



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

23<sup>rd</sup> March 2012

Our Reference: 12037:JHF567

Winslow Constructors Pty Ltd  
50 Barry Road  
CAMPBELLFIELD VIC 3061

Dear Sirs,

**RE: LEVEL 1 EARTHWORKS INSPECTION AND TESTING  
ESTUARY ESTATE (STAGE 13A) – LEOPOLD**

Please find attached our Report No 12037AA that relates 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 early February 2012.

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 an experienced geotechnician from this office. Any areas that were deemed unsatisfactory were reworked and retested under his 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

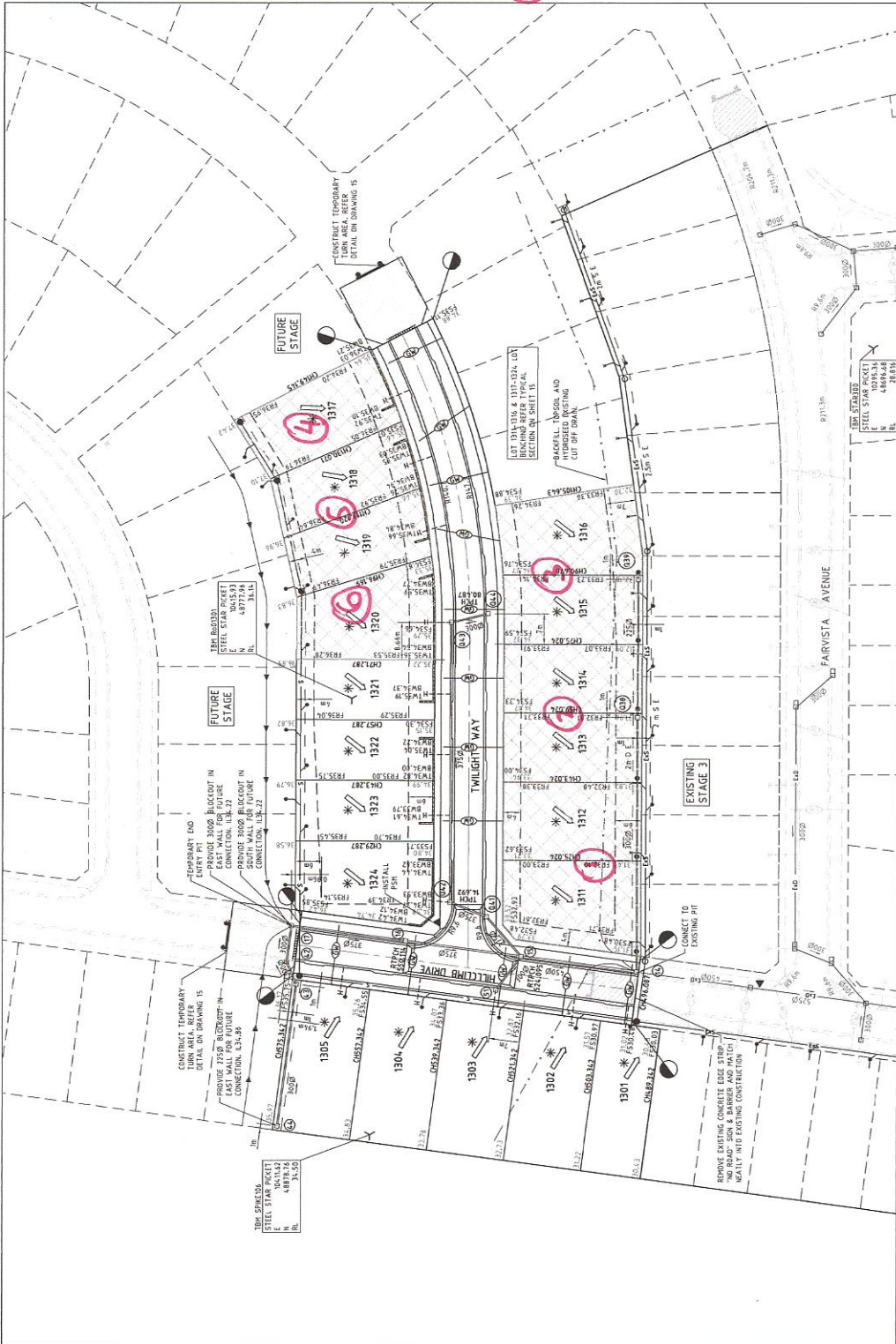
Justin Fry

# FIGURE 1

**LEGEND - LAYOUT PLAN**

- STORMWATER DRAIN PIT & PROPERTY INLET
- SEWER & MAINTENANCE STRUCTURES
- HOUSE DRAIN
- SERVICE CONDUITS
- ACTIVE PIPERS
- EXISTING ELECTRICITY (UNDERGROUND)
- EXISTING ELECTRICITY (OVERHEAD)
- EXISTING GAS
- EXISTING TELSTRA
- EXISTING WATER
- EXISTING WATER DRAIN
- EXISTING HOSE DRAIN
- EXISTING SMOKE DRAIN
- EXISTING SURFACE LEVEL
- PROPOSED SURFACE LEVEL
- PROPOSED FINISH FLOOR LEVEL
- TOP OF RETAINING WALL
- BOTTOM OF RETAINING WALL
- RETAINING WALL
- 200L LOT LINES (MAY VARY)
- CONCRETE TEMPORARY TURK AREA, REFER TO DETAIL ON DRAWING IS
- DIRECTION OF FILL
- EX. STRUCTURAL FILL - 200mm DEEP
- OVERLAND FLOW
- OVERLAND FLOW TO BE GRADED FINISH IN TURK AREA, REFER TO DETAIL ON DRAWING IS
- CONCRETE EDGE STRIP WITH SUBSOIL DRAIN
- "NO ROAD" SIGN & BARRIER
- LIMIT OF WORKS
- PROPOSED SURFACE MARK
- TEMPORARY BENCH MARK
- PROPOSED DRIVEWAY

APPROXIMATE  
FIELD DENSITY  
LOCATION



**WARNING**  
BEWARE OF UNDERGROUND SERVICES  
The location of underground services is shown on this drawing for information only and does not constitute a guarantee of their location. No guarantee is given that all existing services, as shown, are correct. Dial 1100 BEFORE YOU DIG

**Estuary Stage 13A**  
City Of Greater Geelong  
Roadworks and Drainage  
Layout Plan  
Drawing No. 0259EHL-13A-03 Rev C  
Sheet No. 3 of 17  
Approved for Construction

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Scale @ A1  
1:500  
0 5 10 20

Designed: A. Perkins  
Drawn: A. Perkins  
Checked: C. Birkett  
Authorised: J. Golden  
Date: November 2010

**estuary leapold**  
Principal: Gregory Dymovskiy Pty Ltd  
Level 1, 6 Revell Quay  
Southbank, Victoria 3008

**ROAD LAYOUT TABLE**

ROAD NAME	RESERVE WIDTH (m)	KERR TYPE		VERGE WIDTH (m)	
		INT/WEST	STP/EAST	INT/WEST	STP/EAST
HULLOOB DRIVE	10.00	B2	B2	4.25	4.25
TWILIGHT WAY	10.00	B2	B2	4.25	4.25

**SERVICES OFFSET SCHEDULE**

ROAD NAME	GAS	WATER	ELECTRICITY	TELSTRA
HULLOOB DRIVE	SIZE	1.00	1.00	1.00
	OFFSET (m)	2.70	2.70	2.70
TWILIGHT WAY	SIZE	2.70	2.70	2.70
	OFFSET (m)	2.70	2.70	2.70

**C. PAVES AMENDMENTS**

AMENDMENT	DATE	DESCRIPTION
1	05.04.11	09/09 - JK
2	24.01.11	09/09 - JK
3	07.12.10	09/09 - JK

DATE ISSUED TO COUNCIL FOR APPROVAL: 09/09/10



## COMPACTION ASSESSMENT

### CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Job No 12037  
 Report No 12037AA  
 Date Issued 13/02/12

Client	WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)	Tested by	KTC
Project	ESTUARY - STAGE 13A	Date tested	03/02/12
Location	LEOPOLD	Checked by	JHF

<b>Feature</b>	<b>EARTHWORKS</b>	Layer thickness	200 mm	Time: 14:08
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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 <i>mm</i>	175	175	175	175	175	175
Field wet density <i>t/m<sup>3</sup></i>	1.91	1.91	1.91	1.94	2.01	1.97
Field moisture content %	7.3	13.7	14.0	10.8	12.6	11.0

Test procedure AS 1289.5.7.1

Test No	1	2	3	4	5	6
Compactive effort	Standard					
Override 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>	1.99	2.01	1.99	2.01	2.04	2.02
Adjusted Peak Converted Wet Density <i>t/m<sup>3</sup></i>	-	-	-	-	-	-
Optimum Moisture Content %	11.5	16.0	17.0	14.5	15.0	14.5

Moisture Variation From Optimum Moisture Content	4.5% dry	2.5% dry	3.0% dry	4.0% dry	2.5% dry	3.5% dry
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Density Ratio ( $R_{HD}$ ) %	96.0	95.0	96.0	97.0	98.5	97.5
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Material description

Test No 1 - 6 Clay Fill
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A581HILF V1.10 OCT 09



This document is issued in accordance with NATA's accreditation requirements. Accredited for compliance with ISO/IEC 17025  
 Accreditation No 9909

Approved Signatory : Justin Fry