



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

21<sup>st</sup> February 2023

Our Reference: 22680:NB1460

Winslow Constructors Pty Ltd  
50 Barry Road  
CAMPBELLFIELD VIC 3061

Dear Sirs/Madams,

**RE: LEVEL 1 EARTHWORKS INSPECTION AND TESTING**  
**KINGBIRD ESTATE – STAGE 2 (BOTANIC RIDGE)**

Please find attached our Report No's 22680/R001 to 22680/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 2022 and was completed 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).

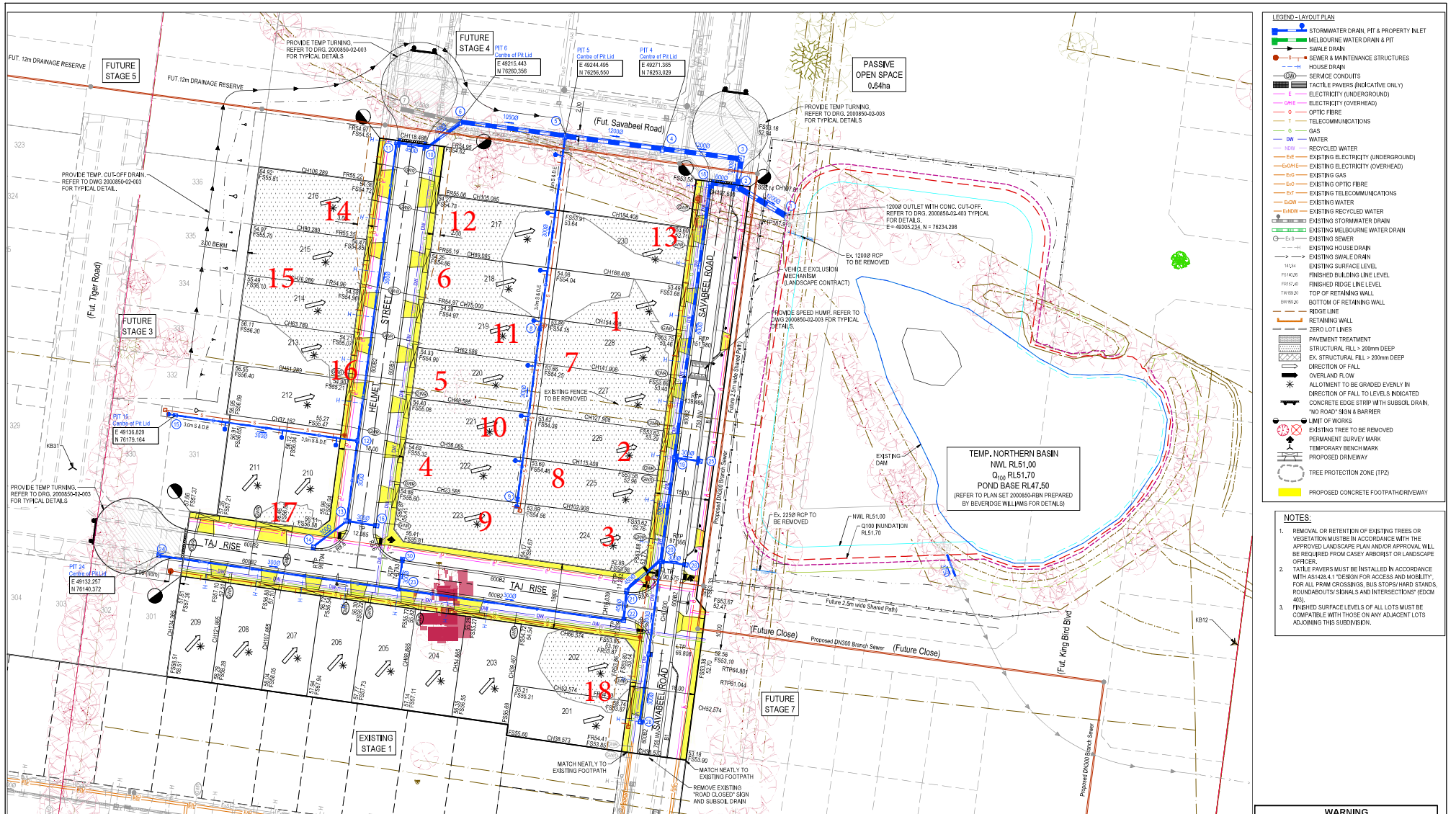
Please contact the undersigned if you require any additional information.

Civil Geotechnical Services

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

Nick Brock

# FIGURE 1



**LEGEND - LAYOUT PLAN**

- STORMWATER DRAIN, PIT & PROPERTY INLET
- MELBOURNE WATER DRAIN & PIT
- SWALE DRAIN
- SEWER & MAINTENANCE STRUCTURES
- HOUSE DRAIN
- SERVICE CONDUITS
- FACTILE PAVERS (INDICATIVE ONLY)
- ELECTRICITY (UNDERGROUND)
- ELECTRICITY (OVERHEAD)
- TELECOMMUNICATIONS
- OPTIC FIBRE
- GAS
- WATER
- RECYCLED WATER
- EXISTING ELECTRICITY (UNDERGROUND)
- EXISTING ELECTRICITY (OVERHEAD)
- EXISTING GAS
- EXISTING OPTIC FIBRE
- EXISTING TELECOMMUNICATIONS
- EXISTING WATER
- EXISTING RECYCLED WATER
- EXISTING STORMWATER DRAIN
- EXISTING MELBOURNE WATER DRAIN
- EXISTING SEWER
- EXISTING HOUSE DRAIN
- EXISTING SWALE DRAIN
- EXISTING SURFACE LEVEL
- FINISHED BUILDING LINE LEVEL
- FINISHED POND LINE LEVEL
- TOP OF RETAINING WALL
- BOTTOM OF RETAINING WALL
- RIDGE LINE
- RETAINING WALL
- ZERO LOT LINES
- STRUCTURAL FILL > 300mm DEEP
- EX. STRUCTURAL FILL > 200mm DEEP
- DIRECTION OF FALL
- 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 BENCH MARK
- PROPOSED DRIVEWAY
- TREE PROTECTION ZONE (TPZ)
- PROPOSED CONCRETE FOOTPATH/DRIVEWAY

- NOTES:**
- REMOVAL OR RETENTION OF EXISTING TREES OR VEGETATION MUST BE IN ACCORDANCE WITH THE APPROVED LANDSCAPE PLAN AND/OR APPROVAL. WILL BE REQUIRED FROM CASEY ARB/STREET OR LANDSCAPE OFFICER.
  - TRAIL FENCES MUST BE INSTALLED IN ACCORDANCE WITH AS1428.4.1 DESIGN FOR ACCESS AND MOBILITY, FOR ALL PRAM CROSSINGS, BUS STOPS, HARD STANDS, ROUNDABOUTS/SIGNALS AND INTERSECTIONS (ECON 403).
  - FINISHED SURFACE LEVELS OF ALL LOTS MUST BE COMPATIBLE WITH THOSE ON ANY ADJACENT LOTS ADJOINING THIS SUBDIVISION.

**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  
**DIAL 1100 BEFORE YOU DIG**  
www.1100.com.au

PRELIMINARY PRINT  
NOT FOR CONSTRUCTION

**SERVICE OFFSET TABLE**

Location	Gas		ND - Water		Water		Electricity		Telecommunication		Sewer	
	Side	Offset (m)	Side	Offset (m)	Side	Offset (m)	Side	Offset (m)	Side	Offset (m)	Side	Offset (m)
SAVABEEL ROAD (lots 224-230)	W	2.10	W	2.50	W	2.95	E	1.10	E	0.50	W	1.00
SAVABEEL ROAD (lots 201 & 202)	W	2.10	W	2.50	W	2.95	E	2.60	E	1.90	W	1.00
TAJ RISE	S	2.10	S	2.50	S	2.95	N	2.60	N	1.90	S	1.00
HELMET STREET	E	2.10	E	2.50	E	2.95	W	2.60	W	1.90	W	1.00
FUTURE CLOSE	S	1.00	S	1.50	N	1.50	N	1.00	N	0.40	N	5.20

NOTE: STREET TREES ARE TO BE PLANTED IN THE CENTRE OF ALL NATURE STRIPS

# Approximate field density test location

© COPYRIGHT All rights reserved  
Beveridge Williams & Co. Pty Ltd has granted a license to the privilege to use this document for its intended purpose.  
No unauthorised copying is permitted

REV	DESCRIPTION	DATE	DRN	APP	REV	DESCRIPTION	DATE	DRN	APP
P4	ISSUED FOR TENDER	16.06.22	HO	LT					
P3	COUNCIL RESUBMISSION	16.06.22	HO	LT					
P2	ISSUED FOR TENDER	05.04.22	HO	LT					
P1	COUNCIL SUBMISSION	15.02.22	HO	LT					



Designed Date: H.DWG 26.02.2022  
Drawn: M.F. JAURIGUE  
Approved Date: L.T.RAN 15.03.2022  
P3 Number: PS00016A



Project Name: KINGBIRD ESTATE STAGE 02 CITY OF CASEY  
Drawing Title: LAYOUT PLAN

Sheet 04 of 26  
Scale: 1:500 @ A1  
Project Ref: 2000850 02 010 P4  
Step No: 02  
Drawing No: 010  
Rev: P4



# COMPACTION ASSESSMENT

Job No 22680  
 Report No 22680/R001  
 Date Issued 13/12/2022

## CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	SB
Project	KINGBIRD ESTATE - STAGE 2	Date tested	08/12/22
Location	BOTANIC RIDGE	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 14:30
---------	------------	-----------------	--------	-------------

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>	2.14	2.15	2.14	2.14	2.12
Field moisture content	%	14.7	15.0	15.2	13.1	14.7

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>	2.17	2.17	2.18	2.15	2.16
Adjusted Peak Converted Wet Density	t/m <sup>3</sup>	-	-	-	-	-
Optimum Moisture Content	%	14.0	15.0	17.5	12.5	14.5

Moisture Variation From Optimum Moisture Content	0.5% wet	0.0%	2.5% dry	0.5% wet	0.0%	0.5% dry
--	----------	------	----------	----------	------	----------

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	98.0	100.0	98.0	98.0
-----------------------------------	---	------	------	------	-------	------	------

Material description

No 1 - 6 Clay Fill
--------------------

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 22680  
 Report No 22680/R002  
 Date Issued 14/12/2022

**CIVIL GEOTECHNICAL SERVICES**

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	SB
Project	KINGBIRD ESTATE - STAGE 2	Date tested	09/12/22
Location	BOTANIC RIDGE	Checked by	JHF

<b>Feature</b>	EARTHWORKS	Layer thickness	200 mm	Time: 13:30
----------------	------------	-----------------	--------	-------------

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>	2.18	2.18	2.17	2.18	2.16	2.14
Field moisture content <i>%</i>	19.6	14.3	13.3	15.9	13.9	14.1

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>	0	0	0	0	0	0
Peak Converted Wet Density <i>t/m<sup>3</sup></i>	2.19	2.20	2.21	2.21	2.21	2.16
Adjusted Peak Converted Wet Density <i>t/m<sup>3</sup></i>	-	-	-	-	-	-
Optimum Moisture Content <i>%</i>	21.0	16.5	15.5	17.0	16.0	16.0

Moisture Variation From Optimum Moisture Content	1.5% dry	2.0% dry	2.5% dry	1.0% dry	2.0% dry	2.0% dry
--	-------------	-------------	-------------	-------------	-------------	-------------

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>99.5</b>	<b>99.0</b>	<b>98.0</b>	<b>98.5</b>	<b>97.5</b>	<b>99.0</b>
--	----------	-------------	-------------	-------------	-------------	-------------	-------------

Material description

No 7 - 12 Clay Fill
---------------------

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 22680  
 Report No 22680/R003  
 Date Issued 21/02/23

## CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	SB
Project	KINGBIRD ESTATE - STAGE 2	Date tested	17/02/23
Location	BOTANIC RIDGE	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 12:00
---------	------------	-----------------	--------	-------------

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>	2.24	2.22	2.22	2.22	2.21
Field moisture content	%	16.7	17.9	17.4	21.8	18.4

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	0	0	0	0
Peak Converted Wet Density	t/m <sup>3</sup>	2.27	2.24	2.23	2.27	2.21
Adjusted Peak Converted Wet Density	t/m <sup>3</sup>	-	-	-	-	-
Optimum Moisture Content	%	18.0	19.5	19.5	23.5	21.0

Moisture Variation From Optimum Moisture Content	1.0% dry	1.5% dry	2.0% dry	1.5% dry	2.0% dry	1.5% dry
--	----------	----------	----------	----------	----------	----------

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	99.0	100.0	97.5	100.0	99.5
-----------------------------------	---	------	------	-------	------	-------	------

Material description

No 13 - 18 Clay Fill
----------------------

AVRLOT HILF V1.10 MAR 13



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

Approved Signatory : Justin Fry