



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

22<sup>nd</sup> March 2018

Our Reference: 18003:NB162

Winslow Constructors Pty Ltd  
50 Barry Road  
CAMPBELLFIELD VIC 3061

Dear Sirs/Madams,

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

Please find attached our Report No's 18003/R001 and 18003/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 January 2018 and were completed in February 2018.

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).

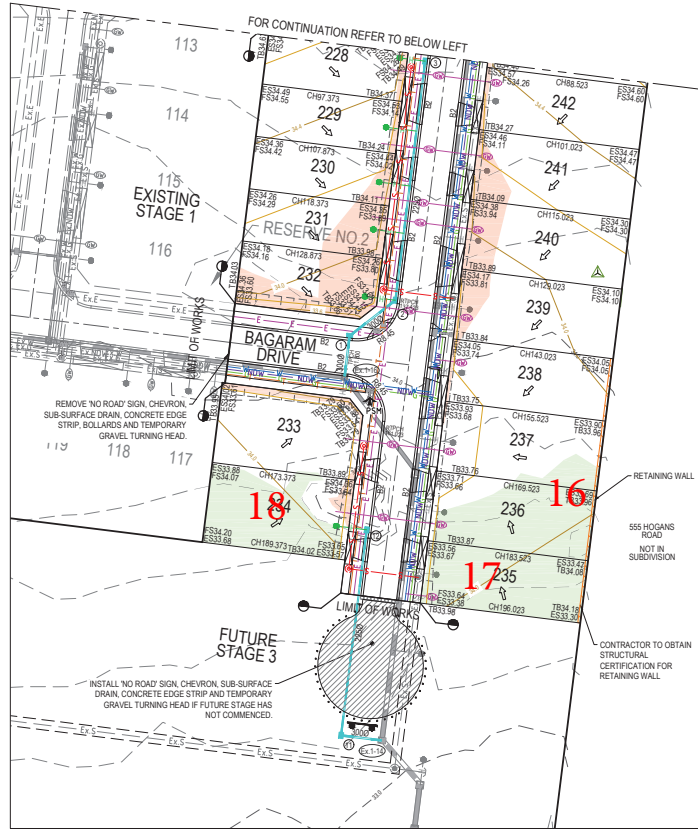
Please contact the undersigned if you require any additional information.

Civil Geotechnical Services

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

Nick Brock

# FIGURE 1



**NOTES**  
 1. CONTRACTOR TO DELAY CONSTRUCTION OF CROSSOVERS AND PARKING BAYS ALONG HOGANS ROAD UNTIL KERBS AND CHANNELS HAS BEEN CONSTRUCTED.  
 2. CONSTRUCTION OF FOOTPATH ALONG HOGANS ROAD BY OTHERS

**ROADWORKS LEGEND**

- B2 KERB & CHANNEL - (AS NOTED)
- TRANSITION KERB
- PROPOSED DRIVEWAY CROSSING
- EXISTING CONSTRUCTION TO BE REMOVED
- NEW BATTER
- EXISTING STORMWATER DRAIN, PIT AND PROPERTY INLET
- OR
- STORMWATER DRAIN, PIT AND PROPERTY INLET
- SEWER, MAINTENANCE STRUCTURES AND PROPERTY CONNECTION
- SHALE DRAIN INVERT AND DIRECTION OF FLOW
- PERMANENT SURVEY MARK (PSM)
- TEMPORARY BENCH MARK (TBM)
- EXISTING SURFACE LEVEL
- FINISHED SURFACE LEVEL
- TOP OR FACE OF BATTER LEVEL
- INVERT OF SINGLE LEVEL
- STORMWATER PIT NO.
- TACTILE PAVERS
- UTILITIES CONDUIT
- STREET SIGN
- CONCRETE EDGE STRIP WITH SUBSURFACE DRAIN
- "NO ROAD" SIGN & BARRIER
- NEW FINISHED SURFACE CONTOUR
- EXISTING SURFACE CONTOUR
- LIMIT OF WORKS
- PROPOSED ELECTRICITY
- PROPOSED GAS
- PROPOSED SEWER
- BRANCH SEWER
- PROPOSED TELECOMMUNICATIONS
- PROPOSED TELSTRA & OPTUS
- PROPOSED WATER
- PROPOSED NON-DRINKING WATER
- EXISTING ELECTRICITY
- EXISTING GAS
- EXISTING SEWER
- EXISTING TELECOMMUNICATIONS
- EXISTING WATER
- EXISTING NON-DRINKING WATER
- EXISTING TREE
- EXISTING TREE TO BE REMOVED

**EARTHWORKS LEGEND**

- LOT FILL (FILL GREATER THAN 200mm DEEP)
- LOT CUT (CUT GREATER THAN 200mm DEEP)

# Approximate field density test location

**WARNING PROPOSED SERVICES**  
 THE LOCATION AND EXTENT OF PROPOSED SERVICES IS INDICATIVE ONLY AND ARE NOT TO BE USED FOR CONSTRUCTION. REFER TO AUTHORISED DOCUMENTATION BY RELEVANT AUTHORITY FOR CONSTRUCTION DETAILS.

**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.



SERVICE OFFSET TABLE

STREET NAME	GAS	NOW	WATER	TELECOMMS	ELECTRICITY
HOGANS ROAD (EXISTING)	1.70 S	2.25 S	2.80 S	3.90 S	4.80 S
SURIN ROAD	2.10 N	2.60 N	3.10 N	1.85 S	2.65 S
KOMODO DRIVE	2.10 E	2.60 E	3.10 E	1.85 W	2.65 W
TATRA STREET	2.10 N	2.60 N	3.10 N	1.85 S	2.65 S
BAGARAM DRIVE	2.30 S	2.80 S	3.30 S	1.80 S	2.65 N

NOTE: OFFSETS SHOWN ARE IN METRES (m)

Planning and Environment Act 1987  
 Wyndham Planning Scheme  
 Approved Plan As Required  
 under Condition 37  
 Permit No WYP9287/16  
 Date 27/11/2017

COUNCIL REFERENCE NUMBER  
 SDW2193/17  
 SHEET NUMBER  
 3 OF 15

REV	DESCRIPTION	BY	APP	DATE
01	CONSTRUCTION ISSUE	HE	LO	18.10.17
02	CONSTRUCTION ISSUE - HOGANS ROAD UPDATE	HE	LO	18.11.17
03	CONSTRUCTION ISSUE - LOT 202 DRIVEWAY REGRADING	DC	LO	24.11.17



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CLIENT  
 TARNIET PROJECTS PTY LTD  
 P.O. BOX 8023  
 CAMBERWELL NORTH, VIC. 3124

TITLE  
 LAYOUT PLAN

PROJECT  
 GRACE - STAGE 2  
 605 HOGANS ROAD, TARNEIT  
 WYNDHAM CITY COUNCIL

STATUS  
 FOR CONSTRUCTION

DESIGNED	LG	DRAWN	HE	APPROVED	AC
PROJECT NO.	114652-02	DRAWING NO.	C100	SCALE @ A1	3 OF 15
REV				SHEET	02



# COMPACTION ASSESSMENT

Job No 18003  
 Report No 18003/R001  
 Date Issued 16/03/2018

## CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	GRACE - STAGE 2	Date tested	17/01/18
Location	TARNEIT	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time:	09:07
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### 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							
Measurement depth	mm	175	175	175	175	-	-
Field wet density	t/m <sup>3</sup>	1.84	1.84	1.90	1.85	-	-
Field moisture content	%	20.2	17.0	17.7	18.6	-	-

### 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/m <sup>3</sup>	1.86	1.87	1.91	1.82	-	-
Adjusted Peak Converted Wet Density	t/m <sup>3</sup>	-	-	1.94	1.84	-	-
Optimum Moisture Content	%	22.0	19.5	20.0	20.5	-	-

Moisture Variation From Optimum Moisture Content		2.0% dry	2.5% dry	2.0% dry	2.0% dry	-	-
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Density Ratio ( R <sub>HD</sub> )	%	98.5	98.5	98.0	100.5	-	-
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### Material description

No 1 - 4 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 18003  
 Report No 18003/R002  
 Date Issued 19/03/2018

**CIVIL GEOTECHNICAL SERVICES**

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	GRACE - STAGE 2	Date tested	18/01/18
Location	TARNEIT	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 09:30
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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						
Measurement depth <i>mm</i>	175	175	175	175	-	-
Field wet density <i>t/m<sup>3</sup></i>	1.82	1.81	1.91	1.84	-	-
Field moisture content %	31.4	21.2	20.7	21.3	-	-

Test procedure AS 1289.5.7.1

Test No	5	6	7	8	-	-
Compactive effort	Standard					
Oversize rock retained on sieve <i>mm</i>	19.0	19.0	19.0	19.0	-	-
Percent of oversize material <i>wet</i>	4	6	15	8	-	-
Peak Converted Wet Density <i>t/m<sup>3</sup></i>	1.84	1.86	1.89	1.84	-	-
Adjusted Peak Converted Wet Density <i>t/m<sup>3</sup></i>	1.86	1.89	1.96	1.87	-	-
Optimum Moisture Content %	24.5	23.0	23.5	23.5	-	-

Moisture Variation From Optimum Moisture Content	2.5% dry	2.0% dry	2.5% dry	2.0% dry	-	-
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<b>Density Ratio ( R<sub>HD</sub> )</b>	<b>98.0</b>	<b>96.0</b>	<b>98.0</b>	<b>98.0</b>	<b>-</b>	<b>-</b>
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Material description

No 5 - 8 Clay Fill
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# COMPACTION ASSESSMENT

Job No 18003  
 Report No 18003/R003  
 Date Issued 20/02/2018

## CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	GRACE - STAGES 2 & 3	Date tested	19/01/18
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 <sup>3</sup>	1.83	1.85	1.79	1.83	-
Field moisture content	%	15.2	19.5	17.2	19.7	-

### 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	6	0	5	12	-
Peak Converted Wet Density	t/m <sup>3</sup>	1.82	1.82	1.82	1.86	-
Adjusted Peak Converted Wet Density	t/m <sup>3</sup>	1.85	1.84	1.84	1.91	-
Optimum Moisture Content	%	17.5	21.5	19.5	22.0	-

Moisture Variation From Optimum Moisture Content	2.0% dry	2.0% dry	2.5% dry	2.0% dry	-	-
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Density Ratio ( R <sub>HD</sub> )	%	99.0	100.5	97.5	96.0	-
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### Material description

No 9 - 12 Clay Fill
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## COMPACTION ASSESSMENT

Job No 18003  
 Report No 18003/R004  
 Date Issued 19/03/2018

**CIVIL GEOTECHNICAL SERVICES**

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	GRACE - STAGE 2	Date tested	22/01/18
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	13	14	15	-	-	-
Location	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1			
Approximate depth below FSL						
Measurement depth <i>mm</i>	175	175	175	-	-	-
Field wet density <i>t/m<sup>3</sup></i>	1.79	1.85	1.80	-	-	-
Field moisture content %	18.3	20.6	12.8	-	-	-

Test procedure AS 1289.5.7.1

Test No	13	14	15	-	-	-
Compactive effort	Standard					
Oversize rock retained on sieve <i>mm</i>	19.0	19.0	19.0	-	-	-
Percent of oversize material <i>wet</i>	0	0	0	-	-	-
Peak Converted Wet Density <i>t/m<sup>3</sup></i>	1.75	1.83	1.78	-	-	-
Adjusted Peak Converted Wet Density <i>t/m<sup>3</sup></i>	-	-	-	-	-	-
Optimum Moisture Content %	20.0	23.5	24.0	-	-	-

Moisture Variation From Optimum Moisture Content	2.0% dry	2.5% dry	2.0% dry	-	-	-
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<b>Density Ratio ( R<sub>HD</sub> )</b>	<b>98.0</b>	<b>100.0</b>	<b>98.0</b>	-	-	-
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Material description

No 13 - 15 Clay Fill
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## COMPACTION ASSESSMENT

Job No 18003  
 Report No 18003/R005  
 Date Issued 23/02/2018

**CIVIL GEOTECHNICAL SERVICES**

6 - 8 Rose Avenue, Croydon 3136

Tested by JB  
 Date tested 23/01/18  
 Checked by JHF

Client WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)  
 Project GRACE - STAGES 2 & 3  
 Location TARNEIT

**Feature** EARTHWORKS      *Layer thickness* 200 mm      *Time:* 10:00

Test procedure AS 1289.2.1.1 & 5.8.1

Test No		16	17	18	-	-	-
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>	1.77	1.83	1.82	-	-	-
Field moisture content	%	16.7	20.2	18.2	-	-	-

Test procedure AS 1289.5.7.1

Test No		16	17	18	-	-	-
Compactive effort		Standard					
Oversize rock retained on sieve	mm	19.0	19.0	19.0	-	-	-
Percent of oversize material	wet	0	3	6	-	-	-
Peak Converted Wet Density	t/m <sup>3</sup>	1.76	1.79	1.78	-	-	-
Adjusted Peak Converted Wet Density	t/m <sup>3</sup>	1.77	1.84	1.89	-	-	-
Optimum Moisture Content	%	19.0	23.0	20.5	-	-	-

Moisture Variation From Optimum Moisture Content		2.5% dry	2.5% dry	2.0% dry	-	-	-
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<b>Density Ratio ( R<sub>HD</sub> )</b>	<b>%</b>	<b>100.0</b>	<b>99.0</b>	<b>96.0</b>	<b>-</b>	<b>-</b>	<b>-</b>
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Material description

No 16 - 18 Clay Fill



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Approved Signatory : Justin Fry



# COMPACTION ASSESSMENT

Job No 18003  
 Report No 18003/R006  
 Date Issued 22/03/2018

## CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	GRACE - STAGE 2	Date tested	13/02/18
Location	TARNEIT	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 12:07
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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>	1.89	1.83	1.76	-	-
Field moisture content	%	21.4	17.0	16.9	-	-

### 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	7	0	5	-	-
Peak Converted Wet Density	t/m <sup>3</sup>	1.86	1.83	1.74	-	-
Adjusted Peak Converted Wet Density	t/m <sup>3</sup>	1.89	-	1.76	-	-
Optimum Moisture Content	%	24.5	19.5	19.0	-	-

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

No 19 - 21 Clay Fill
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