



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

9<sup>th</sup> March 2018

Our Reference: 17691:NB155

Winslow Constructors Pty Ltd  
50 Barry Road  
CAMPBELLFIELD VIC 3061

Dear Sirs/Madams,

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

Please find attached our Report No's 17691/R001 to 17691/R003 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 was performed in November 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

Nick Brock

# FIGURE 1

**SERVICE OFFSET TABLE**

STREET NAME	GAS	NDW	WATER	TELECOMMS	ELECTRICITY	OPTUS & TELSTRA
CASABENE DRIVE	2.40 W	2.90 W	3.40 W	1.85 E	2.80 E	1.80 W
SURIN ROAD	2.40 N	2.85 N	3.30 N	1.85 S	2.65 S	1.80 N
ETOSHA STREET				0.40 E	1.30 E	1.85 W
WICKLOW WALK	0.70 E	1.20 E	1.70 E			
KUBAH STREET	2.30 E	2.80 E	3.30 E	1.70 E	2.65 W	
BAGARAM DRIVE (CH36-396-CH161-945)	2.30 S	2.80 S	3.30 S	1.80 S	2.65 N	
BAGARAM DRIVE (CH161-945-CH209-644)	2.10 S	2.60 S	3.10 S	1.85 N	2.65 N	
MARQA STREET	2.10 W	2.60 W	3.10 W	1.85 E	2.65 E	
ISLA STREET	2.10 W	2.60 W	3.10 W	1.85 E	2.65 E	
TATRA STREET	2.10 N	2.60 N	3.10 N	1.85 S	2.65 S	

NOTE: OFFSETS SHOWN ARE IN METRES (m)

**TREE OFFSET TABLE**

STREET NAME	TREE	TREE
CASABENE DRIVE	3.00 E	3.00 W
SURIN ROAD	3.00 N	2.80 S
ETOSHA STREET	2.70 E	1.30 W
WICKLOW WALK		
KUBAH STREET	3.00 E	2.80 W
BAGARAM DRIVE	2.80 N	3.00 S
MARQA STREET	2.80 E	3.00 W
ISLA STREET	2.80 E	3.00 W
TATRA STREET	3.00 N	2.80 S

NOTE: OFFSETS SHOWN ARE IN METRES (m)

**EARTHWORKS LEGEND**

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

**TELECOMMUNICATIONS TOWER**

- CONTRACTOR IS TO MAINTAIN INTEGRITY OF ELECTRICAL & TELECOMMUNICATIONS CABLES SUPPLYING TOWER THROUGHOUT CONSTRUCTION TO ENSURE CONTINUOUS SUPPLY.
- CONTRACTOR IS TO ENSURE THAT TOWER STABILITY IS PROTECTED AT ALL TIMES.

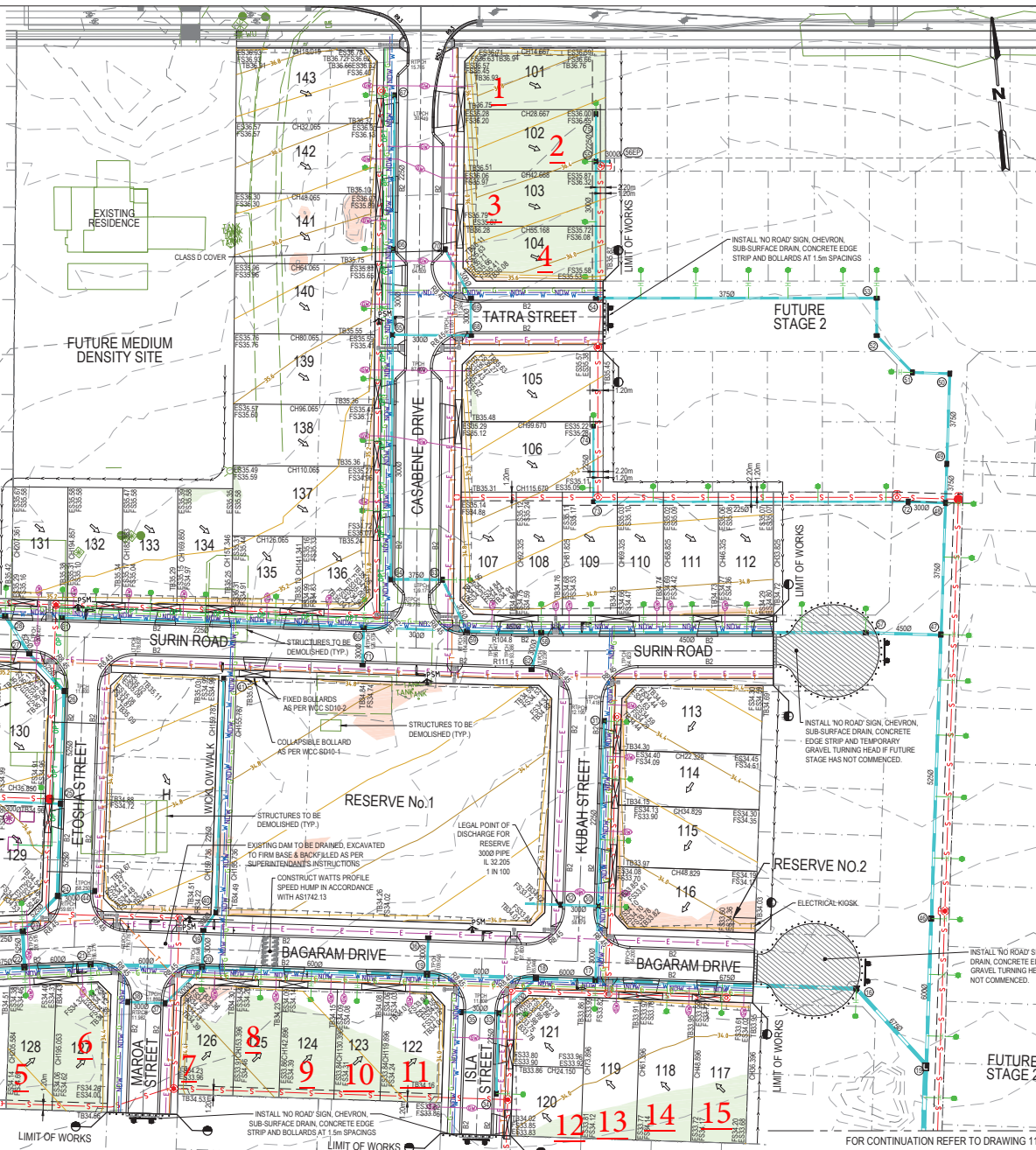
**# Approximate field density test location**

**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.



REV	DESCRIPTION	BY	APP	DATE
01	CONSTRUCTION ISSUE	MS	LG	26.08.17
02	CONSTRUCTION ISSUE - SERVICE OFFSETS REVISED, DWAYS ADDED (LOT 16)	MS	LG	27.08.17
03	CONSTRUCTION ISSUE - TREE PROTECTION ZONE & LPO	HE	LG	27.08.17
04	CONSTRUCTION ISSUE - SHEET ADDED	HE	LG	28.11.17



**ROADWORKS LEGEND**

	KERB & CHANNEL - (AS NOTED)
	TRANSITION KERB
	PROPOSED DRIVEWAY CROSSING
	EXISTING CONSTRUCTION TO BE REMOVED
	NEW BATTER
	EXISTING STORMWATER DRAIN, PIT AND PROPERTY INLET
	STORMWATER DRAIN, PIT AND PROPERTY INLET
	SEWER MAINTENANCE STRUCTURES AND PROPERTY CONNECTION
	SHALLOW DRAIN INVERT AND DIRECTION OF FLOW
	PERMANENT SURVEY MARK (PSM)
	TEMPORARY BENCH MARK (TBM)
	EXISTING SURFACE LEVEL
	FINISHED SURFACE LEVEL
	TOP OF RISE OF BATTER LEVEL
	INVERT OF SHALLOW LEVEL
	STORMWATER PIT NO.
	TACTILE PAVERS
	UTILITIES CONDUIT
	STREET SIGN
	CONCRETE EDGE STRIP WITH SUBSOL 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
	TREE PROTECTION ZONE
	EXISTING ELECTRICITY
	EXISTING GAS
	EXISTING SEWER
	EXISTING TELECOMMUNICATIONS
	EXISTING WATER
	EXISTING NON-DRINKING WATER
	EXISTING TREE
	EXISTING TREE TO BE REMOVED

COUNCIL REFERENCE NUMBER: SDW2305/17  
SHEET NUMBER: 3 OF 30

FOR CONTINUATION REFER TO DRAWING 114652-01-C101

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CLIENT: TARNIET PROJECTS PTY LTD  
P.O. BOX 8023  
CAMBERWELL NORTH, VIC. 3124  
TITLE: LAYOUT PLAN  
SHEET 1 OF 2

PROJECT: GRACE - STAGE 1  
605 HOGANS ROAD, TARNEIT  
WYNDHAM CITY COUNCIL  
STATUS: FOR CONSTRUCTION

DESIGNED	DRAWN	APPROVED	SCALE	SHEET
LG	HE	AC	AS SHOWN	3 of 30
PROJECT NO:	114652-01	C100		03



## COMPACTION ASSESSMENT

Job No 17691  
 Report No 17691/R001  
 Date Issued 19/12/2017

**CIVIL GEOTECHNICAL SERVICES**

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	GRACE - STAGE 1	Date tested	22/11/17
Location	TARNEIT	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 10:38
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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>	1.84	1.81	1.85	1.85	1.82	1.81
Field moisture content %	26.6	28.9	32.7	30.9	29.8	30.3

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>	3	2	5	6	4	1
Peak Converted Wet Density <i>t/m<sup>3</sup></i>	1.79	1.74	1.82	1.81	1.79	1.78
Adjusted Peak Converted Wet Density <i>t/m<sup>3</sup></i>	1.84	1.79	1.91	1.93	1.87	1.79
Optimum Moisture Content %	29.0	31.0	31.0	30.0	31.5	31.0

Moisture Variation From Optimum Moisture Content	2.0% dry	2.0% dry	2.0% wet	1.0% wet	2.0% dry	1.0% dry
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<b>Density Ratio ( R<sub>HD</sub> )</b>	<b>%</b>	<b>100.0</b>	<b>101.5</b>	<b>97.0</b>	<b>96.0</b>	<b>97.5</b>	<b>101.5</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 17691  
 Report No 17691/R002  
 Date Issued 09/01/2018

**CIVIL GEOTECHNICAL SERVICES**

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	GRACE - STAGE 1	Date tested	29/11/17
Location	TARNEIT	Checked by	JHF

<b>Feature</b>	EARTHWORKS	Layer thickness	200 mm	Time: 12:00
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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>	1.81	1.82	1.82	1.80	1.83	1.80
Field moisture content %	23.7	23.7	30.8	33.9	29.0	31.5

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	0	0	0	0	0
Peak Converted Wet Density <i>t/m<sup>3</sup></i>	1.87	1.84	1.87	1.87	1.82	1.83
Adjusted Peak Converted Wet Density <i>t/m<sup>3</sup></i>	-	-	-	-	-	-
Optimum Moisture Content %	26.0	26.5	30.0	31.0	30.5	31.5

Moisture Variation From Optimum Moisture Content	2.0% dry	2.5% dry	1.0% wet	2.5% wet	1.5% dry	0.5% dry
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<b>Density Ratio ( R<sub>HD</sub> )</b>	<b>%</b>	<b>97.0</b>	<b>99.0</b>	<b>97.5</b>	<b>96.5</b>	<b>100.5</b>	<b>98.5</b>
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Material description

No 7 - 12 Clay Fill
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Approved Signatory : Justin Fry



# COMPACTION ASSESSMENT

Job No 17691  
 Report No 17691/R003  
 Date Issued 19/12/2017

## CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	JB
Project	GRACE - STAGE 1	Date tested	29/11/17
Location	TARNEIT	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time:	13:30
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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 <sup>3</sup>	1.85	1.83	1.83	-	-	-
Field moisture content	%	28.9	27.2	27.3	-	-	-

### 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 <sup>3</sup>	1.81	1.81	1.81	-	-	-
Adjusted Peak Converted Wet Density	t/m <sup>3</sup>	-	-	-	-	-	-
Optimum Moisture Content	%	28.0	26.0	28.5	-	-	-

Moisture Variation From Optimum Moisture Content		1.0% wet	1.0% wet	1.5% dry	-	-	-
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Density Ratio ( R <sub>HD</sub> )	%	101.5	101.5	101.5	-	-	-
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### Material description

No 13 - 15 Clay Fill



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