



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

2<sup>nd</sup> November 2017

Our Reference: 17625:NB061

Grassylands Pty Ltd  
C/o The Corcoris Group  
Level 1, 20 Council Street, Hawthorn East, Victoria, 3123

Dear Sirs/Madams,

**RE: LEVEL 1 EARTHWORKS INSPECTION AND TESTING**  
**EMERALD PARK – STAGE 2 (TARNEIT)**

Please find attached our Report No's 17625/R001 to 17625/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 October 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.

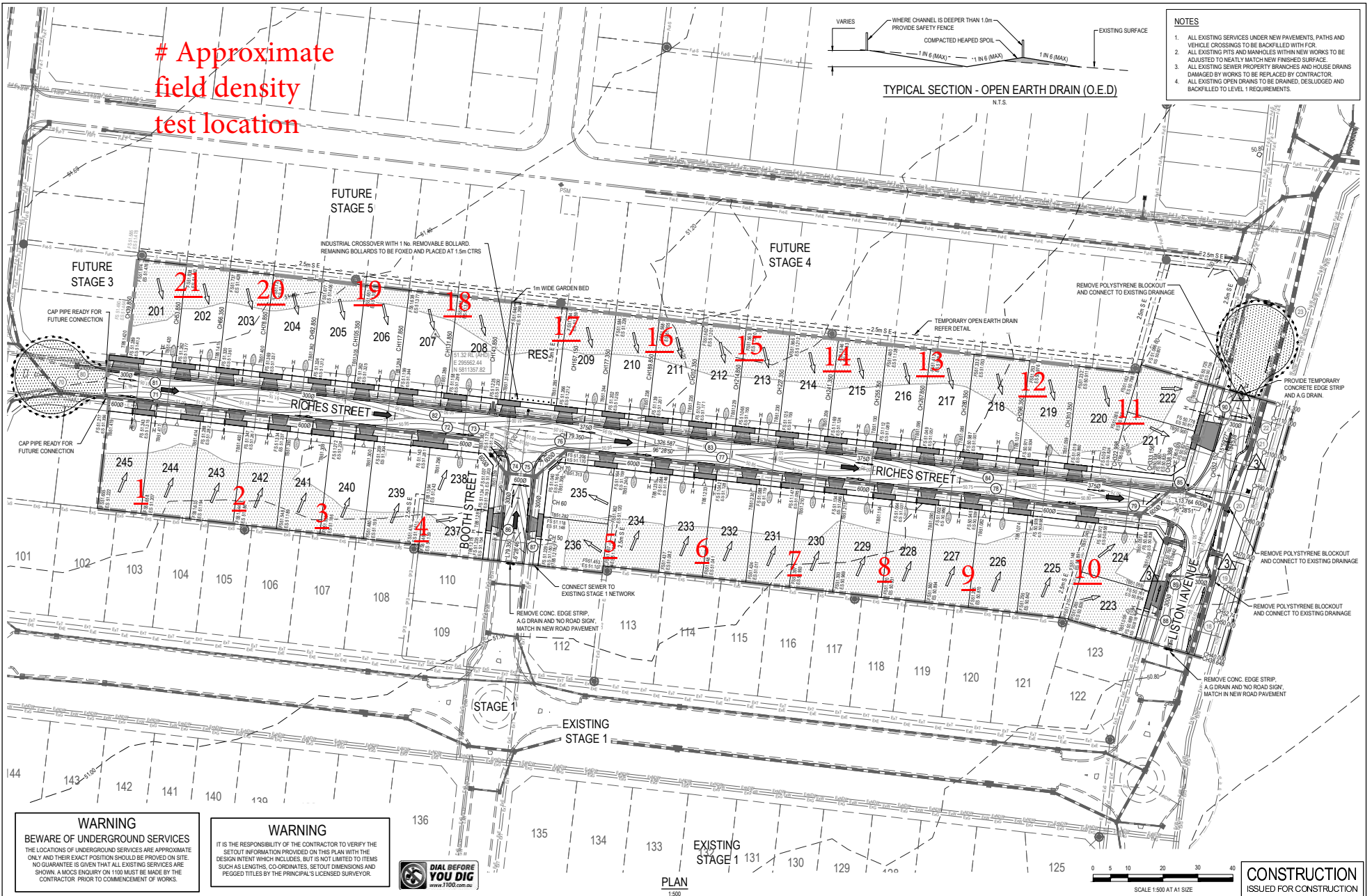
Civil Geotechnical Services

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

Nick Brock

# FIGURE 1

# Approximate field density test location

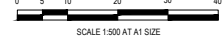


**WARNING**  
BEWARE OF UNDERGROUND SERVICES  
THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVIDED ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN. A MOCS ENQUIRY ON 1100 MUST BE MADE BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF WORKS.

**WARNING**  
IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE SETOUT INFORMATION PROVIDED ON THIS PLAN WITH THE DESIGN INTENT WHICH INCLUDES, BUT IS NOT LIMITED TO ITEMS SUCH AS LENGTHS, CO-ORDINATES, SETOUT DIMENSIONS AND PEGGED TITLES BY THE PRINCIPAL'S LICENSED SURVEYOR.



PLAN  
1:500

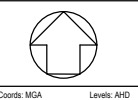


**CONSTRUCTION**  
ISSUED FOR CONSTRUCTION

VER	DATE	REVISION
3	05/10/2017	MINOR AMENDMENTS
2	26/07/2017	LOT LEVELS, CHANGES, FILL AREA AND BATTER UPDATED
1	26/06/2017	DRAINAGE DESIGN UPDATED
0	12/09/2016	ISSUED FOR CONSTRUCTION

APPD.	EXISTING	PROPOSED
	Existing Gas Main	Proposed Gas Main
	Existing Water Main	Proposed Water Main
	Existing Electricity Cable	Proposed Electricity Cable
	Existing Storm Water Pipe	Proposed Storm Water Pipe
	Existing Sewer Main & M.H.	Proposed Sewer Main & M.H.
	Existing Drain & Pit	Proposed Drain & Pit
	Existing Property Walls	Proposed Property Walls
	Open Drain	Open Drain

LEGEND
Proposed House Drain
Street Name Sign
Proposed Gas Main
Proposed Water Main
Proposed Electricity Cable
Proposed Storm Water Pipe
Proposed Sewer Main & M.H.
Proposed Drain & Pit
Proposed Property Walls
Finished surface building line & ead reserve
Finished surface top of batter
Filling on site deeper than 200mm



**TAYLORS**  
Urban Development | Civil Engineering | Infrastructure  
Civil Engineering | Planning | Quantity Surveying | Environmental Management

DESIGNED: TND AUTHORIZED: JYJ TAYLORS REF: 12332-2-E  
CHECKED: AHM AUTH. DATE: 12/09/2016 CAD REF: 12332-2-E-107

WYNDHAM CITY COUNCIL  
EMERALD PARK  
STAGE 2  
DETAIL LAYOUT PLAN

SCALE 1:500@A1, 1:1000@A3  
VERSION 3  
SHEET 8 OF 21  
DRAWING No. 12332-2-E-107



## COMPACTION ASSESSMENT

Job No 17625  
 Report No 17625/R001  
 Date Issued 02/11/2017

**CIVIL GEOTECHNICAL SERVICES**

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	SB
Project	EMERALD PARK - STAGE 2	Date tested	30/10/17
Location	TARNEIT	Checked by	JHF

<b>Feature</b>	EARTHWORKS	Layer thickness	300 mm	Time: 09:00
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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 <i>mm</i>	175	175	175	175	175	175
Field wet density <i>t/m<sup>3</sup></i>	1.80	1.89	1.84	1.86	1.80	1.78
Field moisture content %	19.5	17.2	19.4	18.1	27.0	24.7

Test procedure AS 1289.5.7.1

Test No	1	2	3	4	5	6
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>	4	5	4	6	2	0
Peak Converted Wet Density <i>t/m<sup>3</sup></i>	1.81	1.89	1.87	1.87	1.76	1.77
Adjusted Peak Converted Wet Density <i>t/m<sup>3</sup></i>	1.82	1.92	1.89	1.89	1.80	-
Optimum Moisture Content %	22.0	20.5	21.5	20.5	29.0	27.0

Moisture Variation From Optimum Moisture Content	2.5% dry	2.0% dry	2.0% dry	2.5% dry	2.0% dry	2.0% dry
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<b>Density Ratio ( R<sub>HD</sub> )</b>	<b>%</b>	<b>98.5</b>	<b>99.0</b>	<b>97.5</b>	<b>98.5</b>	<b>100.0</b>	<b>100.5</b>
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Material description

No 1 - 6 Clay Fill
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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

Job No 17625  
 Report No 17625/R002  
 Date Issued 02/11/2017

**CIVIL GEOTECHNICAL SERVICES**

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	SB
Project	EMERALD PARK - STAGE 2	Date tested	30/10/17
Location	TARNEIT	Checked by	JHF

<b>Feature</b>	EARTHWORKS	Layer thickness	300 mm	Time: 10:00
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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 <i>mm</i>	175	175	175	175	175	175
Field wet density <i>t/m<sup>3</sup></i>	1.84	1.84	1.85	1.94	1.85	1.85
Field moisture content %	23.7	25.0	24.8	25.6	25.0	27.6

Test procedure AS 1289.5.7.1

Test No	7	8	9	10	11	12
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	11	0	6	10	0
Peak Converted Wet Density <i>t/m<sup>3</sup></i>	1.83	1.85	1.86	1.85	1.88	1.86
Adjusted Peak Converted Wet Density <i>t/m<sup>3</sup></i>	-	1.90	-	1.96	1.92	-
Optimum Moisture Content %	26.5	27.0	27.0	27.5	25.5	28.5

Moisture Variation From Optimum Moisture Content	2.5% dry	2.0% dry	2.5% dry	2.0% dry	0.5% dry	0.5% dry
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<b>Density Ratio ( R<sub>HD</sub> )</b>	<b>%</b>	<b>100.5</b>	<b>97.0</b>	<b>100.0</b>	<b>99.0</b>	<b>97.0</b>	<b>100.0</b>
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Material description

No 7 - 12 Clay Fill
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Approved Signatory : Justin Fry



# COMPACTION ASSESSMENT

Job No 17625  
 Report No 17625/R003  
 Date Issued 01/11/2017

## CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	EMERALD PARK - STAGE 2	Date tested	30/10/17
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	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 <sup>3</sup>	1.85	1.85	1.87	1.85	1.83	1.83
Field moisture content %	26.8	28.5	24.6	24.6	20.9	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 <sup>3</sup>	1.90	1.87	1.90	1.93	1.83	1.88
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	-	-	-	-	-	-
Optimum Moisture Content %	26.5	29.0	24.5	24.0	23.5	27.0

Moisture Variation From Optimum Moisture Content	0.0%	0.5% dry	0.5% wet	0.5% wet	2.5% dry	0.5% wet
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Density Ratio ( R <sub>HD</sub> ) %	97.0	98.5	98.5	95.5	100.0	97.5
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### Material description

No 13 - 18 Clay Fill



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Approved Signatory : Justin Fry



# COMPACTION ASSESSMENT

Job No 17625  
 Report No 17625/R004  
 Date Issued 02/11/2017

## CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	EMERALD PARK - STAGE 2	Date tested	30/10/17
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	19	20	21	-	-	-
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 <sup>3</sup>	1.82	1.84	1.85	-	-
Field moisture content	%	21.1	25.9	28.2	-	-

### Test procedure AS 1289.5.7.1

Test No	19	20	21	-	-	-
Compactive effort	Standard					
Oversize rock retained on sieve	mm	19.0	19.0	19.0	-	-
Percent of oversize material	wet	1	3	0	-	-
Peak Converted Wet Density	t/m <sup>3</sup>	1.79	1.77	1.85	-	-
Adjusted Peak Converted Wet Density	t/m <sup>3</sup>	1.81	1.83	-	-	-
Optimum Moisture Content	%	23.5	29.5	28.5	-	-

Moisture Variation From Optimum Moisture Content	2.5% dry	3.5% dry	0.5% dry	-	-	-
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Density Ratio ( R <sub>HD</sub> )	%	100.5	100.5	100.0	-	-
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### Material description

No 19 - 21 Clay Fill



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