



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

26<sup>th</sup> February 2021

Our Reference: 20527:NB900

Winslow Constructors Pty Ltd  
50 Barry Road  
CAMPBELLFIELD VIC 3061

Dear Sirs/Madams,

**RE: LEVEL 1 EARTHWORKS INSPECTION AND TESTING  
FLORIAN – STAGE 7 (BONSHAW)**

Please find attached our Report No's 20527/R001 to 20527/R005 which relate to the field 5density testing that was conducted within the filled allotments at the above subdivision. The level 1 inspections and associated field density testing commenced in August 2020 and was completed in September 2020.

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 blue ink, appearing to read 'Nick Brock', is written over a light blue circular stamp.

Nick Brock

# FIGURE 1



NOTE: FALL ON LOTS IS MEASURED FROM HIGHEST TOP/T/OE OF BATTER OR HIGHEST LOT CORNER TO LOWEST TOP/T/OE OF BATTER OR LOT CORNER

NOTE: CULTURAL HERITAGE AREAS NOT PERMITTED TO BE ENTERED INTO DURING CONSTRUCTION AREA TO BE FLAGGED PRIOR TO WORK COMMENCING

FOR CONSTRUCTION

ISSUE	DESCRIPTION	DATE	LEGEND		DESIGNED	SCALE	PROJECT	CIVIL REF. No.	SHEET	REV
A	ISSUED FOR APPROVAL	05/03/2019	LOT CUT (LOT GREATER THAN 200mm DEEP) LOT FILL (LOT GREATER THAN 200mm DEEP)	FINISHED SURFACE LEVEL EXISTING SURFACE LEVEL	I BRAMBLE	1:500	LOT 32 TAIT STREET FLORIAN STAGE 7	802RD-07-04	4	2
B	ISSUED FOR APPROVAL	07/09/20			BATTERS	SLOPE & FALL ARROW		CHECKED	SHEET SIZE	DRAWING TITLE:
C	COUNCIL COMMENTS ADDRESSED	19/05/2020			A MURPHY	A1	BONSHAW PROJECTS PTY LTD			
1	ISSUED FOR CONSTRUCTION	29/04/2020			AUTHORISED	DATE:				
2	AMENDED PLANS, ISSUED FOR CONSTRUCTION	08/09/20			C COUGHLAN	16/01/2020				

**AXIOM CONSULTING ENGINEERS**  
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 Ballarat Victoria 3360



# COMPACTION ASSESSMENT

Job No 20527  
 Report No 20527/R001  
 Date Issued 28/09/2020

## CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	WS
Project	FLORIAN - STAGE 7	Date tested	18/09/20
Location	BONSHAW	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time:	09:00
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No		1	2	3	4	-	-
Location		REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1		
Approximate depth below FSL	m	0.4	1.0	0.6	0.6		
Measurement depth	mm	175	175	175	175	-	-
Field wet density	t/m <sup>3</sup>	2.09	2.06	1.96	2.00	-	-
Field moisture content	%	23.1	19.8	28.1	27.9	-	-

Test procedure AS 1289.5.7.1

Test No		1	2	3	4	-	-
Compactive effort		Standard					
Oversize rock retained on sieve	mm	19.0	19.0	19.0	19.0	-	-
Percent of oversize material	wet	0	0	0	0	-	-
Peak Converted Wet Density	t/m <sup>3</sup>	2.12	2.10	1.98	2.02	-	-
Adjusted Peak Converted Wet Density	t/m <sup>3</sup>	-	-	-	-	-	-
Optimum Moisture Content	%	20.5	17.5	25.5	25.5	-	-

Moisture Variation From Optimum Moisture Content		2.5% wet	2.5% wet	2.5% wet	2.5% wet	-	-
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Density Ratio ( R <sub>HD</sub> )	%	98.5	98.5	99.0	99.0	-	-
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Material description

No 1 - 4 Clay Fill
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AVRLOT HILF V1.10 MAR 13



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. Accredited for compliance with ISO/IEC 17025 - Testing

Accreditation No 9909

Approved Signatory : Justin Fry



# COMPACTION ASSESSMENT

## CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Job No 20527  
Report No 20527/R002  
Date Issued 28/09/2020

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	WS
Project	FLORIAN - STAGE 7	Date tested	23/09/20
Location	BONSHAW	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time:	09:30
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No		5	6	7	8	-	-
Location		REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1		
Approximate depth below FSL	m	0.8	0.2	fsl	0.8		
Measurement depth	mm	175	175	175	175	-	-
Field wet density	t/m <sup>3</sup>	2.29	2.28	2.22	2.26	-	-
Field moisture content	%	26.1	23.1	22.6	25.2	-	-

Test procedure AS 1289.5.7.1

Test No		5	6	7	8	-	-
Compactive effort		Standard					
Oversize rock retained on sieve	mm	19.0	19.0	19.0	19.0	-	-
Percent of oversize material	wet	0	0	0	0	-	-
Peak Converted Wet Density	t/m <sup>3</sup>	2.32	2.31	2.25	2.29	-	-
Adjusted Peak Converted Wet Density	t/m <sup>3</sup>	-	-	-	-	-	-
Optimum Moisture Content	%	23.5	25.5	24.5	22.5	-	-

Moisture Variation From Optimum Moisture Content		2.5% wet	2.0% dry	2.0% dry	2.5% wet	-	-
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Density Ratio ( R <sub>HD</sub> )	%	98.5	98.5	98.5	98.5	-	-
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Material description

No 5 - 8 Clay Fill
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Approved Signatory : Justin Fry



# COMPACTION ASSESSMENT

Job No 20527  
 Report No 20527/R003  
 Date Issued 29/09/2020

## CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	WS
Project	FLORIAN - STAGE 7	Date tested	24/09/20
Location	BONSHAW	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 08:00
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No		9	10	11	12	13	14
Location		REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1
Approximate depth below FSL	m	0.6	0.4	0.4	0.4	fsl	fsl
Measurement depth	mm	175	175	175	175	175	175
Field wet density	t/m <sup>3</sup>	2.12	2.09	2.02	2.05	2.22	2.16
Field moisture content	%	23.3	20.4	21.2	21.9	20.9	22.4

Test procedure AS 1289.5.7.1

Test No		9	10	11	12	13	14
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	0	0	0	0	0	0
Peak Converted Wet Density	t/m <sup>3</sup>	2.20	2.13	2.05	2.08	2.25	2.20
Adjusted Peak Converted Wet Density	t/m <sup>3</sup>	-	-	-	-	-	-
Optimum Moisture Content	%	21.0	20.5	21.0	19.5	21.0	22.5

Moisture Variation From Optimum Moisture Content		2.5% wet	0.0%	0.0%	2.5% wet	0.0%	0.0%
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Density Ratio ( R <sub>HD</sub> )	%	96.5	98.5	98.5	98.5	98.5	98.5
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Material description

No 9 - 14 Clay Fill
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# COMPACTION ASSESSMENT

Job No 20527  
 Report No 20527/R004  
 Date Issued 07/10/2020

## CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	WS
Project	FLORIAN - STAGE 7	Date tested	30/09/20
Location	BONSHAW	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 07:30
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	15	16	17	18	-	-
Location	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1		
Approximate depth below FSL	m 0.2	fsl	0.2	fsl		
Measurement depth	mm 175	175	175	175	-	-
Field wet density	t/m <sup>3</sup> 2.15	2.10	2.15	2.18	-	-
Field moisture content	% 24.5	20.8	20.2	18.7	-	-

Test procedure AS 1289.5.7.1

Test No	15	16	17	18	-	-
Compactive effort	Standard					
Oversize rock retained on sieve	mm 19.0	19.0	19.0	19.0	-	-
Percent of oversize material	wet 0	0	0	0	-	-
Peak Converted Wet Density	t/m <sup>3</sup> 2.18	2.12	2.18	2.21	-	-
Adjusted Peak Converted Wet Density	t/m <sup>3</sup> -	-	-	-	-	-
Optimum Moisture Content	% 22.0	18.5	18.0	16.5	-	-

Moisture Variation From Optimum Moisture Content	2.5% wet	2.5% wet	2.0% wet	2.0% wet	-	-
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Density Ratio ( R <sub>HD</sub> )	% 98.5	99.0	98.5	98.5	-	-
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Material description

No 15 - 18 Clay Fill

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# COMPACTION ASSESSMENT

## CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Job No 20527  
Report No 20527/R005  
Date Issued 08/10/2020

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	WS
Project	FLORIAN - STAGE 7	Date tested	30/09/20
Location	BONSHAW	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time:	07:30
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No		19	20	21	-	-	-
Location		REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1			
Approximate depth below FSL	m	fsl	fsl	fsl			
Measurement depth	mm	175	175	175	-	-	-
Field wet density	t/m <sup>3</sup>	2.13	2.13	2.01	-	-	-
Field moisture content	%	16.6	18.5	16.7	-	-	-

Test procedure AS 1289.5.7.1

Test No		19	20	21	-	-	-
Compactive effort		Standard					
Oversize rock retained on sieve	mm	19.0	19.0	19.0	-	-	-
Percent of oversize material	wet	0	0	0	-	-	-
Peak Converted Wet Density	t/m <sup>3</sup>	2.21	2.16	2.11	-	-	-
Adjusted Peak Converted Wet Density	t/m <sup>3</sup>	-	-	-	-	-	-
Optimum Moisture Content	%	19.0	21.0	14.5	-	-	-

Moisture Variation From Optimum Moisture Content		2.5% dry	2.5% dry	2.0% wet	-	-	-
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Density Ratio ( R <sub>HD</sub> )	%	96.5	98.5	95.5	-	-	-
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Material description

No 19 - 21 Clay Fill
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