of fall to levels indicated
- Direction of Fall
- Overland Flow
- Permanent Survey Mark
- Temporary Bench Mark
- Concrete Edge Strip with Subsoil Drain underneath "No Road " sign and Barrier
- Building Envelope
- Limit of Works

1	11/11/16	DRAINAGE & LOTS 105 & 125 DRIVEWAY AMENDED
0	24/10/16	CONSTRUCTION ISSUE
H	23/09/16	COUNCIL COMMENTS DATED 19/09/16
G	09/09/16	COUNCIL COMMENTS DATED 05/09/16
F	08/08/16	SOS AMENDED
E	12/07/16	ISSUED FOR APPROVAL
D	3/06/16	POS AMENDED
C	12/04/16	STAGE 1 LOT REDESIGN
B	02/02/16	ROAD NAMES AMENDED
A	18/12/15	ISSUED FOR TENDER
	DATE	COMMENTS

CLIENT

villawood properties
COMMUNITIES DESIGNED FOR LIVING

PROJECT

SANCTUARY ESTATE
ARMSTRONG CREEK
STAGE 1

calibre CONSULTING

CALIBRE CONSULTING (MELB) PTY LTD
Level 2, 55 Southbank Boulevard
Southbank VIC 3006
T 03 9203 9000

TITLE

LAYOUT PLAN - 1

1:500 10 5 0 10 20 A1
1:1000 A3

SCALE @ A1	DRAWN	DESIGNED
1:500	R.TALASILA	M.TROUNCE
PROJECT ENGINEER	PROJECT MANAGER	DATE FIRST ISSUE
R.KOZUL	T.PALIOS	18/12/15

CONSTRUCTION

SIGNED	DATE

CONSULT AUSTRALIA
A.C.N. 109 448 982

DRAWING NUMBER	REVISION
M110512-01-C02	1

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.: # 1897/476

LOCATION: DRAPERS - Sanctuary Estate Stage 1

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)
12/07/17	1	***Refer to #1897/477 for approx. test site locations.***	1.93	24.5	97.5	1.98	24.5	175	0.0 Drier	100.0	0	0	0
12/07/17	2		1.98	24.5	101.5	1.95	24.5	175	0.0 Drier	100.0	0	0	0
12/07/17	3		1.91	20.5	99.0	1.93	22.5	175	2.0 Drier	91.5	0	0	0
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-

NOTES: Onsite Clay Fill

Test sites located - Geolab Procedure 4, Part 4.4

Compaction specimens sampled after compaction.

Start Time: 9.58am Finish Time: 10.17am

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)

✠

❖

NATA ACCREDITED FOR TECHNICAL COMPETENCE

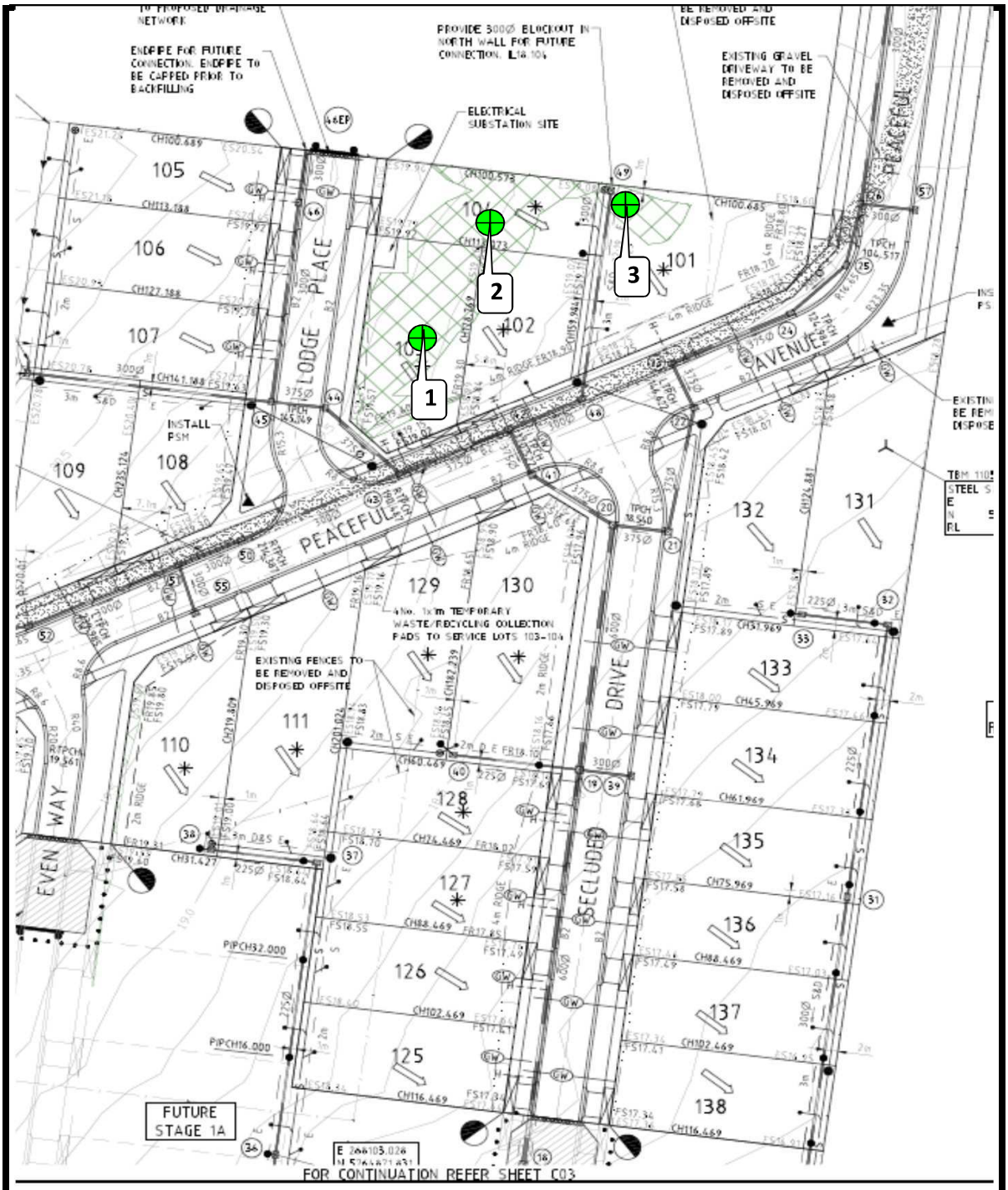
Accredited for compliance with ISO/IEC 17025. The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/National standards. This document may not be reproduced except in full.

NATA Accredited Laboratory Number 14561

SAM LOZA

(Approved Signatory)

Issue Date: 19/7/2017



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: 12/7/17	JOB No.: 1897/477
LOCATION:Sanctuary Estate Stage 1	OPERATOR: JC	CHECKED: EG
Sketch indicating approx. compaction test locations	SCALE: NTS	Page 1 of 1