



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

18th January 2021

Our Reference: 20627:NB866

Winslow Constructors Pty Ltd
50 Barry Road
CAMPBELLFIELD VIC 3061

Dear Sirs/Madams,

**RE: LEVEL 1 EARTHWORKS INSPECTION AND TESTING
FLORIAN – STAGE 8 (BONSHAW)**

Please find attached our Report No's 20627/R001 to 20627/R007 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 commenced in November 2020 and was completed in December 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).

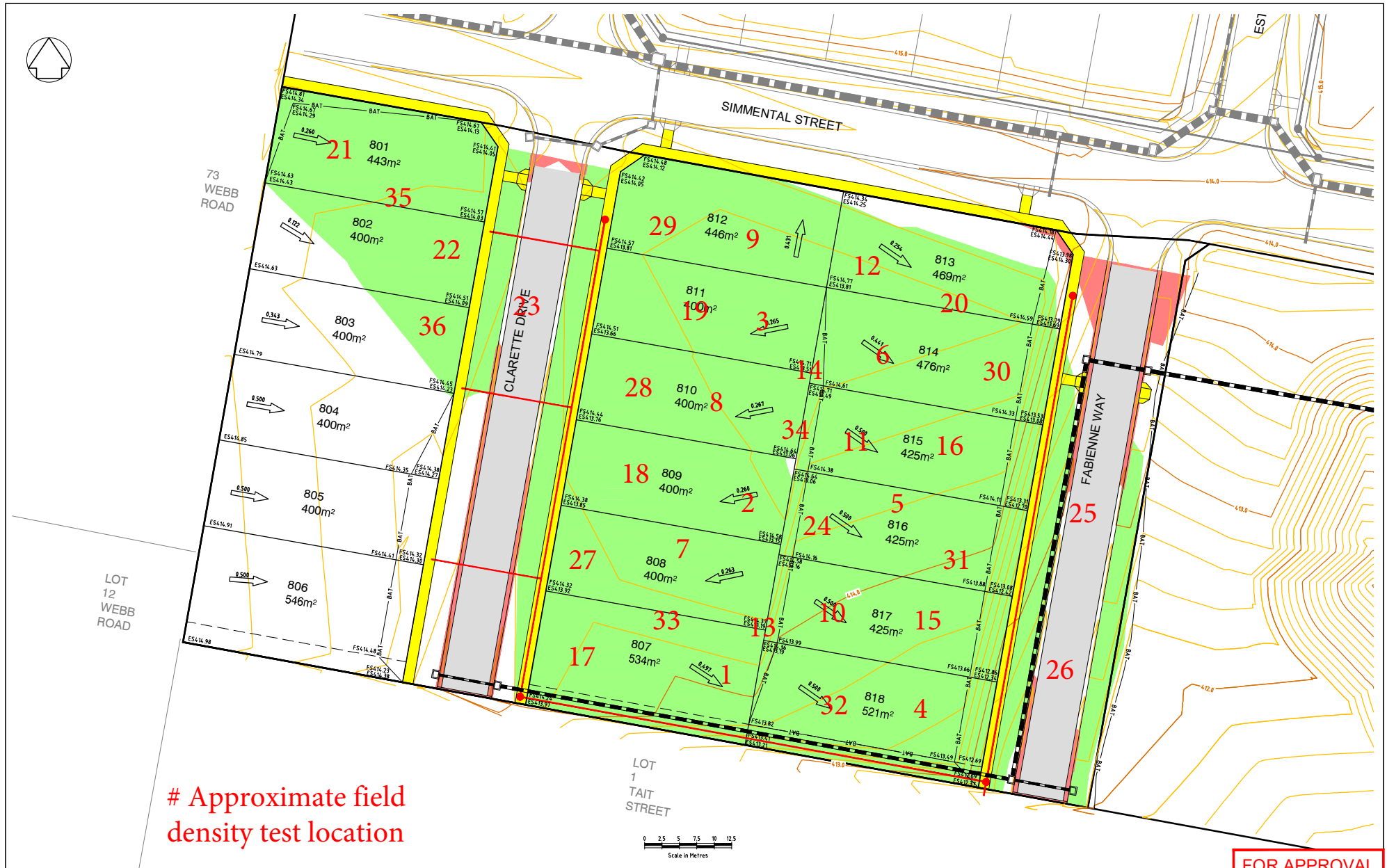
We are of the view that the bulk fill materials that have been placed across the reported allotments by Winslow Constructors during the aforementioned period can be considered as having been placed in a controlled manner to a minimum density ratio of 95% (standard compactive effort).

Please contact the undersigned if you require any additional information.

Civil Geotechnical Services

Nick Brock

FIGURE 1



ISSUE	DESCRIPTION	DATE	LEGEND			DESIGNED	SCALE	 AXIOM CONSULTING ENGINEERS	PROJECT:	CIVIL REF. No.	SHEET	REV.
A	ISSUED FOR APPROVAL	13/10/20	 LOT CUT (CUT GREATER THAN 200mm DEEP)	 LOT FILL (FILL GREATER THAN 200mm DEEP)	 BATTERS	 FINISHED SURFACE LEVEL	1:250		A MURPHY	LOT 32 TAIT STREET FLORIAN STAGE 8	802RD-08-03	3
			 PROPOSED EASEMENTS	EXISTING STORMWATER DRAINAGE	 PROPOSED STORMWATER DRAINAGE	 EXISTING SURFACE LEVEL		M PARKER		DRAWING TITLE:		
			 PROPOSED SEWER	 EXISTING SEWER	 PROPOSED FOOTPATH	 CULTURALLY SENSITIVE AREA		C COUGHLAN	DATE: 13/10/20	EARTHWORKS LAYOUT PLAN		
												
			PS 142.05 ES 141.97			Quality Certified Company ENR0001-21058						
						REGISTRATION ENR0001-21058						
												
						ACN 100 526 458 W: axiom.com.au E: axiom@axiom.com.au						
						P: 03 5331 2688 6 Webster Street, Melbourne Victoria 3002						
						CLIENT:			BONSHAW PROJECTS PTY LTD			



COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Job No 20627
Report No 20627/R001
Date Issued 25/11/2020

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	WS
Project	FLORIAN - STAGE 8	Date tested	16/11/20
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		1	2	3	4	5	6
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	1.0	1.2	1.0	0.8	1.2	0.8
Measurement depth	mm	175	175	175	175	175	175
Field wet density	t/m ³	1.85	1.89	2.03	2.06	2.14	2.13
Field moisture content	%	21.6	18.8	22.8	22.3	20.0	19.9

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	19.0
Percent of oversize material	wet	0	0	0	0	0	0
Peak Converted Wet Density	t/m ³	1.87	1.95	2.05	2.06	2.18	2.18
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-	-
Optimum Moisture Content	%	19.5	21.5	20.5	24.5	17.5	17.5

Moisture Variation From Optimum Moisture Content	2.0% wet	2.5% dry	2.5% wet	2.0% dry	2.5% wet	2.5% wet
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Density Ratio (R_{HD})	%	99.0	97.0	98.5	100.0	98.0	98.0
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Material description

No 1 - 6 Clay Fill

AVRLOT HILF V1.10 MAR 13



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Accreditation No 9909

Justin Fry

Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Job No 20627
Report No 20627/R002
Date Issued 13/01/2021

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	WS
Project	FLORIAN - STAGE 8	Date tested	16/11/20
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		7	8	-	-	-	-
Location		REFER TO FIGURE 1	REFER TO FIGURE 1				
Approximate depth below FSL	m	0.8	0.8				
Measurement depth	mm	175	175	-	-	-	-
Field wet density	t/m ³	2.04	1.99	-	-	-	-
Field moisture content	%	19.3	19.3	-	-	-	-

Test procedure AS 1289.5.7.1

Test No		7	8	-	-	-	-
Compactive effort		Standard					
Oversize rock retained on sieve	mm	19.0	19.0	-	-	-	-
Percent of oversize material	wet	0	0	-	-	-	-
Peak Converted Wet Density	t/m ³	2.09	2.05	-	-	-	-
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-	-
Optimum Moisture Content	%	19.5	19.5	-	-	-	-

Moisture Variation From Optimum Moisture Content		0.0%	0.0%	-	-	-	-
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Density Ratio (R_{HD})	%	97.5	97.0	-	-	-	-
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Material description

No 7 - 8 Clay Fill

AVRLOT HILF V1.10 MAR 13



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COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Job No 20627
Report No 20627/R003
Date Issued 23/11/2020

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	WS
Project	FLORIAN - STAGE 8	Date tested	17/11/20
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	m	0.6	0.6	0.6	0.2	0.4	0.4
Measurement depth	mm	175	175	175	175	175	175
Field wet density	t/m ³	1.92	1.86	2.14	2.07	2.15	2.11
Field moisture content	%	18.5	15.8	21.3	19.6	23.2	18.5

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 ³	2.00	1.93	2.17	2.17	2.19	2.19
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-	-
Optimum Moisture Content	%	21.0	18.0	24.0	17.0	20.5	21.0

Moisture Variation From Optimum Moisture Content	2.5% dry	2.0% dry	2.5% dry	2.5% wet	2.5% wet	2.5% dry
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Density Ratio (R_{HD})	%	96.5	97.0	98.5	95.5	98.5	96.0
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Material description

No 9 - 14 Clay Fill

AVRLOT HILF V1.10 MAR 13



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COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Job No 20627
Report No 20627/R004
Date Issued 13/01/2021

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	WS
Project	FLORIAN - STAGE 8	Date tested	17/11/20
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	16	17	18	19	20
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	0.4	0.4	0.6	0.6	0.6	0.2
Measurement depth mm	175	175	175	175	175	175
Field wet density t/m ³	2.04	2.05	2.03	2.18	2.20	2.13
Field moisture content %	22.7	18.9	20.3	18.6	21.2	16.0

Test procedure AS 1289.5.7.1

Test No	15	16	17	18	19	20
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 ³	2.11	2.10	2.10	2.25	2.24	2.17
Adjusted Peak Converted Wet Density t/m ³	-	-	-	-	-	-
Optimum Moisture Content %	22.5	19.0	22.5	18.5	23.5	18.5

Moisture Variation From Optimum Moisture Content	0.0%	0.0%	2.0% dry	0.0%	2.5% dry	2.5% dry
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Density Ratio (R_{HD})	%	96.5	98.0	97.0	96.5	98.5	98.0
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Material description

No 15 - 20 Clay Fill

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COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Job No 20627
Report No 20627/R005
Date Issued 14/01/2021

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	WS
Project	FLORIAN - STAGE 8	Date tested	18/11/20
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	21	22	23	24	25	26
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	0.2	0.2	0.2	0.2	0.2	0.2
Measurement depth mm	175	175	175	175	175	175
Field wet density t/m ³	1.96	1.96	1.96	1.87	1.86	1.88
Field moisture content %	24.7	21.0	22.6	19.8	23.0	22.7

Test procedure AS 1289.5.7.1

Test No	21	22	23	24	25	26
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 ³	2.02	2.03	1.98	1.97	1.89	1.89
Adjusted Peak Converted Wet Density t/m ³	-	-	-	-	-	-
Optimum Moisture Content %	26.5	23.5	24.5	22.5	25.0	24.5

Moisture Variation From Optimum Moisture Content	2.0% dry	2.5% dry	2.0% dry	2.5% dry	2.0% dry	2.0% dry
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Density Ratio (R_{HD})	%	97.0	96.5	99.0	95.0	98.0	99.5
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Material description

No 21 - 26 Clay Fill

AVRLOT HILF V1.10 MAR 13



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COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Job No 20627
Report No 20627/R006
Date Issued 18/01/2021

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	WS
Project	FLORIAN - STAGE 8	Date tested	18/11/20
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	27	28	29	30	-	-
Location	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1		
Approximate depth below FSL	fsl	fsl	fsl	fsl		
Measurement depth mm	175	175	175	175	-	-
Field wet density t/m ³	2.10	2.07	2.01	2.09	-	-
Field moisture content %	26.1	25.2	21.7	20.0	-	-

Test procedure AS 1289.5.7.1

Test No	27	28	29	30	-	-
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 ³	2.15	2.14	2.08	2.12	-	-
Adjusted Peak Converted Wet Density t/m ³	-	-	-	-	-	-
Optimum Moisture Content %	28.5	25.0	23.5	22.5	-	-

Moisture Variation From Optimum Moisture Content	2.0% dry	0.0%	2.0% dry	2.5% dry	-	-
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Density Ratio (R_{HD})	%	97.5	96.5	96.5	98.5	-	-
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Material description

No 27 - 30 Clay Fill

AVRLOT HILF V1.10 MAR 13



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COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Job No 20627
Report No 20627/R007
Date Issued 14/01/2021

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	WS
Project	FLORIAN - STAGE 8	Date tested	02/12/20
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	31	32	33	34	35	36
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	fsl	fsl	fsl	fsl	fsl	fsl
Measurement depth mm	175	175	175	175	175	175
Field wet density t/m ³	2.06	2.13	2.13	1.99	2.04	2.07
Field moisture content %	25.3	22.7	24.3	21.0	21.1	24.0

Test procedure AS 1289.5.7.1

Test No	31	32	33	34	35	36
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 ³	2.09	2.21	2.16	2.05	2.08	2.14
Adjusted Peak Converted Wet Density t/m ³	-	-	-	-	-	-
Optimum Moisture Content %	25.5	22.5	24.5	21.0	18.5	21.5

Moisture Variation From Optimum Moisture Content	0.0%	0.0%	0.0%	0.0%	2.5% wet	2.5% wet
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Density Ratio (R_{HD})	%	98.5	96.5	99.0	97.0	98.0	97.0
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Material description

No 31 - 36 Clay Fill

AVRLOT HILF V1.10 MAR 13



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