



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

15<sup>th</sup> February 2023

Our Reference: 22679:NB1459

Winslow Constructors Pty Ltd  
50 Barry Road  
CAMPBELLFIELD VIC 3061

Dear Sirs/Madams,

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

Please find attached our Report No's 22679/R001 to 22679/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 November 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).

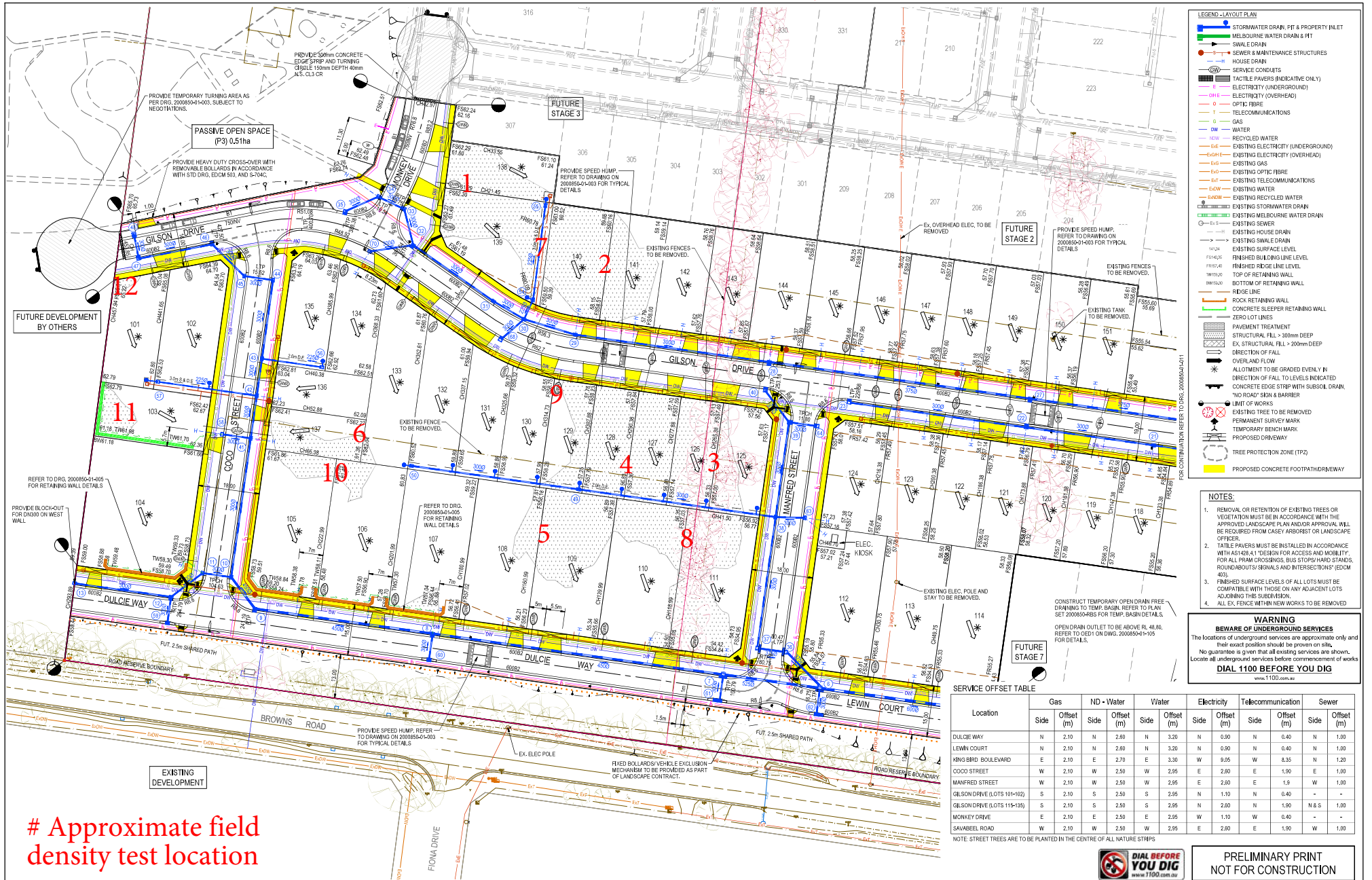
Please contact the undersigned if you require any additional information.

Civil Geotechnical Services

A handwritten signature in blue ink, appearing to be 'Nick Brock', written in a cursive style.

Nick Brock

# FIGURE 1 (1 of 2)



**LEGEND - LAYOUT PLAN**

- STORMWATER DRAIN, PIT & PROPERTY INLET
- MELBOURNE WATER DRAIN & FIT
- SWALE DRAIN
- SEWER & MAINTENANCE STRUCTURES
- HOUSE DRAIN
- SERVICE CONDUITS
- TACTILE PAVERS (INDICATIVE ONLY)
- ELECTRICITY (UNDERGROUND)
- ELECTRICITY (OVERHEAD)
- OPTIC FIBRE
- TELECOMMUNICATIONS
- GAS
- WATER
- RECYCLED WATER
- EXISTING ELECTRICITY (UNDERGROUND)
- EXISTING ELECTRICITY (OVERHEAD)
- EXISTING GAS
- EXISTING OPTIC FIBRE
- EXISTING TELECOMMUNICATIONS
- EXISTING RECYCLED WATER
- EXISTING STORMWATER DRAIN
- EXISTING MELBOURNE WATER DRAIN
- EXISTING SEWER
- EXISTING HOUSE DRAIN
- EXISTING SWALE DRAIN
- EXISTING SURFACE LEVEL
- FINISHED BUILDING LEVEL
- FINISHED RIDGE LINE LEVEL
- TOP OF RETAINING WALL
- BOTTOM OF RETAINING WALL
- RIDGE LINE
- ROCK RETAINING WALL
- CONCRETE FILL > 300mm DEEP
- ZERO TO LINES
- PAVEMENT TREATMENT
- STRUCTURAL FILL > 300mm DEEP
- EX. STRUCTURAL FILL > 200mm DEEP
- DIRECTION OF FLOW
- OVERFLOW
- ALLOTMENT TO BE GRADED EVENLY IN
- CONCRETE EDGE STRIP WITH SUBSOIL DRAIN
- NO ROAD MARK & 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 APPROVAL WILL BE REQUIRED FROM CASEY ARBORIST OR LANDSCAPE OFFICER.
  - TACTILE PAVERS MUST BE INSTALLED IN ACCORDANCE WITH AS1428.4.1 'DESIGN FOR ACCESS AND MOBILITY' FOR ALL PRAM CROSSINGS, BUS STOP/HARD STANDS, ROUNDABOUTS/STRAKAS AND INTERSECTIONS (BEM 403).
  - FINISHED SURFACE LEVELS OF ALL LOTS MUST BE COMPATIBLE WITH THOSE ON ADJACENT LOTS ADJOINING THIS SUBDIVISION.
  - ALL EX. FENCE WITHIN NEW WORKS TO BE REMOVED
- 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

**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)
DULCIE WAY	N	2.10	N	2.60	N	3.20	N	0.90	N	0.40	N	1.00
LEWIN COURT	N	2.10	N	2.60	N	3.20	N	0.90	N	0.40	N	1.00
KING BIRD BOULEVARD	E	2.10	E	2.70	E	3.30	W	9.05	W	8.35	N	1.25
COCO STREET	W	2.10	W	2.50	W	2.95	E	2.60	E	1.90	E	1.00
MANFRED STREET	W	2.10	W	2.50	W	2.95	E	2.60	E	1.90	W	1.00
GILSON DRIVE (LOTS 101-102)	S	2.10	S	2.50	S	2.95	N	1.10	N	0.40	-	-
GILSON DRIVE (LOTS 115-135)	S	2.10	S	2.50	S	2.95	N	2.00	N	1.00	N & S	1.00
MONKEY DRIVE	E	2.10	E	2.50	E	2.95	W	1.10	W	0.40	-	-
SAVABEEL ROAD	W	2.10	W	2.50	W	2.95	E	2.60	E	1.90	W	1.00

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

# Approximate field density test location

REV	DESCRIPTION	DATE	DRN	APP	REV	DESCRIPTION	DATE	DRN	APP
P3	COUNCIL COMMENTS	13.06.22	HO	LT					
P2	ISSUED FOR TENDER	05.04.22	HO	LT					
P1	COUNCIL SUBMISSION	11.02.21	MS	LT					



Designed Date: R. ONG 24.07.2022  
 Drawn: M.F. JAURIGUE  
 Approved Date: L. TRAN 15.02.2022  
 P3 Number: P5004413K



Project Name: KINGBIRD ESTATE, BOTANIC RIDGE  
 STAGE 01  
 CITY OF CASEY  
 Drawing Title: LAYOUT PLAN

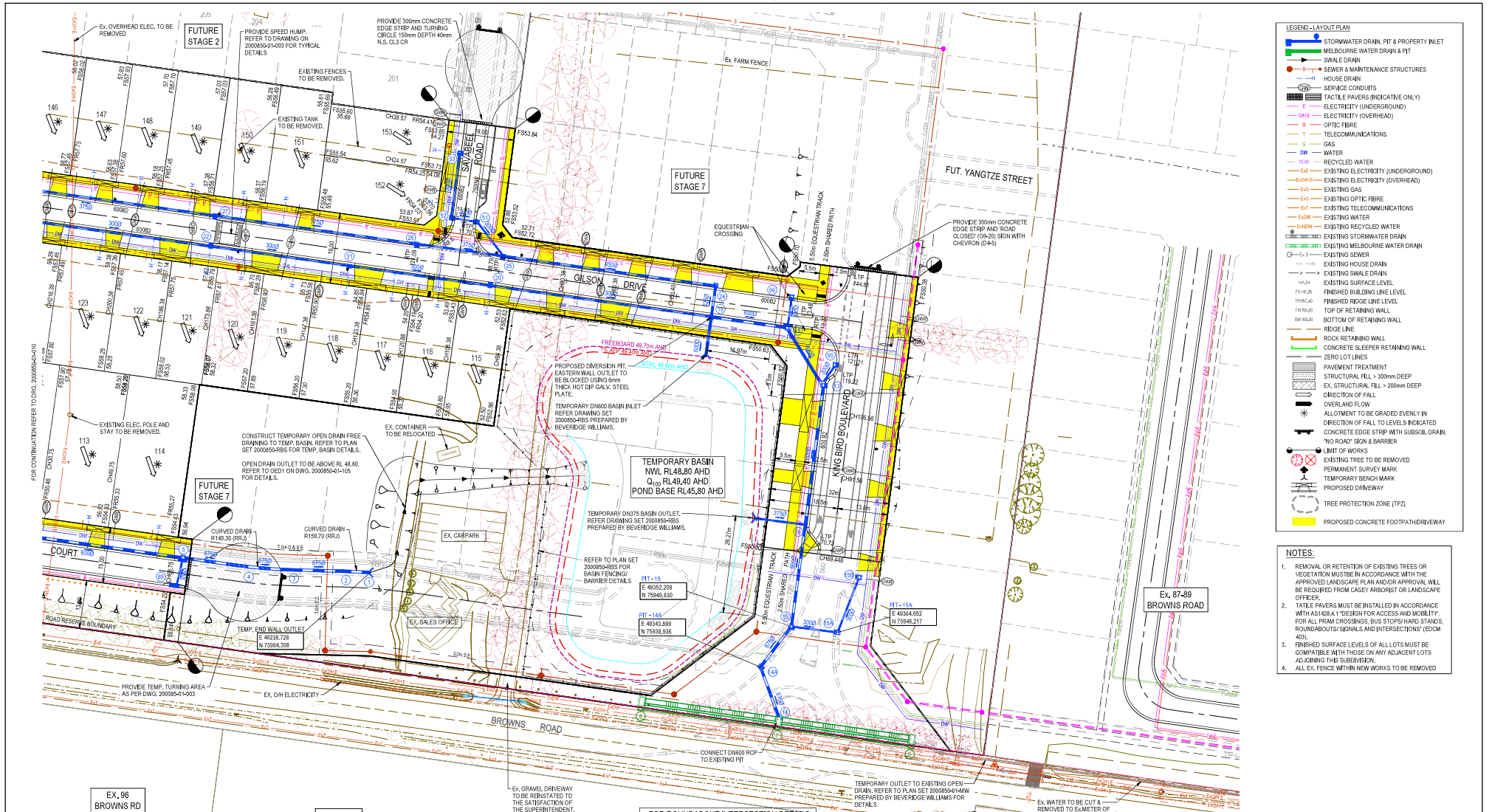
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NOT FOR CONSTRUCTION

Sheet 05 of 45  
 Scale: 1:500 @ A1  
 Project Ref: 2000850  
 Stage No: 01  
 Drawing No: 010  
 Rev: P3

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# FIGURE 1 (2 of 2)



**LEGEND - LAYOUT PLAN**

- STORMWATER DRAIN, PIT & PROPERTY INLET
- MELBOURNE WATER DRAIN & PIT
- SWALE DRAIN
- SEWER & MAINTENANCE STRUCTURES
- HOUSE DRAIN
- SERVICE CONDUITS
- TRAFFIC LIGHTS (INDICATIVE ONLY)
- ELECTRICITY (UNDERGROUND)
- ELECTRICITY (OVERHEAD)
- OPTIC FIBRE
- TELECOMMUNICATIONS
- 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 RIDGE LINE LEVEL
- TOP OF RETAINING WALL
- BOTTOM OF RETAINING WALL
- RIDGE LINE
- ROCK RETAINING WALL
- CONCRETE SLEEPER RETAINING WALL
- ZERO LOT LINES
- PAVEMENT TREATMENT
- STRUCTURAL FILL > 300mm 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 SUBSOL 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 ARBORIST OR LANDSCAPE OFFICER.
  - Traffic Pavers 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 (EDCM 403).
  - FINISHED SURFACE LEVELS OF ALL LOTS MUST BE COMPATIBLE WITH THOSE ON ADJACENT LOTS ADJOINING THIS SUBDIVISION.
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**PRELIMINARY PRINT**  
**NOT FOR CONSTRUCTION**

# Approximate field density test location

REV	DESCRIPTION	DATE	DRN.	APP.	REV	DESCRIPTION	DATE	DRN.	APP.
P1	COUNCIL COMMENTS	13.06.22	HO	LT					
P2	ISSUED FOR TENDER	25.04.22	HO	LT					
P3	COUNCIL SUBMISSION	11.02.21	MR	LT					



Designed Date: R. ONG 24.7.2022  
 Drawn: M.F. JAURIGUE  
 Approved Date: L. TRAN 15.02.2022  
 P3 Number: P5804413K



Project Name: KINGBIRD ESTATE, BOTANIC RIDGE STAGE 01 CITY OF CASEY  
 Drawing Title: LAYOUT PLAN

Sheet 06 of 45

Scale: 1:500 @ A1

Project Ref	Sheet No	Drawing No	Rev
2000850	01	011	P3

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# COMPACTION ASSESSMENT

Job No 22679  
 Report No 22679/R001  
 Date Issued 29/11/2022

## CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	SB
Project	KINGBIRD ESTATE - STAGE 1	Date tested	25/11/22
Location	BOTANIC RIDGE	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	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>	1.97	2.02	2.04	-	-
Field moisture content	%	23.1	20.2	21.3	-	-

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>	2.02	2.04	2.07	-	-
Adjusted Peak Converted Wet Density	t/m <sup>3</sup>	-	-	-	-	-
Optimum Moisture Content	%	24.5	22.5	23.5	-	-

Moisture Variation From Optimum Moisture Content	1.5% dry	2.0% 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> )	%	98.0	99.0	98.5	-	-
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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 22679  
 Report No 22679/R002  
 Date Issued 13/01/23

## CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	SB
Project	KINGBIRD ESTATE - STAGE 1	Date tested	28/11/22
Location	BOTANIC RIDGE	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time:	09:00
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### Test procedure AS 1289.2.1.1 & 5.8.1

Test No	4	5	6	-	-	-
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>	2.03	1.99	2.04	-	-
Field moisture content	%	21.2	22.6	27.1	-	-

### Test procedure AS 1289.5.7.1

Test No	4	5	6	-	-	-
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>	2.05	2.00	2.08	-	-
Adjusted Peak Converted Wet Density	t/m <sup>3</sup>	-	-	-	-	-
Optimum Moisture Content	%	22.5	23.5	28.5	-	-

Moisture Variation From Optimum Moisture Content	1.5% 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> )	%	98.5	99.5	98.5	-	-
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### Material description

No 4 - 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 22679  
 Report No 22679/R003  
 Date Issued 13/01/23

## CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	SB
Project	KINGBIRD ESTATE - STAGE 1	Date tested	29/11/22
Location	BOTANIC RIDGE	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 12:00
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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/m <sup>3</sup>	2.08	2.08	2.07	-	-
Field moisture content	%	22.6	21.3	22.1	-	-

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/m <sup>3</sup>	2.08	2.10	2.08	-	-
Adjusted Peak Converted Wet Density	t/m <sup>3</sup>	-	-	-	-	-
Optimum Moisture Content	%	24.0	23.5	23.5	-	-

Moisture Variation From Optimum Moisture Content	1.5% dry	2.0% 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	99.0	99.5	-	-
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Material description

No 7 - 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 22679  
 Report No 22679/R004  
 Date Issued 13/01/23

## CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Tested by SB  
 Date tested 30/11/22  
 Checked by JHF

Client WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)  
 Project KINGBIRD ESTATE - STAGE 1  
 Location BOTANIC RIDGE

<b>Feature</b>	<b>EARTHWORKS</b>	<b>Layer thickness</b>	200 mm	<b>Time:</b> 13:30
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### Test procedure AS 1289.2.1.1 & 5.8.1

Test No	10	11	12	-	-	-
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>	2.05	2.03	2.05	-	-	-
Field moisture content %	19.4	19.4	18.9	-	-	-

### Test procedure AS 1289.5.7.1

Test No	10	11	12	-	-	-
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	2.07	-	-	-
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	-	-	-	-	-	-
Optimum Moisture Content %	21.5	20.0	19.0	-	-	-

Moisture Variation From Optimum Moisture Content	2.0% dry	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

<b>Density Ratio ( R<sub>HD</sub> )</b>	<b>%</b>	<b>99.0</b>	<b>99.5</b>	<b>99.0</b>	-	-	-
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### Material description

No 10 - 12 Clay Fill
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AVRLOT HILF V1.10 MAR 13



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 Accredited for compliance with  
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Approved Signatory : Justin Fry