



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

9th September 2024

Our Reference: 24480:NB2006

Winslow Constructors Pty Ltd
50 Barry Road
CAMPBELLFIELD VIC 3061

Dear Sirs/Madams,

RE: LEVEL 1 EARTHWORKS INSPECTION AND TESTING
REDSTONE – STAGE 16 (SUNBURY)

Please find attached our Report No's 24480/R001 to 24480/R010 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 July 2024.

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).

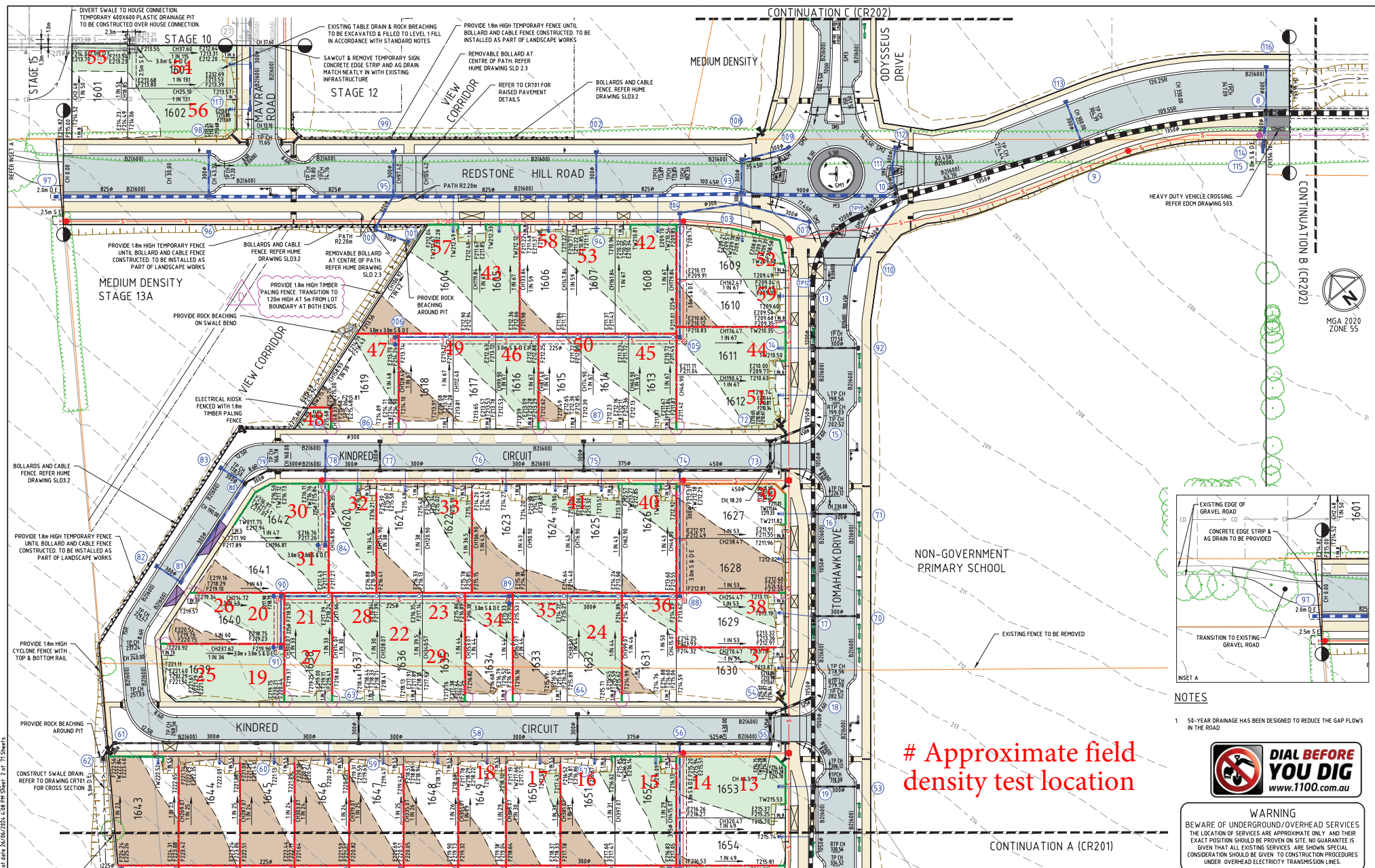
We are of the view that the bulk fill materials that have been placed across the reported allotments by Winslow Constructors during the aforementioned period can be considered as having been placed in a controlled manner to a minimum density ratio of 95% (standard compactive effort).

Please contact the undersigned if you require any additional information.

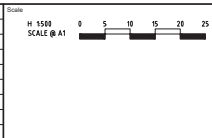
Civil Geotechnical Services

Nick Brock

FIGURE 1 (1 of 2)



Rev	Amendments	Approved	Date
D	TEMPORARY FENCE CHANGED, STONE ROCK RETAINING RETURN UP LOTS	M.T-S	27/06/24
C	BIKE PATH SHIFTED, OTHER AMENDMENTS	M.T-S	26/04/24
B	AMENDED AS PER COUNCIL COMMENTS	M.T-S	23/12/23
A	ISSUED TO COUNCIL	M.T-S	22/12/22



System Certified

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Properties

Communities Designed for Living

Designed
H.HOGGARD

Authorised
J.POYNTER

Redstone.
Your world awaits

Checked
J.POYNTER

Date
APRIL 2024

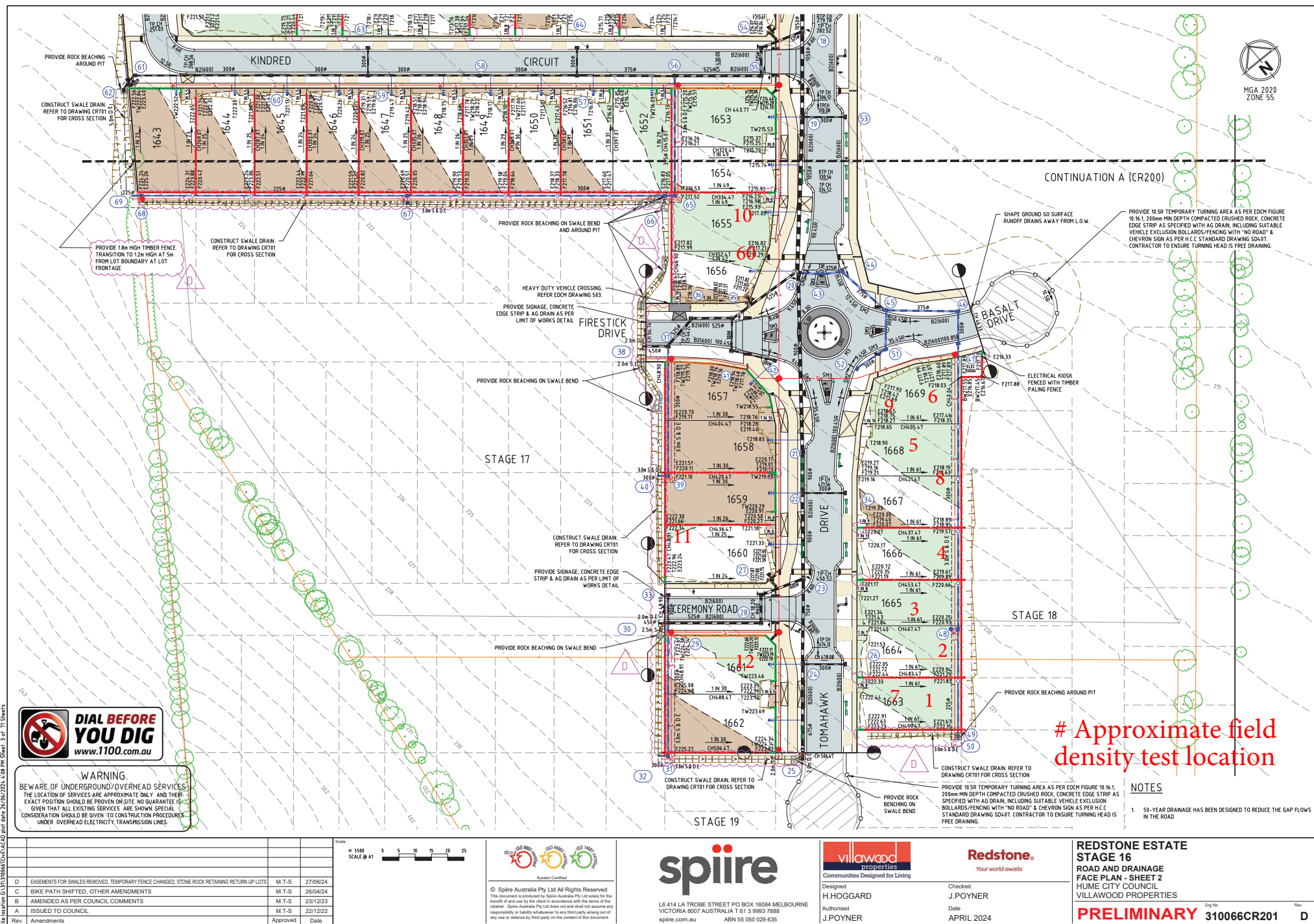
**REDSTONE ESTATE
STAGE 16
ROAD AND DRAINAGE
FACE PLAN - SHEET 1**

HUME CITY COUNCIL
VILLAWOOD PROPERTIES

PRELIMINARY 310066CR200

D

FIGURE 1 (2 of 2)





COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Job No 24480
Report No 24480/R001
Date Issued 22/07/24

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	BS
Project	REDSTONE ESTATE - STAGE 16	Date tested	02/07/24
Location	SUNBURY	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 08:41
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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						
Measurement depth mm	175	175	175	175	175	175
Field wet density t/m ³	1.92	1.98	1.90	1.81	1.88	1.87
Field moisture content %	22.3	20.7	21.5	19.9	22.4	20.5

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	2.01	2.04	1.91	1.87	1.91	1.94
Adjusted Peak Converted Wet Density t/m ³	-	-	-	-	-	-
Optimum Moisture Content %	22.5	21.5	24.0	22.0	23.5	23.0

Moisture Variation From Optimum Moisture Content	0.0%	1.0% dry	2.5% dry	2.0% dry	1.0% dry	2.0% dry
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density and moisture ratio results relate only to the soil to the depth of test and not to the full depth of the layer

Density Ratio (R_{HD})	%	95.5	97.0	99.5	96.5	98.5	96.0
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Material description

No 1 - 6 Clay Fill

AVRLOT HILF V1.10 MAR 13



NATA Accredited Laboratory No 9909
Accredited for compliance with
ISO/IEC 17025 - Testing

Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Job No 24480
Report No 24480/R002
Date Issued 22/07/24

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	BS
Project	REDSTONE ESTATE - STAGE 16	Date tested	04/07/24
Location	SUNBURY	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 08:45
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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	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	175
Field wet density t/m ³	1.97	1.95	1.97	1.96	1.90	1.93
Field moisture content %	25.5	25.0	22.7	24.3	24.6	26.3

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	0	0	0	0	0	0
Peak Converted Wet Density t/m ³	1.98	1.95	1.96	1.97	1.92	1.95
Adjusted Peak Converted Wet Density t/m ³	-	-	-	-	-	-
Optimum Moisture Content %	27.5	27.5	25.0	26.0	27.5	28.5

Moisture Variation From Optimum Moisture Content	2.0% dry	2.0% dry	2.0% dry	1.5% dry	2.5% dry	2.0% dry
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density and moisture ratio results relate only to the soil to the depth of test and not to the full depth of the layer

Density Ratio (R_{HD})	%	99.5	100.0	100.0	99.5	99.0	99.0
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Material description

No 7 - 12 Clay Fill

AVRLOT HILF V1.10 MAR 13



NATA Accredited Laboratory No 9909
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ISO/IEC 17025 - Testing

Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Job No 24480
Report No 24480/R003
Date Issued 22/07/24

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	BS
Project	REDSTONE ESTATE - STAGE 16	Date tested	09/07/24
Location	SUNBURY	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 08:49
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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	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	175
Field wet density t/m ³	1.89	1.87	1.99	1.96	1.86	1.88
Field moisture content %	20.0	19.6	21.2	19.3	19.1	18.9

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	19.0
Percent of oversize material wet	0	0	0	0	0	0
Peak Converted Wet Density t/m ³	1.97	1.92	2.00	1.96	1.92	1.96
Adjusted Peak Converted Wet Density t/m ³	-	-	-	-	-	-
Optimum Moisture Content %	22.0	19.5	23.0	21.5	21.5	21.0

Moisture Variation From Optimum Moisture Content	2.0% dry	0.0%	2.0% dry	2.0% dry	2.5% dry	2.0% dry
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density and moisture ratio results relate only to the soil to the depth of test and not to the full depth of the layer

Density Ratio (R_{HD})	%	96.0	97.5	99.5	100.0	97.0	95.5
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Material description

No 13 - 18 Clay Fill

AVRLOT HILF V1.10 MAR 13



NATA Accredited Laboratory No 9909
Accredited for compliance with
ISO/IEC 17025 - Testing

Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Job No 24480
Report No 24480/R004
Date Issued 22/07/24

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	BS
Project	REDSTONE ESTATE - STAGE 16	Date tested	10/07/24
Location	SUNBURY	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 08:54
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	19	20	21	22	23	24
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	175
Field wet density t/m ³	1.91	1.88	1.96	1.96	1.86	1.84
Field moisture content %	22.3	22.2	25.2	23.8	22.9	28.1

Test procedure AS 1289.5.7.1

Test No	19	20	21	22	23	24
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	1.97	1.95	1.95	1.96	1.94	1.89
Adjusted Peak Converted Wet Density t/m ³	-	-	-	-	-	-
Optimum Moisture Content %	24.5	24.5	26.5	26.0	25.0	29.0

Moisture Variation From Optimum Moisture Content	2.0% dry	2.0% dry	1.5% dry	2.0% dry	2.0% dry	1.0% dry
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density and moisture ratio results relate only to the soil to the depth of test and not to the full depth of the layer

Density Ratio (R_{HD})	%	97.0	96.0	100.5	99.5	96.0	97.5
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Material description

No 19 - 24 Clay Fill

AVRLOT HILF V1.10 MAR 13



NATA Accredited Laboratory No 9909
Accredited for compliance with
ISO/IEC 17025 - Testing

Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Job No 24480
Report No 24480/R005
Date Issued 25/07/24

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	BS
Project	REDSTONE ESTATE - STAGE 16	Date tested	16/07/24
Location	SUNBURY	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 08:58
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	25	26	27	28	29	30
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	175
Field wet density t/m ³	1.94	2.00	1.86	1.95	1.98	1.96
Field moisture content %	27.6	26.6	29.5	23.0	23.2	23.8

Test procedure AS 1289.5.7.1

Test No	25	26	27	28	29	30
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	2.01	2.04	1.92	2.04	1.98	2.01
Adjusted Peak Converted Wet Density t/m ³	-	-	-	-	-	-
Optimum Moisture Content %	30.0	28.0	29.5	25.5	25.0	26.0

Moisture Variation From Optimum Moisture Content	2.0% dry	1.0% dry	0.0%	2.0% dry	1.5% dry	2.0% dry
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density and moisture ratio results relate only to the soil to the depth of test and not to the full depth of the layer

Density Ratio (R_{HD})	%	96.5	98.0	96.5	95.5	100.0	97.5
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Material description

No 25 - 30 Clay Fill

AVRLOT HILF V1.10 MAR 13



NATA Accredited Laboratory No 9909
Accredited for compliance with
ISO/IEC 17025 - Testing

Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Job No 24480
Report No 24480/R006
Date Issued 25/07/24

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	BS
Project	REDSTONE ESTATE - STAGE 16	Date tested	19/07/24
Location	SUNBURY	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 09:01
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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						
Measurement depth mm	175	175	175	175	175	175
Field wet density t/m ³	1.92	1.98	1.90	1.87	1.92	2.00
Field moisture content %	20.6	22.5	26.7	22.4	21.7	22.4

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	2.01	1.98	1.97	1.97	1.99	2.05
Adjusted Peak Converted Wet Density t/m ³	-	-	-	-	-	-
Optimum Moisture Content %	22.5	24.5	29.0	22.5	21.5	25.0

Moisture Variation From Optimum Moisture Content	2.0% dry	2.0% dry	2.0% dry	0.0%	0.0%	2.0% dry
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density and moisture ratio results relate only to the soil to the depth of test and not to the full depth of the layer

Density Ratio (R_{HD})	%	95.5	100.0	96.0	95.0	96.5	97.5
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Material description

No 31 - 36 Clay Fill

AVRLOT HILF V1.10 MAR 13



NATA Accredited Laboratory No 9909
Accredited for compliance with
ISO/IEC 17025 - Testing

Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Job No 24480
Report No 24480/R007
Date Issued 26/07/24

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	BS
Project	REDSTONE ESTATE - STAGE 16	Date tested	22/07/24
Location	SUNBURY	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 09:05
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	37	38	39	40	41	42
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	175
Field wet density t/m ³	1.91	1.96	1.89	2.01	1.92	1.89
Field moisture content %	19.4	19.4	18.9	20.6	21.5	20.4

Test procedure AS 1289.5.7.1

Test No	37	38	39	40	41	42
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	2.01	1.94	1.95	2.04	1.97	1.97
Adjusted Peak Converted Wet Density t/m ³	-	-	-	-	-	-
Optimum Moisture Content %	21.5	21.5	19.0	22.5	24.0	22.5

Moisture Variation From Optimum Moisture Content	2.0% dry	2.0% dry	0.0%	2.0% dry	2.0% dry	2.0% dry
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density and moisture ratio results relate only to the soil to the depth of test and not to the full depth of the layer

Density Ratio (R_{HD})	%	95.0	101.0	96.5	98.5	97.5	96.0
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Material description

No 37 - 42 Clay Fill

AVRLOT HILF V1.10 MAR 13



NATA Accredited Laboratory No 9909
Accredited for compliance with
ISO/IEC 17025 - Testing

Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Job No 24480
Report No 24480/R008
Date Issued 30/07/24

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	BS
Project	REDSTONE ESTATE - STAGE 16	Date tested	25/07/24
Location	SUNBURY	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 09:20
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	43	44	45	46	47	48
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	175
Field wet density t/m ³	1.99	1.95	1.99	1.95	1.97	1.98
Field moisture content %	22.9	22.3	22.0	22.9	25.0	23.7

Test procedure AS 1289.5.7.1

Test No	43	44	45	46	47	48
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	2.01	1.94	2.01	1.93	1.97	1.97
Adjusted Peak Converted Wet Density t/m ³	-	-	-	-	-	-
Optimum Moisture Content %	25.0	24.5	24.5	21.5	27.5	26.0

Moisture Variation From Optimum Moisture Content	2.0% dry	2.0% dry	2.5% dry	1.0% wet	2.5% dry	2.5% dry
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density and moisture ratio results relate only to the soil to the depth of test and not to the full depth of the layer

Density Ratio (R_{HD})	%	99.0	100.0	99.5	101.0	100.0	100.0
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Material description

No 43 - 48 Clay Fill

AVRLOT HILF V1.10 MAR 13



NATA Accredited Laboratory No 9909
Accredited for compliance with
ISO/IEC 17025 - Testing

Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Job No 24480
Report No 24480/R009
Date Issued 31/07/24

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	BS
Project	REDSTONE ESTATE - STAGE 16	Date tested	26/07/24
Location	SUNBURY	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 09:22
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	49	50	51	52	53	54
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	175
Field wet density t/m ³	1.76	1.89	1.81	1.79	1.83	1.80
Field moisture content %	20.7	22.3	21.0	22.3	20.3	21.9

Test procedure AS 1289.5.7.1

Test No	49	50	51	52	53	54
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	1.84	1.90	1.89	1.84	1.87	1.87
Adjusted Peak Converted Wet Density t/m ³	-	-	-	-	-	-
Optimum Moisture Content %	23.0	22.5	22.5	24.5	20.0	24.0

Moisture Variation From Optimum Moisture Content	2.5% dry	0.0%	1.5% dry	2.5% dry	0.5% wet	2.0% dry
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density and moisture ratio results relate only to the soil to the depth of test and not to the full depth of the layer

Density Ratio (R_{HD})	%	95.5	99.5	96.0	97.0	98.0	96.0
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Material description

No 49 - 54 Clay Fill

AVRLOT HILF V1.10 MAR 13



NATA Accredited Laboratory No 9909
Accredited for compliance with
ISO/IEC 17025 - Testing

Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Job No 24480
Report No 24480/R010
Date Issued 31/07/24

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	BS
Project	REDSTONE ESTATE - STAGE 16	Date tested	30/07/24
Location	SUNBURY	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 09:25
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	55	56	57	58	59	60
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	175
Field wet density t/m ³	1.85	1.86	1.78	1.84	1.82	1.83
Field moisture content %	24.5	22.1	21.4	26.6	26.8	28.2

Test procedure AS 1289.5.7.1

Test No	55	56	57	58	59	60
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	1.89	1.89	1.84	1.85	1.89	1.89
Adjusted Peak Converted Wet Density t/m ³	-	-	-	-	-	-
Optimum Moisture Content %	27.0	24.0	24.0	28.0	29.0	30.5

Moisture Variation From Optimum Moisture Content	2.0% dry	2.0% dry	2.5% dry	1.5% dry	2.0% dry	2.0% dry
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density and moisture ratio results relate only to the soil to the depth of test and not to the full depth of the layer

Density Ratio (R_{HD})	%	98.0	98.5	96.5	99.5	96.0	97.0
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Material description

No 55 - 60 Clay Fill

AVRLOT HILF V1.10 MAR 13



NATA Accredited Laboratory No 9909
Accredited for compliance with
ISO/IEC 17025 - Testing

Approved Signatory : Justin Fry