



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

24<sup>th</sup> June 2022

Our Reference: 21851:NB1279

Winslow Constructors Pty Ltd  
50 Barry Road  
CAMPBELLFIELD VIC 3061

Dear Sirs/Madams,

**RE: LEVEL 1 EARTHWORKS INSPECTION AND TESTING  
WINTERFIELD – STAGES 13 & 14 BEW (DELACOMBE)**

Please find attached our Report No's 21851/R001 to 21851/R008 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 2021 and was completed in January 2022.

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.

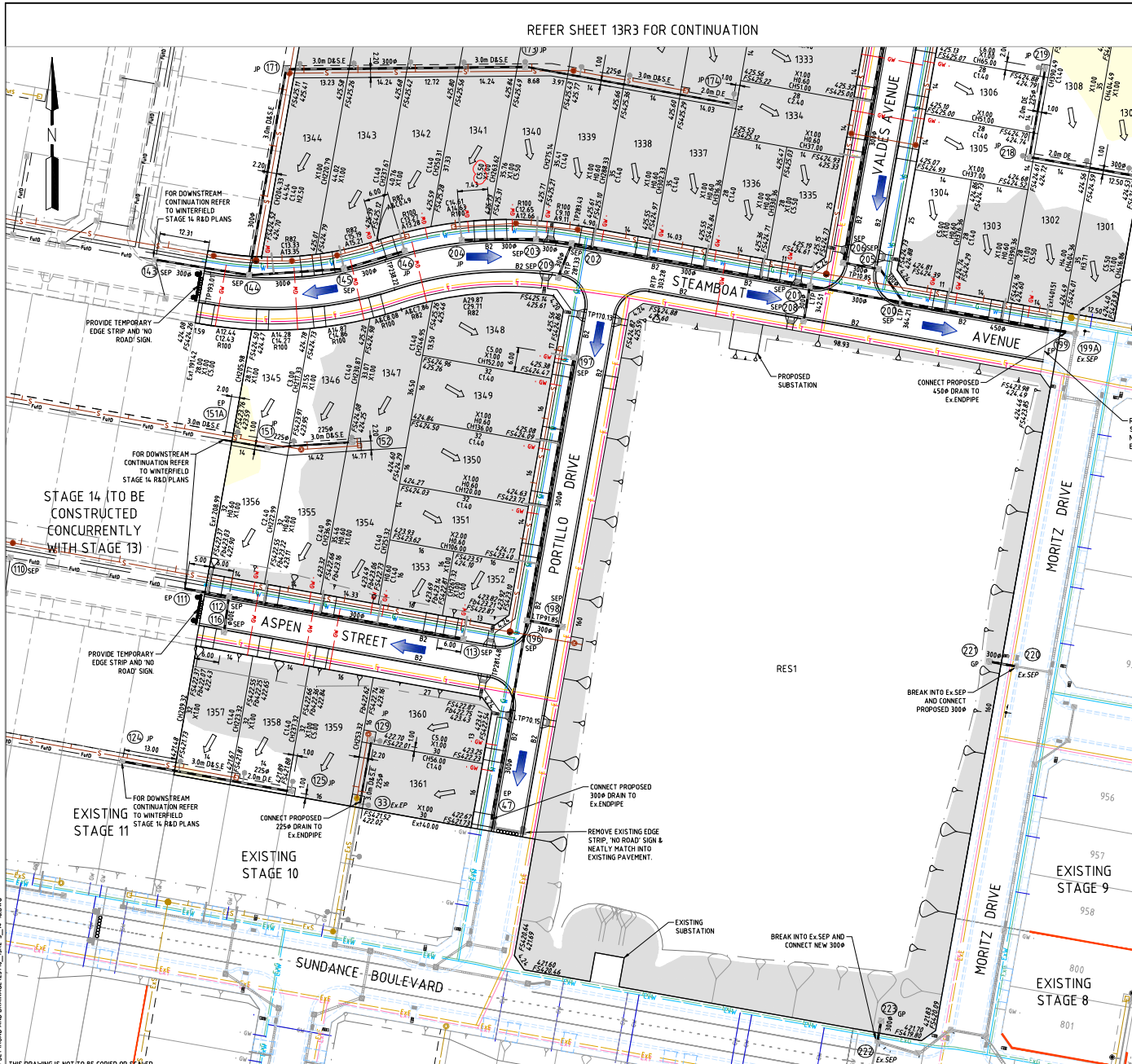
Civil Geotechnical Services

A handwritten signature in blue ink, appearing to read 'Nick Brock', is written over a faint circular stamp.

Nick Brock

# FIGURE 1 (1 of 4)

REFER SHEET 13R3 FOR CONTINUATION



SERVICES SCHEDULE							
STREET NAME	GAS	WATER	TELSTRA	ELECT.	SEWER	TREES BOTH SIDES	ROAD RESERVE
ASPEN STREET	2.30 N	2.75 N	2.20 S	2.80 S	1.00 N	1.00 B.O.K.	18.00
PORTILLO DRIVE	2.30 W	2.75 W	0.60 E	1.30 E	1.00 W	1.00 B.O.K. WEST ONLY	16.00
STEAMBOAT AVENUE (RESERVE)	2.30 N	2.75 N	0.70 S	1.30 S	1.00 N	1.00 B.O.K. NORTH ONLY	16.00
STEAMBOAT AVENUE (LOT 1345-1348)	2.30 N	2.75 N	2.20 S	2.80 S	1.00 N	1.00 B.O.K.	18.00
SELVA AVENUE	2.10 E	2.60 E	2.20 W	2.80 W	1.00 W	1.00 B.O.K.	18.00
SNOWBIRD ROAD	2.10 N	2.80 N	2.20 S	2.80 S	1.00 N	1.00 B.O.K.	20.00
VALDES AVENUE	2.30 E	2.75 E	2.20 W	2.80 W	1.00 W	1.00 B.O.K.	18.00

\* DENOTES EXISTING SERVICE EXACT LOCATION TO BE PROVEN ON SITE BY CONTRACTOR. ALL OFFSETS ARE REFERENCED TO NEAREST BL.

### DRAINAGE PIT LEGEND

- (35) EP END PIPE
- (33) JP JUNCTION PIT
- (31) SEP SIDE ENTRY PIT
- (78) GP GRATED PIT

### LEGEND

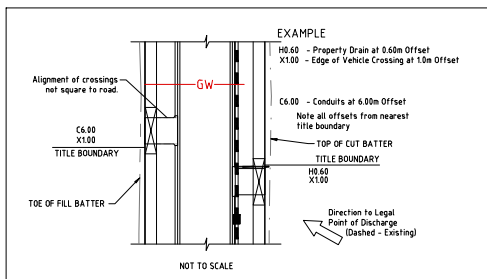
- GW PROPOSED GAS & WATER CONDUITS
- ET PROPOSED ELECT. & TELECOMM. CONDUITS
- W PROPOSED WATER MAIN
- EW EX. WATER MAIN
- G PROPOSED GAS MAIN
- EG EX. GAS MAINS & VALVE
- C PROPOSED ELECTRICAL CABLES
- EX EX. ELECTRICAL CABLE
- CX PROPOSED COMMS CABLES
- EX EX. COMMS CABLES
- PROPOSED DRAIN & PIT
- EX. DRAIN & PIT
- PROPOSED HOUSE DRAIN
- EX. HOUSE DRAIN
- DIRECTION OF LOT FINISHED SURFACE FALL
- OVERLAND FLOW PATH

# Approximate field density test location

### 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.



**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.

**CONSTRUCTION PLAN**

VERSION	REMARKS	DATE	BY	APP'D
E	LOT 1309 WATER TAPPING	24.03.22	LP	
D	SEWER MS IN RESERVE, LOT 1305 TO 1309 EASEMENT. CONSTRUCTION ISSUE	08.11.21	LP	
C	UPDATED AS PER RESPONSE TO COUNCIL COMMENTS	20.09.21	LP	
B	ISSUE TO COUNCIL	22.07.21	LP	
A	PRELIMINARY ISSUE	XXXXXX	LP	

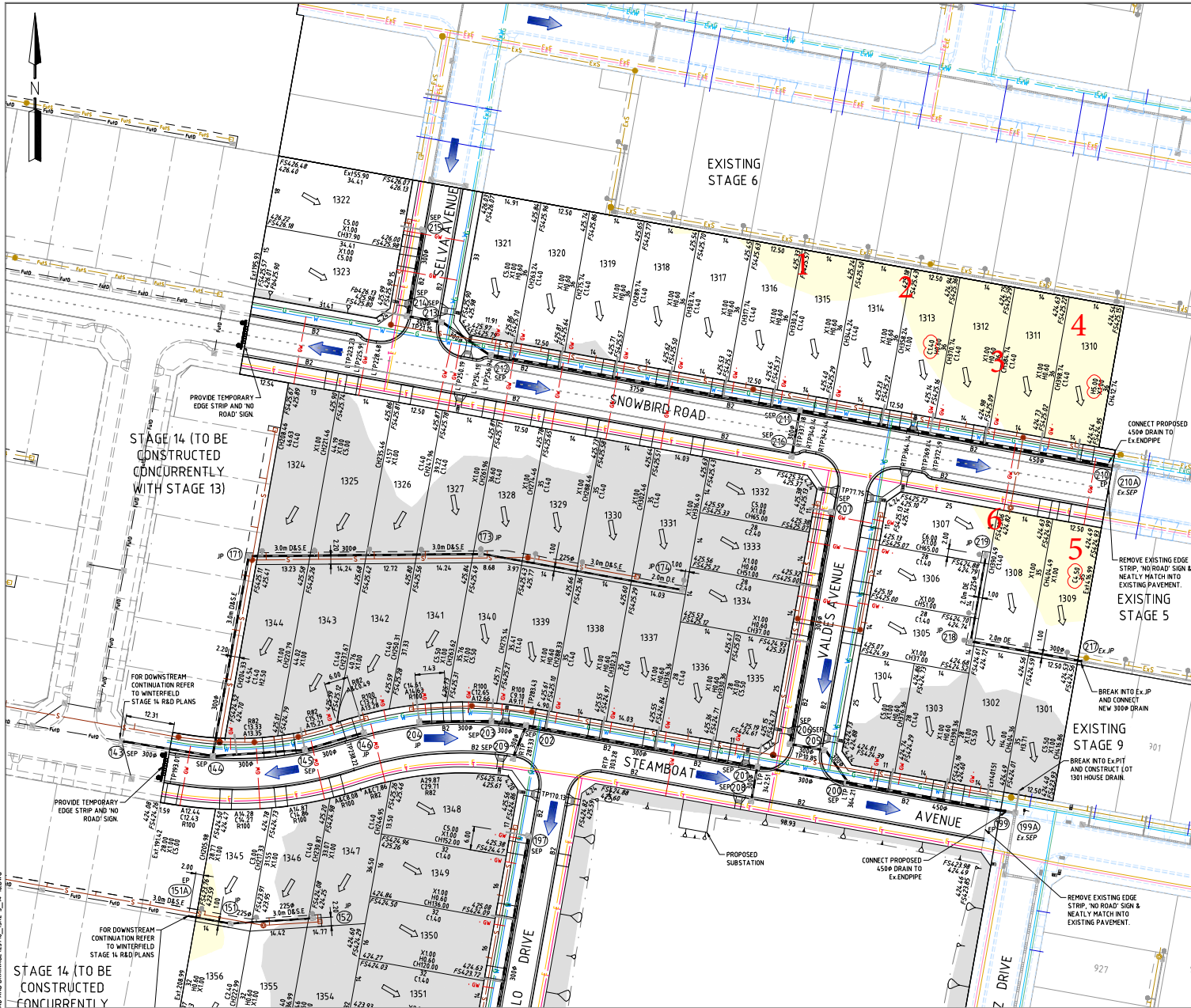
DRAWN BY	D. JARNA	DESIGNED BY	L. PHAN
CHECKED BY	S71 02	APPROVED BY	L. PHAN
DATUM	AHD	AUTHORISED BY	P. MILLER

**REEDS CONSULTING**  
LAND SURVEYING CIVIL ENGINEERING PLANNING DEVELOPMENT CONSULTING  
Lvl. 4, 448 Elizabeth Street Melbourne Victoria 3000  
9 03 8468 3000

CITY OF BALLARAT  
WINTERFIELD ESTATE, WINTER VALLEY  
STAGE 13  
LAYOUT PLAN - 1

DRAWING No.	13R2	VERSION	E
REFERENCE	23718E/13	SHEET	2 OF 23

# FIGURE 1 (2 of 4)

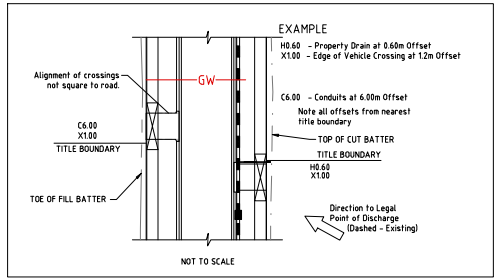


### LEGEND

- GW PROPOSED GAS & WATER CONDUITS
- ET PROPOSED ELECT. & TELECOM. CONDUITS
- W PROPOSED WATER MAIN
- ExW Ex. WATER MAIN
- G PROPOSED GAS MAINS
- ExG Ex. GAS MAINS & VALVE
- PROP. ELECTRICAL CABLES
- ExE Ex. ELECTRICAL CABLE
- PROPOSED COMMS CABLES
- Ex. COMMS CABLES
- PROPOSED DRAIN & PIT
- Ex. DRAIN & PIT
- PROPOSED HOUSE DRAIN
- Ex. HOUSE DRAIN
- 109.0 DESIGN FINISHED SURFACE CONTOURS (0.25m INT.)
- DIRECTION OF LOT FINISHED SURFACE FALL
- OVERLAND FLOW PATH

### DRAINAGE PIT LEGEND

- 35 EP END PIPE
- 33 JP JUNCTION PIT
- 31 SEP SIDE ENTRY PIT
- 51 WW WINGWALL
- 78 GSEP GRATED SIDE ENTRY PIT



### EARTHWORKS LEGEND

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

THIS PLAN SHOWS ONLY APPROXIMATE EXTENTS & LEVELS OF FILL TO BE PLACED DURING CONSTRUCTION. DEPTH OF FILL USES FOR TOP DRESSING ALL ALLOCATIONS MAY VARY BY UP TO 0.50m. THE EXTENT OF FILL SHOWN IS BASED ON DESIGN AND MAY BE SUBJECT TO CHANGE FOLLOWING FINAL INSPECTION BY GEOTECHNICAL ENGINEER.

**# 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.

THIS DRAWING IS NOT TO BE COPIED OR SCALED

VERSION	REMARKS	DATE	BY
D	LOT 1310 HOUSE DRAIN, LOT 1313 & 1341 WATER TAPPING	26.03.22	LP
C	SEWER MS IN RESERVE, LOT 1305 TO 1309 EASEMENT, CONSTRUCTION ISSUE.	08.11.21	LP
B	UPDATED AS PER RESPONSE TO COUNCIL COMMENTS	20.09.21	LP
A	ISSUE TO COUNCIL	22.07.21	LP

REFER SHEET 13R2 FOR CONTINUATION

DRAWN BY	D. JARNA	DESIGNED BY	L. PHAN
CHECKED BY	S71 02	CHECKED BY	L. PHAN
AUTHORISED BY	P. MILLER		

DATUM	AHD	AUTHORISED BY	P. MILLER
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**REEDS CONSULTING**

LAND SURVEYING  
CIVIL ENGINEERING  
PLANNING  
DEVELOPMENT CONSULTING

1st & 4th Elizabeth Street Melbourne Victoria 3000  
03 9486 3000

CITY OF BALLARAT  
WINTERFIELD ESTATE, WINTER VALLEY  
STAGE 13  
LAYOUT PLAN - 2

DRAWING No. 13R3  
VERSION D  
REFERENCE 23718E/13  
SHEET 3 OF 23

# FIGURE 1 (3 of 4)



### SERVICES SCHEDULE

STREET NAME	GAS	D-WATER	TELSTRA	ELECT	SEWER	TREES BOTH SIDES	ROAD RESERVE
ASPEN STREET	2.30 N	2.75 N	2.20 S	2.80 S	1.00 N	1.00 B.O.K.	18.00
INNSBRUCK ROAD	3.44 E	4.10 E	1.85 W	2.55 W	1.60 E	1.00 B.O.K.	24.00
NEVADO AVENUE	2.30 E	2.75 E	1.90 W	2.60 W	N/A	1.00 B.O.K.	18.00
STEAMBOAT AVENUE	2.30 N	2.75 N	2.20 S	2.80 S	1.00 N	1.00 B.O.K.	18.00
SNOWBIRD ROAD	2.10 N	2.80 N	2.20 S	2.80 S	1.00 N	1.00 B.O.K.	20.00
VERBIER AVENUE	2.30 W	2.75 W	1.90 E	2.60 E	1.00 E	1.00 B.O.K.	18.00

\* DENOTES EXISTING SERVICE EXACT LOCATION TO BE PROVIDED ON SITE BY CONTRACTOR.  
ALL OFFSETS ARE REFERENCED TO NEAREST BL.

### LEGEND

- GW - PROPOSED GAS & WATER CONDUITS
- ET - PROPOSED ELECT. & TELECOMM. CONDUITS
- EW - PROPOSED WATER MAIN
- EW - Ex. WATER MAIN
- CG - PROPOSED GAS MAINS
- CG - Ex. GAS MAINS & VALVE
- EC - PROPOSED ELECTRICAL CABLES
- EC - Ex. ELECTRICAL CABLE
- CC - PROPOSED COMMS CABLES
- CC - Ex. COMMS CABLES
- DP - PROPOSED DRAIN & PIT
- DP - Ex. DRAIN & PIT
- HD - PROPOSED HOUSE DRAIN
- HD - Ex. HOUSE DRAIN
- SC - DESIGN FINISHED SURFACE CONTOURS (0.25m INT.)
- DF - DIRECTION OF LOT FINISHED SURFACE FALL
- OP - OVERLAND FLOW PATH

# Approximate field density test location

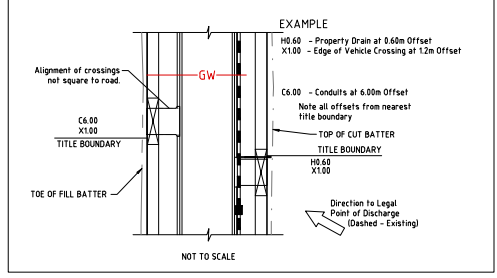
### DRAINAGE PIT LEGEND

- EP - END PIPE
- JP - JUNCTION PIT
- SEP - SIDE ENTRY PIT
- GSEP - GRATED SIDE ENTRY PIT

### EARTHWORKS LEGEND

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

THIS PLAN SHOWS ONLY APPROXIMATE EXTENTS & LEVELS OF FILL TO BE PLACED DURING CONSTRUCTION. DEPTH OF FILL USED FOR TOP DRESSING ALL ALLOCATIONS MAY VARY BY UP TO 0.5m. THE EXTENT OF FILL SHOWN IS BASED ON DESIGN AND MAY BE SUBJECT TO CHANGE FOLLOWING FINAL INSPECTION BY GEOTECHNICAL ENGINEER.



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**CONSTRUCTION PLAN**

THIS DRAWING IS NOT TO BE COPIED OR SCALED

VERSION	REMARKS	DATE	BY
D	LOT 1468 TO 1472 DIMENSIONS UPDATED. PSM ADDED. LOT 1409 5m WIDE CROSSOVER	17.05.22	LP
C	CONSTRUCTION ISSUE. LOT 1477 ELEC SUB. DRAIN LINE 180-180A, 180-180B, 158-163	07.04.22	LP
B	UPDATED AS PER RESPONSE TO COUNCIL	26.01.22	LP
A	ISSUE TO COUNCIL	23.08.21	LP



DRAWN BY	N. ROBINSON	DESIGNED BY	L. PHAN
CHECKED BY	P. MILLER	AUTHORISED BY	P. MILLER
DATUM	AHD		

**REEDS CONSULTING**

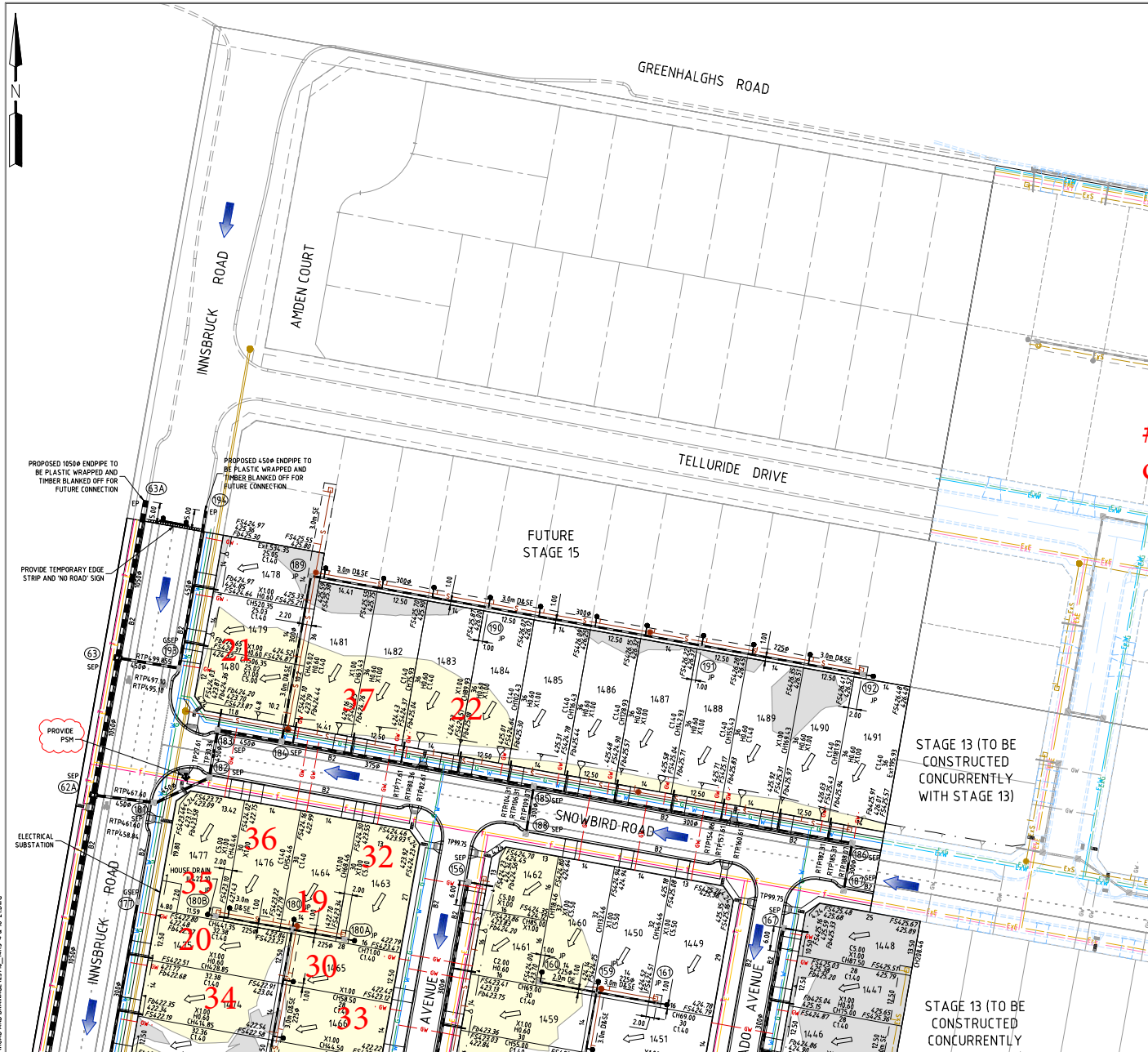
LAND SURVEYING  
CIVIL ENGINEERING  
PLANNING  
DEVELOPMENT CONSULTING

Let. 6, 448 Elizabeth Street Melbourne Victoria 3000  
Tel: 03 9486 3000  
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CITY OF BALLARAT  
WINTERFIELD ESTATE, WINTER VALLEY  
STAGE 14  
LAYOUT PLAN - 1

DRAWING No.	14R3	VERSION	D
REFERENCE	23718E/14		
SHEET	3	OF	31

# FIGURE 1 (4 of 4)



SERVICES SCHEDULE							
STREET NAME	GAS	D-WATER	TELSTRA	ELECT.	SEWER	TREES BOTH SIDES	ROAD RESERVE
ASPEN STREET	2.30 N	2.75 N	2.20 S	2.80 S	1.00 N	1.00 B.O.K.	18.00
INNSBRUCK ROAD	3.44 E	4.10 E	1.85 W	2.55 W	1.60 E	1.00 B.O.K.	24.00
NEVADO AVENUE	2.30 E	2.75 E	1.90 W	2.60 W	N/A	1.00 B.O.K.	18.00
STEAMBOAT AVENUE	2.30 N	2.75 N	2.20 S	2.80 S	1.00 N	1.00 B.O.K.	18.00
SNOWBIRD ROAD	2.10 N	2.80 N	2.20 S	2.80 S	1.00 N	1.00 B.O.K.	20.00
VERBER AVENUE	2.30 W	2.75 W	1.90 E	2.60 E	1.00 E	1.00 B.O.K.	18.00

\* DENOTES EXISTING SERVICE EXACT LOCATION TO BE PROVEN ON SITE BY CONTRACTOR. ALL OFFSETS ARE REFERENCED TO NEAREST BL.

**LEGEND**

- GW - PROPOSED GAS & WATER CONDUITS
- ET - PROPOSED ELECT. & TELECOMM. CONDUITS
- W - PROPOSED WATER MAIN
- ExW - Ex. WATER MAIN
- G - PROPOSED GAS MAINS
- ExG - Ex. GAS MAINS & VALVE
- E - PROP. ELECTRICAL CABLES
- ExE - Ex. ELECTRICAL CABLE
- C - PROPOSED COMMS CABLES
- ExC - Ex. COMMS CABLES
- Proposed Drain & Pit
- Ex. Drain & Pit
- Proposed House Drain
- Ex. House Drain
- DESIGN FINISHED SURFACE CONTOURS (0.25m INT.)
- DIRECTION OF LOT FINISHED SURFACE FALL
- OVERLAND FLOW PATH

# Approximate field density test location

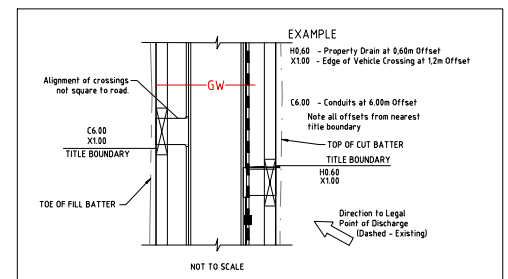
**DRAINAGE PIT LEGEND**

- EP - END PIPE
- JP - JUNCTION PIT
- SEP - SIDE ENTRY PIT
- GSEP - GRATED SIDE ENTRY PIT

**EARTHWORKS LEGEND**

- FILL EARTHWORKS - FILL AREA WITHIN LOTS GREATER THAN 150mm DEPTH
- CUT EARTHWORKS - CUT AREA WITHIN 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 ALLOWMENTS 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.



**WARNING**  
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**CONSTRUCTION PLAN**

REFER SHEET 14R3 FOR CONTINUATION

VERSION	REMARKS	DATE	BY
E	PSM ADDED	16.05.22	LP
D	CONSTRUCTION ISSUE. LOT 1477 ELEC SUB. DRAIN LINE 180-180A, 180-180B, 158-163	07.04.22	LP
C	ELEC SUBSTATION ADDED TO LOT 1480	17.02.22	LP
B	UPDATED AS PER RESPONSE TO COUNCIL	26.01.22	LP
A	ISSUE TO COUNCIL	23.08.21	LP



DRAWN BY	N. ROBINSON	DESIGNED BY	L. PHAN
MELWAY		CHECKED BY	P. MILLER
DATUM	AHD	AUTHORISED BY	P. MILLER

**REEDS CONSULTING**

LAND SURVEYING  
CIVIL ENGINEERING  
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DEVELOPMENT CONSULTING

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CITY OF BALLARAT  
WINTERFIELD ESTATE, WINTER VALLEY  
STAGE 14  
LAYOUT PLAN - 2

DRAWING No. 14R4  
VERSION E  
REFERENCE 23718E/14  
SHEET 4 OF 31



# COMPACTION ASSESSMENT

Job No 21851  
 Report No 21851/R001  
 Date Issued 13/01/2022

## CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	WS
Project	WINTERFIELD - STAGES 13 & 14 BEW	Date tested	06/12/21
Location	DELACOMBE	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 10:00
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	1	2	3	-	-	-
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>	2.08	2.06	2.05	-	-
Field moisture content	%	21.2	21.2	20.0	-	-

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	0	-	-
Peak Converted Wet Density	t/m <sup>3</sup>	2.12	2.10	2.10	-	-
Adjusted Peak Converted Wet Density	t/m <sup>3</sup>	-	-	-	-	-
Optimum Moisture Content	%	21.0	21.5	22.0	-	-

Moisture Variation From Optimum Moisture Content	0.0%	0.0%	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> )	%	98.0	98.0	98.0	-	-
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Material description

No 1 - 3 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 21851  
 Report No 21851/R002  
 Date Issued 13/01/2022

## CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	WS
Project	WINTERFIELD - STAGES 13 & 14 BEW	Date tested	07/12/21
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	4	5	6	7	8	9	
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>	2.07	2.03	2.08	2.02	1.99	2.02
Field moisture content	%	22.6	21.1	20.2	22.9	25.3	33.7

Test procedure AS 1289.5.7.1

Test No	4	5	6	7	8	9	
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>	2.10	2.04	2.11	2.05	2.01	2.08
Adjusted Peak Converted Wet Density	t/m <sup>3</sup>	-	-	-	-	-	-
Optimum Moisture Content	%	21.5	19.5	20.5	22.5	23.0	32.0

Moisture Variation From Optimum Moisture Content	1.5% wet	2.0% wet	0.0%	0.5% wet	2.5% wet	1.5% wet
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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	99.5	98.5	98.5	99.0	97.0
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Material description

No 4 - 9 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 21851  
 Report No 21851/R003  
 Date Issued 13/01/2022

## CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	WS
Project	WINTERFIELD - STAGES 13 & 14 BEW	Date tested	08/12/21
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	10	11	12	13	14	15
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>	2.20	2.17	2.14	2.06	2.08
Field moisture content	%	23.7	22.4	22.7	22.6	21.2

Test procedure AS 1289.5.7.1

Test No	10	11	12	13	14	15
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>	2.21	2.20	2.18	2.11	2.13
Adjusted Peak Converted Wet Density	t/m <sup>3</sup>	-	-	-	-	-
Optimum Moisture Content	%	21.5	22.0	21.0	21.0	20.0

Moisture Variation From Optimum Moisture Content	2.0% wet	0.5% wet	1.5% wet	1.5% wet	1.5% wet	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	98.5	98.0	97.5	98.0	97.0
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Material description

No 10 - 15 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 21851  
 Report No 21851/R004  
 Date Issued 25/01/2022

**CIVIL GEOTECHNICAL SERVICES**

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	WS
Project	WINTERFIELD - STAGES 13 & 14 BEW	Date tested	14/12/21
Location	DELACOMBE	Checked by	JHF

<b>Feature</b>	<b>EARTHWORKS</b>	Layer thickness	200 mm	Time: 08:30
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	16	17	18	19	20	21
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>	2.06	2.04	2.01	2.09	2.09	2.14
Field moisture content <i>%</i>	24.4	18.5	20.6	24.0	21.7	22.2

Test procedure AS 1289.5.7.1

Test No	16	17	18	19	20	21
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>	2.09	2.07	2.06	2.11	2.11	2.15
Adjusted Peak Converted Wet Density <i>t/m<sup>3</sup></i>	-	-	-	-	-	-
Optimum Moisture Content <i>%</i>	24.0	17.5	19.0	21.5	20.0	21.0

Moisture Variation From Optimum Moisture Content	0.5% wet	1.0% wet	1.5% wet	2.5% wet	1.5% wet	1.5% wet
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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

<b>Density Ratio ( <math>R_{HD}</math> )</b>	<b>%</b>	<b>98.0</b>	<b>98.5</b>	<b>97.5</b>	<b>99.0</b>	<b>99.0</b>	<b>99.5</b>
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Material description

No 16 - 21 Clay Fill
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AVRLOT HILF V1.10 MAR 13



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Approved Signatory : Justin Fry



# COMPACTION ASSESSMENT

## CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Job No 21851  
Report No 21851/R005  
Date Issued 22/12/2021

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	WS
Project	WINTERFIELD - STAGES 13 & 14 BEW	Date tested	14/12/21
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	22	23	24	-	-	-
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>	2.06	1.99	1.98	-	-
Field moisture content	%	20.3	21.7	21.4	-	-

Test procedure AS 1289.5.7.1

Test No	22	23	24	-	-	-
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>	2.07	2.04	2.01	-	-
Adjusted Peak Converted Wet Density	t/m <sup>3</sup>	-	-	-	-	-
Optimum Moisture Content	%	18.5	20.0	19.5	-	-

Moisture Variation From Optimum Moisture Content	1.5% wet	2.0% wet	2.0% wet	-	-	-
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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	97.5	98.5	-	-
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Material description

No 22 - 24 Clay Fill
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AVRLOT HILF V1.10 MAR 13



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Approved Signatory : Justin Fry



## COMPACTION ASSESSMENT

Job No 21851  
 Report No 21851/R006  
 Date Issued 21/01/2022

**CIVIL GEOTECHNICAL SERVICES**

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	WS
Project	WINTERFIELD - STAGES 13 & 14 BEW	Date tested	17/01/22
Location	DELACOMBE	Checked by	JHF

<b>Feature</b>	EARTHWORKS	Layer thickness	200 mm	Time: 09:45
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	25	26	27	28	29	30
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>	2.10	2.07	2.08	2.07	2.08	2.10
Field moisture content <i>%</i>	19.0	20.7	19.4	20.5	28.5	20.9

Test procedure AS 1289.5.7.1

Test No	25	26	27	28	29	30
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>	2.12	2.04	2.14	2.10	2.13	2.13
Adjusted Peak Converted Wet Density <i>t/m<sup>3</sup></i>	-	-	-	-	-	-
Optimum Moisture Content <i>%</i>	17.0	20.0	17.5	19.0	26.5	18.5

Moisture Variation From Optimum Moisture Content	1.5% wet	0.5% wet	2.0% wet	1.5% wet	2.0% wet	2.5% wet
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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

<b>Density Ratio ( <math>R_{HD}</math> )</b>	<b>%</b>	<b>99.0</b>	<b>101.5</b>	<b>97.5</b>	<b>98.5</b>	<b>98.0</b>	<b>98.5</b>
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Material description

No 25 - 30 Clay Fill
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AVRLOT HILF V1.10 MAR 13



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Approved Signatory : Justin Fry



# COMPACTION ASSESSMENT

Job No 21851  
 Report No 21851/R007  
 Date Issued 21/01/2022

## CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	WS
Project	WINTERFIELD - STAGES 13 & 14 BEW	Date tested	18/01/22
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	31	32	33	-	-	-
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>	2.12	2.08	2.13	-	-
Field moisture content	%	19.7	19.7	19.5	-	-

Test procedure AS 1289.5.7.1

Test No	31	32	33	-	-	-
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>	2.14	2.10	2.14	-	-
Adjusted Peak Converted Wet Density	t/m <sup>3</sup>	-	-	-	-	-
Optimum Moisture Content	%	17.5	19.5	20.0	-	-

Moisture Variation From Optimum Moisture Content	2.0% wet	0.0%	0.5% 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> )	%	99.0	99.0	99.5	-	-
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Material description

No 31 - 33 Clay Fill
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AVRLOT HILF V1.10 MAR 13



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 ISO/IEC 17025 - Testing

Approved Signatory : Justin Fry



# COMPACTION ASSESSMENT

Job No 21851  
 Report No 21851/R008  
 Date Issued 01/02/2022

## CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	WS
Project	WINTERFIELD - STAGES 13 & 14 BEW	Date tested	21/01/22
Location	DELACOMBE	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time:	11:30
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Test procedure AS 1289.2.1.1 & 5.8.1

Test No	34	35	36	37	-	-
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>	2.14	2.11	2.03	2.04	-
Field moisture content	%	21.1	21.5	26.9	23.9	-

Test procedure AS 1289.5.7.1

Test No	34	35	36	37	-	-
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>	2.15	2.14	2.10	2.09	-
Adjusted Peak Converted Wet Density	t/m <sup>3</sup>	-	-	-	-	-
Optimum Moisture Content	%	20.0	19.5	25.5	22.0	-

Moisture Variation From Optimum Moisture Content	1.0% wet	1.5% wet	1.5% wet	2.0% wet	-	-
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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	98.5	96.5	98.0	-
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Material description

No 34 - 37 Clay Fill
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AVRLOT HILF V1.10 MAR 13



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 ISO/IEC 17025 - Testing

Approved Signatory : Justin Fry