



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

9th May 2023

Our Reference: 22531:NB1533

Winslow Constructors Pty Ltd
50 Barry Road
CAMPBELLFIELD VIC 3061

Dear Sirs/Madams,

RE: LEVEL 1 EARTHWORKS INSPECTION AND TESTING
SMITHS LANE – STAGE 6B (CLYDE NORTH)

Please find attached our Report No's 22531/R001 to 22531/R006 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 commenced in July 2022 and was completed in April 2023.

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).

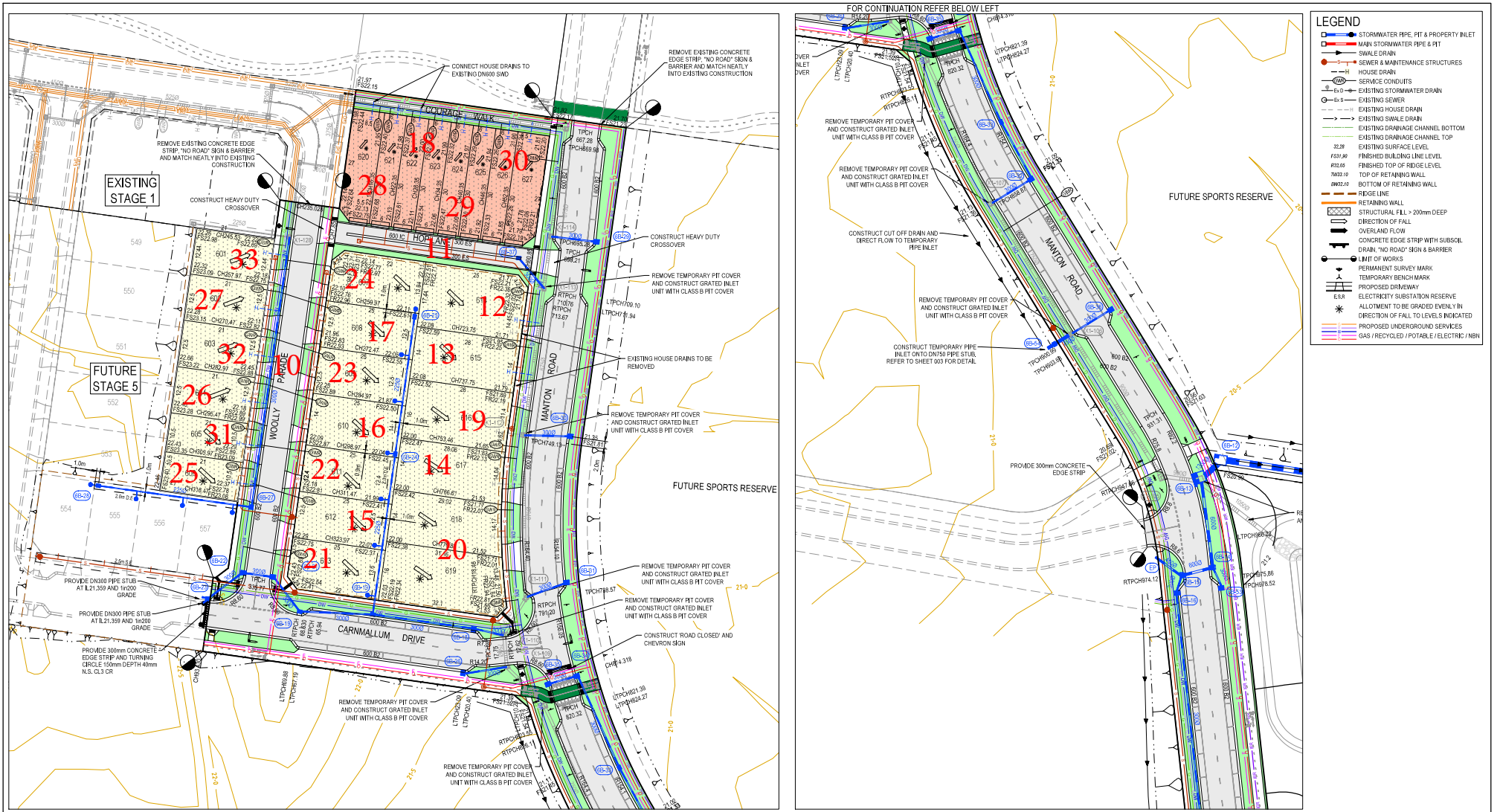
Please contact the undersigned if you require any additional information.

Civil Geotechnical Services

A handwritten signature in blue ink, appearing to read 'Nick Brock', is written over a faint circular stamp.

Nick Brock

FIGURE 1 (1 of 2)



FOR CONTINUATION REFER ABOVE RIGHT

FOR CONTINUATION REFER DRG. NO. 11101438-6B-011

SERVICE OFFSET TABLE

Location	Gas		ND - Water		Water		Electricity		Telecommunication		Sewer		Irrigation	
	Side	Offset (m)	Side	Offset (m)	Side	Offset (m)	Side	Offset (m)	Side	Offset (m)	Side	Offset (m)	Side	Offset (m)
CARMALLUM DRIVE	N	2.25	N	2.20	N	3.20	S	2.80	S	1.85	N	1.00	-	-
MANTON ROAD	W	2.25	W	2.20	W	3.20	E	1.95/1.485	E	1.20/3.90	W	1.00	E	0.50/2.50
HARDYS ROAD	S	2.25	S/N	2.70/4.80	S	3.35	N	2.80	N	1.85	N	1.00	N	6.70
WOOLLY PARADE	W	2.25	W	2.70	W	3.20	E	2.80	E	1.85	W/E	1.00	-	-
HOP LANE	-	-	-	-	-	-	-	-	-	-	S	3.00	-	-
COURAGE WALK	S	0.50	S	0.95	S	1.45	N	1.25	N	0.50	-	-	-	-

NOTE: STREET TREES ARE TO BE PLANTED IN THE CENTRE OF ALL NATURE STRIPS

ROAD LAYOUT TABLE

ROAD NAME	RESERVE WIDTH (m)	ROAD WIDTH (m)				VERGE WIDTH (m)	
		LIP to LIP	IVV to IVV	BACK to BACK	NORTHWEST	SOUTHEAST	
CARMALLUM DRIVE	20.00	6.40 (10.30)	7.30 (11.20)	7.80 (11.50)	6.45 (4.50)	6.25 (4.30)	
MANTON ROAD	20.00	6.40 (10.30)	7.30 (11.20)	7.80 (11.50)	7.10 (5.15)	5.80 (3.85)	
MANTON ROAD	22.00	6.40 (10.30)	7.30 (11.20)	7.80 (11.50)	6.45 (4.50)	6.25 (6.30)	
WOOLLY PARADE	15.00	6.40	7.30	7.80	4.50	4.20	
HARDYS ROAD	25.00	6.40 (10.30)	7.30 (11.20)	7.80 (11.50)	10.85 (8.50)	6.85 (4.50)	
HOP LANE	8.00	6.00	-	-	0.50	1.50	

NOTE: DIMENSIONS IN PARENTHESSES INCLUDES PARKING LANE

REV	DESCRIPTION	DATE
0 <td>ISSUED FOR CONSTRUCTION</td> <td>11/05/22</td>	ISSUED FOR CONSTRUCTION	11/05/22
1 <td>ISSUED FOR CONSTRUCTION</td> <td>15/04/22</td>	ISSUED FOR CONSTRUCTION	15/04/22
2 <td>ISSUED FOR CONSTRUCTION</td> <td>15/04/22</td>	ISSUED FOR CONSTRUCTION	15/04/22
3 <td>ISSUED FOR CONSTRUCTION</td> <td>15/04/22</td>	ISSUED FOR CONSTRUCTION	15/04/22
4 <td>ISSUED FOR CONSTRUCTION</td> <td>15/04/22</td>	ISSUED FOR CONSTRUCTION	15/04/22
5 <td>ISSUED FOR CONSTRUCTION</td> <td>15/04/22</td>	ISSUED FOR CONSTRUCTION	15/04/22
6 <td>ISSUED FOR CONSTRUCTION</td> <td>15/04/22</td>	ISSUED FOR CONSTRUCTION	15/04/22
7 <td>ISSUED FOR CONSTRUCTION</td> <td>15/04/22</td>	ISSUED FOR CONSTRUCTION	15/04/22
8 <td>ISSUED FOR CONSTRUCTION</td> <td>15/04/22</td>	ISSUED FOR CONSTRUCTION	15/04/22
9 <td>ISSUED FOR CONSTRUCTION</td> <td>15/04/22</td>	ISSUED FOR CONSTRUCTION	15/04/22
10 <td>ISSUED FOR CONSTRUCTION</td> <td>15/04/22</td>	ISSUED FOR CONSTRUCTION	15/04/22

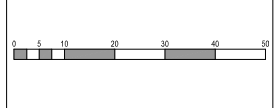
Approximate field density test location

WARNING
BEWARE OF UNDERGROUND SERVICES
The locations of underground services are approximate only and their exact position should be proven on site. No guarantee is given that all existing services are shown. Locate all underground services before commencement of works.
DIAL 1100 BEFORE YOU DIG
www.1100.com.au

FOR CONSTRUCTION

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10	ISSUED FOR CONSTRUCTION	15/04/22



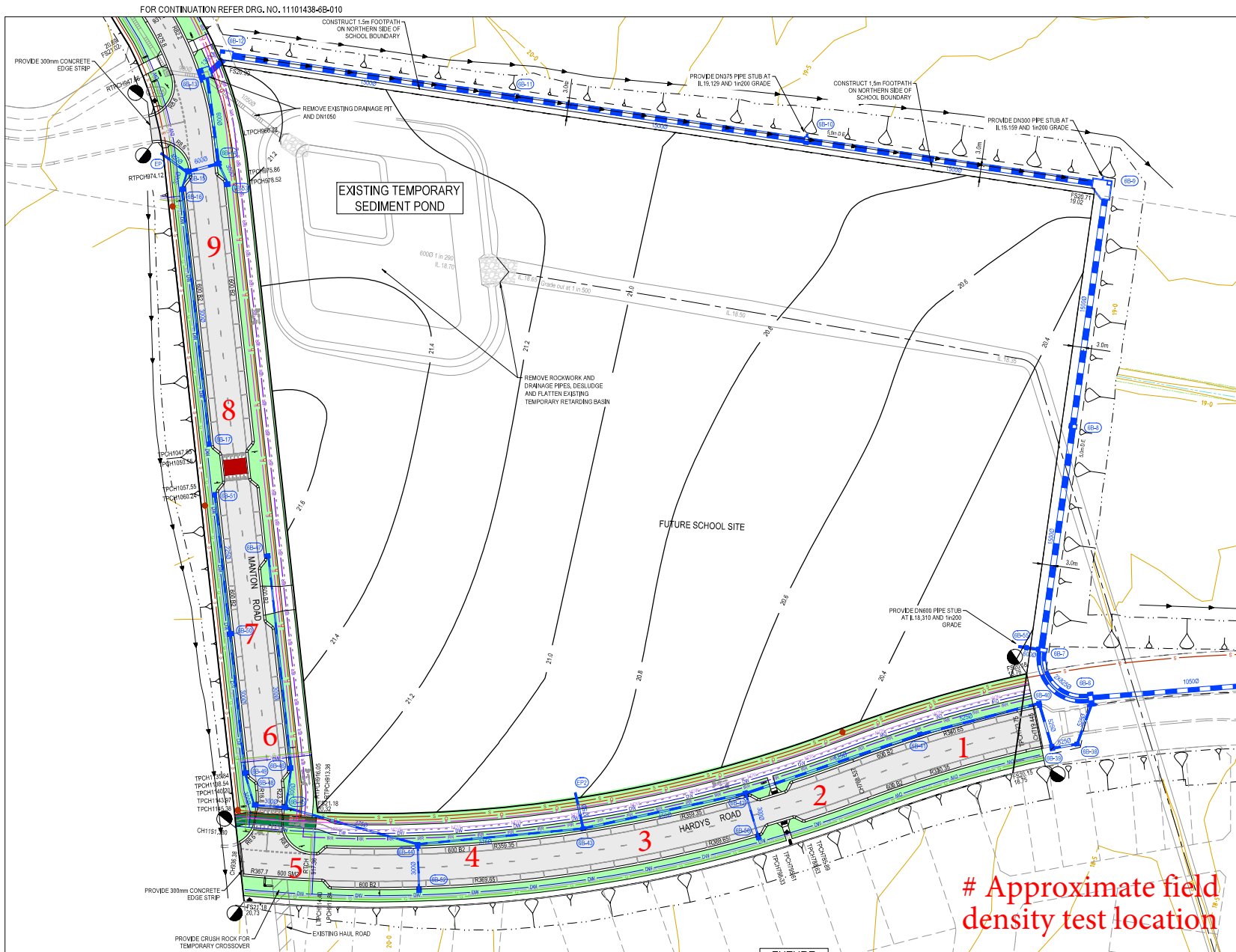
Designed by: C.DAWSON
Date: 26/08/2021
Drawn by: L.SUTHERLAND
Approved by: D.BELTON
Date: 07/06/2021
PS Number: PS833968U

BW Beveridge Williams
development & environment consultants
1 Glenferrie Road
Malvern VIC 3144
ph: 03 9524 8888
www.beveridgewilliams.com.au

Project Name: SMITHS LANE STAGE 6B CITY OF CASEY
Drawing Title: LAYOUT PLAN (SHEET 1 OF 5)

Sheet 05 of 38
Scale: 1:500 @ A1
Project Ref: 1101438 Stage No: 6B Drawing No: 010 Rev: D

FIGURE 1 (2 of 2)



LEGEND

- STORMWATER PIPE, PIT & PROPERTY INLET
- MAN STORMWATER PIPE & PIT
- SWALE DRAIN
- SEWER & MAINTENANCE STRUCTURES
- HOUSE DRAIN
- SERVICE CONDUITS
- EXISTING STORMWATER DRAIN
- EXISTING SEWER
- EXISTING HOUSE DRAIN
- EXISTING SWALE DRAIN
- EXISTING DRAINAGE CHANNEL BOTTOM
- EXISTING DRAINAGE CHANNEL TOP
- EXISTING SURFACE LEVEL
- #531.80 FINISHED TOP OF RIDGE LEVEL
- #532.10 TOP OF RETAINING WALL
- #502.50 BOTTOM OF RETAINING WALL
- RETAINING WALL
- STRUCTURAL FALL > 200mm DEEP
- DIRECTION OF FALL
- OVERLAND FLOW
- CONCRETE EDGE STRIP WITH SUBSOIL DRAIN, "NO ROAD" SIGN & BARRIER
- LIMIT OF WORKS
- PERMANENT SURVEY MARK
- TEMPORARY BENCHMARK
- PROPOSED DRIVEWAY
- ELECTRICITY SUBSTATION RESERVE ALLOTMENT TO BE GRADED EVENLY IN DIRECTION OF FALL TO LEVELS INDICATED
- PROPOSED UNDERGROUND SERVICES
- GAS / RECYCLED / POTABLE / ELECTRIC / NBN

FOR CONTINUATION REFER DRG. NO. 11101438-6B-412

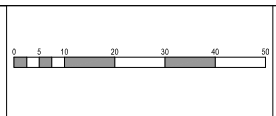
WARNING
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DIAL 1100 BEFORE YOU DIG
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Approximate field density test location

FOR CONSTRUCTION

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D	LINE (B-43) TO RYDGE AND SCHOOL SITE (FULL ACCESS)	16.05.22	CD	LM
C	PARKING BAY & DRAINAGE (UPDATED) PATH & CROSSOVER ADDED	13.04.22	CD	LM
B	S&G AND HAUL ROAD ADDED	08.03.22	CD	LM
A	ISSUED FOR CONSTRUCTION	14.02.22	CD	DB
PI	ISSUED FOR INFORMATION	13.06.21	CD	DB



Designed By: C.DAWSON
 Date: 30.08.2021
 Drawn: L. SUTHERLAND
 Approved: D.BELTON
 Date: 07.06.2021
 P/E Number: PS833968J

BW Beveridge Williams
 development & environment consultants
 1 Glenferrie Road
 Malvern VIC 3144
 ph: 03 9524 8888
 www.beveridgewilliams.com.au

Project Name: SMITHS LANE STAGE 06 CITY OF CASEY
 Drawing Title: LAYOUT PLAN (SHEET 2 OF 5)

Sheet 06 of 38
 Scale: 1:500 @ A1
 Project Ref: 1101438 6B 011
 Stage No: 6B
 Drawing No: 011
 Rev: D



COMPACTION ASSESSMENT

Job No 22531
 Report No 22531/R001
 Date Issued 28/07/2022

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	SB
Project	SMITHS LANE - STAGE 6B	Date tested	22/07/22
Location	CLYDE NORTH	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 12:30
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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	2.02	2.04	-	-
Field moisture content	%	20.7	21.3	21.5	-	-

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	2.06	2.03	2.06	-	-
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-
Optimum Moisture Content	%	22.0	23.0	23.0	-	-

Moisture Variation From Optimum Moisture Content	1.5% dry	1.5% 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})	%	98.0	99.5	99.0	-	-
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Material description

No 1 - 3 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

Job No 22531
 Report No 22531/R002
 Date Issued 09/05/23

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	SB
Project	SMITHS LANE - STAGE 6B	Date tested	17/04/23
Location	CLYDE NORTH	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 11:30
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	4	5	6	7	8	9
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	2.00	2.02	2.01	2.01	2.00
Field moisture content	%	17.8	15.5	17.7	16.3	19.0

Test procedure AS 1289.5.7.1

Test No	4	5	6	7	8	9
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	2.02	2.06	2.04	2.02	2.05
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-
Optimum Moisture Content	%	18.5	14.5	17.5	16.5	18.5

Moisture Variation From Optimum Moisture Content	1.0% dry	1.0% wet	0.5% wet	0.0%	0.5% wet	0.5% wet
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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	98.5	98.5	99.5	98.0	100.0
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Material description

No 4 - 9 Clay Fill

AVRLOT HILF V1.10 MAR 13



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 Accredited for compliance with
 ISO/IEC 17025 - Testing

Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

Job No 22531
 Report No 22531/R003
 Date Issued 09/05/23

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	SB
Project	SMITHS LANE - STAGE 6B	Date tested	18/04/23
Location	CLYDE NORTH	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time:	13:30
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	10	11	12	13	14	15
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	2.01	2.03	2.02	2.03	2.01
Field moisture content	%	18.0	19.8	19.4	19.7	20.2

Test procedure AS 1289.5.7.1

Test No	10	11	12	13	14	15
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	2.04	2.04	2.08	2.07	2.04
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-
Optimum Moisture Content	%	16.5	19.0	18.0	18.0	16.0

Moisture Variation From Optimum Moisture Content	1.5% wet	0.5% wet	1.5% wet	2.0% wet	2.0% wet	0.0%
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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})	%	98.5	100.0	97.5	98.0	98.5	99.0
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Material description

No 10 - 15 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

Job No 22531
 Report No 22531/R004
 Date Issued 09/05/23

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	SB
Project	SMITHS LANE - STAGE 6B	Date tested	19/04/23
Location	CLYDE NORTH	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time:	12:00
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No		16	17	18	19	20	21
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	2.02	2.01	2.00	2.02	2.02	2.01
Field moisture content	%	17.9	19.0	15.7	16.7	16.0	17.3

Test procedure AS 1289.5.7.1

Test No		16	17	18	19	20	21
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	2.04	2.02	2.02	2.04	2.04	2.07
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-	-
Optimum Moisture Content	%	18.0	19.0	15.5	16.0	15.0	17.5

Moisture Variation From Optimum Moisture Content	0.0%	0.0%	0.0%	0.5% wet	1.0% wet	0.0%
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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})	%	98.5	99.5	99.0	99.0	99.0	97.0
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Material description

No 16 - 21 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

Job No 22531
 Report No 22531/R005
 Date Issued 09/05/23

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	SB
Project	SMITHS LANE - STAGE 6B	Date tested	20/04/23
Location	CLYDE NORTH	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	22	23	24	25	26	27
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	2.02	2.02	2.02	2.02	2.01
Field moisture content	%	18.8	17.5	17.6	18.6	20.9

Test procedure AS 1289.5.7.1

Test No	22	23	24	25	26	27
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	2.07	2.05	2.06	2.05	2.03
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-
Optimum Moisture Content	%	16.0	17.5	20.0	21.0	22.5

Moisture Variation From Optimum Moisture Content	2.5% wet	0.0%	2.5% dry	2.0% dry	1.5% dry	0.0%
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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})	%	97.5	98.0	98.0	98.5	99.0	99.0
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Material description

No 22 - 27 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

Job No 22531
 Report No 22531/R006
 Date Issued 09/05/23

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	SB
Project	SMITHS LANE - STAGE 6B	Date tested	21/04/23
Location	CLYDE NORTH	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time:	12:30
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	28	29	30	31	32	33
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	2.01	2.01	2.02	2.01	2.02
Field moisture content	%	15.4	14.7	15.2	19.9	18.5

Test procedure AS 1289.5.7.1

Test No	28	29	30	31	32	33
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	2.03	2.04	2.04	2.03	2.02
Adjusted Peak Converted Wet Density	t/m ³	-	-	-	-	-
Optimum Moisture Content	%	15.5	14.0	15.5	20.0	16.0

Moisture Variation From Optimum Moisture Content	0.0%	1.0% wet	0.0%	0.0%	2.5% wet	2.5% wet
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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	98.5	99.0	99.5	99.5	100.0
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Material description

No 28 - 33 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