



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

27th October 2017

Our Reference: 17534:NB050

Winslow Constructors Pty Ltd
50 Barry Road
CAMPBELLFIELD VIC 3061

Dear Sirs/Madams,

**RE: LEVEL 1 EARTHWORKS INSPECTION AND TESTING
NEWHAVEN – STAGE 3 (TARNEIT)**

Please find attached our Report No's 17534/R001 to 17534/R004 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 mid-September 2017 and was completed in late September 2017.

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).

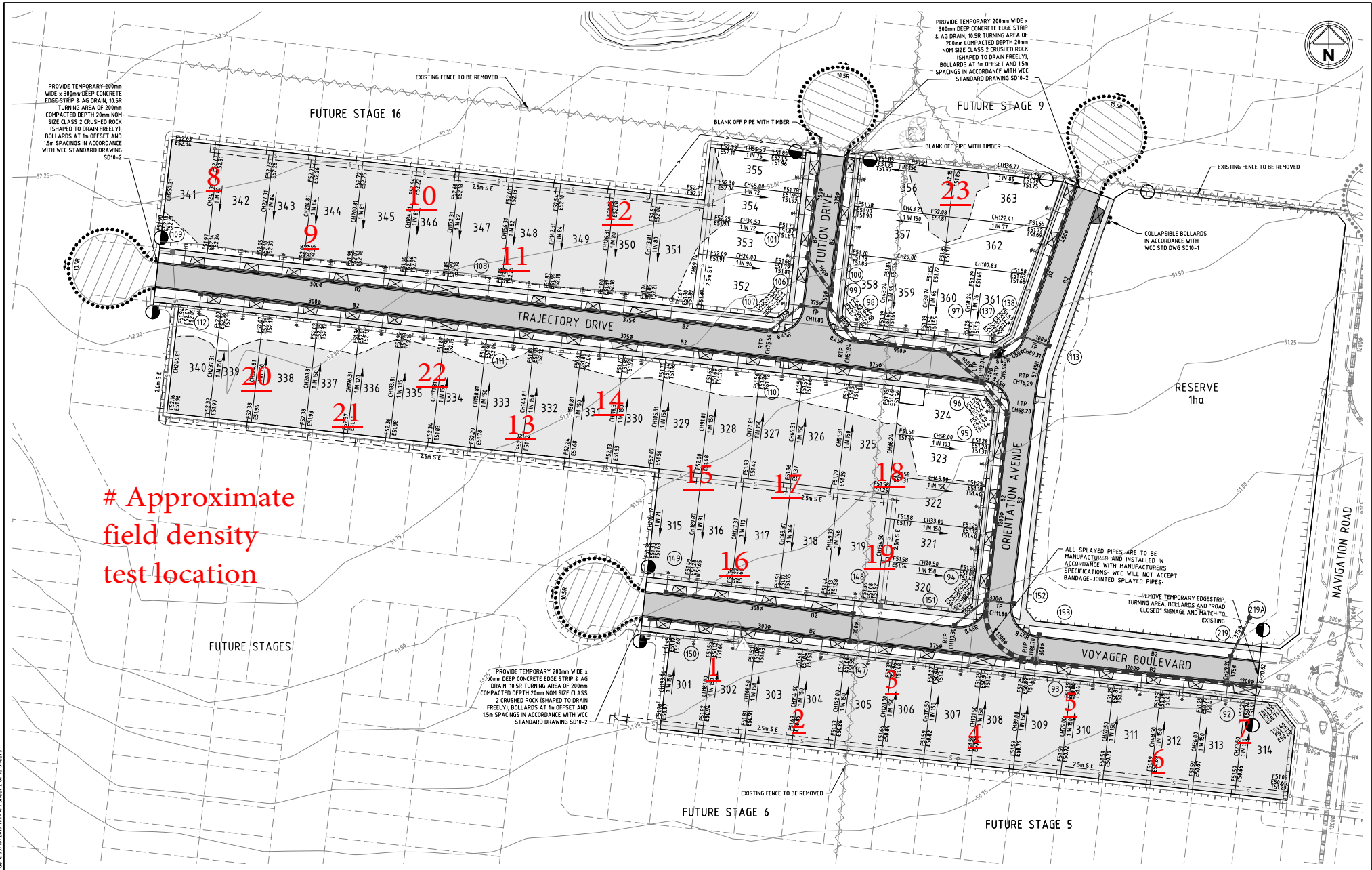
Please contact the undersigned if you require any additional information.

Civil Geotechnical Services

A handwritten signature in blue ink, appearing to be 'Nick Brock', written in a cursive style.

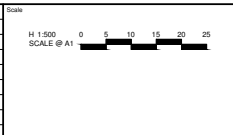
Nick Brock

FIGURE 1



File Name: 303218CR200_A01.dwg, Date: 27-09-17, Project: Newhaven Stage 3 Road & Drainage Layout Plan, Detail Plan, 2 of 18 Sheets

Rev	Amendments	Approved	Date
1	PIT BETWEEN PITS 147-150 REMOVED	JS	09-10-17
0	ISSUED FOR CONSTRUCTION	JS	27-09-17
D	REMOVAL OF EXISTING FENCE & DRIVEWAY AMENDED FOR LOT 111, 330 & 355	JS	05-09-17
E	DRIVEWAY LOCATIONS AMENDED & SPLAY PIPE NOTE ADDED, SWD PIPES EXTENDED	JS	17-05-17
C	RESERVE CROSSOVER LOCATION AMENDED TO SUIT LANDSCAPE PLAN	JS	20-04-17
B	ISSUED FOR APPROVAL	JS	30-03-17
A	ISSUED FOR TENDER	JS	06-12-16



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Designed
H. SPURLING

Authorised
J. SPENCER

Checked
A. CHARALAMBOUS

Date
27-09-17

NEWHAVEN STAGE 3 ROAD & DRAINAGE LAYOUT PLAN
DETAIL PLAN
WYNDHAM CITY COUNCIL
PEET 1895 PTY LTD

CONSTRUCTION **303218CR200** 1



COMPACTION ASSESSMENT

Job No 17534
 Report No 17534/R001
 Date Issued 27/10/2017

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Tested by JB
 Date tested 18/09/17
 Checked by JHF

Client WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)
 Project NEW HAVEN - STAGE 3
 Location TARNEIT

Feature EARTHWORKS *Layer thickness* 200 mm *Time:* 12:04

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	1.88	1.90	1.85	-	-	-
Field moisture content	%	27.2	23.5	21.1	-	-	-

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	3	4	4	-	-	-
Peak Converted Wet Density	t/m ³	1.95	1.89	1.86	-	-	-
Adjusted Peak Converted Wet Density	t/m ³	1.96	1.90	1.87	-	-	-
Optimum Moisture Content	%	30.0	26.0	23.5	-	-	-

Moisture Variation From Optimum Moisture Content	2.5% dry	2.5% dry	2.0% dry	-	-	-
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Density Ratio (R_{HD})	%	95.5	100.0	98.5	-	-	-
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Material description

No 1 - 3 Clay Fill



The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/National standards. Accredited for compliance to ISO/IEC 17025. Accreditation No 9909

Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Job No 17534
 Report No 17534/R002
 Date Issued 27/10/2017

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	NEW HAVEN - STAGE 3	Date tested	20/09/17
Location	TARNIET	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 11:32
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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 <i>mm</i>	175	175	175	175	175	175
Field wet density <i>t/m³</i>	1.78	1.78	1.78	1.76	1.75	1.74
Field moisture content %	25.8	26.6	23.3	26.9	28.7	29.0

Test procedure AS 1289.5.7.1

Test No	4	5	6	7	8	9
Compactive effort	Standard					
Oversize rock retained on sieve <i>mm</i>	19.0	19.0	19.0	19.0	19.0	19.0
Percent of oversize material <i>wet</i>	0	0	0	0	0	0
Peak Converted Wet Density <i>t/m³</i>	1.78	1.79	1.79	1.76	1.75	1.74
Adjusted Peak Converted Wet Density <i>t/m³</i>	-	-	-	-	-	-
Optimum Moisture Content %	28.0	29.0	25.0	29.0	30.5	32.0

Moisture Variation From Optimum Moisture Content	2.5% dry	2.0% dry	2.0% dry	2.0% dry	2.0% dry	2.5% dry
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Density Ratio (<i>R_{HD}</i>) %	100.0	100.0	99.5	100.0	100.0	100.0
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Material description

No 4 - 9 Clay Fill



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Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

Job No 17534
 Report No 17534/R003
 Date Issued 27/10/2017

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	NEW HAVEN - STAGE 3	Date tested	21/09/17
Location	TARNEIT	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 11:07
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	10	11	12	13	-	-
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	1.92	1.83	1.88	1.90	-
Field moisture content	%	21.9	21.2	24.1	18.5	-

Test procedure AS 1289.5.7.1

Test No	10	11	12	13	-	-
Compactive effort	Standard					
Oversize rock retained on sieve	mm	19.0	19.0	19.0	19.0	-
Percent of oversize material	wet	0	3	1	2	-
Peak Converted Wet Density	t/m ³	1.90	1.86	1.89	1.92	-
Adjusted Peak Converted Wet Density	t/m ³	-	1.92	1.91	1.95	-
Optimum Moisture Content	%	24.5	23.0	26.5	21.0	-

Moisture Variation From Optimum Moisture Content	2.5% dry	2.0% dry	2.0% dry	2.5% dry	-	-
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Density Ratio (R _{HD})	%	101.5	95.5	98.5	97.5	-
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Material description

No 10 - 13 Clay Fill



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Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

Job No 17534
 Report No 17534/R004
 Date Issued 26/10/2017

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Tested by SB
 Date tested 26/09/17
 Checked by JHF

Client WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)
 Project NEW HAVEN - STAGE 3
 Location TARNEIT

Feature	EARTHWORKS	<i>Layer thickness</i>	300 mm	<i>Time:</i> 11:00
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	14	15	16	17	18	19
<i>Location</i>	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1
<i>Approximate depth below FSL</i>						
<i>Measurement depth</i> mm	175	175	175	175	175	175
<i>Field wet density</i> t/m ³	1.90	1.82	1.77	1.80	1.84	1.81
<i>Field moisture content</i> %	24.2	24.2	23.7	23.9	22.0	24.3

Test procedure AS 1289.5.7.1

Test No	14	15	16	17	18	19
<i>Compactive effort</i>	Standard					
<i>Oversize rock retained on sieve</i> mm	19.0	19.0	19.0	19.0	19.0	19.0
<i>Percent of oversize material</i> wet	4	0	0	0	0	0
<i>Peak Converted Wet Density</i> t/m ³	1.88	1.87	1.78	1.78	1.84	1.81
<i>Adjusted Peak Converted Wet Density</i> t/m ³	1.95	-	-	-	-	-
<i>Optimum Moisture Content</i> %	26.5	26.5	26.0	26.5	25.0	26.5

<i>Moisture Variation From Optimum Moisture Content</i>	2.0% dry	2.0% dry	2.0% dry	2.5% dry	2.5% dry	2.0% dry
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Density Ratio (R_{HD}) %	98.0	97.5	99.5	101.0	100.0	100.5
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Material description

No 14 - 19 Clay Fill



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COMPACTION ASSESSMENT

Job No 17534
 Report No 17534/R005
 Date Issued 27/10/2017

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	NEW HAVEN - STAGE 3	Date tested	26/09/2017
Location	TARNEIT	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 14:30:54
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	20	21	22	23	-	-
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	1.90	1.86	1.88	1.91	-
Field moisture content	%	21.9	21.2	24.1	18.5	-

Test procedure AS 1289.5.7.1

Test No	20	21	22	23	-	-
Compactive effort	Standard					
Oversize rock retained on sieve	mm	19.0	19.0	19.0	19.0	-
Percent of oversize material	wet	0	3	1	2	-
Peak Converted Wet Density	t/m ³	1.90	1.86	1.89	1.92	-
Adjusted Peak Converted Wet Density	t/m ³	-	1.92	1.91	1.95	-
Optimum Moisture Content	%	24.5	23.0	26.5	21.0	-

Moisture Variation From Optimum Moisture Content	2.5% dry	2.0% dry	2.0% dry	2.5% dry	-	-
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Density Ratio (R _{HD})	%	100.0	97.0	98.5	98.0	-
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Material description

No 20 - 23 Clay Fill



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Approved Signatory : Justin Fry