



**CIVIL GEOTECHNICAL SERVICES**  
**ABN 26 474 013 724**  
**PO Box 678 Croydon Vic 3136**  
**Telephone: 9723 0744 Facsimile: 9723 0799**

11<sup>th</sup> May 2017

Our Reference: 17126:GB163

Winslow Constructors Pty Ltd  
50 Barry Road  
CAMPBELLFIELD VIC 3061

Dear Sirs,

**RE: LEVEL 1 EARTHWORKS INSPECTION AND TESTING  
HAVEN ESTATE – STAGE 7, TARNEIT**

Please find attached our Report Nos 17126/R001 to 17126/R003 which relates to the field density testing that was conducted within the filled allotments at the above subdivision. The level 1 inspections and associated field density testing were performed in early March 2017.

The inspections and testing of the earthworks was undertaken in general accordance with the Level 1 requirements of AS 3798 - Guidelines on Earthworks for Commercial and Residential Developments.

The site inspection and testing was performed by experienced geotechnicians from this office. Any areas that were deemed unsatisfactory were reworked and retested under their supervision. The testing was performed to the relevant Australian Standards and the accompanying test reports carry NATA endorsement. The attached compaction results, which were located randomly throughout the fill profile, are considered to be representative of the bulk fill materials that were placed across the reported allotments by Winslow Constructors during the aforementioned period. The approximate locations of the field density tests can be seen on the attached plan (Figure 1).

We are of the view that the bulk fill materials that have been placed across the reported allotments by Winslow Constructors during the aforementioned period can be considered as having been placed in a controlled manner to a minimum density ratio of 95% (standard compactive effort).

Please contact the undersigned if you require any additional information.

Civil Geotechnical Services

A handwritten signature in black ink, appearing to read 'Griffin Brown', written over a white background.

Griffin Brown

FIGURE 1

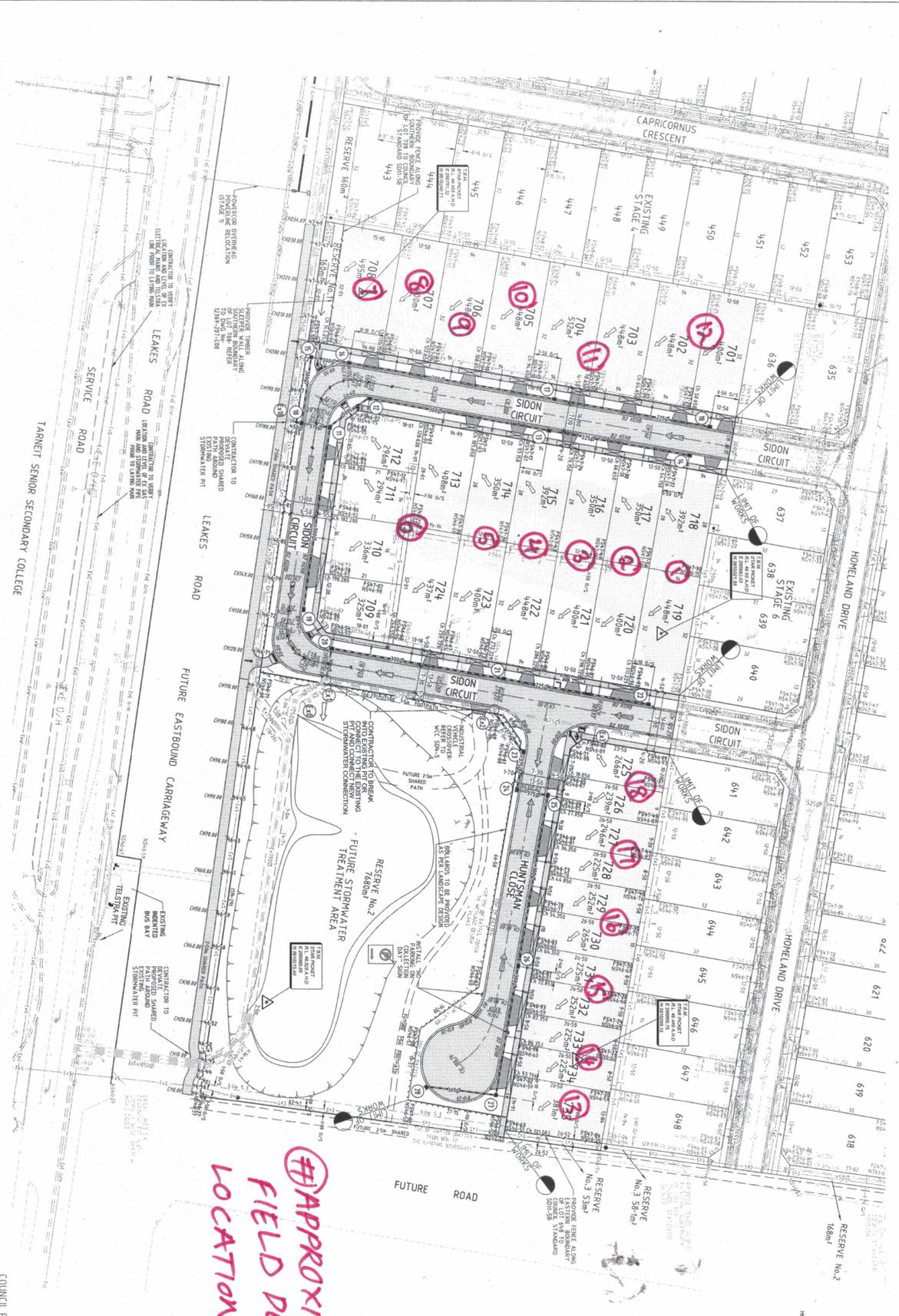
Planning and Environment Act 1987  
 Approved Plan As Required  
 under Condition 31  
 Page No. WY/PS/82/8/13  
 Date 20/02/018

DETAIL PLAN

SCALE 1:500M AT A1 SIZE  
 1:1000M AT A3 SIZE

- LEGEND**
- 5 ALL UTILITIES (GAS, WATER, TELEPHONE, CABLE, TELEVISION, POWER, FIBRE OPTIC, TV, RAINWATER, SULLY, SEWER, STORMWATER, OVERHEAD POWER LINE)
  - 6 EXISTING CONCRETE CHANGELINE
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**APPROXIMATE FIELD DENSITY LOCATION**



REV	DATE	REVISION	APPROVED	ISSUED	DATE	ISSUED
A	13/03/16	COUNCIL AND PEER REVIEW COMMENTS	A	ISSUED	18/06/16	ISSUED FOR APPROVAL
B	18/06/16	ISSUED FOR APPROVAL	A	ISSUED	18/06/16	ISSUED FOR APPROVAL

DESIGNED	DATE	10/08/2016
DRAWN	SCALE	1:500
CHECKED	SHEET SIZE	A1
APPROVED	REVISION	202 D1

TGM Group Melbourne	10/08/2016
736 Glenmore Road	1:500
PO Box 2004	A1
100 Glenmore Road	202 D1
PO Box 2004	
100 Glenmore Road	
PO Box 2004	
100 Glenmore Road	

PROJECT	HAVERN AT TARNEIT
STAGE	STAGE 7
LOCATION	830 LEAKES ROAD, TARNEIT
CLIENT	WYNDHAM CITY COUNCIL

PROJECT TITLE	CIVIL DRAWING
DETAIL PLAN	
PROJECT NUMBER	12565-207-C02
SHEET	2
TOTAL SHEETS	3
SCALE	A1
DATE	2



# COMPACTION ASSESSMENT

Job No 17126  
 Report No 17126/R001  
 Date Issued 29/03/2017

## CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	NB
Project	HAVEN ESTATE - STAGE 7	Date tested	03/03/17
Location	TARNEIT	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time:	11:04
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### Test procedure AS 1289.2.1.1 & 5.8.1

Test No	1	2	3	4	5	6	
Location	718/719	717/720	716/721	715/722	714/723	713/724	
	REFER TO FIGURE 1						
Approximate depth below FSL							
Measurement depth	mm	175	175	175	175	175	
Field wet density	t/m <sup>3</sup>	1.90	2.00	1.90	1.96	1.87	1.89
Field moisture content	%	20.9	20.2	20.2	21.1	21.2	20.0

### Test procedure AS 1289.5.7.1

Test No	1	2	3	4	5	6	
Compactive effort	Standard						
Oversize rock retained on sieve	mm	19.0	19.0	19.0	19.0	19.0	
Percent of oversize material	wet	5	7	12	11	5	7
Peak Converted Wet Density	t/m <sup>3</sup>	1.88	1.90	1.89	1.90	1.89	1.90
Adjusted Peak Converted Wet Density	t/m <sup>3</sup>	1.90	1.93	1.94	1.95	1.91	1.93
Optimum Moisture Content	%	23.0	23.0	21.5	23.0	23.5	22.0

Moisture Variation From Optimum Moisture Content	2.5% dry	2.5% dry	1.5% dry	2.0% dry	2.0% dry	2.0% dry
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Density Ratio ( R <sub>HD</sub> )	%	100.0	103.5	98.0	101.0	98.5	98.0
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### Material description

No 1 - 6 Clay Fill



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/National standards. Accredited for compliance to ISO/IEC 17025. Accreditation No 9909

Approved Signatory : Justin Fry



# COMPACTION ASSESSMENT

Job No 17126  
 Report No 17126/R002  
 Date Issued 07/04/2017

## CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	NB
Project	HAVEN ESTATE - STAGE 7	Date tested	06/03/17
Location	TARNEIT	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 10:00
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	7	8	9	10	11	12
Location	REFER TO FIGURE 1					
Approximate depth below FSL						
Measurement depth mm	175	175	175	175	175	175
Field wet density t/m <sup>3</sup>	1.93	1.99	1.90	1.94	1.90	1.93
Field moisture content %	18.6	18.9	16.8	20.1	18.9	17.4

Test procedure AS 1289.5.7.1

Test No	7	8	9	10	11	12
Compactive effort	Standard					
Oversize rock retained on sieve mm	19.0	19.0	19.0	19.0	19.0	19.0
Percent of oversize material wet	4	11	2	2	2	2
Peak Converted Wet Density t/m <sup>3</sup>	1.83	1.87	1.78	1.84	1.81	1.81
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	1.91	2.09	1.81	1.85	1.82	1.81
Optimum Moisture Content %	20.5	21.5	19.5	24.0	21.5	22.0

Moisture Variation From Optimum Moisture Content	2.0% dry	2.5% dry	2.5% dry	2.0% dry	2.5% dry	2.0% dry
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Density Ratio ( R <sub>HD</sub> )	%	101.0	95.0	105.5	105.0	104.5	106.5
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Material description

No 7 - 12 Clay Fill
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The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/National standards. Accredited for compliance to ISO/IEC 17025. Accreditation No 9909

Approved Signatory : Justin Fry



# COMPACTION ASSESSMENT

Job No 17126  
 Report No 17126/R003  
 Date Issued 29/03/2017

## CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	NB
Project	HAVEN ESTATE - STAGE 7	Date tested	08/03/17
Location	TARNEIT	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time:	10:25
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### Test procedure AS 1289.2.1.1 & 5.8.1

Test No	13	14	15	16	17	18
Location	REFER TO FIGURE 1					
Approximate depth below FSL						
Measurement depth	mm	175	175	175	175	175
Field wet density	t/m <sup>3</sup>	1.94	1.94	1.89	1.93	1.90
Field moisture content	%	9.1	9.0	8.6	8.7	8.4

### Test procedure AS 1289.5.7.1

Test No	13	14	15	16	17	18
Compactive effort	Standard					
Oversize rock retained on sieve	mm	19.0	19.0	19.0	19.0	19.0
Percent of oversize material	wet	11	8	8	7	9
Peak Converted Wet Density	t/m <sup>3</sup>	1.75	1.80	1.81	1.80	1.79
Adjusted Peak Converted Wet Density	t/m <sup>3</sup>	1.78	1.82	1.84	1.83	1.83
Optimum Moisture Content	%	20.5	18.0	18.5	18.0	17.5

Moisture Variation From Optimum Moisture Content	2.5% dry					
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Density Ratio ( R <sub>HD</sub> )	%	109.0	106.5	102.5	106.0	103.5	101.0
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### Material description

No 13 - 18 Clay Fill



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/National standards. Accredited for compliance to ISO/IEC 17025. Accreditation No 9909

Approved Signatory : Justin Fry