



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

10th December 2019

Our Reference: 19084:NB624

Winslow Constructors Pty Ltd
50 Barry Road
CAMPBELLFIELD VIC 3061

Dear Sirs/Madams,

**RE: LEVEL 1 EARTHWORKS INSPECTION AND TESTING
FLORIAN ESTATE – STAGE 2 (BONSHAW)**

Please find attached our Report No's 19084/R001 to 19084/R004 which relate 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 was performed in March 2019.

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 (1 of 2)



Approximate field density test location

FOR CONSTRUCTION

ISSUE	DESCRIPTION	DATE
A	ISSUED FOR APPROVAL	13/04/2018
B	COUNCIL COMMENTS ADDRESSED	10/09/2018
1	ISSUED FOR CONSTRUCTION	1/10/2018

LEGEND		
	LOT CUT (CUT GREATER THAN 200mm DEEP)	FS+4.00 FINISHED SURFACE LEVEL
	LOT FILL (FILL GREATER THAN 200mm DEEP)	ES+4.00 EXISTING SURFACE LEVEL
	BATTERS	SLOPE & FALL ARROW

DESIGNED: A MURPHY
 CHECKED: M PARKER
 AUTHORIZED: C COUGHLAN
 SCALE: 1:500
 SHEET SIZE: A1
 DATE: 13/04/2018

AXIOM CONSULTING ENGINEERS
 ACN 100 526 458
 W: axiomce.com.au
 P: 03 5331 2688
 6 Webster Street, Bellerive Victoria 3200

PROJECT: LOT 32 TAIT STREET BONSHAW - STAGE 2
 CLIENT: BONSHAW PROJECTS PTY LTD

CIVIL REF. No: 802RD-02-05
 SHEET: 5
 REV: 1
 DRAWING TITLE: EARTHWORKS PLAN (SHEET 1 OF 2)

FOR CONTINUATION REFER 802RD-02-06

FIGURE 1 (2 of 2)



FOR CONSTRUCTION

ISSUE	DESCRIPTION	DATE
A	ISSUED FOR APPROVAL	13/04/2018
B	COUNCIL COMMENTS ADDRESSED	10/09/2018
1	ISSUED FOR CONSTRUCTION	1/10/2018

LEGEND	
	LOT CUT (CUT GREATER THAN 200mm DEEP)
	LOT FILL (FILL GREATER THAN 200mm DEEP)
	BATTERS
	SLOPE & FALL ARROW
	FINISHED SURFACE LEVEL
	EXISTING SURFACE LEVEL

	DESIGNED: A MURPHY	SCALE: 1:500
	CHECKED: M PARKER	SHEET SIZE: A1
	AUTHORISED: C COUGHLAN	DATE: 13/04/2018
	<small>Quality Certified Company ISO9001:2008 REGISTRATION No. 004891-0009</small>	

AXIOM CONSULTING ENGINEERS

ACN 100 526 458
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P: 03 5331 2688
6 Webster Street,
Belconnen Victoria 3000

PROJECT:	LOT 32 TAIT STREET BONSHAW - STAGE 2
CLIENT:	BONSHAW PROJECTS PTY LTD

CIVIL REF. No:	802RD-02-06	SHEET:	6	REV:	1
DRAWING TITLE:	EARTHWORKS PLAN (SHEET 2 OF 2)				



COMPACTION ASSESSMENT

Job No 19084
 Report No 19084/R001
 Date Issued 28/03/2019

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	WS
Project	FLORIAN ESTATE - STAGE 2	Date tested	22/03/19
Location	BONSHAW	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 07:00
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	1	2	-	-	-	-
Location	REFER TO FIGURE 1	REFER TO FIGURE 1				
Approximate depth below FSL						
Measurement depth <i>mm</i>	175	175	-	-	-	-
Field wet density <i>t/m³</i>	2.24	2.24	-	-	-	-
Field moisture content <i>%</i>	18.9	18.3	-	-	-	-

Test procedure AS 1289.5.7.1

Test No	1	2	-	-	-	-
Compactive effort	Standard					
Oversize rock retained on sieve <i>mm</i>	19.0	19.0	-	-	-	-
Percent of oversize material <i>wet</i>	0	0	-	-	-	-
Peak Converted Wet Density <i>t/m³</i>	2.23	2.26	-	-	-	-
Adjusted Peak Converted Wet Density <i>t/m³</i>	-	-	-	-	-	-
Optimum Moisture Content <i>%</i>	21.5	21.0	-	-	-	-

Moisture Variation From Optimum Moisture Content	2.5% dry	2.5% dry	-	-	-	-
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Density Ratio (R_{HD})	%	100.5	99.0	-	-	-
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Material description

No 1 - 2 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 19084
 Report No 19084/R002
 Date Issued 28/05/2019

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	WS
Project	FLORIAN ESTATE - STAGE 2	Date tested	26/03/19
Location	BONSHAW	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 07:00
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	3	4	5	6	7	8
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						
Measurement depth	mm	175	175	175	175	175
Field wet density	t/m ³	1.93	1.92	2.09	2.06	1.96
Field moisture content	%	16.7	17.0	17.8	15.5	13.5

Test procedure AS 1289.5.7.1

Test No	3	4	5	6	7	8
Compactive effort	Standard					
Oversize rock retained on sieve	mm	19.0	19.0	19.0	19.0	19.0
Percent of oversize material	wet	0	0	0	0	0
Peak Converted Wet Density	t/m ³	1.97	1.95	2.12	2.10	2.00
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-
Optimum Moisture Content	%	17.5	17.0	20.0	17.5	15.5

Moisture Variation From Optimum Moisture Content	0.5% dry	0.0%	2.0% dry	2.0% dry	1.5% dry	2.0% dry
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Density Ratio (R _{HD})	%	98.0	98.5	98.5	98.5	98.0	98.5
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Material description

No 3 - 8 Clay Fill

AVRLOT HILF V1.10 MAR 13



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Accreditation No 9909

Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

Job No 19084
 Report No 19084/R003
 Date Issued 28/05/2019

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	WS
Project	FLORIAN ESTATE - STAGE 2	Date tested	27/03/19
Location	BONSHAW	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 07:00
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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							
Measurement depth	mm	175	175	175	175	175	
Field wet density	t/m ³	2.18	2.14	2.09	2.07	2.04	1.89
Field moisture content	%	21.0	21.0	23.1	26.7	21.7	20.0

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	
Percent of oversize material	wet	0	0	0	0	0	
Peak Converted Wet Density	t/m ³	2.22	2.17	2.12	2.10	2.07	1.93
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-	-
Optimum Moisture Content	%	22.0	21.0	21.0	26.0	21.0	18.0

Moisture Variation From Optimum Moisture Content	0.5% dry	0.0%	2.0% wet	0.5% wet	0.5% wet	2.0% wet
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Density Ratio (R _{HD})	%	98.5	98.5	98.5	98.5	98.5	98.0
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Material description

No 9 - 14 Clay Fill

AVRLOT HILF V1.10 MAR 13



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Accreditation No 9909

Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

Job No 19084
 Report No 19084/R004
 Date Issued 08/04/19

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	WS
Project	FLORIAN ESTATE - STAGE 2	Date tested	28/03/19
Location	BONSHAW	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 07:00
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	15	-	-	-	-	-
Location	REFER TO FIGURE 1					
Approximate depth below FSL						
Measurement depth	mm	175	-	-	-	-
Field wet density	t/m ³	1.98	-	-	-	-
Field moisture content	%	17.8	-	-	-	-

Test procedure AS 1289.5.7.1

Test No	15	-	-	-	-	-
Compactive effort		Standard				
Oversize rock retained on sieve	mm	19.0	-	-	-	-
Percent of oversize material	wet	0	-	-	-	-
Peak Converted Wet Density	t/m ³	2.08	-	-	-	-
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-
Optimum Moisture Content	%	18.5	-	-	-	-

Moisture Variation From Optimum Moisture Content	0.5% dry	-	-	-	-	-
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Density Ratio (R _{HD})	%	95.0	-	-	-	-
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Material description

No 15 - 15 Clay Fill

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