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

19th January 2022

Our Reference: 20326:NB1117

Winslow Constructors Pty Ltd
50 Barry Road
CAMPBELLFIELD VIC 3061

Dear Sirs/Madams,

RE: LEVEL 1 EARTHWORKS INSPECTION AND TESTING
RATHDOWNE – STAGE 8 (WOLLERT)

Please find attached our Report No's 20326/R001 to 201326/R005 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 June 2020 and was completed in January 2022.

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).

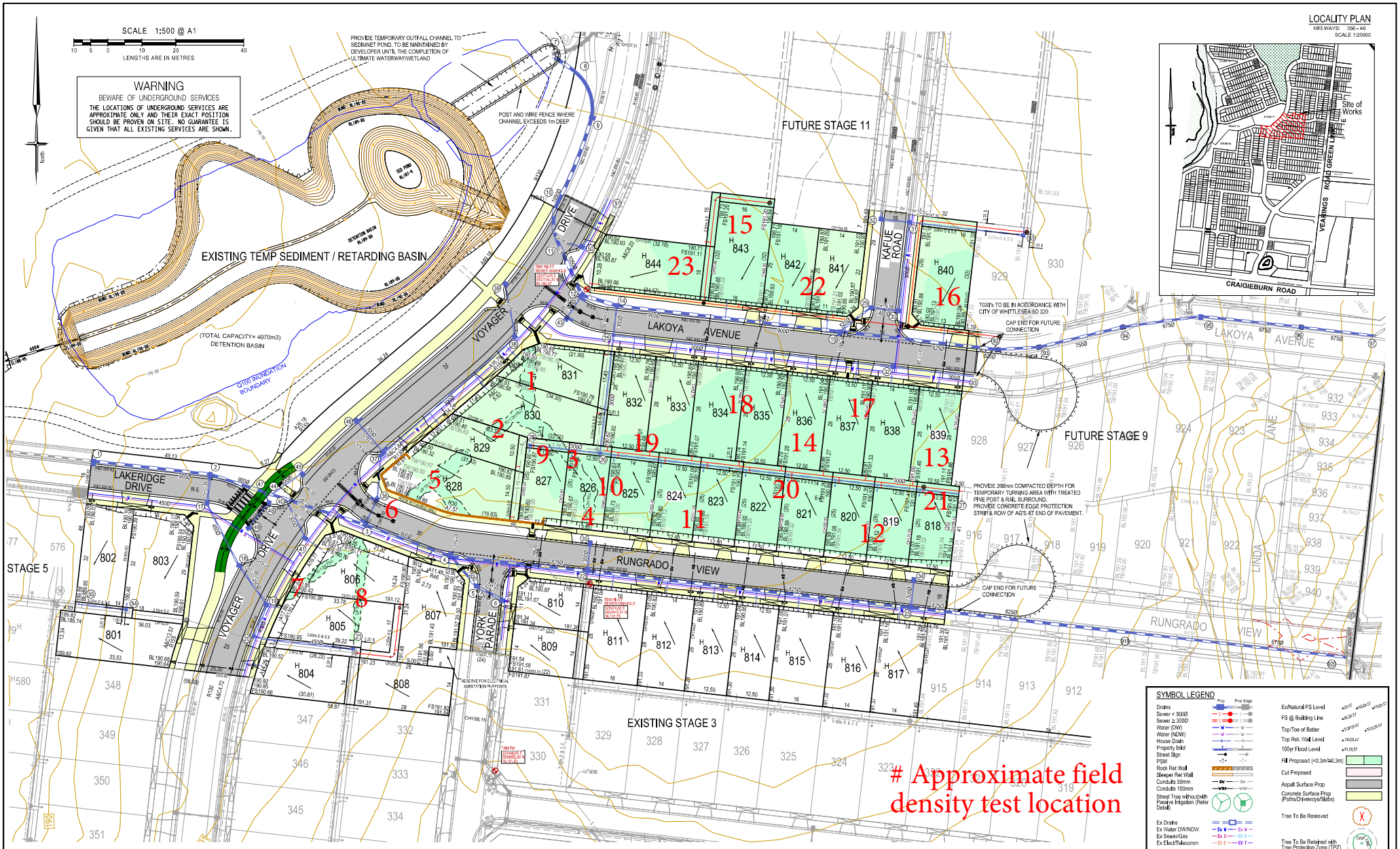
We are of the view that the bulk fill materials that have been placed across the reported allotments by Winslow Constructors during the aforementioned period can be considered as having been placed in a controlled manner to a minimum density ratio of 95% (standard compactive effort).

Please contact the undersigned if you require any additional information.

Civil Geotechnical Services

Nick Brock

FIGURE 1



Approximate field density test location

SERVICES OFFSETS AND LOCATIONS

Location	Gas	Water		Communications		Electricity		BOK	Road Width	Joint Trenching	Street Classification
		NDW	DW	Cables	Pits	Cables	Poles				
RUNGRADO	2.10S	2.55S	3.00S	1.80N	1.80N/1.70S	2.60N	1.00 BOK	4.35S,4.05N	16	G/W,F/T/H/E	LEVEL 1
LAKOYA	2.20S	2.70S	3.20S	1.80N	1.80N/S	2.60N	1.00 BOK	5.20N,5.20S	18	G/W,F/T/H/E	LEVEL 1
LAKERIDGE	2.35S	2.75S	3.20S	0.95N	1.80S	0.45N	1.00 BOK	4.35S,4.05N	16	G/W,F/T/H/E	LEVEL 1
YORK	2.20E	2.70E	3.20E	1.80W	1.80E/W	2.60W	1.00 BOK	4.35E,4.05W	16	G/W,F/T/H/E	LEVEL 1
KAFUE	2.20E	2.70E	3.20E	1.80W	1.80E/W	2.60W	1.00 BOK	4.35E,4.05W	16	G/W,F/T/H/E	LEVEL 1
VOYAGER	2.25E.	2.70E	3.20E	1.80W	1.80E/W	2.60W	1.00 BOK	4.55E,8.55W	25	G/W,F/T/H/E	LEVEL 2

NOTE; a) At the court bowl where water and gas mains pass, the watermain offset is to be increased by 0.5 metres.

ATTENTION TO CONTRACTOR

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

AMENDMENTS

VER	DATE	REMARKS
D	12.08.21	PATH AMEDMENTS
C	03.06.21	FS LEVELS LOTS 802-803 AMENDED
B	16.04.21	CONSTRUCTION ISSUE

breese pitt dixon pty. ltd.
land surveyors civil engineers
1/19 cato street
hawthorn east, 3123
telephone 8823 2300
fax no. 8823 2310

MELWAY REF.	388-C-10
SURVEY	BPD
DESIGN	RGW
DRAWN	RGW
CHECKED	NM

RATHDOWNE ESTATE STAGE 8 DETAIL PLAN

SCALE	AS SHOWN	DATUM	AHD	DATE	JUN'20

MUNICIPALITY: WHITTLESEA
REFERENCE: 9365 E/8
SHEET 1 OF 17 D

COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

		Job No	20326
		Report No	20326/R001
		Date Issued	09/07/2020
Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	*Tested by*	AC
Project	RATHDOWNE - STAGE 8	*Date tested*	15/06/20
Location	WOLLERT	*Checked by*	JHF

Feature **SWALE FILL** *Layer thickness* 200 mm *Time:* 14:07

Test procedure AS 1289.2.1.1 & 5.8.1

Test No		**1**	**2**	**3**	**4**	**-**	**-**
Location		REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1		
Approximate depth below FSL	*m*	0.9	0.6	0.3	fsl		
Measurement depth	*mm*	175	175	175	175	-	-
Field wet density	*t/m³*	1.86	1.88	1.87	1.85	-	-
Field moisture content	*%*	35.5	33.2	30.3	33.2	-	-

Test procedure AS 1289.5.7.1

Test No		1	2	3	4	-	-
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/m³*	1.89	1.93	1.95	1.88	-	-
Adjusted Peak Converted Wet Density	*t/m³*	-	-	-	-	-	-
Optimum Moisture Content	*%*	33.0	31.0	29.5	31.0	-	-

Moisture Variation From Optimum Moisture Content		2.5% wet	2.0% wet	1.0% wet	2.0% wet	-	-

Density Ratio (R_{HD})	***%***	**98.5**	**97.5**	**96.0**	**98.5**	**-**	**-**

Material description

No 1 - 4 Clay Fill

Approved Signatory : Justin Fry

COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

		Job No	20326
		Report No	20326/R002
		Date Issued	09/07/2020
Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	*Tested by*	AC
Project	RATHDOWNE - STAGE 8	*Date tested*	16/06/20
Location	WOLLERT	*Checked by*	JHF

Feature **SWALE FILL** *Layer thickness* 200 mm *Time:* 08:38

Test procedure AS 1289.2.1.1 & 5.8.1

Test No		**5**	**6**	**7**	**8**	**-**	**-**
Location		REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1		
Approximate depth below FSL	*m*	0.9	0.6	0.3	fsl		
Measurement depth	*mm*	175	175	175	175	-	-
Field wet density	*t/m³*	1.90	1.99	1.91	1.92	-	-
Field moisture content	*%*	37.0	31.9	30.1	31.4	-	-

Test procedure AS 1289.5.7.1

Test No		5	6	7	8	-	-
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/m³*	1.93	2.02	1.99	1.96	-	-
Adjusted Peak Converted Wet Density	*t/m³*	-	-	-	-	-	-
Optimum Moisture Content	*%*	34.0	29.0	28.0	29.5	-	-

Moisture Variation From Optimum Moisture Content		2.5% wet	2.5% wet	2.0% wet	2.0% wet	-	-
Density Ratio (R_{HD})	*%*	**98.5**	**98.5**	**96.0**	**98.0**	**-**	**-**

Material description

No 5 - 8 Clay Fill

AVRLOT HILF V1.10 MAR 13

NATA

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

Approved Signatory : Justin Fry

COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

		Job No	20326
		Report No	20326/R003
		Date Issued	19/01/2022
Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	*Tested by*	AC
Project	RATHDOWNE - STAGE 8	*Date tested*	10/01/22
Location	WOLLERT	*Checked by*	JHF

Feature **EARTHWORKS** *Layer thickness* 200 mm *Time:* 07:26

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							
Measurement depth	*mm*	175	175	175	175	175	175
Field wet density	*t/m³*	2.05	1.86	1.94	2.00	1.98	1.91
Field moisture content	*%*	19.5	14.8	20.6	20.2	29.0	20.3

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/m³*	2.04	1.91	1.94	2.07	1.97	1.97
Adjusted Peak Converted Wet Density	*t/m³*	-	-	-	-	-	-
Optimum Moisture Content	*%*	21.5	17.0	20.5	20.0	28.5	20.0

Moisture Variation From Optimum Moisture Content	1.5% dry	2.0% dry	0.0%	0.0%	0.5% wet	0.0%

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})	*%*	**100.5**	**97.5**	**100.0**	**96.5**	**100.5**	**96.5**

Material description

No 9 - 14 Clay Fill

Approved Signatory : Justin Fry

COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

		Job No	20326
		Report No	20326/R004
		Date Issued	19/01/2022
Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	*Tested by*	AC
Project	RATHDOWNE - STAGE 8	*Date tested*	12/01/22
Location	WOLLERT	*Checked by*	JHF

Feature **EARTHWORKS** *Layer thickness* 200 mm *Time:* 08:33

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							
Measurement depth	*mm*	175	175	175	175	175	175
Field wet density	*t/m³*	2.05	2.01	2.04	2.00	2.05	2.05
Field moisture content	*%*	23.1	20.6	26.5	22.3	16.6	22.8

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/m³*	2.10	2.08	2.10	2.06	2.11	2.12
Adjusted Peak Converted Wet Density	*t/m³*	-	-	-	-	-	-
Optimum Moisture Content	*%*	22.5	20.5	24.0	21.5	16.0	21.0

Moisture Variation From Optimum Moisture Content		0.5% wet	0.0%	2.5% wet	0.5% wet	0.5% wet	1.5% wet

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**	**96.5**	**97.5**	**97.5**	**97.0**	**96.5**

Material description

No 15 - 20 Clay Fill

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	20326
		Report No	20326/R005
		Date Issued	18/01/2022
Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	*Tested by*	AC
Project	RATHDOWNE - STAGE 8	*Date tested*	12/01/22
Location	WOLLERT	*Checked by*	JHF

Feature **EARTHWORKS** *Layer thickness* 200 mm *Time:* 09:25

Test procedure AS 1289.2.1.1 & 5.8.1

Test No		**21**	**22**	**23**	**-**	**-**	**-**
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/m³*	2.05	2.04	2.05	-	-	-
Field moisture content	*%*	23.2	20.3	17.8	-	-	-

Test procedure AS 1289.5.7.1

Test No		21	22	23	-	-	-
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/m³*	2.10	2.06	2.10	-	-	-
Adjusted Peak Converted Wet Density	*t/m³*	-	-	-	-	-	-
Optimum Moisture Content	*%*	25.5	19.5	17.5	-	-	-

Moisture Variation From Optimum Moisture Content	2.0% dry	0.5% wet	0.5% wet	-	-	-

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**	**99.0**	**97.5**	**-**	**-**	**-**

Material description

No 21 - 23 Clay Fill

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

Approved Signatory : Justin Fry