

Shadforths Civil Contractors Pty Ltd
Sandalwood Lane
FOREST GLEN 4566

Project 68604.00 Rev 03
19 July 2017
SJ:BS

Attention: Colin Foster

Email: Colin.Foster@shadcivil.com.au

Dear Sirs

Report on Bulk Earthworks Level 1 Supervision and Testing
Emerald Hills Estate Stages 13B, 14A, 14B and 15
Heritage Drive, Brassall

1. Introduction

This report presents a summary of geotechnical inspections and bulk earthworks testing operations associated with Stages 13B, 14A, 14B and 15 of a residential subdivision located at Heritage Drive, Brassall (Emerald Hills Estate). The report was previously issued for Stage 14 only on 9 November 2015. Ipswich City Council requested subsequent testing to be carried out on Lots 276, 295 & 304 on 19 April 2016 and report has been updated on this basis.

The scope of inspection and testing provided by Douglas Partners Pty Ltd (DP) comprised full-time supervision of earthworks operations ('Level 1' testing inspections) as defined in AS 3798-2007 "Guidelines on Earthworks for Commercial and Residential Developments".

2. Earthworks Activities

2.1 Extent of Works

The extent of bulk filling placed for Stage 13B, 14A, 14B and 15 of the Emerald Hills Estate, is indicated on Drawings P2P3.17,P2.17.A,P2.17B and P3.17A attached. Multiple drawings are provided for clarity.

2.2 Subgrade Preparation

A senior geotechnician observed the stripping of vegetation and topsoil beneath the proposed filling areas. After stripping, the exposed subgrade comprised natural silty sandy clay or gravelly silty sand, estimated to be in a very stiff or medium dense condition.

Test rolls were performed with a loaded articulated water truck and generally no noticeable deflections were observed. All subgrade areas were stripped to what was considered a suitable subgrade for filling placement.

2.3 Filling Material

The materials used as filling comprised natural silty sandy clay or gravelly silty sand, won from on-site cut areas.

2.4 Placement and Testing of Filling

The filling was spread and compacted by Cat 825 compactor. The filling was placed in 200mm to 300mm loose thickness layers.

Observations were made by a senior technician who was present on-site full-time during the works. At completion of filing, each layer was presented for testing.

Additional field density testing and dynamic cone penetrometer testing was carried out on Lots 276, 295 & 304 on 19 April 2016.

Density testing was conducted by using nuclear gauge method (AS 1289.5.8.1) and relative compaction was determined using the maximum dry density method (AS 1289.5.1.1). Levels are based on site survey markings and coordinates were taken by the senior geotechnician with handheld GPS. The results of density tests, which were forwarded to Shadforths Civil Contractors during the course of the works, are summarised in Table 1 below.

Table 1: Summary of Density Testing Results

Item	Compaction	Moisture Variation
Specification	Minimum 95% Standard	Within 2.0% of OMC
No. of Tests	226	226
Range of Results	95.0% to 105.5% Standard	1.5% dry to 2.0% wet of OMC
No. of Tests Outside the Specification	0	0
Mean (all tests)	98.5% Standard	0.5% wet of OMC

* OMC – optimum moisture content for Std compaction

3. Comments

DP undertook 'Level 1' inspection of bulk earthworks as defined in AS 3798–2007 "Guidelines on Earthworks for Commercial and Residential Developments". Based on the inspections and test results provided, it is considered that the placement and compaction of the bulk filling for the proposed Emerald Hills Estate, located at Heritage Drive, Brassall by Shadforths Civil Contractors Pty Ltd over the period from 29 July to 31 November 2015, has been carried out in accordance with the specification requirements for relative compaction and moisture variation.

DP does not undertake to guarantee the work of the contractors nor relieve their responsibility to produce a completed product conforming to the requirements of the specification.

For building on controlled filling at the site, consideration should be given by the user to the following:

- possible disruption of the compacted filling at the site by the installation of services, footings and retaining walls;
- the possibility that additional filling has been placed after the date of the last field density test or at times when DP has not been notified that filling operations were in progress;
- adequate confinement of the filled areas;
- the suitability of the filled land to support structures of various types without excessive deflection.

We trust that the above information is suitable for your present requirements. Should you have any queries, please do not hesitate to contact the undersigned.

- Yours faithfully-

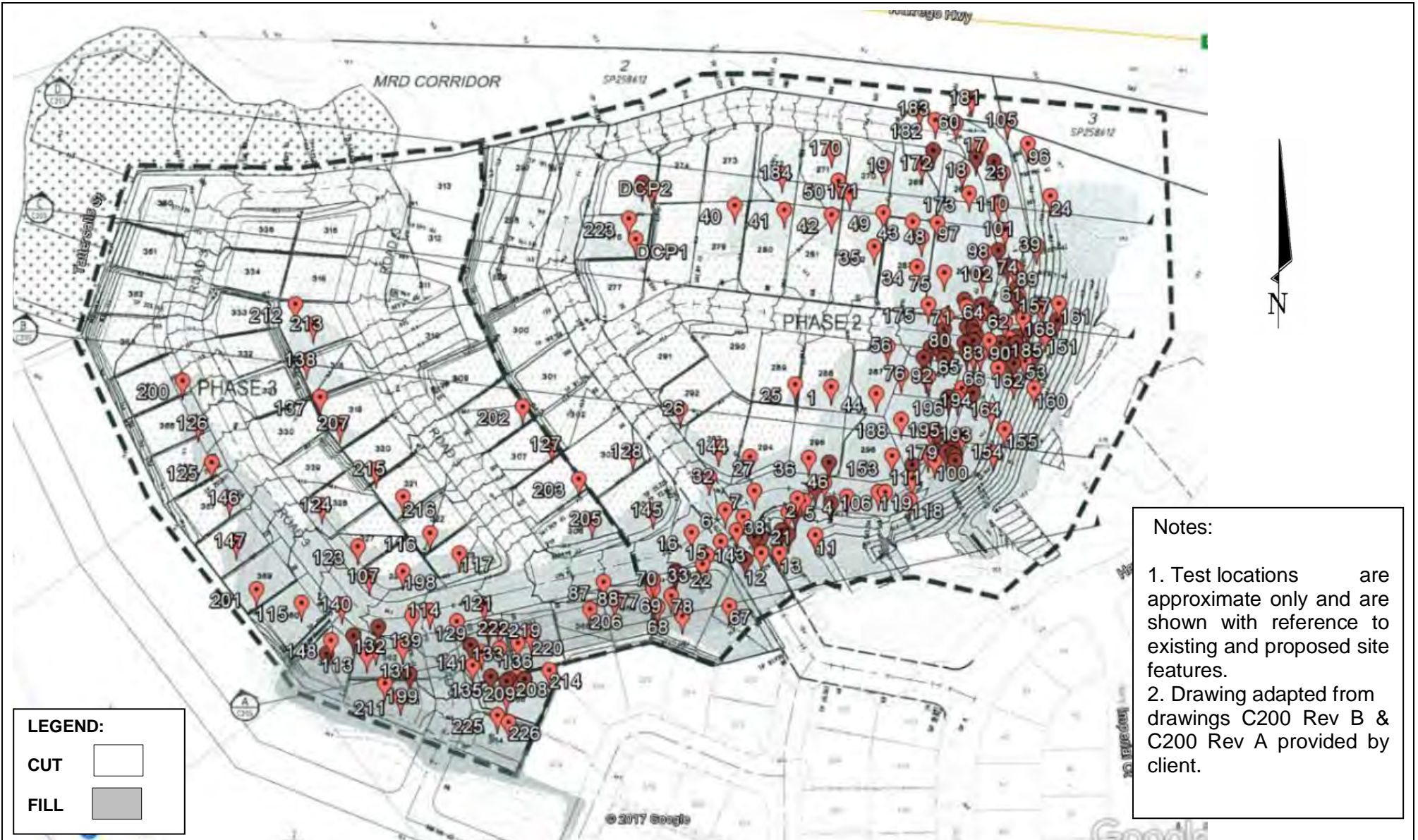
Douglas Partners Pty Ltd


Srdjan Jajcanin
Laboratory Manager

Reviewed by


Bruce Stewart
Principal

Attachments: Drawing Earthworks Plans phase P2P3.17,P2.17.A,P2.17B and P3.17A
Notes entitled 'About This Report'
DCP Report




Notes:

1. Test locations are approximate only and are shown with reference to existing and proposed site features.
2. Drawing adapted from drawings C200 Rev B & C200 Rev A provided by client.

LEGEND:

CUT

FILL

 Douglas Partners Geotechnics Environment Groundwater	CLIENT: Shadforths Civil Contractors	Bulk Filling Test Locations	PROJECT No: 68604
	OFFICE: Brisbane	Phase 2 & 3	DRAWING No: P2P3.17
	DATE: 19.07.2017	Heritage Drive, Brassall	REVISION: -



Notes:

1. Test locations are approximate only and are shown with reference to existing and proposed site features.
2. Drawing adapted from drawings C200 Rev B & C200 Rev A provided by client.

LEGEND:

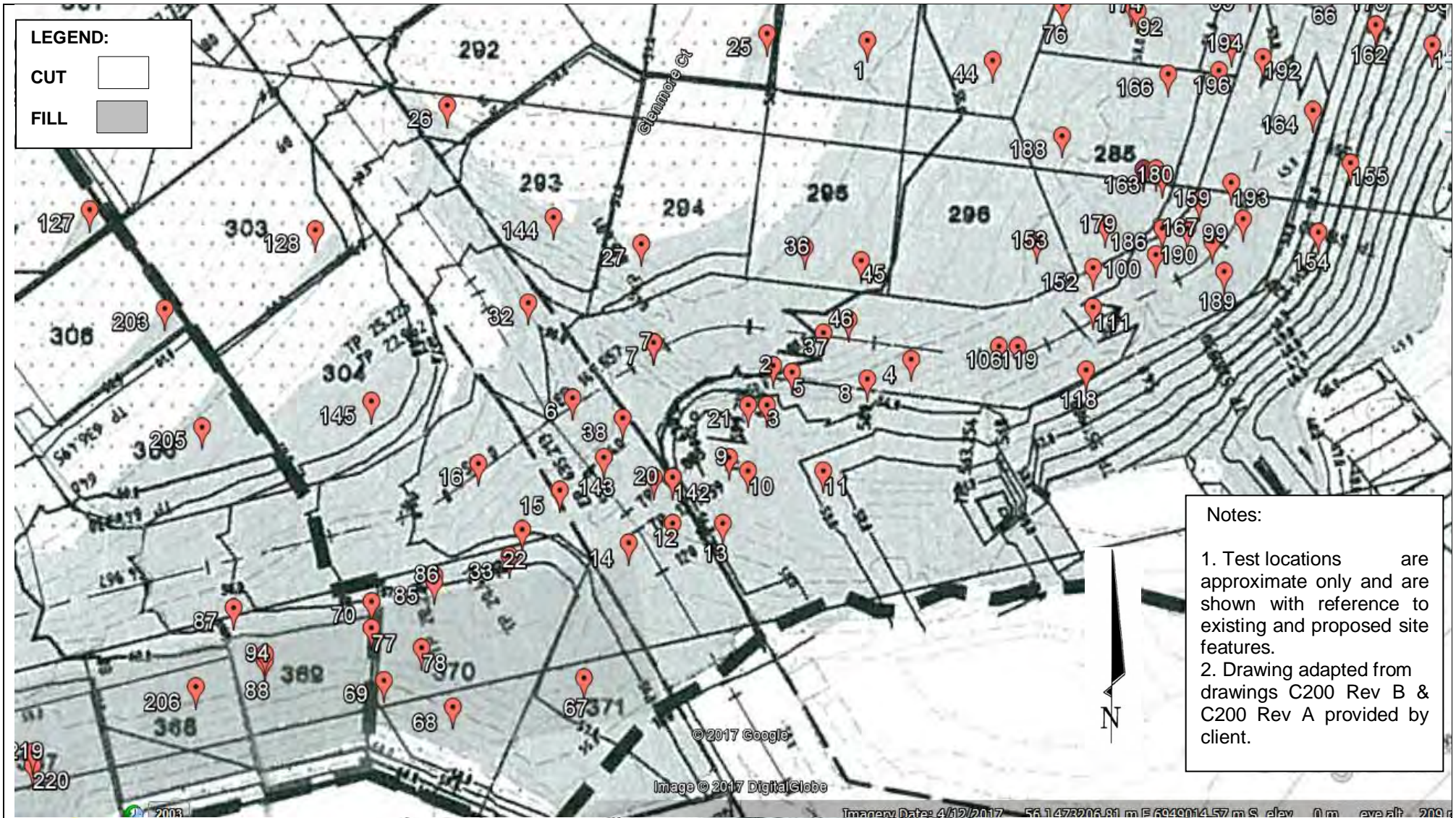
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CLIENT: Shadforths Civil Contractors
 OFFICE: Brisbane
 DATE: 19.07.2017

Bulk Filling Test Locations
Phase 2 North
Heritage Drive, Brassall

PROJECT No: 68604
 DRAWING No: P2.17.A
 REVISION: -



Notes:

1. Test locations are approximate only and are shown with reference to existing and proposed site features.
2. Drawing adapted from drawings C200 Rev B & C200 Rev A provided by client.



CLIENT: Shadforths Civil Contractors
 OFFICE: Brisbane
 DATE: 19.07.2017

Bulk Filling Test Locations
Phase 2 South
Heritage Drive, Brassall


PROJECT No: 68604
 DRAWING No: P2.17.B
 REVISION: -





Notes:

1. Test locations are approximate only and are shown with reference to existing and proposed site features.
2. Drawing adapted from drawings C200 Rev B & C200 Rev A provided by client.

LEGEND:

CUT 

FILL 

 <p>Douglas Partners Geotechnics Environment Groundwater</p>	CLIENT: Shadforths Civil Contractors	<p>Bulk Filling Test Locations</p> <p>Phase 3</p> <p>Heritage Drive, Brassall</p>	PROJECT No: 68604
	OFFICE: Brisbane		DRAWING No: P3.17.A
	DATE: 19.07.2017		REVISION: -