



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

8th December 2015

Our Reference: 15319:DK101

Winslow Constructors Pty Ltd
50 Barry Road
CAMPBELLFIELD VIC 3061

Dear Sirs,

**RE: LEVEL 1 EARTHWORKS INSPECTION AND TESTING
ASPECT ESTATE (STAGE 5) – GREENVALE**

Please find attached our Report Nos 15319/R001 to 15319/R004 that 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 early July 2015 and was completed in mid August 2015.

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 inspections and testing was performed by an experienced geotechnician 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 filled 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 filled 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

Dino Kondzic

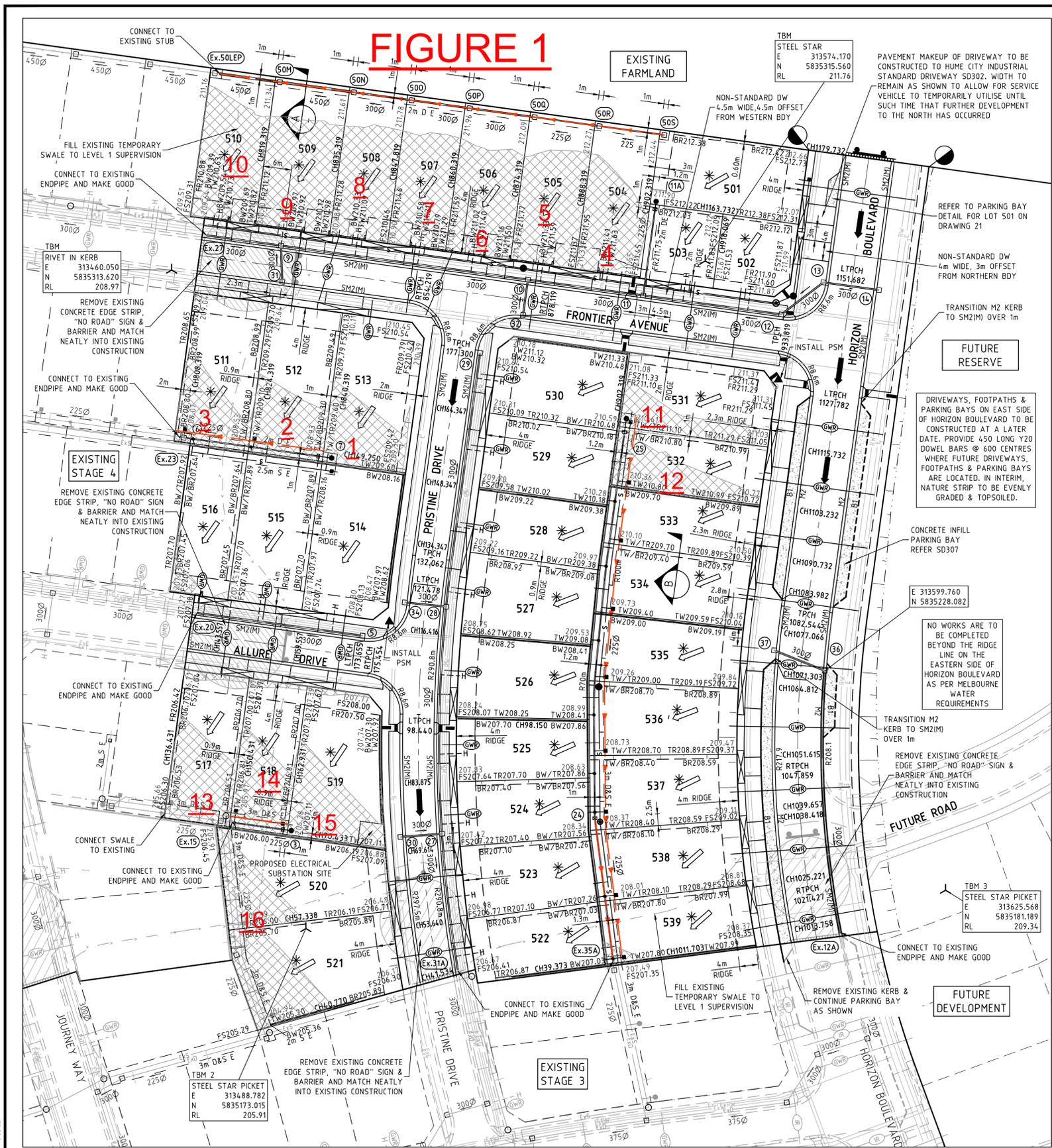


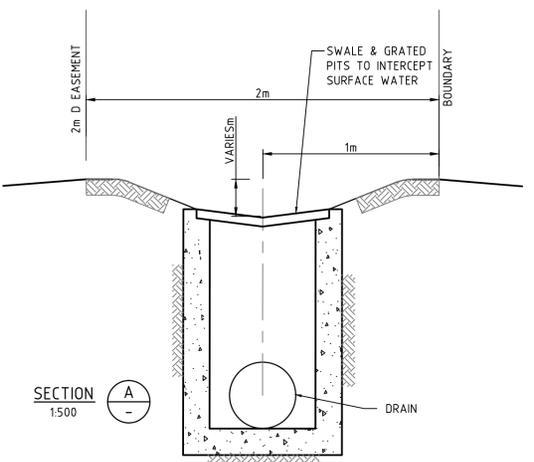
FIGURE 1

LEGEND - LAYOUT PLAN

— S —	STORMWATER DRAIN, PIT & PROPERTY INLET	— H —	EXISTING HOUSE DRAIN	— Ful Ag —	FUTURE AG DRAIN
— SW —	SWALE DRAIN	— Ex Ag —	EXISTING AG DRAIN	— Ful S —	FUTURE SEWER
— S —	SEWER & MAINTENANCE STRUCTURES	— H —	EXISTING SURFACE LEVEL	— H —	FUTURE HOUSE DRAIN
— H —	HOUSE DRAIN	14.1.34	EXISTING FINISHED BUILDING LINE LEVEL	— Z —	ZERO LOT LINES
— E —	ELECTRICITY (U.GROUND) (INDICATIVE ONLY)	FR151.40	EXISTING FINISHED RIDGE LINE LEVEL	— P —	PAVEMENT TREATMENT
— G/H —	ELECTRICITY (O.HEAD) (INDICATIVE ONLY)	TW159.30	TOP OF RETAINING WALL	— S —	STRUCTURAL FILL > 200mm DEEP
— G —	GAS (INDICATIVE ONLY)	BW159.30	BOTTOM OF RETAINING WALL	— Ex —	EX. STRUCTURAL FILL > 200mm DEEP
— T —	TELSTRA (INDICATIVE ONLY)	TR200.00	TOP OF RIDGE	— D —	DIRECTION OF FALL
— W —	WATER (INDICATIVE ONLY)	BW200.00	BOTTOM OF RIDGE	— O —	OVERLAND FLOW
— RW —	RECYCLED WATER (INDICATIVE ONLY)	TW/TR200.00	TOP OF RETAINING WALL/TOP OF RIDGE	— A —	ALLOTMENT TO BE GRADED EVENLY IN DIRECTION OF FALL TO LEVELS INDICATED
— Ag —	AG. DRAIN (INDICATIVE ONLY)	BW/BR200.00	BOTTOM OF RETAINING WALL/BOTTOM OF RIDGE	— S —	CONCRETE EDGE STRIP WITH SUBSOIL DRAIN, "NO ROAD" SIGN & BARRIER
— OF —	OPTIC FIBRE (INDICATIVE ONLY)	BW/BR200.00	BOTTOM OF RETAINING WALL/TOP OF RIDGE	— L —	LIMIT OF WORKS
— GW —	SERVICE CONDUITS	BW/BR200.00	BOTTOM OF RETAINING WALL/BOTTOM OF RIDGE	— R —	RETAINING WALL
— Ex E —	EXISTING ELECTRICITY (UNDERGROUND)	— Ful E —	FUTURE ELECTRICITY (UNDERGROUND)	— T —	TEMPORARY BENCH MARK
— Ex O/H —	EXISTING ELECTRICITY (OVERHEAD)	— Ful O/H —	FUTURE ELECTRICITY (OVERHEAD)	— P —	PROPOSED DRIVEWAY
— Ex G —	EXISTING GAS	— Ful G —	FUTURE GAS	— RL —	RIDGE LINE
— Ex T —	EXISTING TELSTRA	— Ful T —	FUTURE TELSTRA		
— Ex W —	EXISTING WATER	— Ful W —	FUTURE WATER		
— Ex RW —	EXISTING RECYCLED WATER	— Ful RW —	FUTURE RECYCLED WATER		
— Ex S —	EXISTING STORMWATER DRAIN	— Ful S —	FUTURE STORMWATER DRAIN		
— S —	EXISTING SEWER				

NOTES:

- REFER TO SHEET 21 FOR PROPERTY INLET PIT DETAILS
- EXISTING SWALE DRAINS TO BE BACKFILLED WITH SUITABLE MATERIAL TO THE SATISFACTION OF THE SUPERINTENDENT
- CONTRACTOR TO ORGANISE A BUILDING PERMIT FOR ALL RETAINING WALLS GREATER THAN 1.0m. RETAINING WALLS GREATER THAN 1.0m REQUIRE CERTIFICATE OF COMPLIANCE FROM A QUALIFIED STRUCTURAL ENGINEER PRIOR TO THE ISSUE OF STATEMENT OF COMPLIANCE FOR THE SUBDIVISIONS. REFER TO PAGE 22 FOR DETAILED RETAINING WALL NOTES.
- INTERNAL LOT RIDGES (SIDE BOUNDARIES) TO BE GRADES AT MAXIMUM 1 IN 3 UNLESS NOTED OTHERWISE.
- ALL LOTS TO BE GRADED AT A MINIMUM 1 IN 150 TOWARDS THE LOW POINT

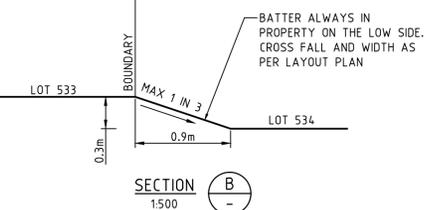


NOTE:

LOTS 511 TO 539 AND LOT 501 ARE PAD LEVELS AND LOTS 502 TO 510 REFER TO FINISHED SURFACE LEVELS.

RETAINING WALLS ARE NOT PART OF THE SUBDIVISIONAL WORKS OR APPROVAL AND ARE SUBJECT TO SEPARATE APPROVAL

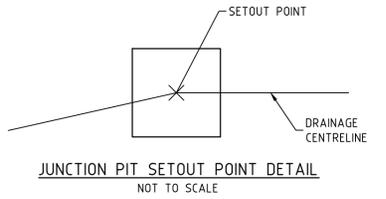
APPROXIMATE FIELD DENSITY LOCATION



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. Locate all underground services before commencement of works

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ROAD LAYOUT TABLE

ROAD NAME	RESERVE WIDTH (m)	ROAD WIDTH (m)				KERB TYPE		VERGE WIDTH (m)	
		LIP to LIP	INV to INV	BACK to BACK	NTH/WEST	STH/EAST	NTH/WEST	STH/EAST	
FRONTIER AVENUE	16.00	6.70	7.30	7.90	SM2(M)	SM2(M)	4.05	4.05	
PRISTINE DRIVE	16.00	6.70	7.30	7.90	SM2(M)	SM2(M)	3.90	4.20	
ALLURE DRIVE	16.00	6.70	7.30	7.90	SM2(M)	SM2(M)	4.20	3.90	
HORIZON BOULEVARD	26.00	9.80	10.40	11.00	SM2(M)/M2	SM2(M)/M2	7.50	7.50	

SERVICES OFFSET SCHEDULE

ROAD NAME	GAS		RECYCLED WATER		WATER		ELECTRICITY		NBN	
	SIDE	OFFSET (m)	SIDE	OFFSET (m)	SIDE	OFFSET (m)	SIDE	OFFSET (m)	SIDE	OFFSET (m)
FRONTIER AVENUE	SOUTH	2.00	SOUTH	2.70	SOUTH	3.50	NORTH	2.60	NORTH	2.00
PRISTINE DRIVE	EAST	2.10	EAST	2.50	EAST	3.00	WEST	2.45	WEST	1.85
ALLURE DRIVE	NORTH	2.20	NORTH	2.60	NORTH	3.10	SOUTH	2.45	SOUTH	1.85
HORIZON BOULEVARD	WEST	2.10	EAST	4.00	WEST	2.80	EAST	2.80	EAST	2.00

0	ISSUED FOR CONSTRUCTION	10.06.15	SM/NS	AB
REVISION	DATE	DES/DFT	APPD	

PEET

Principal
Peet Limited
Level 3, 492 St Kilda Road
Melbourne VIC 3004

All setting out should be carried out in accordance with GAA/Council's standard drawings or as nominated on hard copy plans provided by SMEC. Any digital information supplied by this office is for information only. Any discrepancies should be discussed with the superintendent.

Designed
S.Murad
Drawn
N.Shrestha
Checked
L.Vieira
Authorised
A.Burrows
Date
Jan 2015

Scale @ A1
1:500

0 5 10 20

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URBAN DEVELOPMENT
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Aspect Estate, Greenvale
Stage 5
Hume City Council
Roadworks and Drainage
Layout Plan

Drawing No. 0811E-05-02
Sheet No. 2 of 26

Rev 0

For Construction



COMPACTION ASSESSMENT

Job No 15319
 Report No 15319/R001
 Date Issued 14/07/15

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	FCF
Project	ASPECT - STAGE 5	Date tested	10/07/15
Location	GREENVALE	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	1	2	3	-	-	-
	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 ³	1.96	1.98	1.91	-	-
Field moisture content	%	22.5	25.5	23.1	-	-

Test procedure AS 1289.5.7.1

Test No	1	2	3	-	-	-
Compactive effort	Standard					
Oversize rock retained on sieve	mm	19.0	19.0	19.0	-	-
Percent of oversize material	wet	0	0	4	-	-
Peak Converted Wet Density	t/m ³	1.92	1.95	1.96	-	-
Adjusted Peak Converted Wet Density	t/m ³	-	-	1.97	-	-
Optimum Moisture Content	%	25.5	23.5	23.5	-	-

Moisture Variation From Optimum Moisture Content	2.5% dry	2.0% wet	0.5% dry	-	-	-
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Density Ratio (R _{HD})	%	102.0	101.5	96.5	-	-
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Material description

No 1 - 3 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 15319
 Report No 15319/R002
 Date Issued 08/09/15

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	ZM
Project	ASPECT - STAGE 5	Date tested	19/08/15
Location	GREENVALE	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 07:57
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	4	5	6	7	8	9
	REFER TO FIGURE 1					
<i>Approximate depth below FSL</i>						
<i>Measurement depth</i>	mm	175	175	175	175	175
<i>Field wet density</i>	t/m ³	1.98	1.87	1.93	1.92	2.00
<i>Field moisture content</i>	%	21.2	30.6	24.5	25.6	23.5

Test procedure AS 1289.5.7.1

Test No	4	5	6	7	8	9
<i>Compactive effort</i>	Standard					
<i>Oversize rock retained on sieve</i>	mm	19.0	19.0	19.0	19.0	19.0
<i>Percent of oversize material</i>	wet	0	0	0	0	0
<i>Peak Converted Wet Density</i>	t/m ³	2.02	1.89	1.89	1.98	1.90
<i>Adjusted Peak Converted Wet Density</i>	t/m ³	-	-	-	-	-
<i>Optimum Moisture Content</i>	%	20.5	29.5	23.5	25.5	22.0

<i>Moisture Variation From Optimum Moisture Content</i>	0.5% wet	1.0% wet	1.0% wet	0.5% wet	1.0% dry	1.5% wet
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Density Ratio (R_{HD})	%	98.0	99.0	102.0	97.5	98.5	99.0
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Material description

No 4 - 9 Clay Fill



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 Accreditation No 9909

Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

Job No 15319
 Report No 15319/R003
 Date Issued 08/09/15

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	ZM
Project	ASPECT - STAGE 5	Date tested	19/08/15
Location	GREENVALE	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 09:17
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	10	11	12	13	14	15
	REFER TO FIGURE 1					
<i>Approximate depth below FSL</i>						
<i>Measurement depth</i>	mm	175	175	175	175	175
<i>Field wet density</i>	t/m ³	1.89	1.77	1.76	1.94	1.82
<i>Field moisture content</i>	%	20.8	24.4	24.9	21.4	24.0

Test procedure AS 1289.5.7.1

Test No	10	11	12	13	14	15
<i>Compactive effort</i>	Standard					
<i>Oversize rock retained on sieve</i>	mm	19.0	19.0	19.0	19.0	19.0
<i>Percent of oversize material</i>	wet	0	0	0	7	4
<i>Peak Converted Wet Density</i>	t/m ³	1.85	1.83	1.84	2.02	1.88
<i>Adjusted Peak Converted Wet Density</i>	t/m ³	-	-	-	2.04	1.90
<i>Optimum Moisture Content</i>	%	22.0	27.0	27.5	22.0	26.0

<i>Moisture Variation From Optimum Moisture Content</i>	1.5% dry	2.5% dry	2.5% dry	0.5% dry	2.0% dry	2.0% dry
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Density Ratio (R_{HD})	%	102.5	96.5	96.0	95.5	96.0	96.5
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Material description

No 10 - 15 Clay Fill



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 Accreditation No 9909

Approved Signatory : Justin Fry



COMPACTION ASSESSMENT

Job No 15319
 Report No 15319/R004
 Date Issued 08/09/15

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	ZM
Project	ASPECT - STAGE 5	Date tested	19/08/15
Location	GREENVALE	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 10:09
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	16	-	-	-	-	-
	REFER TO FIGURE 1					
<i>Approximate depth below FSL</i>						
<i>Measurement depth</i>	mm	175	-	-	-	-
<i>Field wet density</i>	t/m ³	1.92	-	-	-	-
<i>Field moisture content</i>	%	22.3	-	-	-	-

Test procedure AS 1289.5.7.1

Test No	16	-	-	-	-	-
<i>Compactive effort</i>		Standard				
<i>Oversize rock retained on sieve</i>	mm	19.0	-	-	-	-
<i>Percent of oversize material</i>	wet	2	-	-	-	-
<i>Peak Converted Wet Density</i>	t/m ³	2.00	-	-	-	-
<i>Adjusted Peak Converted Wet Density</i>	t/m ³	2.01	-	-	-	-
<i>Optimum Moisture Content</i>	%	22.0	-	-	-	-

<i>Moisture Variation From Optimum Moisture Content</i>	0.5% wet	-	-	-	-	-
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Density Ratio (R_{HD})	%	96.0	-	-	-	-
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Material description

No 16 - 16 Clay Fill



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