

LEVEL ONE

Reference
No.: 1993-056

SURVEILLANCE

AND INSPECTION REPORT

*Carried Out
By*



PREPARED FOR: -

DRAPERS CIVIL CONTRACTING PTY LTD



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Appendix A Construction Drawings

Appendix B Daily Field Compaction Summary Results



Client Name: Drapers Civil Contracting Pty Ltd

Project Name: Wandana Estate Stage 6

Date: 8th of May 2020

Author: Mr. Sam Loza

Reference No.: 1993-056

Revision: 0

Project Manager: Mr. Kieran Missen

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 17th of December 2019 to the 9th of January 2020 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). Earthworks Detail Plan Project Reference No. R200 Rev 1.

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

2. Site Preparation

Site inspections were undertaken on the 17th of December 2019 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 service trenches and road boxing.



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 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).

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 twenty-one compaction tests were performed on the allotment filling 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 from the 17th of December 2019 to the 9th of January 2020 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.

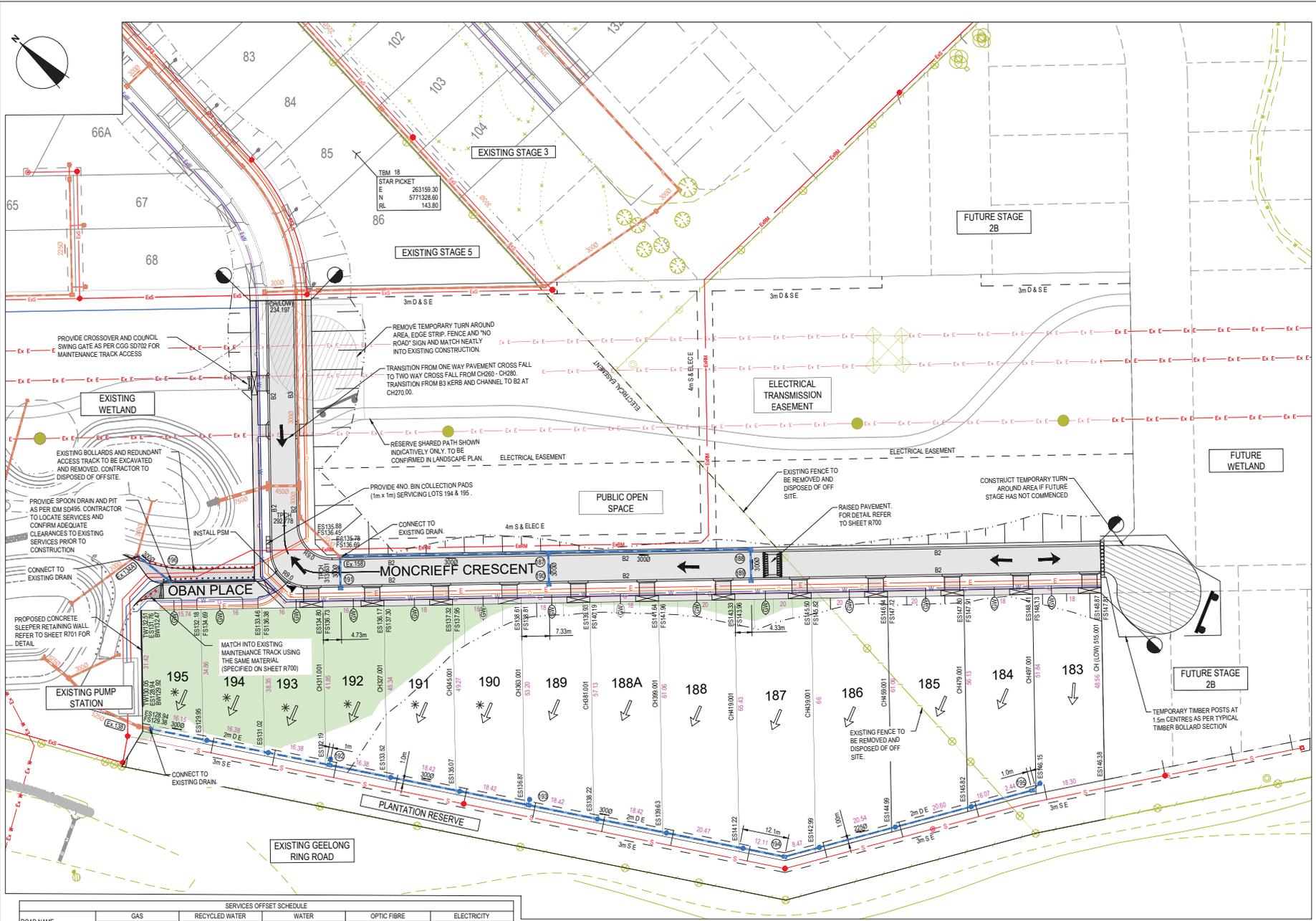
For & on behalf of
Geotechnical Laboratories Pty Ltd.

Sam Loza
Laboratory Manager.



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APPENDIX A



LEGEND - LAYOUT PLAN

- STORMWATER DRAIN, PIT & PROPERTY INLET
- SWALE DRAIN
- SEWER & MAINTENANCE STRUCTURES
- HOUSE DRAIN
- SERVICE CONDUITS
- TACTILE PAVERS
- EXISTING ELECTRICITY (UNDERGROUND)
- EXISTING ELECTRICITY (OVERHEAD)
- EXISTING GAS
- EXISTING OPTIC FIBRE
- EXISTING TELSTRA
- EXISTING WATER
- EXISTING RECYCLED WATER
- EXISTING STORMWATER DRAIN
- EXISTING SEWER
- EXISTING HOUSE DRAIN
- EXISTING SWALE DRAIN
- EXISTING SURFACE LEVEL
- FINISHED BUILDING LINE LEVEL
- FINISHED RIDGE LINE LEVEL
- TOP OF RETAINING WALL
- BOTTOM OF RETAINING WALL
- RETAINING WALL
- BUILDING ENVELOPE
- 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

WARNING
BEWARE OF UNDERGROUND & OVERHEAD SERVICES
 The locations of underground & overhead services are approximate only & 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

NOTE
 VEHICLE EXCLUSION MEASURES SHOWN ON THIS DRAWING ARE INDICATIVE ONLY. ALL VEHICLE EXCLUSION MEASURES ARE ALL TO FORM PART OF THE LANDSCAPE WORKS.

SERVICES OFFSET SCHEDULE

ROAD NAME	GAS		RECYCLED WATER		WATER		OPTIC FIBRE		ELECTRICITY	
	SIDE	OFFSET (m)	SIDE	OFFSET (m)	SIDE	OFFSET (m)	SIDE	OFFSET (m)	SIDE	OFFSET (m)
MONCRIEFF CRESCENT (WEST)	WEST	1.70	-	-	WEST	2.10 & Ex.1.10	EAST	1.80	EAST	Ex 2.40
MONCRIEFF CRESCENT (LOTS 182 - 193)	SOUTH	1.70	-	-	SOUTH	2.10	SOUTH	2.70	SOUTH	3.60
OBAN PLACE	SOUTH	1.35	-	-	SOUTH	2.40	SOUTH	0.90	SOUTH	0.95



REVISION	DATE	ISSUE DESCRIPTION	DRAWN	CHECKED	APPROVED
1	29/10/19	REVISED SERVICE OFFSETS IN OBAN PLACE	C.R.	M.T.	T.P.
0	26/09/19	CONSTRUCTION ISSUE	C.R.	M.T.	T.P.
B	06/09/19	AMENDMENTS AS PER COUNCIL COMMENTS	C.R.	M.T.	T.P.
A	29/07/19	APPROVAL ISSUE	C.R.	M.T.	T.P.

villawood properties
 Communities Designed for Living

creo CONSULTANTS
 Level 7, 176 Wellington Parade
 East Melbourne, VIC, Australia 3002

WANDANA
 Wandana Heights

PROJECT: **WANDANA ESTATE - STAGE 6 LAYOUT PLAN**

STATUS	SCALE AT A1	DRAWN	DESIGNED
ISSUED FOR CONSTRUCTION	1:500 @ A1	C.ROHDE	C.ROHDE
	PROJECT ENGINEER	PROJECT MANAGER	DATE FIRST ISSUE
M.T.ROUNCE	T.PALIOS	29/07/19	
PROJECT No.	DRAWING No.	REVISION	
180363.6	R200	1	



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APPENDIX B



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.: # 1992/253

LOCATION: DRAPERS - Wandana Estate Stage 6

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)	
17/12/19	1	<i>Refer to #1992/254 for approx. test site locations.</i>	1.91	15.5	95.0	2.01	17.0	175	2.0 Drier	89.5	0	0	2000	
17/12/19	2		2.04	18.5	98.0	2.08	18.5	175	0.0 Wetter	101.5	0	0	2000	
17/12/19	3		1.95	16.0	95.5	2.05	17.5	175	1.0 Drier	93.5	0	0	2000	
-	-		-	-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-	-

NOTES: Clayey Fill Ex. Onsite

Test sites located - Geolab Procedure 4, Part 4.4.

Compaction specimens sampled after compaction.

Start Time: 11.30am Finish Time: 12.05pm

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

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)

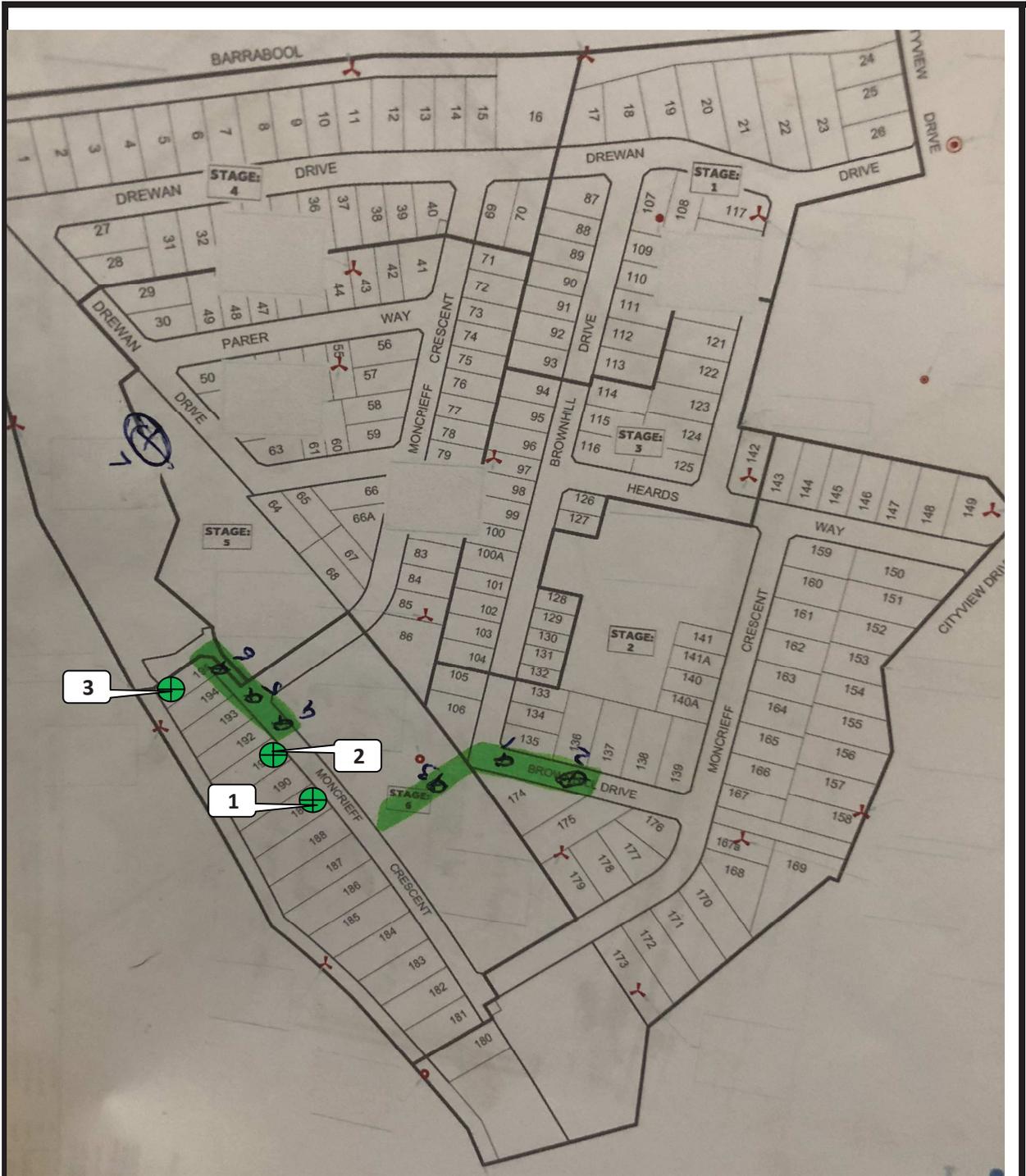


*Accredited for compliance with ISO/IEC
 17025 - Testing*

NATA Accredited Laboratory Number 14561

MICK CROWE
 (Approved Signatory)

Issue Date: 6/1/2020



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ACN 102 571 077**

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

CLIENT: DRAPERS

LOCATION: Wandana Estate Stage 6

Sketch indicating compaction test locations

DATE: 17/12/19

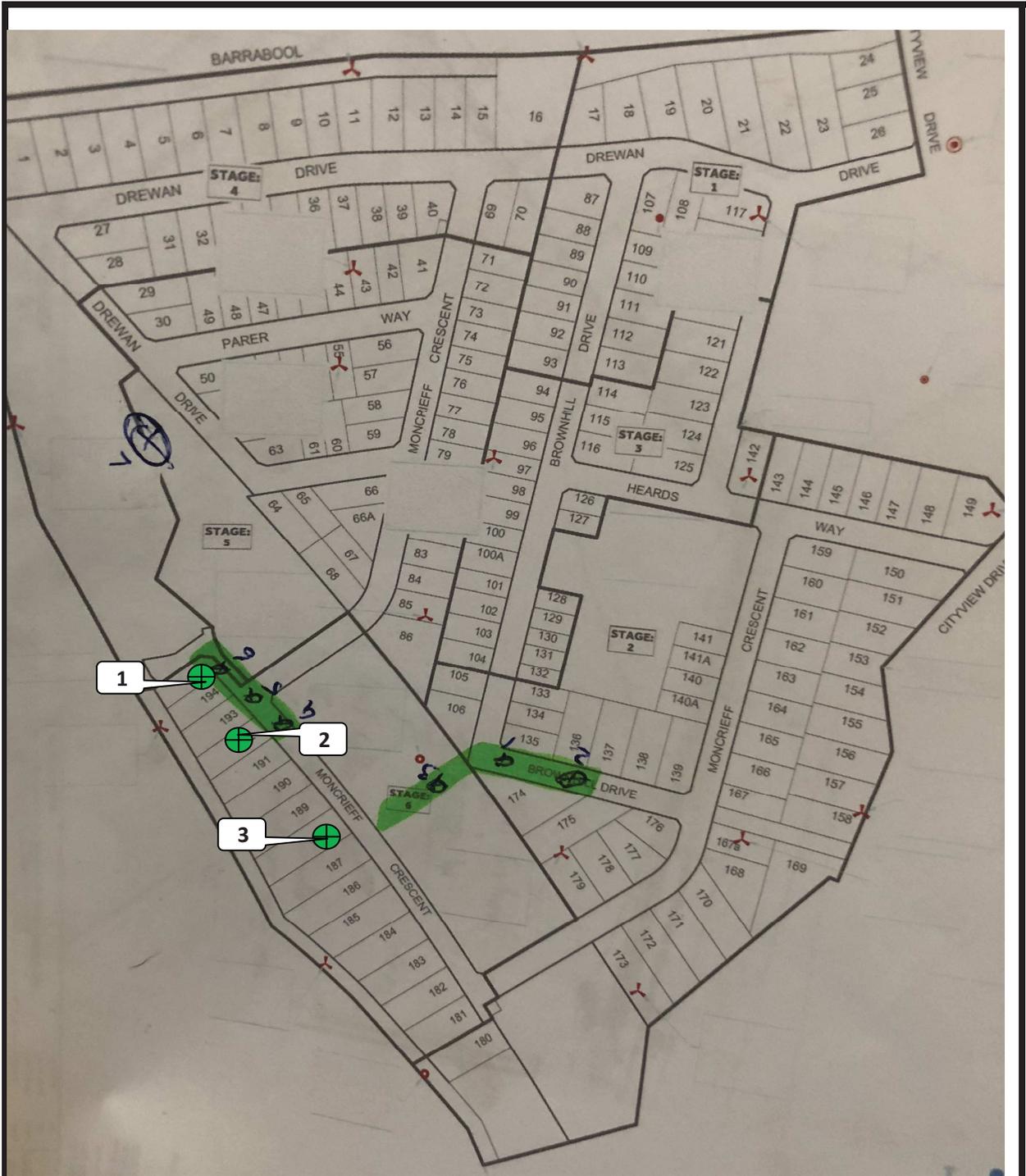
OPERATOR: WS

SCALE: NTS

JOB No.: 1992/254

CHECKED: CL

FIGURE No: -



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

CLIENT: DRAPERS

LOCATION: Wandana Estate Stage 6

Sketch indicating compaction test locations

DATE: 18/12/19

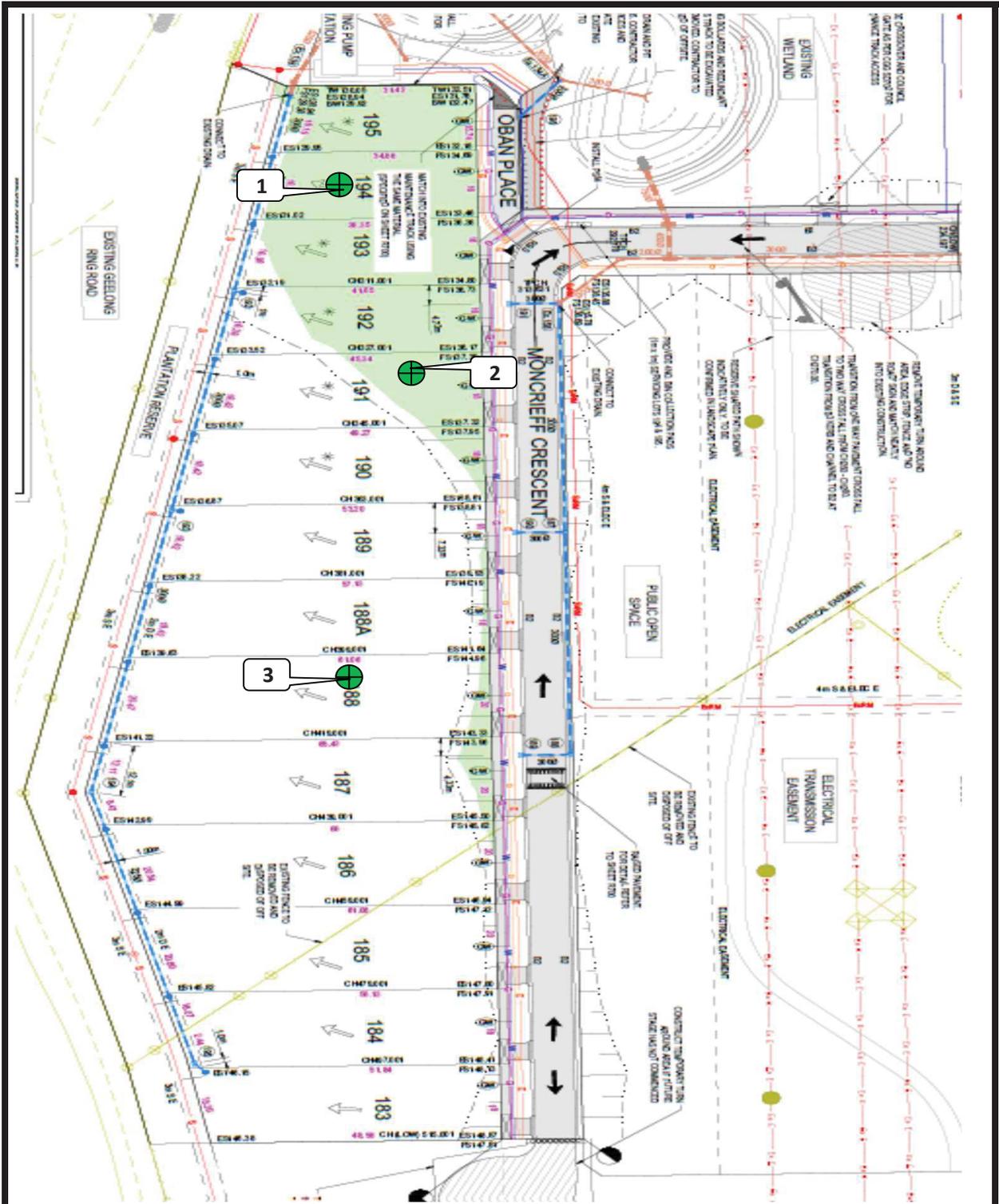
OPERATOR: WS

SCALE: NTS

JOB No.: 1992/256

CHECKED: EG

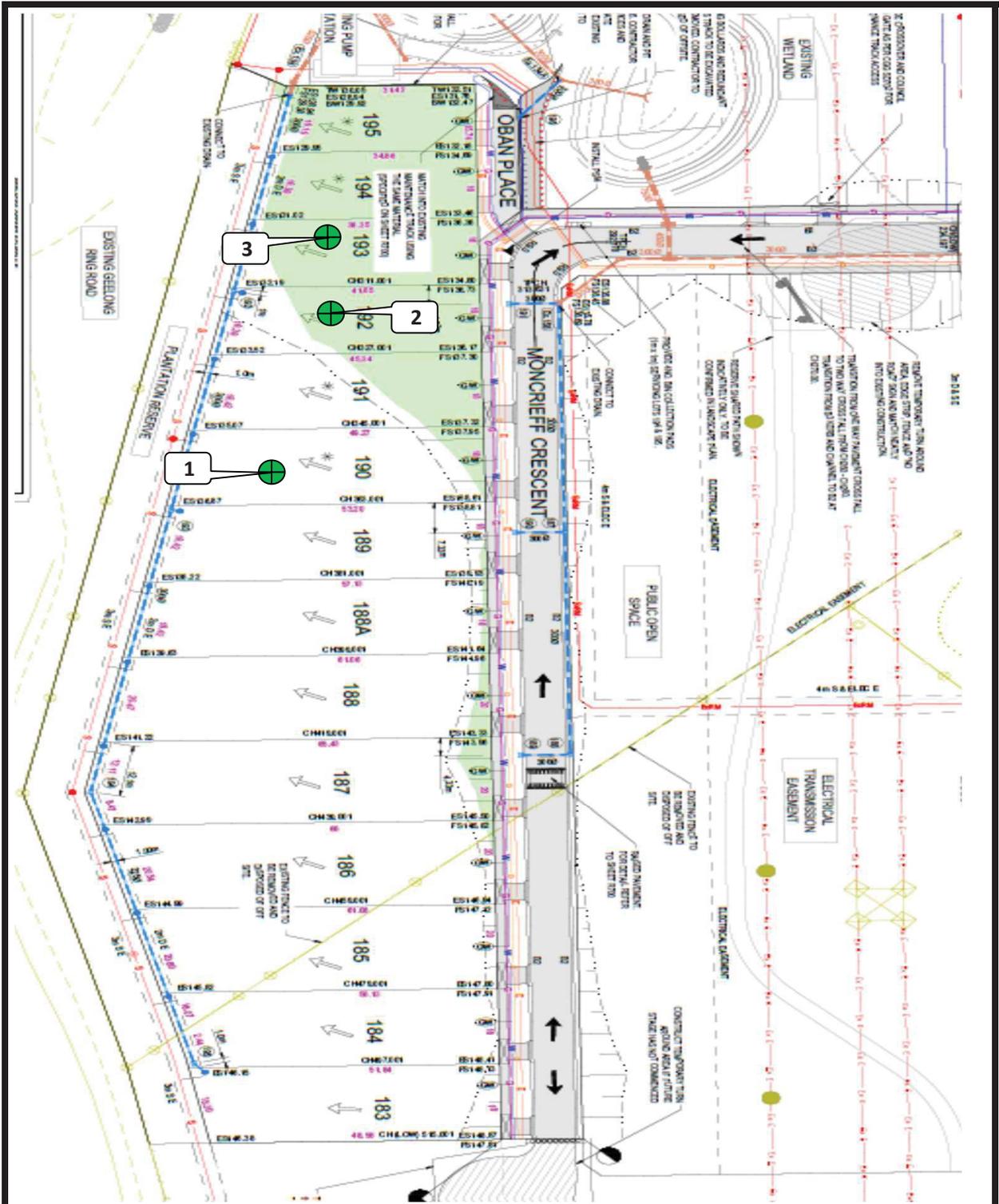
FIGURE No: -



GEOTECHNICAL LABORATORIES
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14 Ravenhall Way, Ravenhall, Vic 3023
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CLIENT: DRAPERS LOCATION: Wandana Estate Stage 6 Sketch indicating compaction test locations	DATE: 19/12/19	JOB No.: 1992/258
	OPERATOR: WS	CHECKED: EG
	SCALE: NTS	FIGURE No.: -



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CLIENT: DRAPERS

LOCATION: Wandana Estate Stage 6

Sketch indicating compaction test locations

DATE: 20/12/19

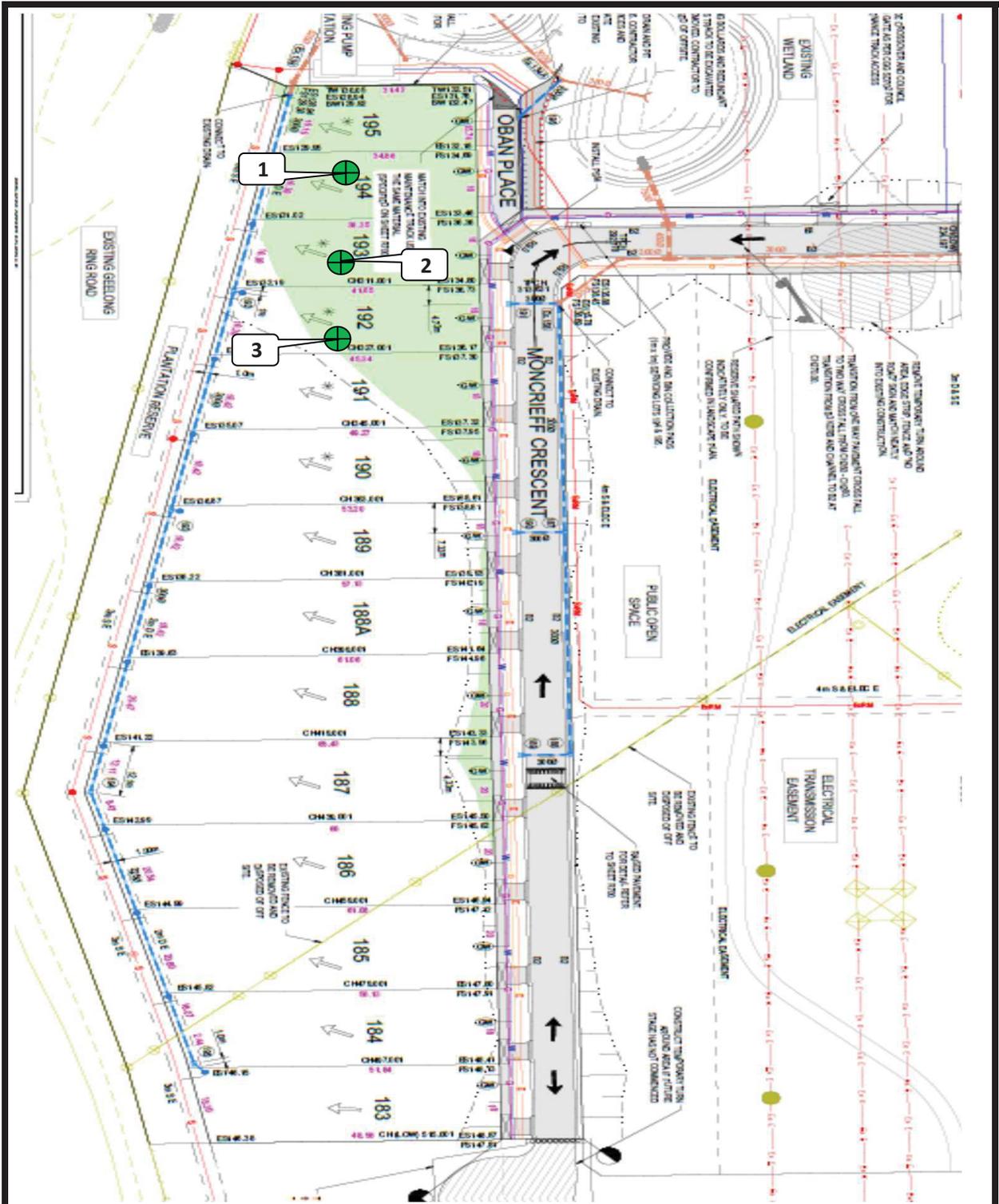
OPERATOR: WS

SCALE: NTS

JOB No.: 1992/260

CHECKED: EG

FIGURE No.: -



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

CLIENT: DRAPERS

LOCATION: Wandana Estate Stage 6

Sketch indicating compaction test locations

DATE: 7/1/20

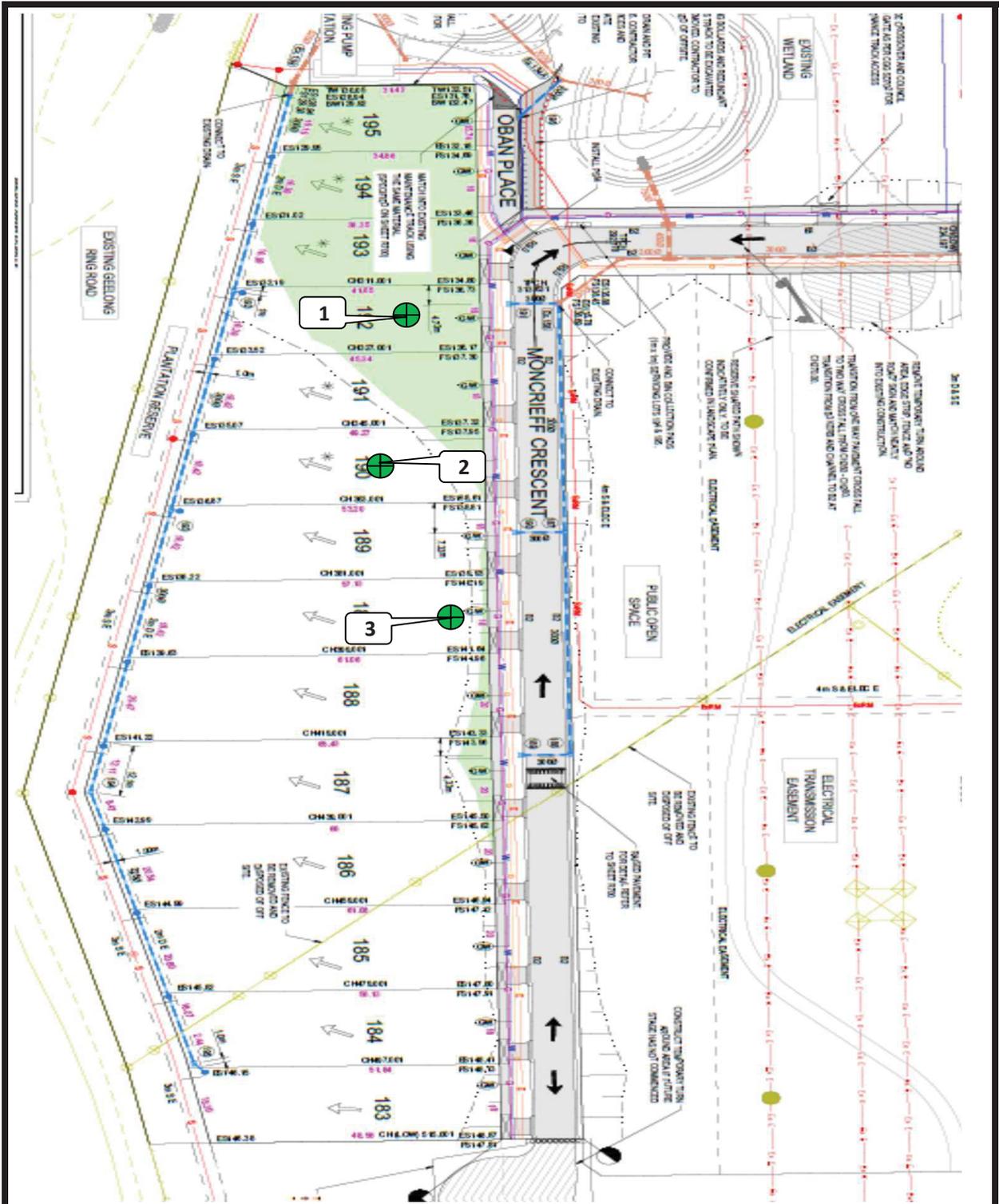
OPERATOR: TI

SCALE: NTS

JOB No.: 1992/262

CHECKED: EG

FIGURE No: -



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

CLIENT: DRAPERS

LOCATION: Wandana Estate Stage 6

Sketch indicating compaction test locations

DATE: 9/1/20

OPERATOR: WS

SCALE: NTS

JOB No.: 1992/266

CHECKED: EG

FIGURE No: -