



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

1st February 2021

Our Reference: 20604:NB878

Winslow Constructors Pty Ltd
50 Barry Road
CAMPBELLFIELD VIC 3061

Dear Sirs/Madams,

**RE: LEVEL 1 EARTHWORKS INSPECTION AND TESTING
CORNERSTONE – STAGE 16 (WYNDHAM VALE)**

Please find attached our Report No's 20604/R001 to 20604/R008 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 November 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).

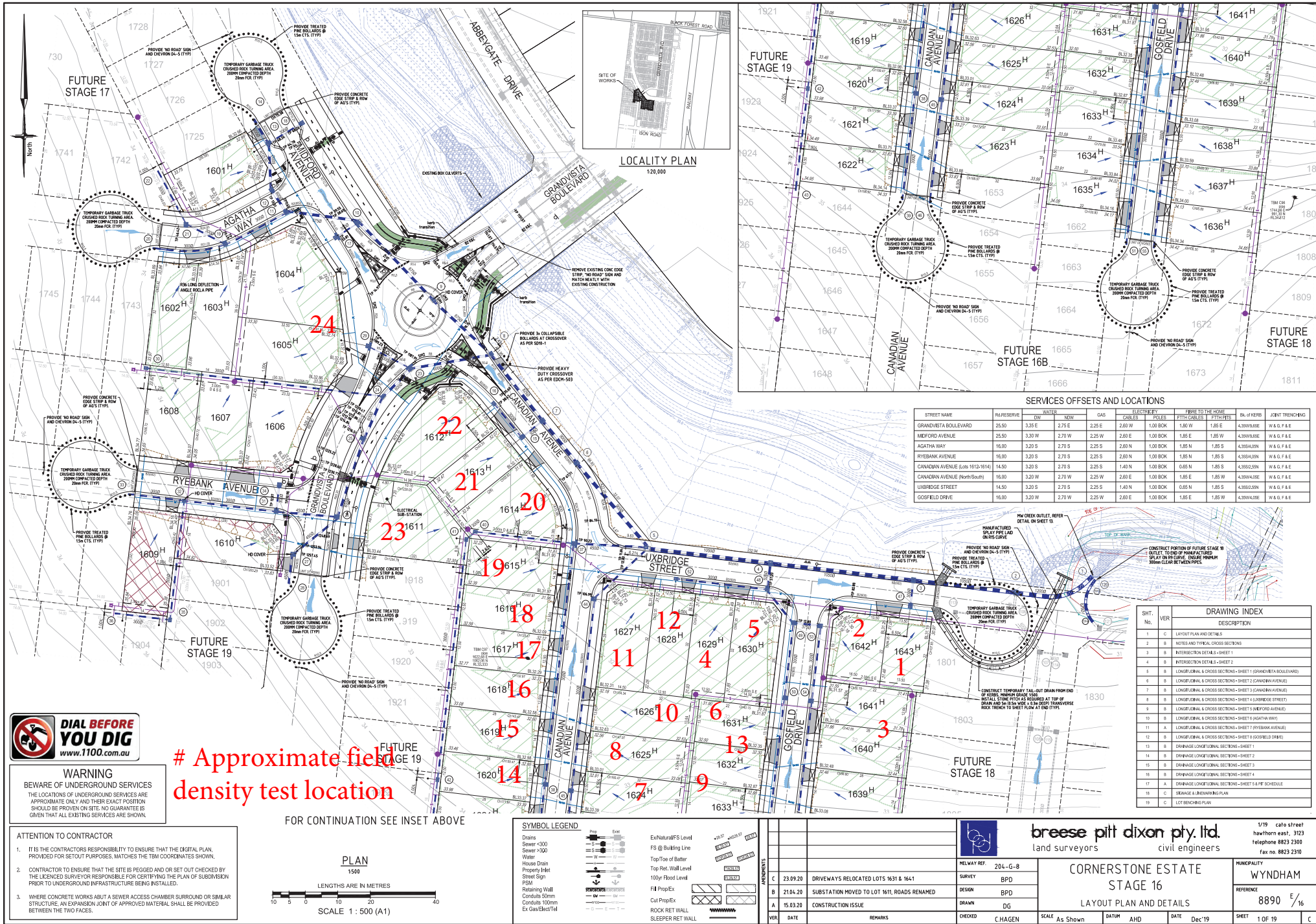
Please contact the undersigned if you require any additional information.

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



1:\projects\BPD\BRE Cornerstone\CAD\Drawings\Stage 16\NAN\BPD_1_NA_011_DET.dwg (REV)



COMPACTION ASSESSMENT

Job No 20604
 Report No 20604/R001
 Date Issued 23/11/2020

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	AM
Project	CORNERSTONE - STAGE 16	Date tested	07/11/20
Location	WYNDHAM VALE	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 08:32
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	1	2	3	-	-	-
Location	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1			
Approximate depth below FSL						
Measurement depth	mm	175	175	175	-	-
Field wet density	t/m ³	2.02	2.01	1.96	-	-
Field moisture content	%	20.3	30.1	17.4	-	-

Test procedure AS 1289.5.7.1

Test No	1	2	3	-	-	-
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 ³	2.07	2.04	2.04	-	-
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-
Optimum Moisture Content	%	23.0	27.5	20.0	-	-

Moisture Variation From Optimum Moisture Content	2.5% dry	2.5% wet	2.5% dry	-	-	-
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Density Ratio (R _{HD})	%	97.5	98.5	96.0	-	-
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Material description

No 1 - 3 Clay Fill

AVRLOT HILF V1.10 MAR 13



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Accreditation No 9909

Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

Job No 20604
 Report No 20604/R002
 Date Issued 26/11/2020

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	AM
Project	CORNERSTONE - STAGE 16	Date tested	09/11/20
Location	WYNDHAM VALE	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 12:53
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	4	5	6	-	-	-
Location	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1			
Approximate depth below FSL						
Measurement depth	mm	175	175	175	-	-
Field wet density	t/m ³	1.87	1.81	1.85	-	-
Field moisture content	%	19.6	22.2	16.9	-	-

Test procedure AS 1289.5.7.1

Test No	4	5	6	-	-	-
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 ³	1.89	1.82	1.91	-	-
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-
Optimum Moisture Content	%	21.5	24.0	19.5	-	-

Moisture Variation From Optimum Moisture Content	2.0% dry	2.0% dry	2.5% dry	-	-	-
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Density Ratio (R _{HD})	%	98.5	99.5	97.0	-	-
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Material description

No 4 - 6 Clay Fill

AVRLOT HILF V1.10 MAR 13



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Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

Job No 20604
 Report No 20604/R003
 Date Issued 23/11/2020

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	AM
Project	CORNERSTONE - STAGE 16	Date tested	10/11/20
Location	WYNDHAM VALE	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 08:47
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	7	8	9	-	-	-
Location	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1			
Approximate depth below FSL						
Measurement depth	mm	175	175	175	-	-
Field wet density	t/m ³	1.91	1.92	1.81	-	-
Field moisture content	%	23.1	24.4	27.9	-	-

Test procedure AS 1289.5.7.1

Test No	7	8	9	-	-	-
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 ³	2.00	1.95	1.91	-	-
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-
Optimum Moisture Content	%	25.5	22.0	25.5	-	-

Moisture Variation From Optimum Moisture Content	2.5% dry	2.5% wet	2.5% wet	-	-	-
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Density Ratio (R _{HD})	%	95.5	98.5	95.0	-	-
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Material description

No 7 - 9 Clay Fill

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Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

Job No 20604
 Report No 20604/R004
 Date Issued 25/11/2020

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	CORNERSTONE - STAGE 16	Date tested	11/11/20
Location	WYNDHAM VALE	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 13:00
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	10	11	12	-	-	-
Location	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1			
Approximate depth below FSL						
Measurement depth	mm	175	175	175	-	-
Field wet density	t/m ³	2.02	1.98	2.01	-	-
Field moisture content	%	24.9	23.8	25.3	-	-

Test procedure AS 1289.5.7.1

Test No	10	11	12	-	-	-
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 ³	2.07	2.00	2.00	-	-
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-
Optimum Moisture Content	%	27.5	26.5	28.0	-	-

Moisture Variation From Optimum Moisture Content	2.0% dry	2.5% dry	2.5% dry	-	-	-
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Density Ratio (R _{HD})	%	97.5	99.0	100.5	-	-
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Material description

No 10 - 12 Clay Fill

AVRLOT HILF V1.10 MAR 13



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Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

Job No 20604
 Report No 20604/R005
 Date Issued 27/11/2020

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	CORNERSTONE - STAGE 16	Date tested	12/11/20
Location	WYNDHAM VALE	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 13:00
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	13	14	15	-	-	-
Location	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1			
Approximate depth below FSL						
Measurement depth	mm	175	175	175	-	-
Field wet density	t/m ³	2.00	1.96	2.09	-	-
Field moisture content	%	25.9	19.2	18.6	-	-

Test procedure AS 1289.5.7.1

Test No	13	14	15	-	-	-
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 ³	2.01	1.97	2.14	-	-
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-
Optimum Moisture Content	%	26.0	19.0	18.5	-	-

Moisture Variation From Optimum Moisture Content	0.0%	0.0%	0.0%	-	-	-
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Density Ratio (R _{HD})	%	99.5	99.5	98.0	-	-
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Material description

No 13 - 15 Clay Fill

AVRLOT HILF V1.10 MAR 13



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Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

Job No 20604
 Report No 20604/R006
 Date Issued 29/01/2021

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	BGG
Project	CORNERSTONE - STAGE 16	Date tested	13/11/20
Location	WYNDHAM VALE	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time:	09:07
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	16	17	18	-	-	-
Location	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1			
Approximate depth below FSL						
Measurement depth	mm	175	175	175	-	-
Field wet density	t/m ³	2.02	2.02	2.02	-	-
Field moisture content	%	26.8	23.9	23.6	-	-

Test procedure AS 1289.5.7.1

Test No	16	17	18	-	-	-
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 ³	2.09	2.11	2.09	-	-
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-
Optimum Moisture Content	%	24.5	26.0	25.5	-	-

Moisture Variation From Optimum Moisture Content	2.5% wet	2.0% dry	2.0% dry	-	-	-
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Density Ratio (R _{HD})	%	96.5	96.0	96.5	-	-
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Material description

No 16 - 18 Clay Fill

AVRLOT HILF V1.10 MAR 13



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Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

Job No 20604
 Report No 20604/R007
 Date Issued 29/01/2021

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	BGG
Project	CORNERSTONE - STAGE 16	Date tested	14/11/20
Location	WYNDHAM VALE	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time:	09:13
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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						
Measurement depth	mm	175	175	175	-	-
Field wet density	t/m ³	1.93	2.00	2.01	-	-
Field moisture content	%	25.2	26.8	24.6	-	-

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 ³	1.97	2.02	2.08	-	-
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-
Optimum Moisture Content	%	28.0	29.5	28.0	-	-

Moisture Variation From Optimum Moisture Content	2.5% dry	2.5% dry	2.5% dry	-	-	-
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Density Ratio (R _{HD})	%	98.0	99.5	96.5	-	-
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Material description

No 19 - 21 Clay Fill

AVRLOT HILF V1.10 MAR 13



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Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

Job No 20604
 Report No 20604/R008
 Date Issued 01/02/2021

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	CORNERSTONE - STAGE 16	Date tested	16/11/20
Location	WYNDHAM VALE	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 13:00
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	22	23	24	-	-	-
Location	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1			
Approximate depth below FSL						
Measurement depth	mm	175	175	175	-	-
Field wet density	t/m ³	2.02	2.01	1.91	-	-
Field moisture content	%	31.3	27.6	30.7	-	-

Test procedure AS 1289.5.7.1

Test No	22	23	24	-	-	-
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 ³	2.11	2.10	1.96	-	-
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-
Optimum Moisture Content	%	31.5	27.5	30.5	-	-

Moisture Variation From Optimum Moisture Content	0.0%	0.0%	0.0%	-	-	-
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Density Ratio (R _{HD})	%	96.0	95.5	97.5	-	-
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Material description

No 22 - 24 Clay Fill

AVRLOT HILF V1.10 MAR 13



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Approved Signatory : Justin Fry