



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

8th April 2020

Our Reference: 19229:NB717

Winslow Constructors Pty Ltd
50 Barry Road
CAMPBELLFIELD VIC 3061

Dear Sirs/Madams,

RE: LEVEL 1 EARTHWORKS INSPECTION AND TESTING
RIVERDALE – STAGE 20 (TARNEIT)

Please find attached our Report No's 19229/R001 to 19229/R005 which relate to the field density testing that was conducted within the filled allotments of the above subdivision. The level 1 inspections and associated field density testing commenced in April 2019 and was completed in May 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

Nick Brock

FIGURE 1

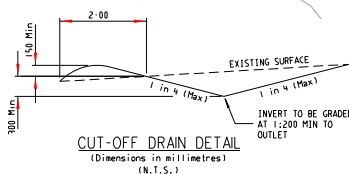
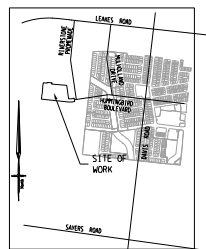
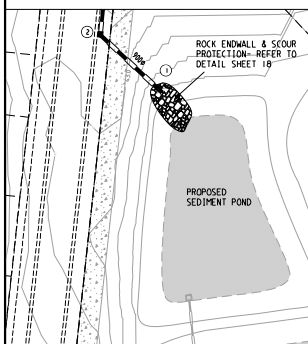
- ATTENTION TO CONTRACTOR**
- IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE THAT THE DIGITAL PLAN, PROVIDED FOR SETOUT PURPOSES, MATCHES THE TBM COORDINATES SHOWN.
 - Contractor to ensure that the site is pegged and set out checked by the licensed surveyor responsible for certifying the Plan of Subdivision prior to underground infrastructure being installed.
 - Where concrete works about a sewer access chamber surround or similar structure, an expansion joint of approved material shall be provided between the two faces.

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.

Approximate field density test location

SHEET INDEX

SHEET NO.	VER.	DESCRIPTION
1	A	DETAIL PLAN, LOCALITY PLAN & SERVICE OFFSETS
2	A	GENERAL NOTES, SPEED HUMP DETAIL & TYPICAL SECTIONS
3	A	INTERSECTION DETAILS No.1
4	A	INTERSECTION DETAILS No.2
5	A	HUMMINGBIRD BOULEVARD - LONGITUDINAL SECTION
6	A	HUMMINGBIRD BOULEVARD - CROSS SECTIONS No.1
7	A	HUMMINGBIRD BOULEVARD - CROSS SECTIONS No.2
8	A	HUMMINGBIRD BOULEVARD - CROSS SECTIONS No.3
9	A	HOUDINI DRIVE - LONGITUDINAL SECTION
10	A	HOUDINI DRIVE - CROSS SECTIONS
11	A	GELLER CIRCUIT - LONGITUDINAL SECTION
12	A	GELLER CIRCUIT - CROSS SECTIONS
13	A	GRANADA DR & PYRONA AVE - LONGITUDINAL & CROSS SECTIONS
14	A	DRAINAGE LONGITUDINAL SECTIONS No.1 & PIT SCHEDULE
15	A	DRAINAGE LONGITUDINAL SECTIONS No.2
16	A	DRAINAGE LONGITUDINAL SECTIONS No.3
17	A	DRAINAGE LONGITUDINAL SECTIONS No.4
18	A	PIT STRUCTURAL DETAILS
19	A	STORAGE & LIME MARKING PLAN
20	A	CULVERT DETAIL
21	A	CULVERT STRUCTURAL DETAILS

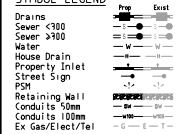


SCALE 1 : 500 @ A1
LENGTHS ARE IN METRES

SERVICES OFFSETS AND LOCATIONS

STREET NAME	RESERVE	WATER	WATER	GAS	ELECTRICITY	PIPING TO THE HOUSE	PIPING TO THE HOUSE	DR. OF KERB	JOINT TRANCHING	STREET CLASSIFICATION
HUMMINGBIRD BOULEVARD (AT CULVERTS)	25-50	9-85 S	9-00 S	8-25 S	2-40 N	1-00 BOX	1-85 N	-	G & W, FTH & E	CONNECTOR ROAD
HUMMINGBIRD BOULEVARD (LOTS 2019-2038)	25-50	7-80 S	2-90 S	2-20 S	2-40 N	1-00 BOX	1-85 N	-	G & W, FTH & E	STREET - LEVEL 1
HOUDINI DRIVE	16-00	7-20 W	2-70 W	2-20 W	2-40 N	1-00 BOX	1-80 E	1-80 W	G & W, FTH & E	STREET - LEVEL 1
GELLER CIRCUIT	16-00	7-20 S & W	2-70 S & W	2-20 S & W	2-40 N & E	1-00 BOX	1-85 N & E	1-80 S & W	G & W, FTH & E	STREET - LEVEL 1
GELLER CIRCUIT (LOT 2019-2020)	16-00	7-20 W	2-70 W	2-20 W	2-40 N	1-00 BOX	1-85 E	1-80 W	G & W, FTH & E	STREET - LEVEL 1
GRANADA DRIVE	16-00	7-20 W	2-70 W	2-20 W	1-85 E	1-00 BOX	0-70 E	1-80 W	G & W, FTH & E	STREET - LEVEL 1
PYRONA AVENUE	16-00	7-20 E	2-70 E	2-20 E	1-80 W	1-00 BOX	2-85 W	1-80 E	G & W, FTH & E	STREET - LEVEL 1
RESERVE (ADJACENT LOT 2001)	16-00	6-00 W	5-50 W	5-00 W	2-40 E	-	-	-	G & W	-

SYMBOL LEGEND



Ex/Natural/FS Level - 100%
FS Building Line
Top/Toe of Batter
Top Ret. Wall Level
100yr Flood Level
Street Sign
Retaining Wall
Conduits 100mm
Conduits 150mm
Ex Gas/Elect/Tel

VER. DATE ISSUED FOR CONSTRUCTION

REMARKS

CHECKED

SCALE AS SHOWN

DATUM AHD

DATE JUN'18

SHEET 1 OF 21

A



breese pitt dixon pty. ltd.
land surveyors
civil engineers

RIVERDALE VILLAGE
STAGE 20

1/19 colo street
howthorn east, 3123
telephone 8823 2300
for no. 8823 2310

WYNDHAM
REFERENCE
8554 E/20

1:00pm/10/01/2018/10/01/2018



COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Job No 19229
Report No 19229/R001
Date Issued 23/05/2019

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	RIVERDALE - STAGE 20	Date tested	02/04/19
Location	TARNEIT	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 08:30
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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 mm	175	175	-	-	-	-
Field wet density t/m ³	1.73	1.72	-	-	-	-
Field moisture content %	27.9	29.1	-	-	-	-

Test procedure AS 1289.5.7.1

Test No	1	2	-	-	-	-
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	1.78	1.76	-	-	-	-
Adjusted Peak Converted Wet Density t/m ³	-	-	-	-	-	-
Optimum Moisture Content %	30.5	31.5	-	-	-	-

Moisture Variation From Optimum Moisture Content	2.5% dry	2.5% dry	-	-	-	-
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Density Ratio (R_{HD})	%	97.5	98.0	-	-	-	-
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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 with ISO/IEC 17025 - Testing

Accreditation No 9909

AVRLOT HILF V1.10 MAR 13

Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Job No 19229
Report No 19229/R002
Date Issued 28/05/2019

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	RIVERDALE - STAGE 20	Date tested	04/04/19
Location	TARNEIT	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 11:00
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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	175
Field wet density t/m ³	1.67	1.67	1.61	1.60	1.54	1.68
Field moisture content %	31.8	30.0	25.5	29.5	32.8	33.7

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	19.0
Percent of oversize material wet	0	0	0	0	0	0
Peak Converted Wet Density t/m ³	1.70	1.71	1.65	1.64	1.58	1.71
Adjusted Peak Converted Wet Density t/m ³	-	-	-	-	-	-
Optimum Moisture Content %	24.5	32.0	28.0	31.5	35.0	36.5

Moisture Variation From Optimum Moisture Content	2.5% dry	2.0% dry	2.5% dry	2.0% dry	2.0% dry	2.5% dry
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Density Ratio (R_{HD})	%	98.0	98.0	98.0	98.0	97.5	98.0
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Material description

No 3 - 8 Clay Fill



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Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Job No 19229
Report No 19229/R003
Date Issued 23/05/2019

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	RIVERDALE - STAGE 20	Date tested	05/04/19
Location	TARNEIT	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	9	10	11	12	-	-
Location	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	-	-
Field wet density t/m ³	1.76	1.75	1.74	1.74	-	-
Field moisture content %	32.2	30.2	30.7	32.2	-	-

Test procedure AS 1289.5.7.1

Test No	9	10	11	12	-	-
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	1.79	1.79	1.78	1.77	-	-
Adjusted Peak Converted Wet Density t/m ³	-	-	-	-	-	-
Optimum Moisture Content %	32.0	30.5	31.0	33.0	-	-

Moisture Variation From Optimum Moisture Content	0.0%	0.5% dry	0.5% dry	0.5% dry	-	-
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Density Ratio (R_{HD})	%	98.0	98.0	98.0	98.0	-	-
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Material description

No 9 - 12 Clay Fill



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Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Job No 19229
Report No 19229/R004
Date Issued 07/06/2019

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	RIVERDALE - STAGE 20	Date tested	08/05/19
Location	TARNEIT	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 11:00
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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	1.95	1.94	1.87	-	-	-
Field moisture content %	27.2	27.5	24.8	-	-	-

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	2.00	1.98	1.91	-	-	-
Adjusted Peak Converted Wet Density t/m ³	-	-	-	-	-	-
Optimum Moisture Content %	25.0	27.0	23.0	-	-	-

Moisture Variation From Optimum Moisture Content	2.0% wet	0.5% wet	2.0% wet	-	-	-
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Density Ratio (R_{HD})	%	98.0	98.0	98.0	-	-	-
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Material description

No 13 - 15 Clay Fill



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Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Job No 19229
Report No 19229/R005
Date Issued 03/07/2019

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	BGG
Project	RIVERDALE - STAGE 20	Date tested	20/05/19
Location	TARNEIT	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 14:30
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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	1.87	1.87	1.84	1.83	1.87	1.86
Field moisture content %	26.0	23.8	24.2	20.4	21.8	27.7

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	1.94	1.93	1.93	1.91	1.95	1.93
Adjusted Peak Converted Wet Density t/m ³	-	-	-	-	-	-
Optimum Moisture Content %	28.0	26.5	26.5	23.0	24.5	30.0

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

No 13 - 18 Clay Fill

AVRLOT HILF V1.10 MAR 13



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