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

5th August 2022

Our Reference: 21786:NB1314

Winslow Constructors Pty Ltd
50 Barry Road
CAMPBELLFIELD VIC 3061

Dear Sirs/Madams,

RE: LEVEL 1 EARTHWORKS INSPECTION AND TESTING
ARMSTRONG – STAGE 67 (MOUNT DUNEED)

Please find attached our Report No's 21786/R001 and 21786/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 was performed in November 2021.

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).

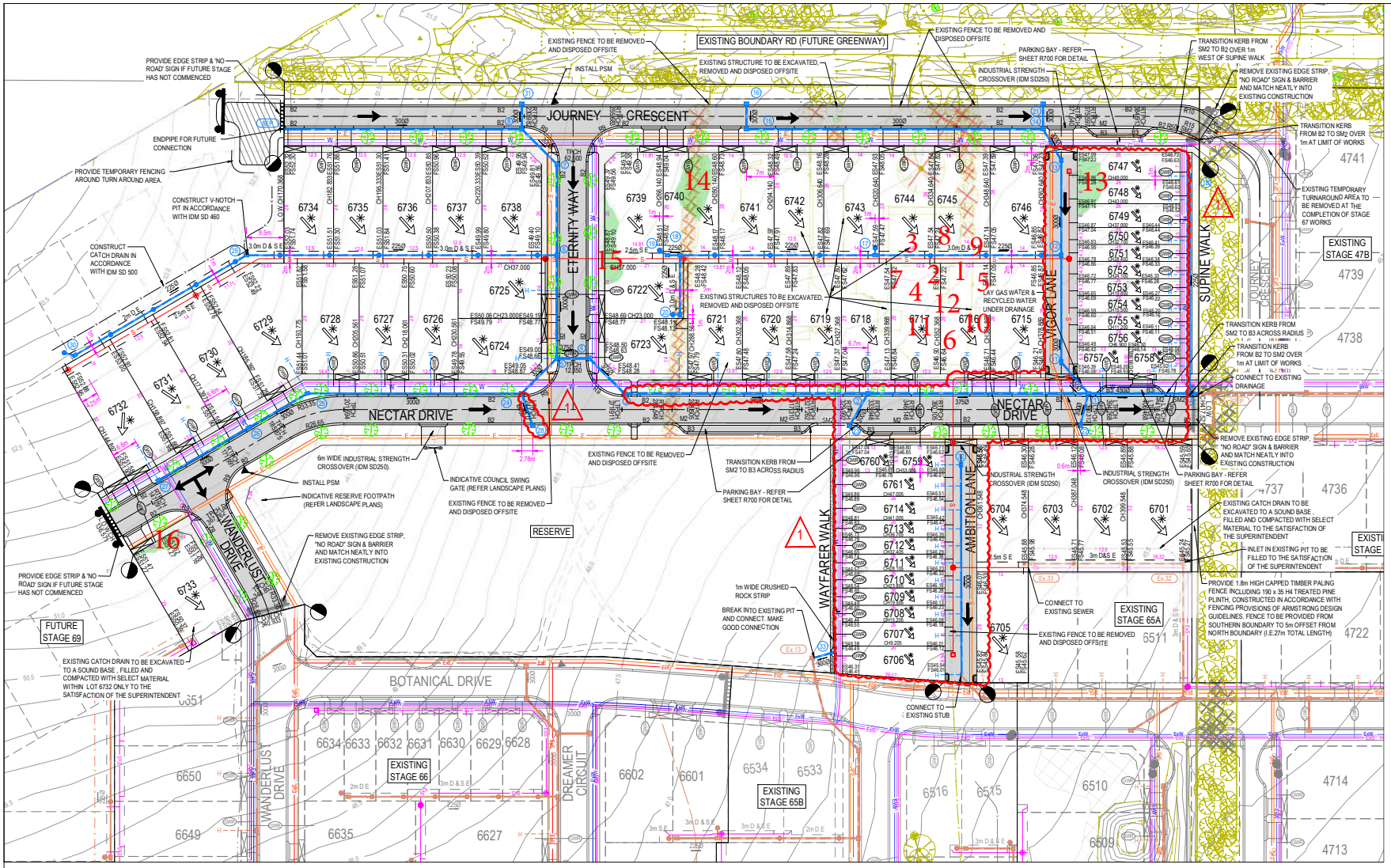
We are of the view that the bulk fill materials that have been placed across the reported allotments by Winslow Constructors during the aforementioned period can be considered as having been placed in a controlled manner to a minimum density ratio of 95% (standard compactive effort).

Please contact the undersigned if you require any additional information.

Civil Geotechnical Services

Nick Brock

FIGURE 1



CITY OF GREATER GEELONG TO STAMP HERE UPON APPROVAL

NOTE: STREET TREE LOCATIONS SHOWN ARE INDICATIVE ONLY. ULTIMATE LOCATION IS TO BE PROVIDED/CONFIRMED BY LANDSCAPE ARCHITECTS

NOTES:

1. ALL VEHICLE AND PRAM CROSSING LAYBACKS, TO BE MINIMUM OF 1.0m FROM PITS.
2. ALL PRAM CROSSINGS TO BE A MINIMUM 2.0m FROM VEHICLE CROSSINGS.
3. ALL PRAM CROSSINGS TO BE DDA COMPLIANT.
4. VEHICLE EXCLUSION MEASURES BETWEEN ROAD RESERVE AND RESERVE TO FORM PART OF LANDSCAPE WORKS.
5. THE USE OF DIRECTIONAL AND HAZARD TACTILE PAVERS MUST ACCORD WITH SECTION 2.2.3.1 OF AS/NZS 1428.4:2002
6. SEWER MAINTENANCE HOLE CONVERTER SLAB OR CONE, TO BE ROTATED TO ENSURE COVER POSITION IS CENTRALLY LOCATED WITHIN FOOTPATH
7. CHAINAGES FOR SETOUT OF PROPERTY INLET POINTS, SERVICING FUTURE LOTS, ARE MEASURED FROM THE DOWNSTREAM PIT
8. CONTRACTOR TO LOCATE ALL EXISTING ASSETS PRIOR TO COMMENCEMENT OF WORKS. ANY DAMAGE TO EXISTING ASSETS TO BE RECTIFIED AT CONTRACTORS EXPENSE.
9. CONTRACTOR TO VERIFY DEPTH OF EXISTING SERVICES, PRIOR TO COMMENCEMENT OF CONSTRUCTION
10. LOTS WITH FRONTAGES OF 12.50m OR LESS ARE TO BE PROVIDED WITH CROSSOVERS OF MAXIMUM 3.50m WIDTH

WARNING

BEWARE OF UNDERGROUND & OVERHEAD SERVICES

The locations of underground & overhead services are approximate only & 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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LEGEND - FUNCTIONAL LAYOUT PLAN

- PROPOSED ELECTRICITY (UNDERGROUND)
- PROPOSED GAS
- PROPOSED OPTIC FIBRE
- PROPOSED TELSTRA
- PROPOSED WATER
- PROPOSED RECYCLED WATER
- STORMWATER DRAIN, PIT & PROPERTY INLET
- SWALE DRAIN
- TRUNK SEWER
- SEWER & MAINTENANCE STRUCTURES
- HOUSE DRAIN
- SERVICE CONDUITS
- TACTILE PAVERS
- EXISTING ELECTRICITY (UNDERGROUND)
- EXISTING ELECTRICITY (OVERHEAD)
- EXISTING GAS
- EXISTING OPTIC FIBRE
- EXISTING TELSTRA
- EXISTING WATER
- EXISTING RECYCLED WATER
- EXISTING STORMWATER DRAIN
- EXISTING SEWER
- EXISTING HOUSE DRAIN
- EXISTING SWALE DRAIN
- STRUCTURAL FILL (>200mm)
- BUILDING ENVELOPES
- PAVEMENT TREATMENT
- CRUSHED ROCK
- DIRECTION OF FALL
- OVERLAND FLOW
- 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
- PROPOSED DRIVEWAY
- VEHICLE EXCLUSION FENCE
- TOP OF BATTER
- RIDGE LINE

SERVICES OFFSET SCHEDULE

ROAD NAME	GAS		RECYCLED WATER		POTABLE WATER		OPTIC FIBRE		ELECTRICITY		PUBLIC LIGHTING	
	SIDE	OFFSET	SIDE	OFFSET	SIDE	OFFSET	SIDE	OFFSET	SIDE	OFFSET	SIDE	OFFSET
WANDERLUST DRIVE	W	2.10	W	2.50	W	3.20	E	1.80	E	2.50	E	1.00*
NECTAR DRIVE	N	2.10	N	2.55	N	3.20	S	1.80	S	2.50	S	1.00*
ETERNITY WAY	E	2.10	E	2.50	E	3.10	W	1.80	W	2.50	W	1.00*
JOURNEY CRESCENT	S	1.80	S	2.40	S	3.20	S	4.10	S	4.80	S	1.00*
VIGOR LANE	-	-	-	-	-	-	W	1.20	W	1.80	-	-
SUPINE WALK	W	0.50	W	1.00	W	1.70	-	-	-	-	-	-
AMBITION LANE	-	-	-	-	-	-	E	1.20	E	1.80	-	-
WAYFARER WALK	E	0.50	E	1.00	E	1.70	-	-	-	-	-	-

1. * DENOTES OFFSET FROM BACK OF KERB.

N

1:500 10 5 0 10 20 A1
1:1000 A3

Approximate field density test location

REVISION	DATE	ISSUE DESCRIPTION	DRAWN	CHECKED	APPROVED
1	29/10/21	LOT LAYOUT CHANGED	I.H.	M.T.	T.P.
0	24/09/21	CONSTRUCTION ISSUE	M.T.	M.T.	T.P.
D	17/09/21	AMENDED TO COUNCIL COMMENTS (15/09/21)	K.M.	M.T.	T.P.
C	15/09/21	TENDER ISSUE	C.R.	M.T.	T.P.
B	31/08/21	ISSUED TO CLIENT	C.R.	M.T.	T.P.
A	15/07/21	ISSUED FOR APPROVAL	M.T.	M.T.	T.P.

CLIENT: villawood properties — Communities Designed for Living

creo CONSULTANTS
Level 7, 176 Wellington Parade
East Melbourne, VIC, Australia 3002

PROJECT: ARMSTRONG

DRAWING TITLE: ARMSTRONG - STAGE 67 LAYOUT PLAN

STATUS: ISSUED FOR CONSTRUCTION

SCALE AT A1	DRAWN	DESIGNED
1:500 @ A1	M.TROUNCE	M.TROUNCE
PROJECT ENGINEER	PROJECT MANAGER	DATE FIRST ISSUE
M. TROUNCE	T. PALIOS	JULY 2021
PROJECT No.	DRAWING No.	REVISION
180016.67	R200	1

COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

		Job No	21786
		Report No	21786/R001
		Date Issued	24/11/2021
Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	*Tested by*	BGG
Project	ARMSTRONG - STAGE 67	*Date tested*	16/11/21
Location	MOUNT DUNEED	*Checked by*	JHF

Feature **VOID BACKFILL** *Layer thickness* 200 mm *Time:* 14:36

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	*m*	1.4	1.2	1.0	0.8	0.6	0.6
Measurement depth	*mm*	175	175	175	175	175	175
Field wet density	*t/m³*	1.95	1.95	1.95	1.88	1.88	1.92
Field moisture content	*%*	28.7	23.1	19.9	30.0	20.9	18.7

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	19.0
Percent of oversize material	*wet*	0	0	0	0	0	0
Peak Converted Wet Density	*t/m³*	2.01	1.95	2.02	1.95	1.96	1.99
Adjusted Peak Converted Wet Density	*t/m³*	-	-	-	-	-	-
Optimum Moisture Content	*%*	28.5	23.0	20.5	30.0	23.0	19.0

Moisture Variation From Optimum Moisture Content		0.0%	0.0%	0.5% dry	0.0%	2.0% dry	0.0%

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_{HD})	*%*	**97.0**	**100.0**	**96.5**	**96.5**	**96.0**	**96.5**

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

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

		Job No	21786
		Report No	21786/R002
		Date Issued	24/11/2021
Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	*Tested by*	BGG
Project	ARMSTRONG - STAGE 67	*Date tested*	16/11/21
Location	MOUNT DUNEED	*Checked by*	JHF

Feature **VOID BACKFILL** *Layer thickness* 200 mm *Time:* 14:38

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	*m*	0.4	0.4	0.2	0.2	fsl	fsl
Measurement depth	*mm*	175	175	175	175	175	175
Field wet density	*t/m³*	1.89	1.92	1.89	1.95	1.95	1.95
Field moisture content	*%*	19.6	23.7	22.6	20.6	22.1	22.0

Test procedure AS 1289.5.7.1

Test No		7	8	9	10	11	12
Compactive effort		Standard					
Oversize rock retained on sieve	*mm*	19.0	19.0	19.0	19.0	19.0	19.0
Percent of oversize material	*wet*	0	0	0	0	0	0
Peak Converted Wet Density	*t/m³*	1.96	2.02	1.98	2.01	1.98	2.00
Adjusted Peak Converted Wet Density	*t/m³*	-	-	-	-	-	-
Optimum Moisture Content	*%*	19.5	22.5	22.5	20.5	22.5	24.5

Moisture Variation From Optimum Moisture Content		0.0%	1.0% wet	0.0%	0.0%	0.5% 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

Density Ratio (R_{HD})	*%*	**96.5**	**95.5**	**95.5**	**97.0**	**98.0**	**97.5**

Material description

No 7 - 12 Clay Fill

Approved Signatory : Justin Fry

COMPACTION ASSESSMENT

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

		Job No	21786
		Report No	21786/R003
		Date Issued	24/01/2022
Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	*Tested by*	BGG
Project	ARMSTRONG - STAGE 67	*Date tested*	10/12/21
Location	MOUNT DUNEED	*Checked by*	JHF

Feature **EARTHWORKS** *Layer thickness* 200 mm *Time:* 14:07

Test procedure AS 1289.2.1.1 & 5.8.1

Test No		**13**	**14**	**15**	**16**	**-**	**-**
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/m³*	1.95	1.95	1.95	1.93	-	-
Field moisture content	*%*	23.0	20.6	25.1	24.3	-	-

Test procedure AS 1289.5.7.1

Test No		13	14	15	16	-	-
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/m³*	2.00	1.99	2.00	2.01	-	-
Adjusted Peak Converted Wet Density	*t/m³*	-	-	-	-	-	-
Optimum Moisture Content	*%*	27.0	23.5	28.5	26.0	-	-

Moisture Variation From Optimum Moisture Content		2.0% dry	2.5% 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

Density Ratio (R_{HD})	*%*	**97.5**	**98.0**	**97.5**	**96.0**	**-**	**-**

Material description

No 13 - 16 Clay Fill

Approved Signatory : Justin Fry