



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

14<sup>th</sup> March 2018

Our Reference: 17762:NB149

Winslow Constructors Pty Ltd  
50 Barry Road  
CAMPBELLFIELD VIC 3061

Dear Sirs/Madams,

**RE: LEVEL 1 EARTHWORKS INSPECTION AND TESTING**  
**ASTON – STAGE 27 (CRAGIEBURN)**

Please find attached our Report No's 17762/R001 to 17762/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 commenced in December 2017 and was completed in mid January 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', is written over a light blue circular stamp.

Nick Brock

SERVICE OFFSET TABLE										
STREET NAME	GAS		NDW		WATER		TELECOMMS.		ELECTRICITY	
VANTAGE BOULEVARD	2.10	E	2.80	E	3.70	E	1.85	W	2.65	W
RIVERGLEN DRIVE	3.10	S	3.60	S	4.30	S	1.85	N	2.65	N
SCENERY DRIVE	2.10	N	2.60	N	3.10	N	2.85	S	3.65	S
TRADITION ROAD	2.10	W	2.50	W	3.00	W	1.85	E	2.65	E
ELEMENT STREET	2.10	W	2.50	W	3.00	W	1.85	E	2.65	E
BOLD STREET	2.10	N	2.50	N	3.00	N	1.85	S	2.65	S
EDGEWATER ROAD	2.10	N	2.50	N	3.00	N	1.85	S	2.65	S
SONA STREET	2.10	S	2.50	S	3.00	S	1.85	N	2.65	N

\*OFFSETS ARE SHOWN IN METRES (m) UNLESS NOTED OTHERWISE.

# FIGURE 1 (1 of 2)



### 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
- SWALE DRAIN INVERT AND DIRECTION OF FLOW
- ENVIRONMENTAL SIGNIFICANCE OVERLAY (ESO)
- PERMANENT SURVEY MARK (PSM)
- TEMPORARY BENCH MARK (TBM)
- EXISTING SURFACE LEVEL
- FINISHED SURFACE LEVEL
- TOP OR TOE OF BATTER LEVEL
- BOTTOM OF RETAINING WALL LEVEL
- TWO.000
- RIDGELINE SURFACE LEVEL
- BUILDING LINE 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 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

- DIRECTION OF FALL (LOT)
- LOT FILL (FILL GREATER THAN 200mm DEEP)
- LOT CUT (CUT GREATER THAN 200mm DEEP)
- RIDGELINE

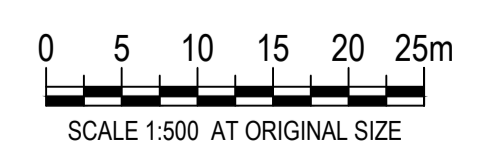
# Approximate field density test location

**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 - COUNCIL COMMENTS	MG	LG	28.03.17
02	CONSTRUCTION ISSUE - LOTS 2745-2750 AMENDMENTS, ADDITIONAL PIT 47A	DC	LG	02.08.17
03	CONSTRUCTION ISSUE - CLIENT REQUEST - PIT 47A REMOVED	DC	CD	03.10.17



CLIENT: PEET LTD  
Level 4, 380 St Kilda Road, Melbourne VIC 3004

TITLE: LAYOUT PLAN SHEET 1 OF 2

PROJECT: ASTON ESTATE STAGE 27 HUME CITY COUNCIL

STATUS: FOR CONSTRUCTION

DESIGNED: CD  
DRAWN: AJB  
APPROVED: AC

PROJECT No: 102419-27  
DRAWING No: C100

PROJECT NORTH

SCALE @ A1: SHOWN  
SHEET: 5 of 35

REV: 03

DWG FILE: 102419 - Barr Property Craigieburn West Road/C106-101.DWG - MH PLOT TIME: 20 Oct 2017, 11:46am

SERVICE OFFSET TABLE										
STREET NAME	GAS		NDW		WATER		TELECOMMS.		ELECTRICITY	
VANTAGE BOULEVARD	2.10	E	2.80	E	3.70	E	1.85	W	2.65	W
RIVERGLEN DRIVE	3.10	S	3.60	S	4.30	S	1.85	N	2.65	N
SCENERY DRIVE	2.10	N	2.60	N	3.10	N	2.85	S	3.65	S
TRADITION ROAD	2.10	W	2.50	W	3.00	W	1.85	E	2.65	E
ELEMENT STREET	2.10	W	2.50	W	3.00	W	1.85	E	2.65	E
BOLD STREET	2.10	N	2.50	N	3.00	N	1.85	S	2.65	S
EDGEWATER ROAD	2.10	N	2.50	N	3.00	N	1.85	S	2.65	S
SONA STREET	2.10	S	2.50	S	3.00	S	1.85	N	2.65	N

\*OFFSETS ARE SHOWN IN METRES (m) UNLESS NOTED OTHERWISE.

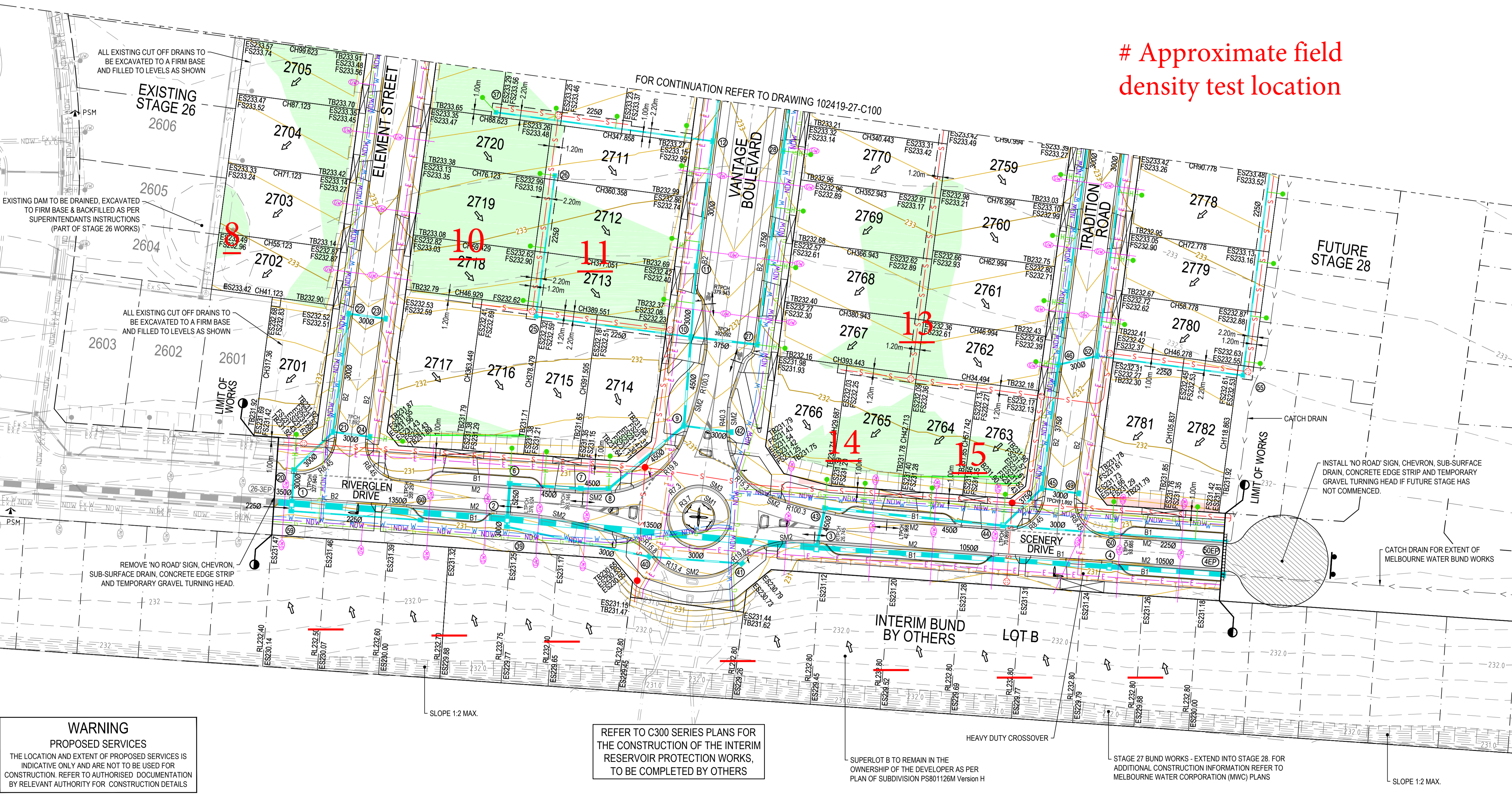
# FIGURE 1 (2 of 2)

### 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
- SWALE DRAIN INVERT AND DIRECTION OF FLOW
- ENVIRONMENTAL SIGNIFICANCE OVERLAY (ESO)
- PSM PERMANENT SURVEY MARK (PSM)
- TEMPORARY BENCH MARK (TBM)
- ES00.000 EXISTING SURFACE LEVEL
- FS00.000 FINISHED SURFACE LEVEL
- TB00.000 TOP OR TOE OF BATTER LEVEL
- BW00.000 BOTTOM OF RETAINING WALL LEVEL
- TW00.000 TOP OF RETAINING WALL LEVEL
- RL00.000 RIDGELINE SURFACE LEVEL
- BL00.000 BUILDING LINE LEVEL
- STORMWATER PIT NO.
- TACTILE PAVERS
- UTILITIES CONDUIT
- STREET SIGN
- CONCRETE EDGE STRIP WITH SUBSOIL DRAIN
- 'NO ROAD' SIGN & BARRIER
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- EXISTING SURFACE CONTOUR
- LIMIT OF WORKS
- PROPOSED ELECTRICITY
- PROPOSED GAS
- PROPOSED SEWER
- BRANCH SEWER
- PROPOSED TELECOMMUNICATIONS
- 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

- DIRECTION OF FALL (LOT)
- LOT FILL (FILL GREATER THAN 200mm DEEP)
- LOT CUT (CUT GREATER THAN 200mm DEEP)
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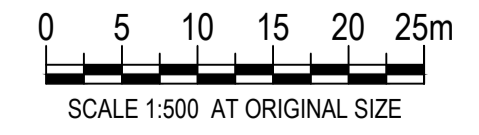
# Approximate field density test location

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REV	DESCRIPTION	BY	APP	DATE
00	CONSTRUCTION ISSUE	MS	LG	28.03.17
01	CONSTRUCTION ISSUE - COUNCIL COMMENTS	DC	LG	02.05.17



**MEINHARDT**  
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info@meinhardtgroup.com  
http://www.meinhardtgroup.com  
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CLIENT  
PEET LTD  
Level 4, 380 St Kilda Road, Melbourne VIC 3004

TITLE  
LAYOUT PLAN  
SHEET 2 OF 2

PROJECT  
ASTON ESTATE  
STAGE 27  
HUME CITY COUNCIL

STATUS  
FOR CONSTRUCTION

DESIGNED	DRAWN	APPROVED	SCALE @ A1	SHEET
CD	AJB	AC	SHOWN	6 of 35
PROJECT No	DRAWING No	REV		
102419-27	C101	01		

DWG FILE: \\102419 - Barr Property Craigeburn West Road\102419-27-C101-101.DWG - MH PLOT TIME: 02 May 2017, 1:08pm



## COMPACTION ASSESSMENT

Job No 17762  
 Report No 17762/R001  
 Date Issued 14/03/2018

**CIVIL GEOTECHNICAL SERVICES**

6 - 8 Rose Avenue, Croydon 3136

Tested by AC  
 Date tested 18/12/17  
 Checked by JHF

Client WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)  
 Project ASTON - STAGE 27  
 Location CRAGIEBURN

**Feature** EARTHWORKS      *Layer thickness* 200 mm      *Time:* 12:08

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 mm	175	175	175	175	175	175
Field wet density t/m <sup>3</sup>	1.88	1.87	1.92	1.89	2.01	2.01
Field moisture content %	12.9	13.7	12.4	12.7	13.5	13.8

Test procedure AS 1289.5.7.1

Test No	1	2	3	4	5	6
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	6	6	0	8	0	0
Peak Converted Wet Density t/m <sup>3</sup>	1.85	1.84	1.88	1.85	1.96	1.96
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	1.88	1.87	1.94	1.89	2.02	2.02
Optimum Moisture Content %	15.0	16.0	14.0	15.0	16.0	15.5

Moisture Variation From Optimum Moisture Content	2.5% dry	2.5% dry	2.0% dry	2.5% dry	2.5% dry	2.0% dry
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<b>Density Ratio ( R<sub>HD</sub> )</b> %	<b>100.0</b>	<b>100.0</b>	<b>99.0</b>	<b>100.0</b>	<b>99.5</b>	<b>99.5</b>
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Material description

No 1 - 6 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

Job No 17762  
 Report No 17762/R002  
 Date Issued 13/03/2018

**CIVIL GEOTECHNICAL SERVICES**

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	AC
Project	ASTON - STAGE 27	Date tested	18/12/17
Location	CRAGIEBURN	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 12:40
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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>	1.86	1.84	1.84	1.86	1.83	1.91
Field moisture content %	11.6	11.8	12.2	10.5	14.2	11.9

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>	7	0	0	9	0	6
Peak Converted Wet Density <i>t/m<sup>3</sup></i>	1.83	1.84	1.85	1.83	1.86	1.86
Adjusted Peak Converted Wet Density <i>t/m<sup>3</sup></i>	1.86	-	-	1.87	-	1.89
Optimum Moisture Content %	14.0	13.5	14.5	12.5	16.0	14.0

Moisture Variation From Optimum Moisture Content	2.5% dry	2.0% dry	2.5% dry	2.5% dry	2.0% dry	2.5% dry
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<b>Density Ratio ( R<sub>HD</sub> )</b>	<b>%</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>99.5</b>	<b>98.5</b>	<b>101.0</b>
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Material description

No 7 - 12 Clay Fill
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Approved Signatory : Justin Fry



# COMPACTION ASSESSMENT

Job No 17762  
 Report No 17762/R003  
 Date Issued 15/02/2018

## CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	AC
Project	ASTON - STAGE 27	Date tested	10/01/18
Location	CRAGIEBURN	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 12:33
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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
Field wet density	t/m <sup>3</sup>	1.92	1.93	2.01	2.00	1.94
Field moisture content	%	13.7	18.9	18.5	17.9	18.5

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
Percent of oversize material	wet	0	5	4	4	0
Peak Converted Wet Density	t/m <sup>3</sup>	1.95	1.96	2.02	1.98	1.93
Adjusted Peak Converted Wet Density	t/m <sup>3</sup>	2.01	1.98	2.04	1.99	1.93
Optimum Moisture Content	%	16.0	21.0	20.5	20.5	21.0

Moisture Variation From Optimum Moisture Content	2.5% dry	2.0% dry	2.0% dry	2.5% dry	2.5% dry	1.0% dry
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Density Ratio ( R <sub>HD</sub> )	%	95.5	97.5	98.5	100.0	100.5	97.0
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Material description

No 13 - 18 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