

LEVEL ONE

Reference  
No.: 1862-148

SURVEILLANCE

AND INSPECTION REPORT

*Carried Out  
By*



PREPARED FOR: -

DRAPERS CIVIL CONTRACTING PTY LTD



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## Appendices

Appendix A Construction Drawings

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Client Name: Drapers Civil Contracting Pty Ltd

Project Name: Armstrong Estate - Stage 27

Date: 18<sup>th</sup> June 2021

Author: Mr. Sam Loza

Reference No.: 1862-148

Revision: 0

Project Manager: Mr. Chris Nation

### **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 13<sup>th</sup> of April 2021 to the 19<sup>th</sup> 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 Drapers Civil Contracting Pty Ltd and was used to determine compliance of earthworks in conjunction with the requirements of AS 3798 – 2007.

(1). Creo Consultants Construction Drawing No. 180016.27 R200 Rev 0.

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 construction drawings.

### **2. Site Preparation**

Site inspections were undertaken on the 13<sup>th</sup> of April 2021 confirming that selected areas to be filled were completely stripped of topsoil and existing pavement materials 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 silty CLAY, brown, grey-brown, slightly moist to moist, medium plasticity with basalt gravels and occasional cobble.

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 / highway trucks
- A watercart
- A sheepsfoot compactor (815)

The sheepsfoot compactor placed material in horizontal loose layers of approximately 250mm-300mm. 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 thirteen 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 from the 13<sup>th</sup> of April 2021 to the 19<sup>th</sup> 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 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 Certification No: 15052;15053;15054

- STORMWATER DRAIN, PIT & PROPERTY INLET
- SWALE DRAIN
- SEWER & MAINTENANCE STRUCTURES
- HOUSE DRAIN
- SERVICE CONDUITS
- EXISTING ELECTRICITY (UNDERGROUND)
- EXISTING ELECTRICITY (OVERHEAD)
- EXISTING GAS
- EXISTING OPTIC FIBRE
- EXISTING TELSTRA
- EXISTING WATER
- EXISTING RECYCLED WATER
- EXISTING STORMWATER DRAIN
- EXISTING SEWER
- EXISTING SURFACE LEVEL
- FINISHED BUILDING LINE LEVEL
- FINISHED RIDGE LINE LEVEL
- PAVEMENT TREATMENT
- 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
- STORM WATER PIT SETOUT POINT
- L12

**NOTE:**  
1. ALL ROAD AND DRAINAGE INFRASTRUCTURE WAS PROVIDED AS A PART OF STAGE 6 ARMSTRONG CENTRAL WORKS, THE WORKS REQUIRED IS LIMITED TO LOT FILLING ONLY.



**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](http://www.1100.com.au)

REVISION	DATE	ISSUE DESCRIPTION	DRAWN	CHECKED	APPROVED
0	03/02/21	CONSTRUCTION ISSUE	M.T.	M.T.	M.T.
A	21/01/21	ISSUED TO COUNCIL FOR APPROVAL	M.T.	M.T.	M.T.



PROJECT  
**ARMSTRONG - STAGE 27 LAYOUT PLAN**

STATUS  
**ISSUED FOR CONSTRUCTION**

SCALE AT A1	DRAWN	DESIGNED
1:400 @ A1	M.TROUNCE	M.TROUNCE
PROJECT ENGINEER	PROJECT MANAGER	DATE FIRST ISSUE
M.TROUNCE	M.TROUNCE	JANUARY 2021
PROJECT NO.	DRAWING NO.	REVISION
180016.27	R200	0

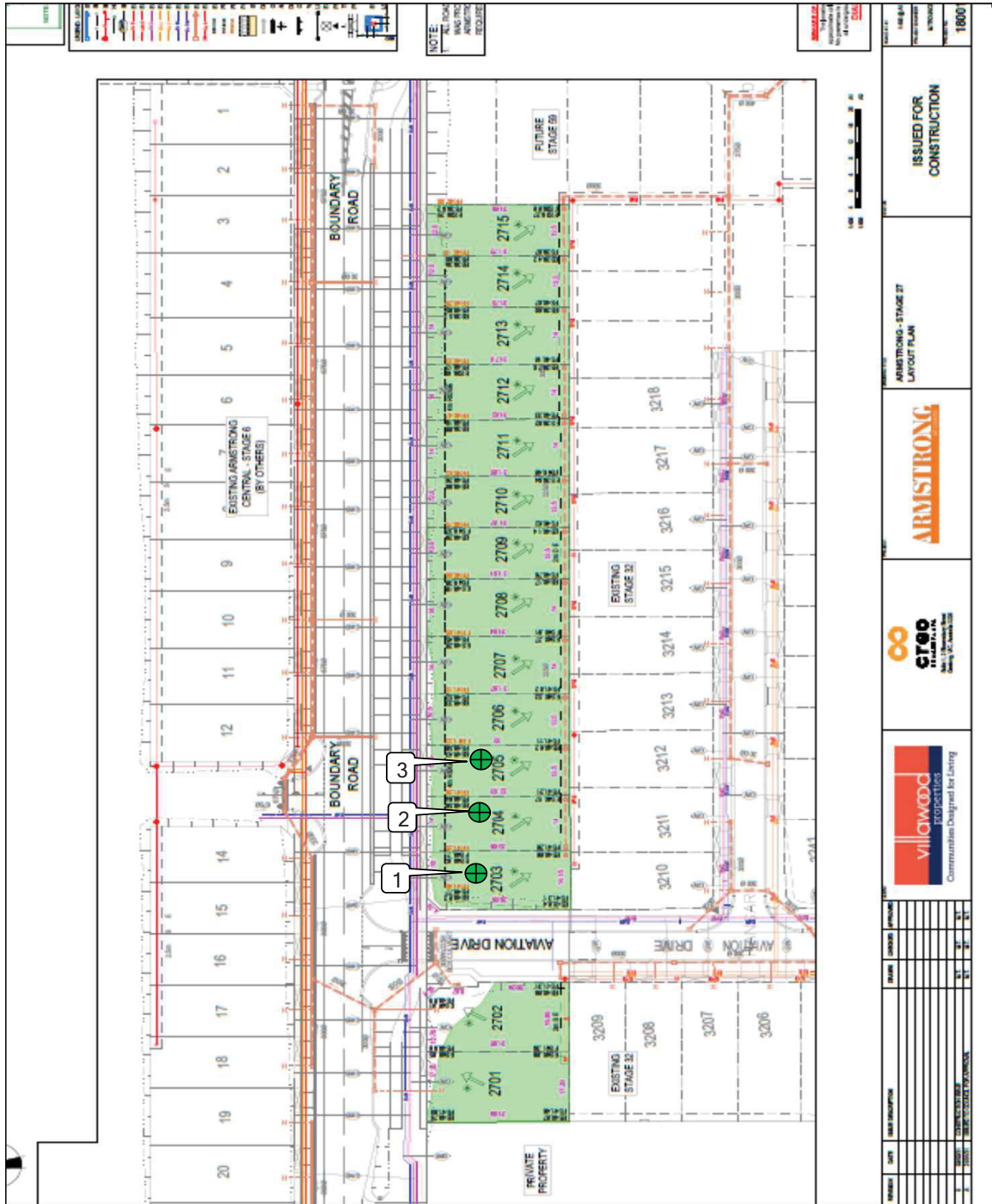


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APPENDIX B







**GEOTECHNICAL LABORATORIES**

**GEOTECHNICAL LABORATORIES  
ACN 102 571 077**

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

**CLIENT: DRAPERS**

**DATE: 13/4/2020**

**JOB No.: 1861/298**

**LOCATION: Armstrong Estate Stage 27**

**OPERATOR: TI**

**CHECKED: KK**

**Sketch indicating approx. compaction test locations**

**SCALE: NTS**

**FIGURE No: -**



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## DAILY SUMMARY - FIELD DENSITY TESTS

REPORT NO.: # 1861/299

LOCATION: DRAPERS - Armstrong Estate Stage 27

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)	
14/04/21	1	<i>Refer to #1861/300 for approx. test site locations.</i>	2.08	18.5	100.5	2.07	18.5	175	0.0 Drier	100.0	0	0	0	
14/04/21	2		2.08	20.0	100.0	2.07	19.5	175	0.5 Wetter	102.5	0	0	0	
14/04/21	3		2.04	20.5	100.5	2.03	20.0	175	0.5 Wetter	102.5	0	0	0	
-	-		-	-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-	-
-	-		-	-	-	-	-	-	-	-	-	-	-	-

NOTES: Clayey Fill Ex. Onsite

Compaction specimens sampled after compaction.

Test sites located - Geolab Procedure 4, Part 4.4.

Start Time: 11:25am Finish Time: 11:45am

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)

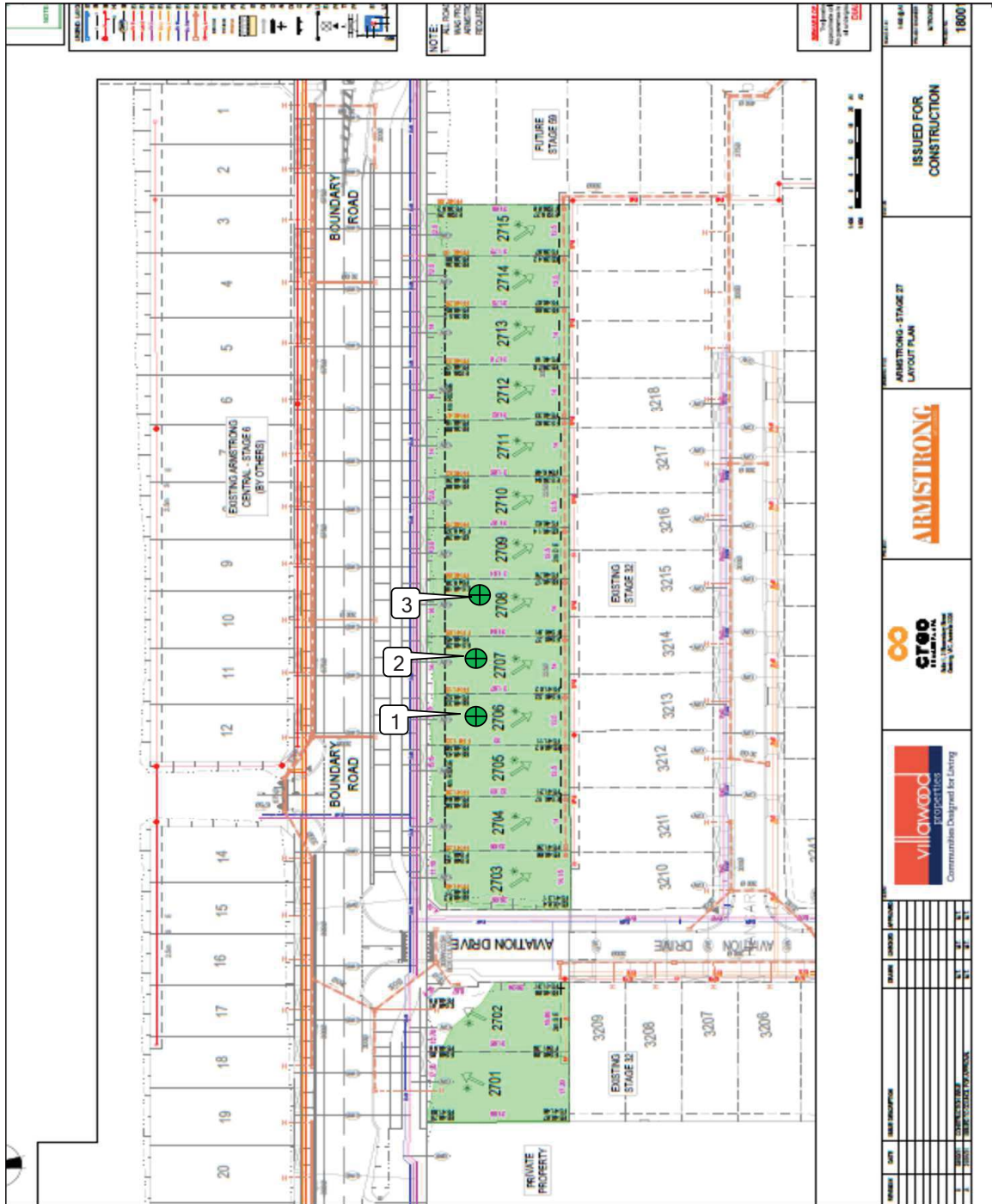


Accredited for compliance with ISO/IEC 17025 - Testing

NATA Accredited Laboratory Number 14561

**MICK CROWE**  
(Approved Signatory)

Issue Date: 19/4/2021

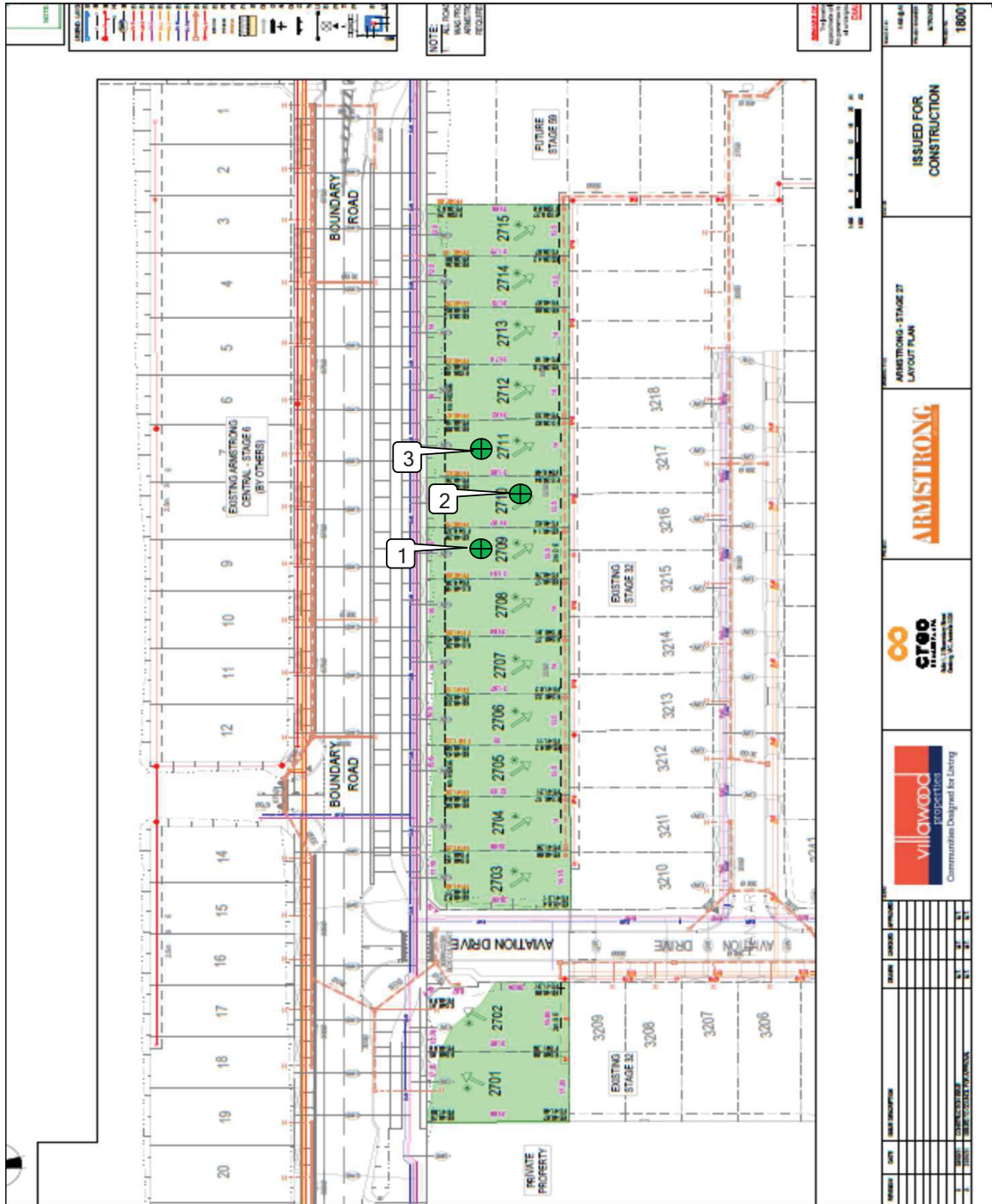


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<b>CLIENT:</b> DRAPERS	<b>DATE:</b> 14/04/2020	<b>JOB No.:</b> 1861/300
<b>LOCATION:</b> Armstrong Estate Stage 27	<b>OPERATOR:</b> TI	<b>CHECKED:</b> KK
<b>Sketch indicating approx. compaction test locations</b>	<b>SCALE:</b> NTS	<b>FIGURE No:</b> -







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**CLIENT: DRAPERS**

**DATE: 15/04/2020**

**JOB No.: 1861/302**

**LOCATION: Armstrong Estate Stage 27**

**OPERATOR: TI**

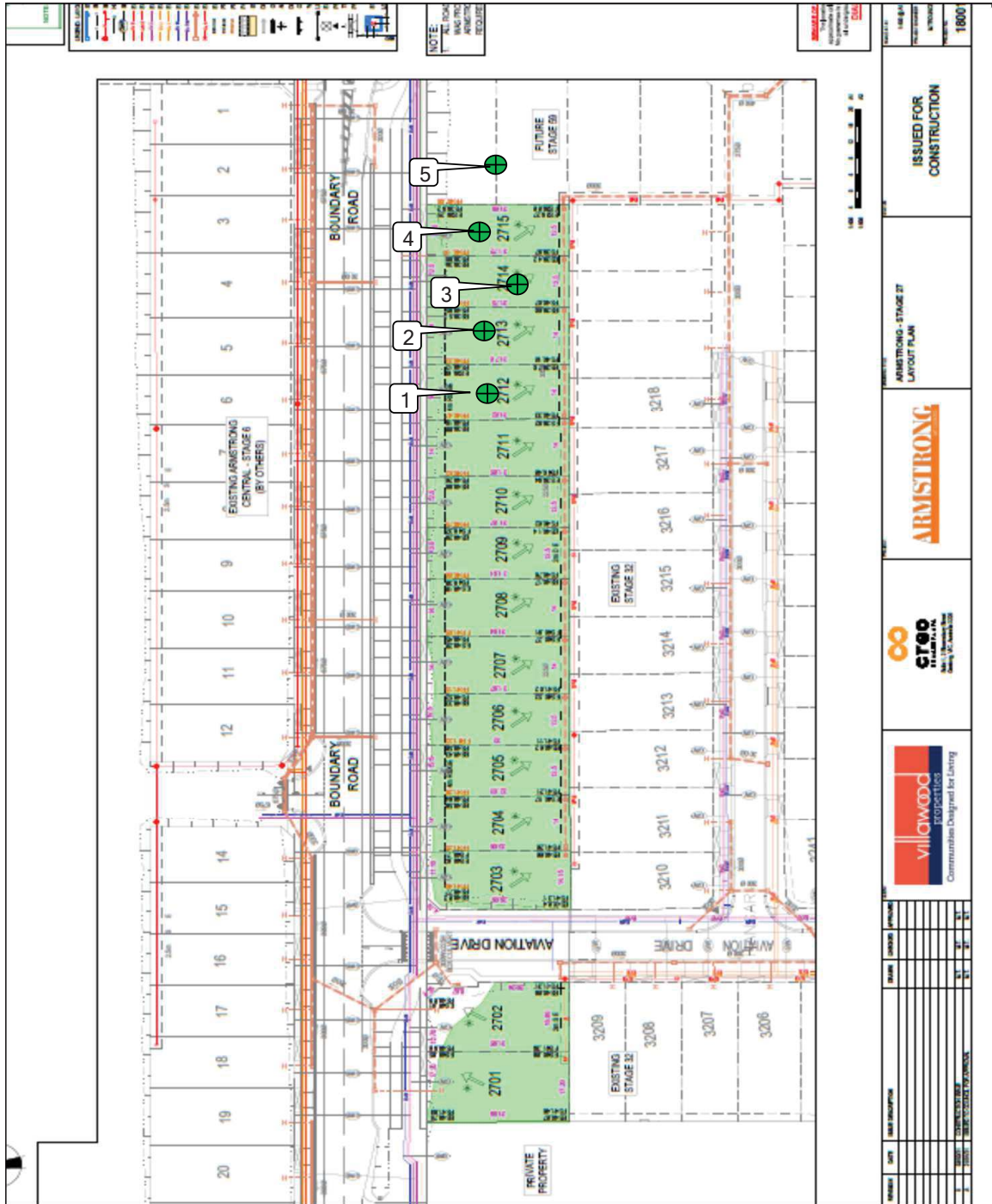
**CHECKED: KK**

**Sketch indicating approx. compaction test locations**

**SCALE: NTS**

**FIGURE No: -**





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<b>CLIENT:</b> DRAPERS	<b>DATE:</b> 19/04/2020	<b>JOB No.:</b> 1861/304
<b>LOCATION:</b> Armstrong Estate Stage 27	<b>OPERATOR:</b> TI	<b>CHECKED:</b> KK
<b>Sketch indicating approx. compaction test locations</b>	<b>SCALE:</b> NTS	<b>FIGURE No:</b> -