



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

26<sup>th</sup> October 2023

Our Reference: 23063:NB1737

Winslow Constructors Pty Ltd  
50 Barry Road  
CAMPBELLFIELD VIC 3061

Dear Sirs/Madams,

**RE: LEVEL 1 EARTHWORKS INSPECTION AND TESTING  
WINTERFIELD NORTH – STAGE 1 (DELACOMBE)**

Please find attached our Report No's 23063/R001 to 23063/R004 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 February 2023.

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).

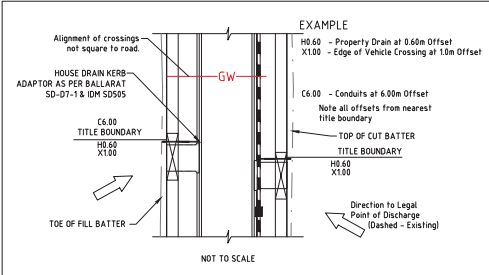
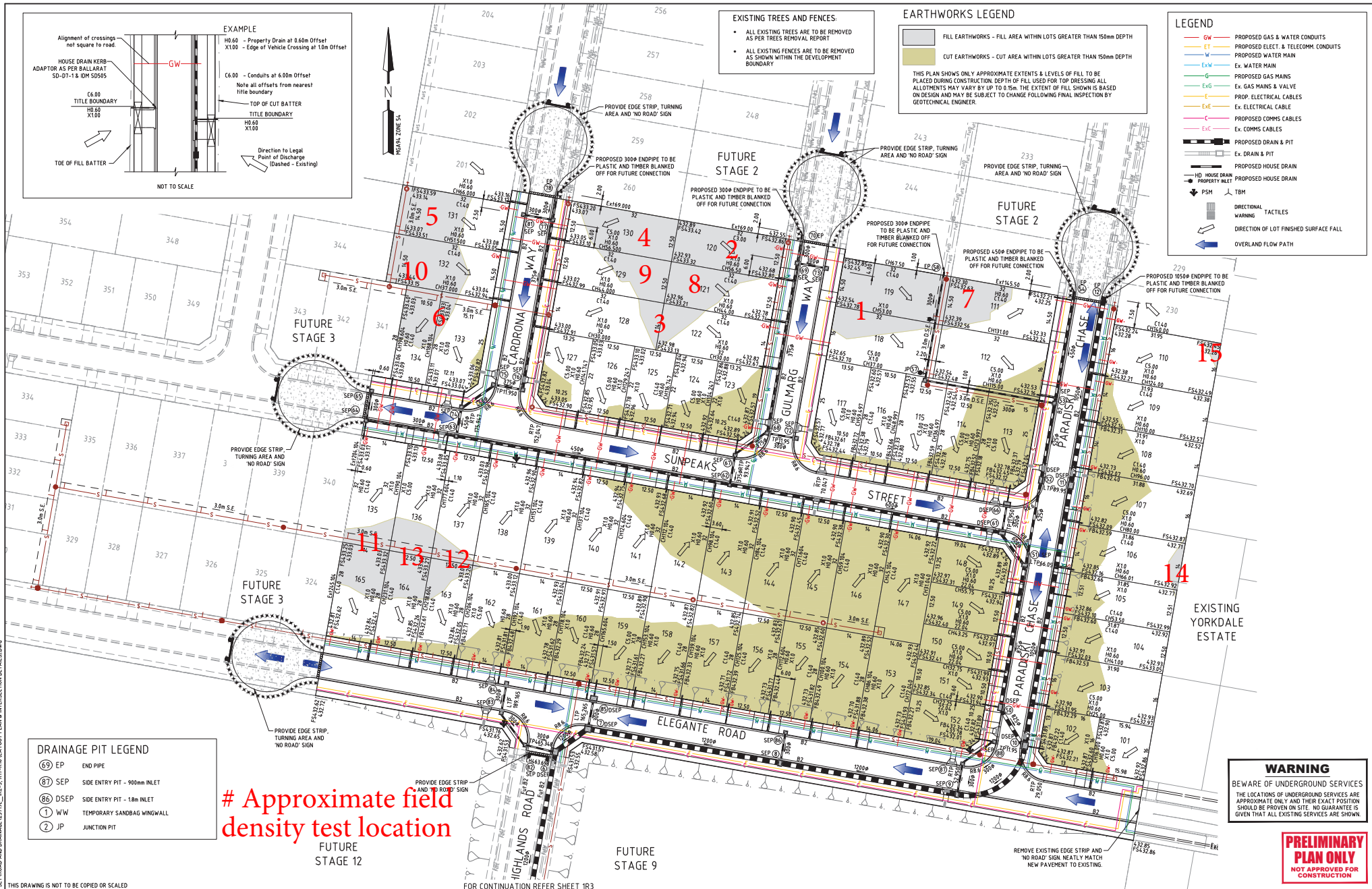
Please contact the undersigned if you require any additional information.

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



**EXISTING TREES AND FENCES**

- ALL EXISTING TREES ARE TO BE REMOVED AS PER TREES REMOVAL REPORT
- ALL EXISTING FENCES ARE TO BE REMOVED AS SHOWN WITHIN THE DEVELOPMENT BOUNDARY

**EARTHWORKS LEGEND**

- FILL EARTHWORKS - FILL AREA WITH LOTS GREATER THAN 150mm DEPTH
- CUT EARTHWORKS - CUT AREA WITH LOTS GREATER THAN 150mm DEPTH

THIS PLAN SHOWS ONLY APPROXIMATE EXTENTS & LEVELS OF FILL TO BE PLACED DURING CONSTRUCTION. DEPTH OF FILL USED FOR TOP DRESSING ALL ALLOTMENTS MAY VARY BY UP TO 0.15m. THE EXTENT OF FILL SHOWN IS BASED ON DESIGN AND MAY BE SUBJECT TO CHANGE FOLLOWING FINAL INSPECTION BY GEOTECHNICAL ENGINEER.

**LEGEND**

- PROPOSED GAS & WATER CONDUITS
- PROPOSED ELECT. & TELECOMM CONDUITS
- PROPOSED WATER MAIN
- EX. WATER MAIN
- PROPOSED GAS MAINS
- EX. GAS MAINS & VALVE
- PROP. ELECTRICAL CABLES
- EX. ELECTRICAL CABLE
- PROPOSED COMMS CABLES
- EX. COMMS CABLES
- PROPOSED DRAIN & PIT
- EX. DRAIN & PIT
- PROPOSED HOUSE DRAIN
- EX. HOUSE DRAIN
- PROPOSED HOUSE DRAIN
- PSM
- TMH
- DIRECTIONAL WARNING
- TACTILES
- DIRECTION OF LOT FINISHED SURFACE FALL
- OVERLAND FLOW PATH

**DRAINAGE PIT LEGEND**

- EP END PIPE
- SEP SIDE ENTRY PIT - 900mm INLET
- DSEP SIDE ENTRY PIT - 18m INLET
- WW TEMPORARY SANDBAG WINGWALL
- JP JUNCTION PIT

**# Approximate field density test 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.

**PRELIMINARY PLAN ONLY**  
NOT APPROVED FOR CONSTRUCTION

THIS DRAWING IS NOT TO BE COPIED OR SCALED

VERSION	REMARKS	DATE	BY
D	RESPONSE TO COUNCIL COMMENTS	29.11.22	LP
C	TENDER ISSUE	15.08.22	MW
B	PRELIMINARY ISSUE	21.07.22	MW
A	PRELIMINARY ISSUE	09.06.22	MW

DRAWN BY	N. KASHA	DESIGNED BY	M. WEE
CHECKED BY	L. PHAN	AUTHORISED BY	T. HOI
DATUM	AHD		

DATE	29.11.22
SCALE	Scale 1:500 @ A1

**REEDS CONSULTING**

LAND SURVEYING  
CIVIL ENGINEERING  
PLANNING  
DEVELOPMENT CONSULTING

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Perth, Western Australia 6000  
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CITY OF BALLARAT  
WINTERFIELD NORTH ESTATE  
STAGE 1  
LAYOUT PLAN

DRAWING No. 1R2  
VERSION D  
REFERENCE 23719E/1  
SHEET 2 OF 25



# COMPACTION ASSESSMENT

Job No 23063  
 Report No 23063/R001  
 Date Issued 14/02/23

## CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	WS
Project	WINTERFIELD NORTH - STAGE 1	Date tested	03/02/23
Location	DELACOMBE	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time:	08:30
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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	mm	175	175	175	175	175	
Field wet density	t/m <sup>3</sup>	2.06	2.00	2.04	2.10	2.18	2.16
Field moisture content	%	18.4	21.9	18.3	19.7	21.4	21.2

### 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	
Percent of oversize material	wet	0	0	0	0	0	
Peak Converted Wet Density	t/m <sup>3</sup>	2.07	2.05	2.09	2.10	2.16	2.16
Adjusted Peak Converted Wet Density	t/m <sup>3</sup>	-	-	-	-	-	-
Optimum Moisture Content	%	20.0	24.0	19.0	22.5	21.5	21.0

Moisture Variation From Optimum Moisture Content	1.5% dry	1.5% dry	0.5% dry	2.5% dry	0.0%	0.0%
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density and moisture ratio results relate only to the soil to the depth of test and not to the full depth of the layer

Density Ratio ( R <sub>HD</sub> )	%	99.5	98.0	98.0	100.0	101.0	100.5
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### Material description

No 1 - 6 Clay Fill
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AVRLOT HILF V1.10 MAR 13



NATA Accredited Laboratory No 9909  
 Accredited for compliance with  
 ISO/IEC 17025 - Testing

Approved Signatory : Justin Fry



# COMPACTION ASSESSMENT

Job No 23063  
 Report No 23063/R002  
 Date Issued 13/02/23

## CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	WS
Project	WINTERFIELD NORTH - STAGE 1	Date tested	03/02/23
Location	DELACOMBE	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time:	08:30
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### Test procedure AS 1289.2.1.1 & 5.8.1

Test No	7	8	9	10	-	-
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>	2.11	2.09	2.13	2.10	-
Field moisture content	%	21.9	19.2	21.9	20.7	-

### Test procedure AS 1289.5.7.1

Test No	7	8	9	10	-	-
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>	2.23	2.19	2.15	2.18	-
Adjusted Peak Converted Wet Density	t/m <sup>3</sup>	-	-	-	-	-
Optimum Moisture Content	%	24.0	19.0	22.5	20.5	-

Moisture Variation From Optimum Moisture Content	2.0% dry	0.5% wet	0.5% dry	0.0%	-	-
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density and moisture ratio results relate only to the soil to the depth of test and not to the full depth of the layer

Density Ratio ( R <sub>HD</sub> )	%	95.0	95.5	99.0	96.5	-
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### Material description

No 7 - 10 Clay Fill
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AVRLOT HILF V1.10 MAR 13



NATA Accredited Laboratory No 9909  
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Approved Signatory : Justin Fry



# COMPACTION ASSESSMENT

Job No 23063  
 Report No 23063/R003  
 Date Issued 16/02/23

## CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	WS
Project	WINTERFIELD NORTH - STAGE 1	Date tested	10/02/23
Location	DELACOMBE	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 07:00
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### Test procedure AS 1289.2.1.1 & 5.8.1

Test No	11	12	13	-	-	-
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>	2.10	2.11	2.13	-	-
Field moisture content	%	20.8	21.2	18.4	-	-

### Test procedure AS 1289.5.7.1

Test No	11	12	13	-	-	-
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>	2.10	2.12	2.14	-	-
Adjusted Peak Converted Wet Density	t/m <sup>3</sup>	-	-	-	-	-
Optimum Moisture Content	%	22.0	22.0	19.5	-	-

Moisture Variation From Optimum Moisture Content	1.0% dry	1.0% dry	1.0% dry	-	-	-
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density and moisture ratio results relate only to the soil to the depth of test and not to the full depth of the layer

Density Ratio ( R <sub>HD</sub> )	%	100.0	100.0	99.5	-	-
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### Material description

No 11 - 13 Clay Fill
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AVRLOT HILF V1.10 MAR 13



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Approved Signatory : Justin Fry



# COMPACTION ASSESSMENT

Job No 23063  
 Report No 23063/R004  
 Date Issued 24/02/23

## CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	WS
Project	WINTERFIELD NORTH - STAGE 1	Date tested	16/02/23
Location	DELACOMBE	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time:	08:00
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	14	15	-	-	-	-
Location	REFER TO FIGURE 1	REFER TO FIGURE 1				
Approximate depth below FSL						
Measurement depth	mm	175	175	-	-	-
Field wet density	t/m <sup>3</sup>	2.11	2.19	-	-	-
Field moisture content	%	16.3	17.8	-	-	-

Test procedure AS 1289.5.7.1

Test No	14	15	-	-	-	-
Compactive effort	Standard					
Oversize rock retained on sieve	mm	19.0	19.0	-	-	-
Percent of oversize material	wet	0	0	-	-	-
Peak Converted Wet Density	t/m <sup>3</sup>	2.14	2.19	-	-	-
Adjusted Peak Converted Wet Density	t/m <sup>3</sup>	-	-	-	-	-
Optimum Moisture Content	%	19.0	20.0	-	-	-

Moisture Variation From Optimum Moisture Content	2.5% dry	2.0% dry	-	-	-	-
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density and moisture ratio results relate only to the soil to the depth of test and not to the full depth of the layer

Density Ratio ( R <sub>HD</sub> )	%	98.5	100.0	-	-	-
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Material description

No 14 - 15 Clay Fill
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AVRLOT HILF V1.10 MAR 13



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