



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

10th October 2018

Our Reference: 17726:NB293

Winslow Constructors Pty Ltd
50 Barry Road
CAMPBELLFIELD VIC 3061

Dear Sirs/Madams,

RE: LEVEL 1 EARTHWORKS INSPECTION AND TESTING
ARMSTRONG ESTATE – STAGE 26 (MOUNT DUNEED)

Please find attached our Report No's 17726/R001 and 17726/R002 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 was completed in March 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

FIGURE 1



LEGEND - LAYOUT PLAN

- STORMWATER DRAIN, PIT & PROPERTY INLET
- SWALE DRAIN
- SEWER & MAINTENANCE STRUCTURES
- HOUSE DRAIN
- SERVICE CONDUITS
- TACTILE PAVERS
- EXISTING ELECTRICITY (UNDERGROUND)
- EXISTING ELECTRICITY (OVERHEAD)
- EXISTING GAS
- EXISTING OPTIC FIBRE
- EXISTING TELSTRA
- EXISTING WATER
- EXISTING RECYCLED WATER
- EXISTING STORMWATER DRAIN
- EXISTING SEWER
- EXISTING HOUSE DRAIN
- EXISTING SWALE DRAIN
- EXISTING SURFACE LEVEL
- FINISHED BUILDING LINE LEVEL
- FINISHED RIDGE LINE LEVEL
- TOP OF RETAINING WALL
- BOTTOM OF RETAINING WALL
- RETAINING WALL
- BUILDING ENVELOPE
- PAVEMENT TREATMENT
- STRUCTURAL FILL > 200mm DEEP
- EX. STRUCTURAL FILL > 200mm DEEP
- DIRECTION OF FALL
- OVERLAND FLOW
- ALLOTMENT TO BE GRADED EVENLY IN DIRECTION OF FALL TO LEVELS INDICATED
- CONCRETE EDGE STRIP WITH SUBSOIL DRAIN, "NO ROAD" SIGN & BARRIER
- LIMIT OF WORKS
- EXISTING TREE TO BE REMOVED
- PERMANENT SURVEY MARK
- TEMPORARY SURVEY MARK
- PROPOSED DRIVEWAY

WARNING
BEWARE OF UNDERGROUND & OVERHEAD SERVICES
 The locations of underground & overhead services are approximate only & their exact position should be proven on site. No guarantee is given that all existing services are shown. Locate all underground services before commencement of works.
DIAL 1100 BEFORE YOU DIG
www.1100.com.au

Approximate field density test location

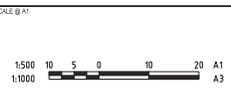
Received 1/6/18

ROAD LAYOUT TABLE								
ROAD NAME	ROAD CLASSIFICATION	RESERVE WIDTH (m)	ROAD WIDTH (m)			KERB TYPE	VERGE WIDTH (m)	
			LIP to LIP	INV to INV	BACK to BACK		NTH/WEST	STH/EAST
CONNECT WAY	ACCESS STREET	16.00	6.70	7.30	7.60	B2	B2	4.20
VELOCITY WAY	ACCESS STREET	16.00	6.70	7.30	7.60	B2	B2	4.20
EFFICIENT AVENUE	ACCESS STREET	VARIABLES	6.70 (EX)	7.30 (EX)	7.60 (EX)	B2 (EX)	B2 (EX)	5.40 (EX)

ROAD NAME	SERVICES OFFSET SCHEDULE					
	GAS		RECYCLED WATER		TELSTRA	
	SIDE	OFFSET (m)	SIDE	OFFSET (m)	SIDE	OFFSET (m)
CONNECT WAY	NORTH	2.10	NORTH	2.60	NORTH	3.10
VELOCITY WAY	SOUTH	2.10	SOUTH	2.60	SOUTH	3.10
EFFICIENT AVENUE	WEST	3.40 (EX)	WEST	3.80 (EX)	WEST	4.25 (EX)

REVISION	DATE	ISSUE DETAILS	DESIGN	DRAWN	CHECK	STATUS
3	20/04/18	LOT 2610 LEVEL AMENDED				
2	17/04/18	LOT 2615-2616 ES & FS LEVEL SHOWN	M.R.	M.R.	J.C.	
1	20/03/18	LOT 2607 DRIVEWAY RELOCATED	M.R.	R.T.	J.C.	
0	09/02/18	ISSUED FOR CONSTRUCTION	M.R.	M.R.	J.C.	
A	04/10/17	ISSUED FOR APPROVAL	M.R.	M.R.	J.C.	

ISSUED FOR CONSTRUCTION



ARMSTRONG
 STAGE 26

LAYOUT PLAN

PROJECT NO.	DRAWING NO.	REVISION
M100611.26	C02	3



COMPACTION ASSESSMENT

Job No 17726
 Report No 17726/R001
 Date Issued 13/08/2018

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	CGS
Project	ARMSTRONG - STAGE 26	Date tested	29/03/18
Location	MOUNT DUNEED	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 14:20:15
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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					
Approximate depth below FSL						
Measurement depth <i>mm</i>	175	175	175	175	175	175
Field wet density <i>t/m³</i>	1.92	1.98	1.93	1.93	1.91	1.92
Field moisture content %	18.6	15.9	19.8	18.1	16.5	20.4

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>	0	0	0	0	0	0
Peak Converted Wet Density <i>t/m³</i>	2.00	2.05	1.98	1.99	1.97	1.98
Adjusted Peak Converted Wet Density <i>t/m³</i>	-	-	-	-	-	-
Optimum Moisture Content %	20.0	18.5	21.0	19.0	18.5	20.5

Moisture Variation From Optimum Moisture Content	1.5% dry	2.0% dry	1.0% dry	1.0% dry	2.0% dry	0.0%
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Density Ratio (R_{HD})	%	96.0	97.0	97.5	97.0	97.0	97.0
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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 17726
 Report No 17726/R001
 Date Issued 14/08/2018

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	CGS
Project	ARMSTRONG - STAGE 26	Date tested	30/03/18
Location	MOUNT DUNEED	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 10:05:52
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	7	8	9			
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/m³	1.94	1.92	1.96			
Field moisture content %	21.6	18.7	17.4			

Test procedure AS 1289.5.7.1

Test No	7	8	9			
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/m³	1.99	2.00	2.02			
Adjusted Peak Converted Wet Density t/m³	-	-	-			
Optimum Moisture Content %	21.5	20.0	19.5			

Moisture Variation From Optimum Moisture Content	0.0%	1.5% dry	2.0% dry			
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Density Ratio (R_{HD})	%	97.5	96.0	97.0		
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Material description

No 7 - 9 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