Reference
No.: 2372-005

LEVEL ONE

SURVEILLANCE

AND INSPECTION REPORT

Carried Out
By

GEOTECHNICAL LABORATORIES

PREPARED FOR: -

CIVILWORX CONSTRUCTIONS PTY LTD

GEOTECHNICAL LABORATORIES PTY LTD ABN 51 102 571 077
PO BOX 2693 GLADSTONE PARK 3043
PH. (03) 9335-1225

Table of Contents

Appendices

Client Name: Civilworx Constructions Pty Ltd

Project Name: Davis Vineyard Stage 1

Date: 8th of November 2021

Author: Mr. Sam Loza

Reference No.: 2372-005

Revision: 0

Project Manager: Mr. Brittany Gardiner

1. Introduction & Scope

At the request of Civilworx Constructions Pty Ltd, Geotechnical Laboratories has carried out inspections and testing of the above-mentioned site from the 19th of March 2021 to 7th of April 2021 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 Civilworx Constructions Pty Ltd and was used to determine compliance of earthworks in conjunction with the requirements of AS 3798 – 2007 (See Appendix A).

(1). Site Layout Plan Drawing Number 010 (Rev A).

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

2. Site Preparation

Site inspections were undertaken on the 19th of March 2021 confirming that selected areas to be filled were completely stripped of topsoil and significant tree roots prior to filling. The brown silty topsoils had been stockpiled around the site for later removal off-site.

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

3. Fill Material

The fill material used was sourced from on-site excavations, mainly road boxing and service trenches.

The fill material is best described a silty CLAY, brown, pale brown, slightly moist to moist, medium to high plasticity with basalt gravels and occasional 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:

- Highway trucks
- A grader
- A watercart
- A padfoot roller

The grader placed material in horizontal loose layers of approximately 250mm-300mm. The pad foot roller performed compaction of the 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).

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 twelve 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 and Concentrated 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.

7. Statement of Compliance

So far as can be determined, Civilworx Constructions 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 Civilworx Constructions Pty Ltd from the 19th of March 2021 to the 7th of April 2021 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 Civilworx Constructions 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 Civilworx Constructions 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.

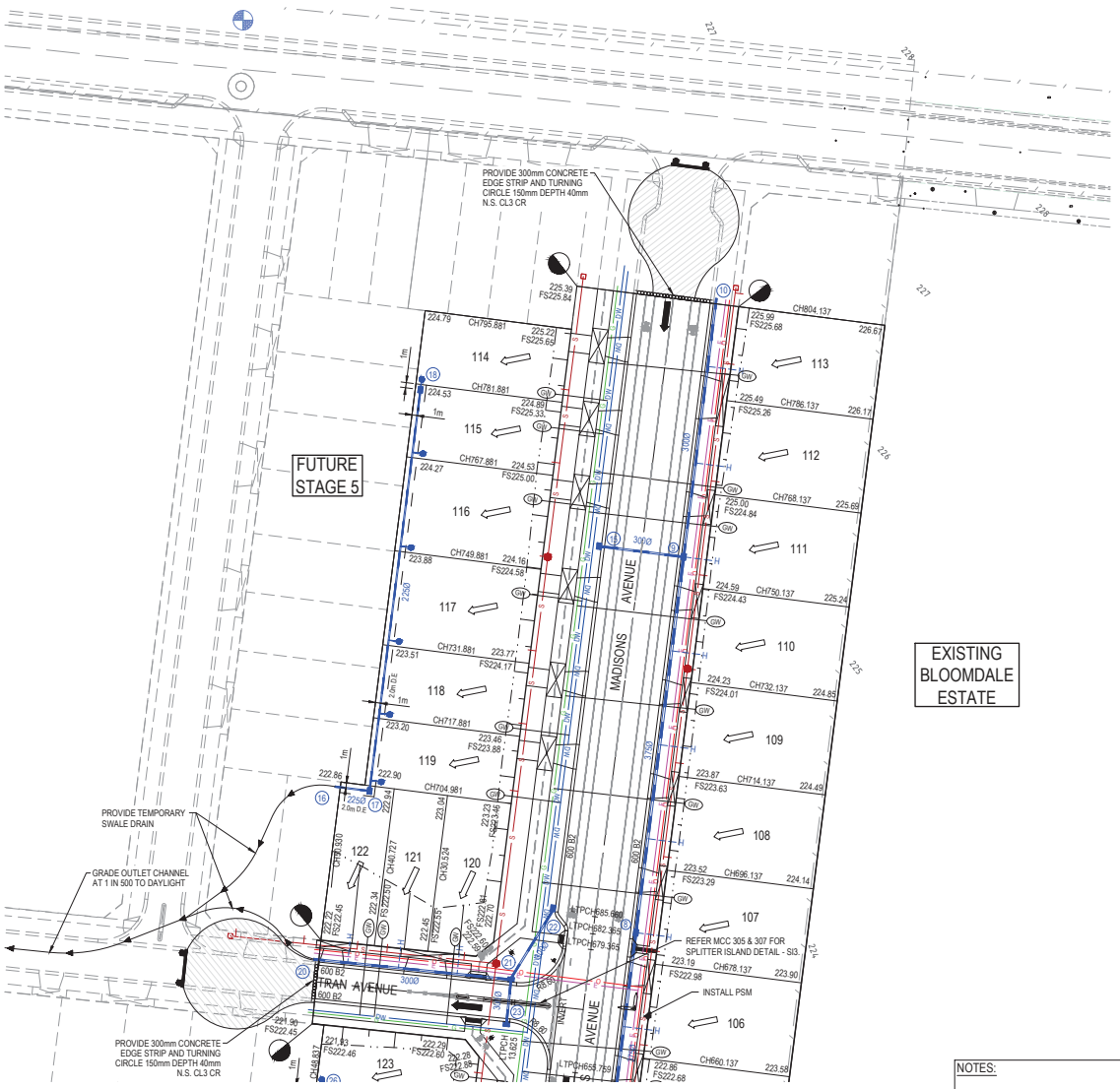
Sam Loza
Laboratory Manager

LEVEL ONE

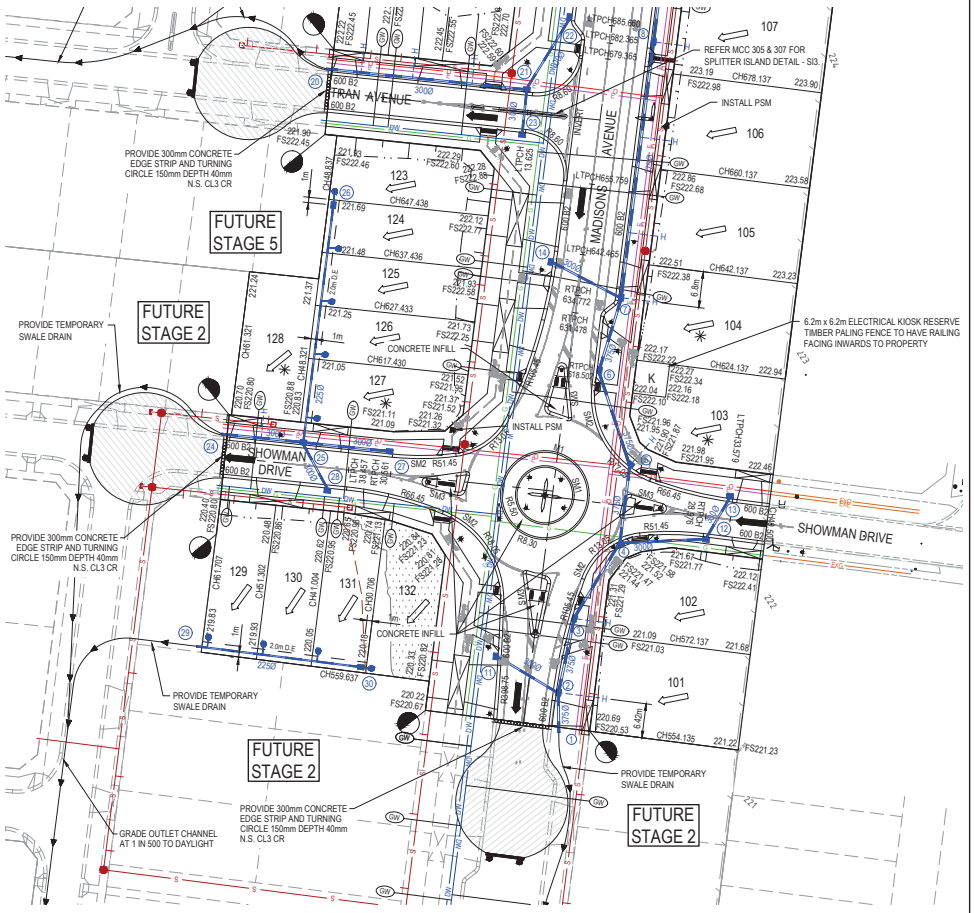
SURVEILLANCE

AND INSPECTION REPORT

APPENDIX A



EXISTING BLOOMDALE ESTATE



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
MADISONS AVENUE	CONNECTOR STREET	31.00	14.10	15.00	15.30	600 B2	600 B2	11.00	5.00
TRAN AVENUE	ACCESS STREET 1	16.00	6.40	7.30	7.60	600 B2	600 B2	4.20	4.50
SHOWMAN DRIVE (WEST)	ACCESS STREET 1	16.00	6.40	7.30	7.60	600 B2	600 B2	4.20	4.20
SHOWMAN DRIVE (EAST)	ACCESS STREET 1	16.00	6.40	7.30	7.60	600 B2	600 B2	5.70	3.00

SERVICE OFFSET TABLE

Location	Gas		375Ø Water		Water		Electricity		Telecommunication		Sewer	
	Side	Offset (m)	Side	Offset (m)	Side	Offset (m)	Side	Offset (m)	Side	Offset (m)	Side	Offset (m)
MADISONS AVENUE	W	7.70	W	8.50	W	9.30	E	2.60	E	1.90	W	1.00
TRAN AVENUE	S	2.10	S	2.60	-	-	N	2.60	N	1.90	N	1.00
SHOWMAN DRIVE (WEST)	S	2.10	S	2.60	-	-	N	2.60	N	1.90	N	1.00
SHOWMAN DRIVE (EAST)	S	0.75	-	-	-	-	N	3.80	N	3.20	-	-

NOTE: STREET TREES ARE TO BE PLANTED IN THE CENTRE OF ALL NATURE STRIPS

NOTES:

1. ALL EXISTING FENCES & STRUCTURES WITHIN NEW WORKS TO BE REMOVED.
2. ALL EXISTING SERVICES UNDER NEW PAVEMENTS AND CONCRETE WORKS TO BE FCR BACKFILLED, UNLESS OTHERWISE SPECIFIED.
3. ALL EXISTING OPEN DRAINS WITHIN NEW WORKS TO BE CLEANED, DE-SLUDGED AND BACKFILLED UNDER LEVEL 1 SUPERVISION.
4. REFER COUNCIL STD. DWG. MCC 305 & 307 FOR SPLITTER ISLAND DETAIL - SI3.
5. REFER COUNCIL STD. DWG. MCC 501 & 503 FOR VEHICLE CROSSING DETAIL .
6. ROUNDABOUT OUTER KERB TO BE SM2 FROM TP TO TP.

TBM SCHEDULE

TBM	EASTING	NORTHING	LEVEL	DESCRIPTION
RM10	297124.94	5834090.67	216.47	RIVET
RM11	297221.64	5834083.06	218.05	RIVET
RM12	297157.58	5834334.71	222.32	RIVET
RM13	297253.85	5834322.56	224.67	RIVET

LEGEND - LAYOUT PLAN

- STORMWATER DRAIN, PIT & PROPERTY INLET
- MELBOURNE WATER DRAIN & PIT
- SWALE DRAIN
- SEWER & MAINTENANCE STRUCTURES
- HOUSE DRAIN
- SERVICE CONDUITS
- ELECTRICITY (UNDERGROUND)
- ELECTRICITY (OVERHEAD)
- OPTIC FIBRE
- TELECOMMUNICATIONS
- GAS
- WATER
- RECYCLED WATER
- EXISTING STORMWATER DRAIN
- EXISTING ELECTRICITY (UNDERGROUND)
- EXISTING ELECTRICITY (OVERHEAD)
- EXISTING GAS
- EXISTING OPTIC FIBRE
- EXISTING TELECOMMUNICATIONS
- EXISTING WATER
- EXISTING RECYCLED WATER
- EXISTING SEWER
- EXISTING HOUSE DRAIN
- EXISTING SWALE DRAIN
- TACTILE PAVERS (INDICATIVE ONLY)
- EXISTING SURFACE LEVEL
- FINISHED BUILDING LINE LEVEL
- FINISHED RIDGE LINE LEVEL
- TOP OF RETAINING WALL
- BOTTOM OF RETAINING WALL
- RIDGE LINE
- RETAINING WALL
- ZERO LOT LINES
- PAVEMENT TREATMENT
- STRUCTURAL FILL > 200mm DEEP
- EX. STRUCTURAL FILL > 200mm DEEP
- DIRECTION OF FALL
- OVERLAND FLOW
- ALLOTMENT TO BE GRADED EVENLY IN
- DIRECTION OF FALL TO LEVELS INDICATED
- CONCRETE EDGE STRIP WITH SUBSOIL DRAIN, "NO ROAD" SIGN & BARRIER
- LIMIT OF WORKS
- EXISTING TREE TO BE REMOVED
- PERMANENT SURVEY MARK
- TEMPORARY BENCH MARK
- PROPOSED DRIVEWAY
- TREE PROTECTION ZONE (TPZ)

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.
Locate all underground services before commencement of works

DIAL 1100 BEFORE YOU DIG

www.1100.com.au

ISSUED FOR CONSTRUCTION

REV	DESCRIPTION	DATE	DRN.	APP.
A	ISSUED FOR CONSTRUCTION	17.08.20	D.Z.	R.W.

0 5 10 20 30 40 50

Designed D. ZHANG Date 05.07.2019
Drawn D. ZHANG
Approved R. WICKETT Date 15.07.2019
PS Number PS 829574B/S1

Beveridge Williams
1 Glenferrie Road
Malvern VIC 3144
ph: 03 9524 8888
www.beveridgewilliams.com.au

Project Details: DAVIS VINEYARD PRECINCT 1 - STAGE 1
AUST. INVESTMENT & DEVELOPMENTS P/L
CITY OF MELTON

Drawing Title: LAYOUT PLAN

Sheet 04 of 23
Scale 1:500 @ A1

Project Ref	Stage No	Drawing No	Rev
1600059	01	010	A

K:\Jobs Data\1600059 Diggers Rest_Engi\Precinct 1\Stage 01\Drawings\1600059-01-010-LAY.dwg

LEVEL ONE

SURVEILLANCE

AND INSPECTION REPORT

APPENDIX B

GEOTECHNICAL LABORATORIES
GEOTECHNICAL LABORATORIES
ACN 102 571 077
14 Ravenhall Way, Ravenhall, Vic 3023
Email: info@geolab.com.au PH: (03) 8361-9140

DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 2371/001

LOCATION: CIVILWORX - Davis Vineyard Stage 1 & 2, Diggers Rest

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)
22/03/21	1	***Refer to #2371/002 for approx. test site locations.***	1.97	18.5	103.5	1.90	22.5	175	4.0 Drier	82.0	0	0	200
22/03/21	2		2.00	22.5	101.0	✠ 1.98	25.0	175	2.0 Drier	91.0	12	0	200
22/03/21	3		1.97	23.0	105.0	1.87	26.0	175	3.0 Drier	88.5	0	0	200
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-

NOTES: Clayey Fill Ex. Onsite
Test sites located - Geolab Procedure 4, Part 4.4.
Compaction specimens sampled after compaction.
Start Time: 7:45am Finish Time: 8:15am

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

❖

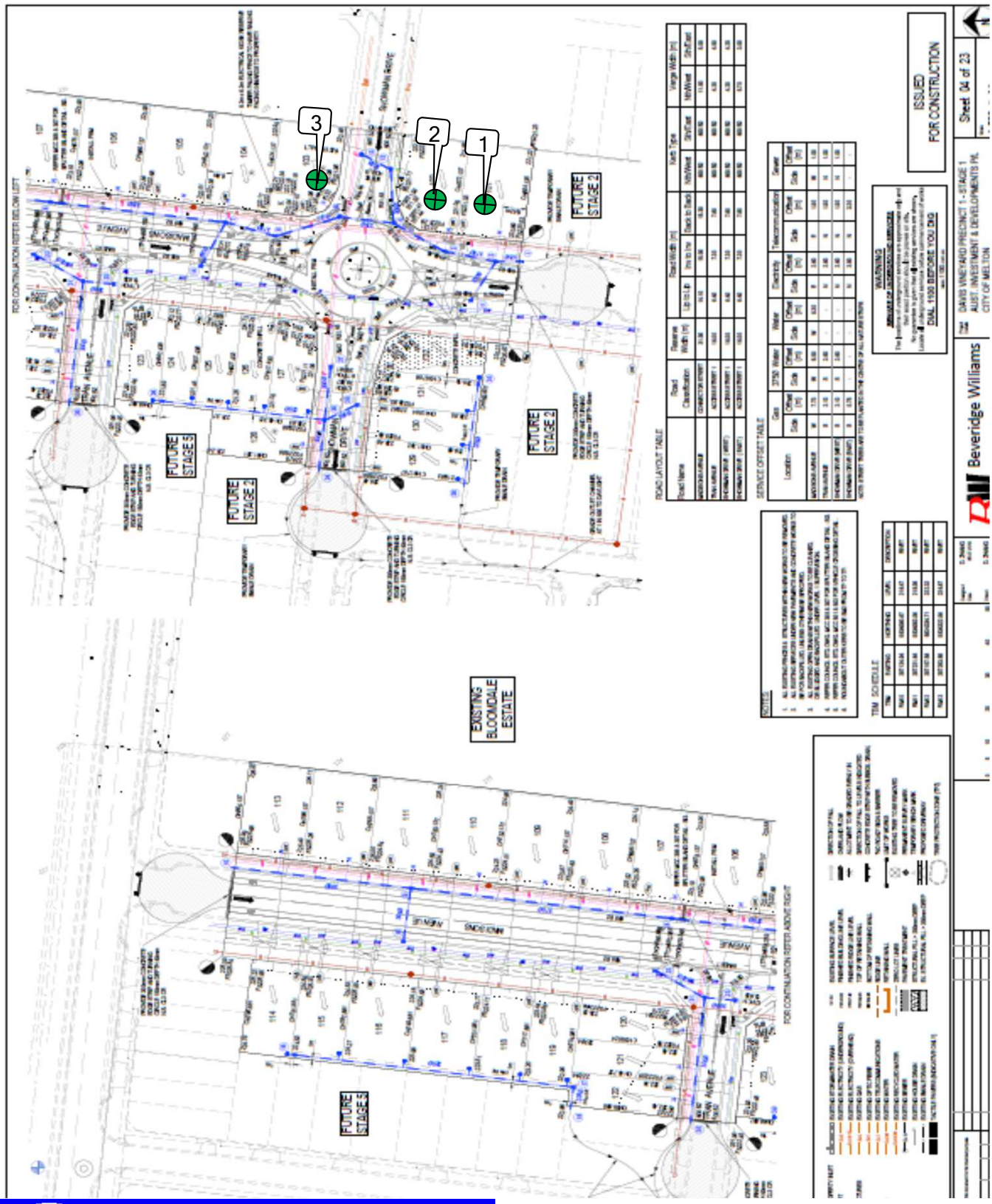
NATA ACCREDITED FOR TECHNICAL COMPETENCE

Accredited for compliance with ISO/IEC 17025 - Testing

NATA Accredited Laboratory Number 14561

MICK CROWE
(Approved Signatory)

Issue Date: 25/3/2021



GEOTECHNICAL LABORATORIES
ACN 102 571 077
14 Ravenhall Way, Ravenhall, Vic 3023
Email: info@geolab.com.au PH: (03) 8361-9140

CLIENT: CIVILWORX	**DATE: 22/03/2021**	**JOB No.: 2371/002**
LOCATION: Davis Vineyard Estate, Diggers Rest	**OPERATOR: DB**	**CHECKED: KK**
Sketch indicating compaction test locations	**SCALE: NTS**	**FIGURE No: -**

DAILY SUMMARY - FIELD DENSITY TESTS

GEOTECHNICAL LABORATORIES
ACN 102 571 077
14 Ravenhall Way, Ravenhall, Vic 3023
Email: info@geolab.com.au PH: (03) 8361-9140

REPORT NO.: # 2371/003

LOCATION: CIVILWORX - Davis Vineyard Stage 1 Diggers Rest

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)
30/03/21	1	***Refer to #2371/004 for approx. test site locations.***	2.03	22.5	103.0	✠ 1.97	23.5	175	1.0 Drier	95.0	14	0	0
30/03/21	2		1.96	24.5	99.5	1.97	24.0	175	0.5 Wetter	103.0	0	0	0
30/03/21	3		1.85	23.0	95.0	✠ 1.95	23.5	175	0.0 Drier	99.0	6	0	0
30/03/21	4		1.86	22.0	95.0	1.96	21.5	175	0.5 Wetter	102.5	0	0	0
30/03/21	5		1.89	21.0	101.0	1.88	24.0	175	3.0 Drier	88.0	0	0	0
30/03/21	6		1.93	18.5	103.5	1.86	22.0	175	3.5 Drier	84.0	0	0	200

NOTES: Clayey Fill Ex. Onsite
Test sites located - Geolab Procedure 4, Part 4.4.

Compaction specimens sampled after compaction.
Start Time: 11:00am Finish Time: 11:32am

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

❖

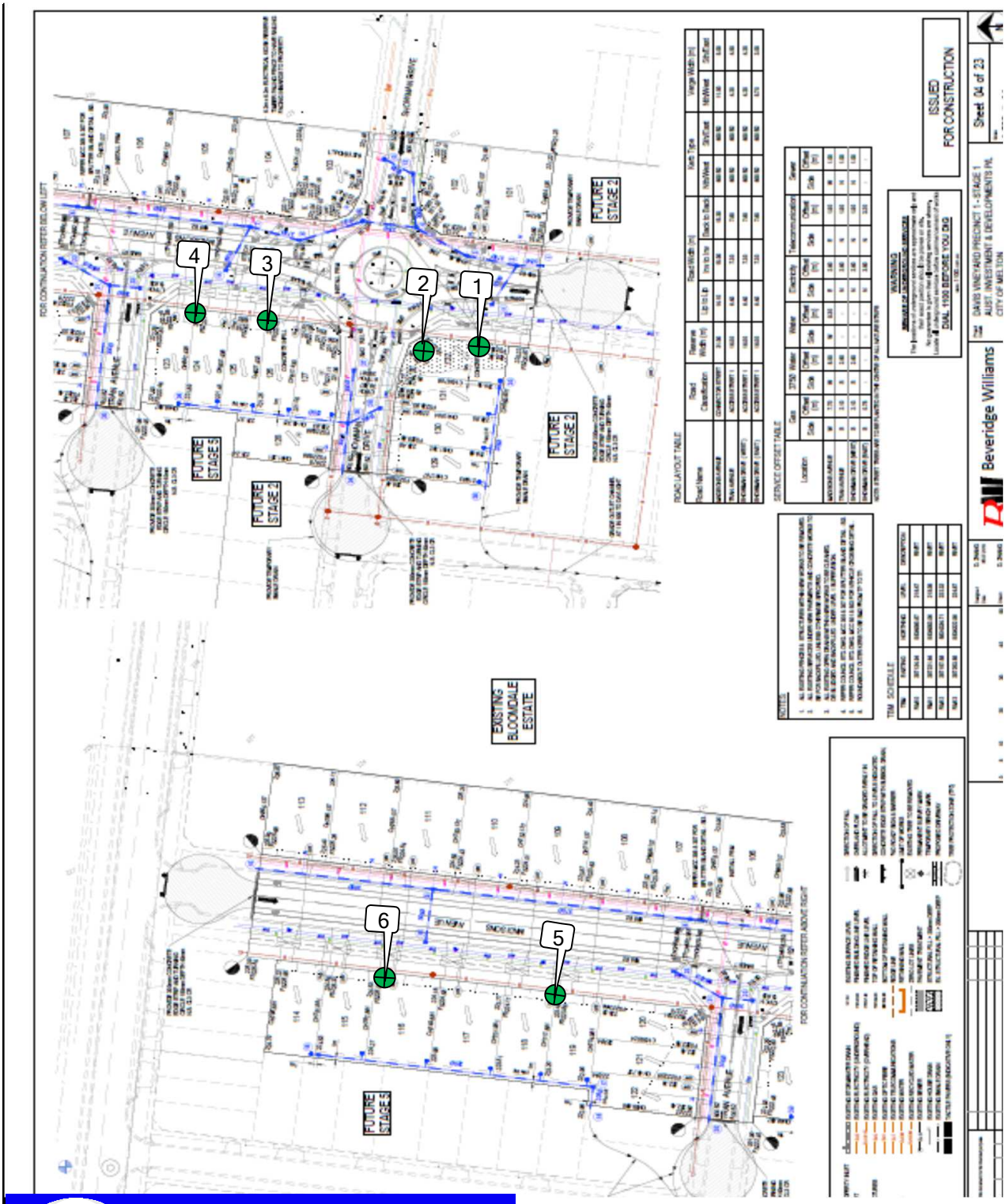
NATA ACCREDITED FOR TECHNICAL COMPETENCE

Accredited for compliance with ISO/IEC 17025 - Testing

NATA Accredited Laboratory Number 14561

MICK CROWE
(Approved Signatory)

Issue Date: 1/4/2021



GEOTECHNICAL LABORATORIES

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ACN 102 571 077
14 Ravenhall Way, Ravenhall, Vic 3023
Email: info@geolab.com.au PH: (03) 8361-9140

CLIENT: CIVILWORX	**DATE: 30/03/2021**	**JOB No.: 2371/004**
LOCATION: Davis Vineyard Estate, Diggers Rest	**OPERATOR: SA/SC**	**CHECKED: KK**
Sketch indicating compaction test locations	**SCALE: NTS**	**FIGURE No: -**

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DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 2371/005
LOCATION: CIVILWORX- Davis Vineyard, Stage 1 & 2, Diggers Rest

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)
7/04/21	1	***Refer to #2371/006 for approx. test site locations.***	1.98	17.0	104.0	1.91	21.0	175	4.5 Drier	79.0	0	0	0
7/04/21	2		1.95	22.0	99.0	1.97	21.0	175	0.5 Wetter	103.5	0	0	300
7/04/21	3		1.99	15.5	102.5	1.94	19.5	175	4.5 Drier	77.5	0	0	200
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-

NOTES: Clayey Fill Ex. Onsite
Test sites located - Geolab Procedure 4, Part 4.4.
Compaction specimens sampled after compaction.
Start Time: 9:55am Finish Time: 10:25am

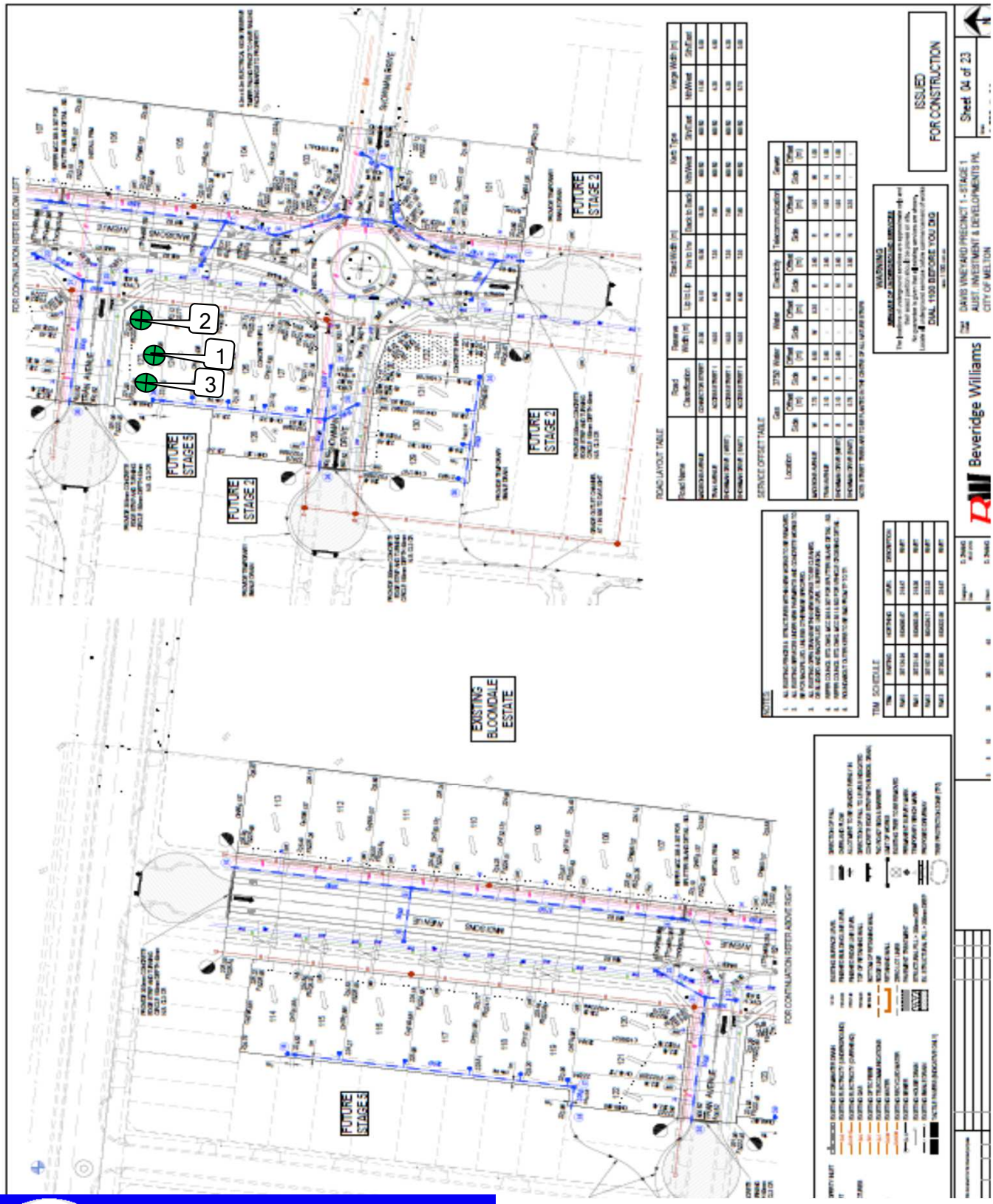
A Hilf Rapid Compaction test was carried out on a sample taken from each Field Density location to obtain the Compaction Parameters tabulated on this Report.

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 - Testing
NATA Accredited Laboratory Number 14561

MICK CROWE
(Approved Signatory)
Issue Date: 12/4/2021



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14 Ravenhall Way, Ravenhall, Vic 3023
Email: info@geolab.com.au PH: (03) 8361-9140

CLIENT: CIVILWORX	**DATE: 7/04/2021**	**JOB No.: 2371/006**
LOCATION: Davis Vineyard Estate, Diggers Rest	**OPERATOR: TI**	**CHECKED: KK**
Sketch indicating compaction test locations	**SCALE: NTS**	**FIGURE No: -**