



## **WALLARA WATERS STAGE 10 & 11**

Level One Report  
G&S Fortunato Group Pty. Ltd.

25th August 2017 **REV:2**



25th August 2017

Fortunato Group Pty Ltd  
38A Merri Concourse  
Campbellfield, VIC, 3061

**Attention: David Diep**

Dear David

**RE: Mace Way**

### **Level 1 Compaction Control**

This letter presents a report by Pearce Geotech Pty Ltd (PG) on Level 1 Testing Services undertaken during the construction of allotment/Road fill at Wallara Waters, Wallan, stages 10 and 11.

One electronic copy provided.

Please do not hesitate to contact the undersigned should there be any queries regarding this report.

For and on behalf of Pearce Geotech Pty Ltd

Regards

Daniel Pearce



[daniel.pearce@pearcegeotech.com.au](mailto:daniel.pearce@pearcegeotech.com.au)

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## 1 INTRODUCTION

This report presents the results of compaction control and laboratory testing services provided by Pearce Geotech Pty Ltd (PG) during the construction of the filling at Wallara Waters, Wallan, stages 10 and 11 (Wallara Waters).

PG was engaged by Fortunato Group Pty Ltd (Fortunato) to provide Level 1 testing services for the duration of these works in accordance with the specification supplied. The work was commissioned by Mr David Diep of Fortunato.

Level 1 testing, as defined in AS3798-2007 "Guidelines on Earthworks for Commercial and Residential Development", provides for full-time inspection of the construction of controlled fill and compaction testing in accordance with AS1289 "Methods of Testing Soils for Engineering Purposes". The Level 1 testing was undertaken by technicians from PG during the period from 4th November 2016 to 16th August 2017.

## 2 SCOPE OF WORK

### 2.1 Area of Work

PG provided Level 1 testing and supervision of the Allotment filling placed. Material selection and condition, as well as compaction testing, were conducted during the construction of this fill.

This report does not include fill other than where mentioned in this report or any other fill that may be placed during this period or subsequent periods at or surrounding the subject site.

### 2.2 Placement Specification

In summary, the project specification written by Reeds Consulting and labelled "Wallara Waters Estate Stage 10. Locality plan, General notes & Drawing index". Reference: 20569E/10 Version B, sent to PG on the 4th November 2016 States that:

- **Note 12:** Fill areas are to be stripped of topsoil, filled and topsoil replaced to obtain final levels as stated. Filling works and fill compaction to conform to AS 1289 5.1.1 -1993 and any revisions thereto. Allotments and road reserves-95% SCTD- under pavements- -top 450mm 100% SCTD, otherwise 95% SCTD. Refer to AS 3798-1996- Guidelines on earthworks for commercial and residential developments. All fill material must confirm to the EPA fill material guidelines and to be approved by the engineer prior to carting to site. Compaction testing to be carried out in accordance with standards by NATA registered laboratory and results submitted to the superintendent.

### **3 CONSTRUCTION PLANT**

The following construction plant was used on site as required:

- 1 x Grader
- 1 x Smooth drum roller
- 1 x Pad foot roller
- 1 x 815 Compactor
- 3 x excavator
- 1 x water truck
- dump trucks as required

### **4 INSPECTION AND TESTING**

#### **4.1 Construction Materials**

Insitu and imported materials were used as fill for this project. Fill material was sourced from:

- Various excavations on site.
- Various local excavation sites.

All material was tested for compliance, spread and watered to achieve the specified density and moisture specification.

#### **4.2 Fill Placement**

Initial site inspection showed one (1) fill area that was consecutively striped of all deleterious silty topsoil and organic matter, down to stiff silty Clay. This area was then proof rolled as per AS3798 "Guidelines on earthworks for commercial and residential developments" section 5.5 "Test Rolling". During this proof rolling process, several "overly wet" soft spots were encountered. These areas were either, left to dry back or further excavated to achieve the required proof roll result.

Compaction tests and proof rolls were conducted on each layer of fill to ensure compliance with the specification. Samples of the fill material were then tested in PG's NATA accredited laboratory (Accreditation Number 18877) to determine the Hilf density ratio and moisture ratio of the material. In total 154 field density tests, 154 Hilf rapid compaction tests and 154 moisture contents were conducted.

Control Fill material was placed by dump truck, spread by grader/compactor, simultaneously water conditioned wherever required and compacted. Where the material appeared too wet, material was left to dry or dry soil was mixed in and processed to a homogenous state.

## 4.2.1 Test Summary

Field No.	Date	Location	Layer	Min Ratio	CDR%
S-23938	4/11/2016	See Site Plan	1	95% Std	92
S-23939	4/11/2016	See Site Plan	1	95% Std	94.5
S-23940	4/11/2016	See Site Plan	1	95% Std	98.35
S-23941	7/11/2016	RT S-23938	1	95% Std	97.5
S-23942	7/11/2016	RT S-23939	1	95% Std	99.5
S-23943	7/11/2016	See Site Plan	1	95% Std	98
S-23990	8/11/2016	See Site Plan	1	95% Std	102.5
S-23991	8/11/2016	See Site Plan	1	95% Std	100
S-23992	8/11/2016	See Site Plan	1	95% Std	103.5
S-23987	9/11/2016	See Site Plan	2	95% Std	103
S-23988	9/11/2016	See Site Plan	2	95% Std	93.5
S-23989	9/11/2016	See Site Plan	2	95% Std	96.5
S-24042	10/11/2016	RT S-23988	2	95% Std	104.5
S-24043	10/11/2016	See Site Plan	1	95% Std	99.5
S-24044	10/11/2016	See Site Plan	1	95% Std	100
S-24045	10/11/2016	See Site Plan	1	95% Std	99.5
S-24176	11/11/2016	See Site Plan	1	95% Std	101
S-24177	11/11/2016	See Site Plan	1	95% Std	95
S-24178	11/11/2016	See Site Plan	1	95% Std	96.5

Wallara Waters stages 10 & 11, Wallan

S-24674	29/11/2016	See Site Plan	1	95% Std	96.5
S-24675	29/11/2016	See Site Plan	1	95% Std	97
S-24676	29/11/2016	See Site Plan	1	95% Std	97
S-24677	29/11/2016	See Site Plan	1	95% Std	97.5
S-24924	1/12/2016	See Site Plan	1	95% Std	95
S-24928	1/12/2016	See Site Plan	1	95% Std	89
S-24929	1/12/2016	See Site Plan	1	95% Std	89.5
S-24930	1/12/2016	See Site Plan	1	95% Std	90.5
S-24931	1/12/2016	See Site Plan	1	95% Std	90
S-24932	1/12/2016	See Site Plan	1	95% Std	90.5
S-24933	1/12/2016	See Site Plan	1	95% Std	94
S-24934	1/12/2016	See Site Plan	1	95% Std	91
S-24935	1/12/2016	See Site Plan	1	95% Std	95
S-24855	2/12/2016	See Site Plan	1	95% Std	87.5
S-24856	2/12/2016	See Site Plan	1	95% Std	89
S-24857	3/12/2016	See Site Plan	1	95% Std	89
S-24858	3/12/2016	See Site Plan	1	95% Std	91.5
S-24859	3/12/2016	See Site Plan	1	95% Std	91.5
S-24860	3/12/2016	See Site Plan	1	95% Std	92.5
S-24725	5/12/2016	See Site Plan	1	95% Std	101.5
S-25032	6/12/2016	RT Report CS-629-2,9,3	1	95% Std	100
S25033	6/12/2016	RT Report CS-629-2,9,3	1	95% Std	98

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S-25034	6/12/2016	RT Report CS-629-2,9,3	1	95% Std	98
S25035	6/12/2016	RT Report CS-629-2,9,3	1	95% Std	93
S-25064	7/12/2016	RT S-25035	1	95% Std	97.5
S-25065	7/12/2016	RT Report CS-629-2,9,3	1	95% Std	100.5
S-25066	7/12/2016	RT Report CS-629-2,9,3	1	95% Std	99.5
S-25023	9/12/2016	See Site Plan	2	95% Std	98.5
S-25024	9/12/2016	See Site Plan	2	95% Std	97
S-25025	9/12/2016	See Site Plan	2	95% Std	100
S-25026	12/12/2016	See Site Plan	2	95% Std	99.5
S-25311	13/12/2016	RT S-24932	1	95% Std	97.5
S-25312	13/12/2016	RT S-24933	1	95% Std	96
S-25476	16/01/2017	See Site Plan	2	95% Std	97
S-25477	16/01/2017	See Site Plan	2	95% Std	98
S-25478	16/01/2017	See Site Plan	2	95% Std	96
S-25479	17/01/2017	See Site Plan	2	95% Std	97
S-25480	17/01/2017	See Site Plan	2	95% Std	97
S-25481	17/01/2017	See Site Plan	2	95% Std	97.5
S-25482	17/01/2017	See Site Plan	2	95% Std	97.5
S-25633	18/01/2017	See Site Plan	3	95% Std	98
S-25634	18/01/2017	See Site Plan	3	95% Std	100.5
S-25635	18/01/2017	See Site Plan	3	95% Std	103
S-25636	19/01/2017	See Site Plan	2	95% Std	98.5



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S-25637	19/01/2017	See Site Plan	SG	100% Std	100
S-25638	19/01/2017	See Site Plan	SG	100% Std	100.5
S-25639	19/01/2017	See Site Plan	SG	100% Std	102.5
S-25617	23/01/2017	See Site Plan	2	95% Std	97.5
S-25618	23/01/2017	See Site Plan	2	95% Std	104
S-25619	23/01/2017	See Site Plan	2	95% Std	98
S-25721	24/01/2017	See Site Plan	2	95% Std	96
S-25722	25/01/2017	See Site Plan	2	95% Std	97.5
S-25723	25/01/2017	See Site Plan	2	95% Std	95
S-25724	25/01/2017	See Site Plan	2	95% Std	96
S-25775	31/01/2017	See Site Plan	1	95% Std	96
S25776	31/01/2017	See Site Plan	1	95% Std	99.5
S-25777	31/01/2017	See Site Plan	1	95% Std	94.5
S-25893	1/02/2017	See Site Plan	1	95% Std	94.5
S-25894	1/02/2017	See Site Plan	2	95% Std	98.5
S-25895	1/02/2017	See Site Plan	1	95% Std	93
S-25946	1/02/2047	RT S-25946	1	95% Std	96
S-25947	1/02/2047	See Site Plan	2	95% Std	95.5
S-25948	1/02/2047	See Site Plan	3	95% Std	99
S-25949	1/02/2047	See Site Plan	4	95% Std	97.5
S-25950	2/02/2017	See Site Plan	2	95% Std	97
S25951	2/02/2017	See Site Plan	3	95% Std	98

Wallara Waters stages 10 & 11, Wallan

S-25952	2/02/2017	See Site Plan	3	95% Std	98
S-25953	2/02/2017	See Site Plan	4	95% Std	99
S-25954	2/02/2017	See Site Plan	4	95% Std	97
S-25955	2/02/2017	See Site Plan	5	95% Std	96.5
S-25956	2/02/2017	See Site Plan	5	95% Std	99.5
S-25957	2/02/2017	See Site Plan	6	95% Std	99
S-25896	3/02/2017	See Site Plan	SG	95% Std	100.5
S-25897	3/02/2017	See Site Plan	SG	95% Std	100.5
S-25898	3/02/2017	See Site Plan	SG	95% Std	101
S-25960	7/02/2017	See Site Plan	3	95% Std	96.5
S-25961	7/02/2017	See Site Plan	4	95% Std	98
S-25962	7/02/2017	See Site Plan	4	95% Std	96.5
S-25963	9/02/2017	See Site Plan	2	95% Std	97.5
S-25964	9/02/2017	See Site Plan	2	95% Std	98.5
S-25965	9/02/2017	See Site Plan	2	95% Std	99
S-26957	13/02/2017	See Site Plan	1	95% Std	96.5
S-26958	13/02/2017	See Site Plan	2	95% Std	96
S-26959	13/02/2017	See Site Plan	3	95% Std	96
S-26960	13/02/2017	See Site Plan	4	95% Std	95.5
S-26961	13/02/2017	See Site Plan	5	95% Std	96
S-26816	14/02/2017	See Site Plan	7	95% Std	99
S-26817	14/02/2017	See Site Plan	3	95% Std	99

Wallara Waters stages 10 & 11, Wallan

S-26818	14/02/2017	See Site Plan	3	95% Std	101.5
S-26819	14/02/2017	See Site Plan	3	95% Std	99
S-26820	14/02/2017	See Site Plan	3	95% Std	98.5
S-26822	15/02/2017	See Site Plan	1	95% Std	101.5
S-26823	15/02/2017	See Site Plan	2	95% Std	102
S-26490	16/02/2017	See Site Plan	SG	100% Std	108
S-26491	16/02/2017	See Site Plan	SG	100% Std	106
S-26492	16/02/2017	See Site Plan	SG	100% Std	105.5
S-26520	17/02/2017	See Site Plan	3	95% Std	101.5
S-26521	17/02/2017	See Site Plan	4	95% Std	99.5
S-26522	17/02/2017	See Site Plan	3	95% Std	99.5
S-26523	17/02/2017	See Site Plan	3	95% Std	99.5
S-26493	20/02/2017	See Site Plan	SG	100% Std	100.5
S26494	20/02/2017	See Site Plan	SG	100% Std	103.5
S26495	20/02/2017	See Site Plan	3	95% Std	98.5
S-26405	21/02/2017	See Site Plan	SG	100% Std	101
S-26721	28/02/2017	See Site Plan	SG	100% Std	101.5
S-26722	28/02/2017	See Site Plan	1	95% Std	100
S-26723	28/02/2017	See Site Plan	1	95% Std	99.5
S-26724	1/03/2017	See Site Plan	3	95% Std	99.5
S-26725	1/03/2017	See Site Plan	4	95% Std	99
S-26726	1/03/2017	See Site Plan	4	95% Std	99

Wallara Waters stages 10 & 11, Wallan

S-26700	2/03/2017	See Site Plan	4	95% Std	96
S-26701	2/03/2017	See Site Plan	4	95% Std	98
S26702	2/03/2017	See Site Plan	4	95% Std	95.5
S-26824	3/03/2017	See Site Plan	FL	95% Std	99
S-26825	3/03/2017	See Site Plan	FL	95% Std	97
S-26826	3/03/2017	See Site Plan	FL	95% Std	97
S-26891	6/03/2017	See Site Plan	1	95% Std	95.5
S-26892	6/03/2017	See Site Plan	2	95% Std	95
S-26893	6/03/2017	See Site Plan	2	95% Std	96
S-26899	7/03/2017	See Site Plan	4	95% Std	95.5
S-26900	7/03/2017	See Site Plan	5	95% Std	96
S-26901	7/03/2017	See Site Plan	5	95% Std	95.5
S-27862	8/03/2017	See Site Plan	3	95% Std	101
S-27863	8/03/2017	See Site Plan	3	95% Std	102.5
S-27864	8/03/2017	See Site Plan	3	95% Std	101.5
S-27865	16/03/2017	See Site Plan	4	95% Std	99
S-27866	16/03/2017	See Site Plan	5	95% Std	98
S-27867	16/03/2017	See Site Plan	5	95% Std	98
S-27876	28/03/2017	See Site Plan	3	95% Std	99
S-27877	28/03/2017	See Site Plan	3	95% Std	98
S-27878	28/03/2017	See Site Plan	3	95% Std	97.5
S-27522	29/03/2017	See Site Plan	4	95% Std	105

S-27523	29/03/2017	See Site Plan	4	95% Std	106.5
S-27524	29/03/2017	See Site Plan	4	95% Std	103
S-31597	16/08/2017	See Site Plan	FL	95% Std	102.5

## 5 STATEMENT OF COMPLIANCE

PG personnel have provided Level 1 inspection and testing services during construction of the allotment fill at Wallara Waters, Wallan. A technician from PG was on site on a full-time basis during fill placement and observed the construction techniques adopted.

Based on observations made by PG personnel and the results of field and laboratory tests, we consider that the fill has been placed in accordance with the intent of the specification.

For and on behalf of Pearce Geotech Pty Ltd



Regards

Daniel Pearce



[daniel.pearce@pearcegeotech.com.au](mailto:daniel.pearce@pearcegeotech.com.au)

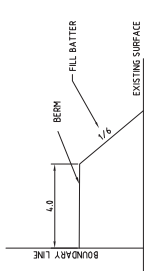
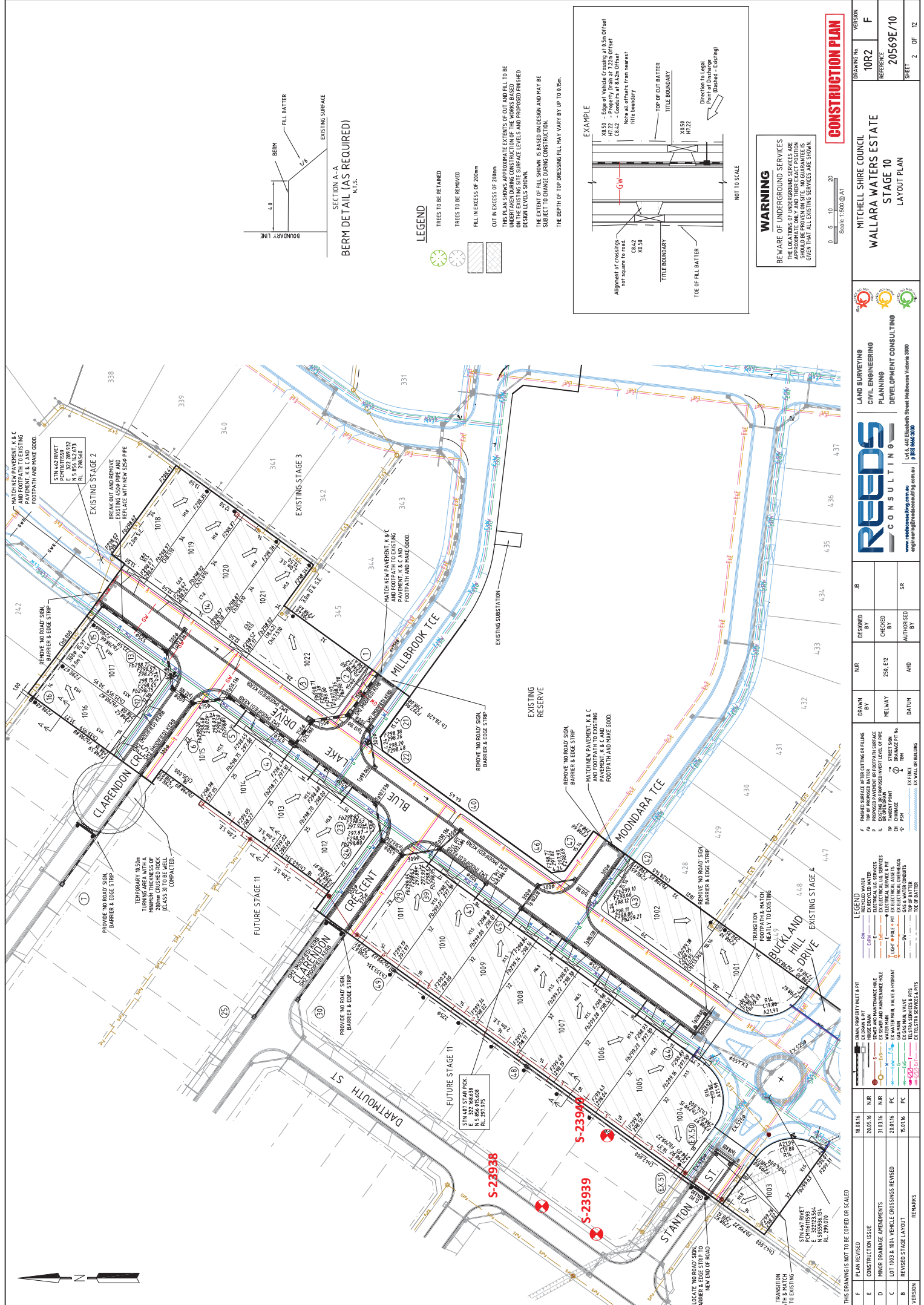
# Appendix A

**Test Results/Site Plan**

## Hilf Density Ratio Report

Client :	<b>Fortunato Group</b>	Report Number:	<b>CS-598 - 1/1</b>
Address :	<b>38A Merri Concourse, Campbellfield, VIC, 3061</b>	Report Date :	<b>9/11/2016</b>
Project Name :	<b>Wallara Waters</b>	Order Number :	
Project Number :	<b>CS-598</b>	Test Method :	<b>AS1289.5.7.1</b>
Location:	<b>Wallan</b>	<b>Page 1 of 1</b>	

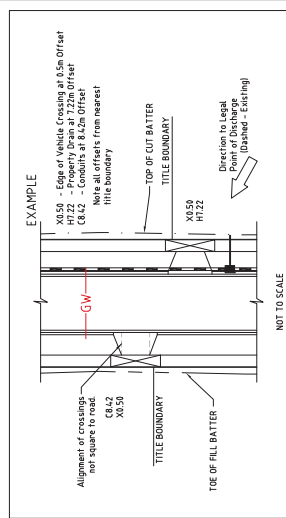
Sample Number :	S-23938	S-23939	S-23940	
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	
Date Sampled :	4/11/2016	4/11/2016	4/11/2016	
Date Tested :	4/11/2016	4/11/2016	4/11/2016	
Material Type :	Clay	Clay	Clay	
Material Source :	Imported	Imported	Imported	
Lot Number :				
Sample Location :	Building Lots Subgrade Lift 1	Building Lots Subgrade Lift 1	Building Lots Subgrade Lift 1	
Test Depth (mm) :	175	175	175	
Layer Depth (mm) :	200	200	200	
Maximum Size (mm) :	19	19	19	
Oversize Wet (%) :	0	0	0	
Oversize Dry (%) :				
Oversize Density (t/m <sup>3</sup> ) :				
Field Moisture Content (%) :	18.7	21.7	19.7	
Hilf MDR Number :	S-23938	S-23939	S-23940	
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	
Compactive Effort :	Standard	Standard	Standard	
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1	
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	
Moisture Ratio (%) :	100.5	101.5	96.5	
Field Wet Density (t/m <sup>3</sup> ) :	1.92	1.95	2.05	
Optimum Moisture Content (%) :	18.6	21.4	20.4	
Moisture Variation :	0.0	-0.5	0.5	
Peak Converted Wet Density (t/m <sup>3</sup> ) :	2.09	2.06	2.08	
Hilf Density Ratio (%) :	<b>92.0</b>	<b>94.5</b>	<b>98.5</b>	
Minimum Specification :	98% Standard	98% Standard	98% Standard	
Moisture Specification :				
Site Selection :	Random	Random	Random	
Soil Description :				
Remarks :	-			



SECTION A-A  
BERM DETAIL (AS REQUIRED)  
N.T.S.

**LEGEND**

- TREES TO BE RETAINED
  - TREES TO BE REMOVED
  - FILL IN EXCESS OF 200mm
  - CUT IN EXCESS OF 200mm
- THIS PLAN SHOWS APPROXIMATE EXTENS OF CUT AND FILL TO BE MADE TO ACHIEVE THE PROPOSED GRADE. THE EXACT POSITIONS ON THE EXISTING SITE SURFACE LEVELS AND PROPOSED FINISHED DESIGN LEVELS SHOWN.
- THE EXTENT OF FILL SHOWN IS BASED ON DESIGN AND MAY BE SUBJECT TO CHANGE DURING CONSTRUCTION.
- THE DEPTH OF TOP DRESSING FILL MAY VARY BY UP TO 0.5m.



**WARNING**

BEWARE OF UNDERGROUND SERVICES

THE LOCATION AND DEPTH OF UNDERGROUND SERVICES SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

**CONSTRUCTION PLAN**

Scale: 1:500 @ A1

MITCHELL SHIRE COUNCIL  
WALLARA WATERS ESTATE  
STAGE 10  
LAYOUT PLAN

PERSON: F  
DRAWING NO: 10R2  
REFERENCE: 20569E/10  
SHEET: 2 OF 12

**REEDS CONSULTING**

LAND SURVEYING  
CIVIL ENGINEERING  
PLANNING  
DEVELOPMENT CONSULTING

www.reedsconsulting.com.au  
1800 688 888

DESIGNED BY	CHECKED BY	AUTHORISED BY
NUR	250_E12	SR

DRAWN BY	DATUM	AND	BY
MELWAY			

18/08/16	20/05/16	31/03/16	20/01/16	15/01/16	PC
F	E	D	C	B	A

PERSON	REMARKS

THIS DRAWING IS NOT TO BE COPIED OR SCALED





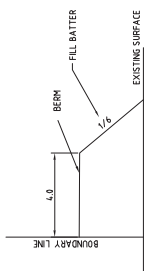
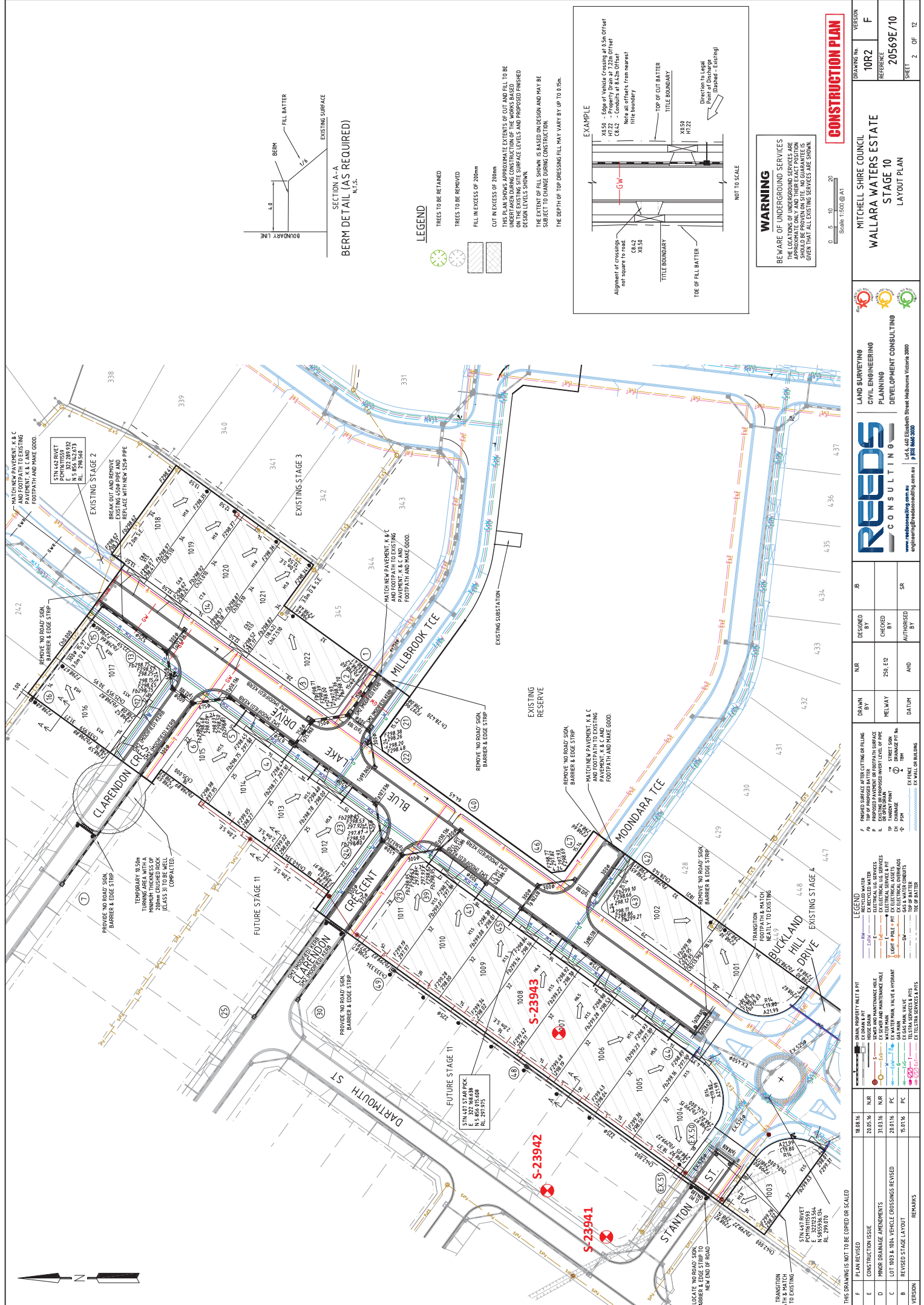
**Moolap Laboratory**  
 Pearce Geotech Pty Ltd  
 23 Nobility Street  
 Moolap VIC 3221

## Hilf Density Ratio Report

Client : <b>Fortunato Group</b> Address : <b>38A Merri Concourse, Campbellfield, VIC, 3061</b> Project Name : <b>Wallara Waters</b> Project Number : <b>CS-598</b> Location: <b>Wallan</b>	Report Number: <b>CS-598 - 2/1</b> Report Date : <b>9/11/2016</b> Order Number : Test Method : <b>AS1289.5.7.1</b> <p style="text-align: right;"><b>Page 1 of 1</b></p>
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Sample Number :	S-23941	S-23942	S-23943	
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	
Date Sampled :	7/11/2016	7/11/2016	7/11/2016	
Date Tested :	7/11/2016	7/11/2016	7/11/2016	
Material Type :	Clay	Clay	Clay	
Material Source :	Imported	Imported	Imported	
Lot Number :				
Sample Location :	Building Lots RT S23938 Lift 1 Refer to Site Plan	Building Lots RT S-23939 Lift 1 Refer to Site Plan	Building Lots Subgrade Lift 1 Refer to Site Plan	
Test Depth (mm) :	175	175	175	
Layer Depth (mm) :	200	200	200	
Maximum Size (mm) :	19	19	19	
Oversize Wet (%) :	0	0	0	
Oversize Dry (%) :				
Oversize Density (t/m <sup>3</sup> ) :				
Field Moisture Content (%) :	17.1	15.4	20.3	
Hilf MDR Number :	S-23941	S-23942	S-23943	
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	
Compactive Effort :	Standard	Standard	Standard	
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1	
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	
Moisture Ratio (%) :	100	85	105	
Field Wet Density (t/m <sup>3</sup> ) :	2.04	2.04	1.99	
Optimum Moisture Content (%) :	17.1	18.2	19.4	
Moisture Variation :	0.0	2.5	-1.0	
Peak Converted Wet Density (t/m <sup>3</sup> ) :	2.10	2.05	2.03	
Hilf Density Ratio (%) :	<b>97.5</b>	<b>99.5</b>	<b>98.0</b>	
Minimum Specification :	98% Standard	98% Standard	98% Standard	
Moisture Specification :				
Site Selection :	Random	Random	Random	
Soil Description :				
Remarks :	-			

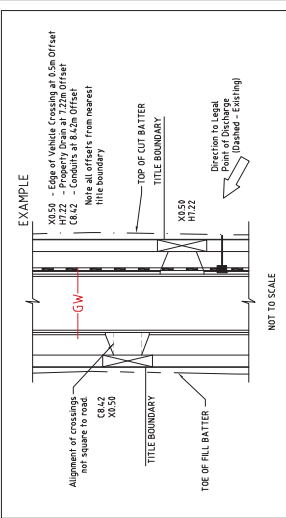
 <p><b>The results of the tests in this report are traceable to Australian/National standards. Accredited for compliance with ISO/IEC 17025</b></p>	<p style="text-align: center;">APPROVED SIGNATORY</p>  <p style="text-align: center;">Anthony Green - Technician          NATA Accreditation Number          18877</p>
--	---



SECTION A-A  
(AS REQUIRED)  
N.T.S.

**LEGEND**

- TREES TO BE RETAINED
  - TREES TO BE REMOVED
  - FILL IN EXCESS OF 200mm
  - CUT IN EXCESS OF 200mm
- THIS PLAN SHOWS APPROXIMATE EXTENS OF CUT AND FILL TO BE MADE TO THE EXISTING SURFACE LEVELS AND PROPOSED FINISHED DESIGN LEVELS SHOWN.
- THE EXTENT OF FILL SHOWN IS BASED ON DESIGN AND MAY BE SUBJECT TO CHANGE DURING CONSTRUCTION.
- THE DEPTH OF TOP DRESSING FILL MAY VARY BY UP TO 0.5m.



**WARNING**

BEWARE OF UNDERGROUND SERVICES

THE LOCATION AND DEPTH OF UNDERGROUND SERVICES SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

**CONSTRUCTION PLAN**

Scale: 1:500 @ A1

PERSON	VERSION
MITCHELL SHIRE COUNCIL	F
WALLARA WATERS ESTATE	20569E/10
STAGE 10	SHEET 2 OF 12
LAYOUT PLAN	

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DESIGNED BY	NJR	CHECKED BY	250_E12	AUTHORISED BY	SR
DRAWN BY	HEWLEY	DATUM			

18.08.16	NJR	PLAN REVISION
20.05.16	NJR	CONSTRUCTION ISSUE
31.03.16	NJR	MINOR DRAINAGE AMENDMENTS
20.01.16	PC	LOT 1003 & 1004 VEHICLE CROSSINGS REVISED
15.01.16	PC	REVISED STAGE LAYOUT

**LEGEND**

- EXISTING WATER
- RECYCLED WATER
- EXISTING SEWER
- EXISTING WATER MAIN
- EXISTING GAS
- EXISTING TELECOM
- EXISTING POWER
- EXISTING FIBRE
- EXISTING CABLE
- EXISTING MAINTENANCE WALKWAY
- EXISTING LIGHT
- EXISTING PALE
- EXISTING VALVE & HYDRANT
- EXISTING WATER MAIN VALVE
- EXISTING GAS MAIN VALVE
- EXISTING TELECOM SERVICES & PITS
- EXISTING ELECTRICAL SERVICES & PITS
- EXISTING TOE OF WATER

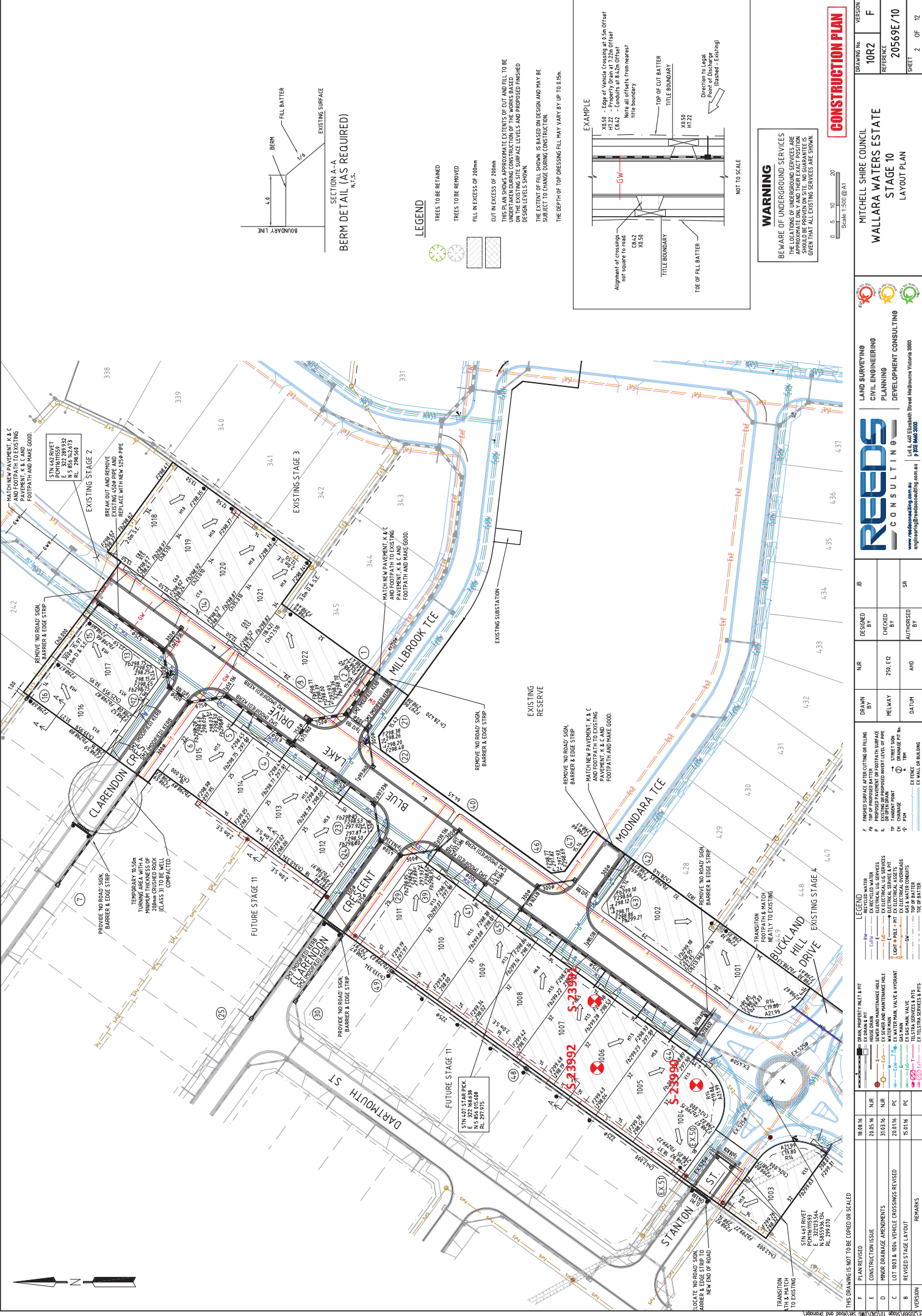
THIS DRAWING IS NOT TO BE COPIED OR SCALED

PERSON	REMARKS

## Hilf Density Ratio Report

Client :	<b>Fortunato Group</b>	Report Number:	<b>CS-598 - 4/1</b>
Address :	<b>38A Merri Concourse, Campbellfield, VIC, 3061</b>	Report Date :	<b>11/11/2016</b>
Project Name :	<b>Wallara Waters</b>	Order Number :	
Project Number :	<b>CS-598</b>	Test Method :	<b>AS1289.5.7.1</b>
Location:	<b>Wallan</b>	<b>Page 1 of 1</b>	

Sample Number :	S-23990	S-23991	S-23992	
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	
Date Sampled :	8/11/2016	8/11/2016	8/11/2016	
Date Tested :	8/11/2016	8/11/2016	8/11/2016	
Material Type :	Clay	Clay	Clay	
Material Source :	Imported	Imported	Imported	
Lot Number :				
Sample Location :	Building Lot Subgrade	Building Lot Subgrade	Building Lot Subgrade	
Test Depth (mm) :	175	175	175	
Layer Depth (mm) :	200	200	200	
Maximum Size (mm) :	19	19	19	
Oversize Wet (%) :	0	0	0	
Oversize Dry (%) :				
Oversize Density (t/m <sup>3</sup> ) :				
Field Moisture Content (%) :	18.7	18.9	20.3	
Hilf MDR Number :	S-23990	S-23991	S-23992	
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	
Compactive Effort :	Standard	Standard	Standard	
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1	
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	
Moisture Ratio (%) :	94	90	89.5	
Field Wet Density (t/m <sup>3</sup> ) :	2.03	1.98	1.93	
Optimum Moisture Content (%) :	19.9	21.0	22.6	
Moisture Variation :	1.0	2.0	2.5	
Peak Converted Wet Density (t/m <sup>3</sup> ) :	1.98	1.97	1.86	
Hilf Density Ratio (%) :	<b>102.5</b>	<b>100.0</b>	<b>103.5</b>	
Minimum Specification :	98% Standard	98% Standard	98% Standard	
Moisture Specification :				
Site Selection :	Random	Random	Random	
Soil Description :				
Remarks :	-			



**LEGEND**

- TREES TO BE RETAINED
- TREES TO BE REMOVED
- FILL IN EXCESS OF 200mm
- CUT IN EXCESS OF 200mm

THIS PLAN SHOWS APPROXIMATE EXTENS OF CUT AND FILL TO BE MADE TO ACHIEVE THE PROPOSED GRADING ON THE EXISTING SITE SURFACE LEVELS AND PROPOSED FINISHED DESIGN LEVELS SHOWN.

THE EXTENT OF FILL SHOWN IS BASED ON DESIGN AND MAY BE SUBJECT TO CHANGE DURING CONSTRUCTION.

THE DEPTH OF TOP DRESSING FILL MAY VARY BY UP TO 0.5m.



**WARNING**

BEWARE OF UNDERGROUND SERVICES

THESE SERVICES ARE NOT SHOWN TO SCALE AND SHOULD BE PROVIDED ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

PERSON	DATE	REVISIONS
F	18/08/16	PLAN REVISION
E	20/05/16	CONSTRUCTION ISSUE
D	31/03/16	MINOR DRAINAGE AMENDMENTS
C	20/01/16	LOT 1003 & 1004 VEHICLE CROSSINGS REVISED
B	15/01/16	REVISED STAGE LAYOUT

DESCRIPTION	DATE	BY	CHECKED	APPROVED
DRAWN		MELWAY	25/01/16	SR
DESIGNED		NUR		

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**LEGEND**

- RECYCLED WATER
- RECYCLED WATER
- EXISTING WATER MAIN
- EXISTING WATER MAIN
- EXISTING WATER MAIN
- EXISTING WATER MAIN
- EXISTING WATER MAIN
- EXISTING WATER MAIN
- EXISTING WATER MAIN
- EXISTING WATER MAIN

**CONSTRUCTION PLAN**

Scale: 1:500 @ A1

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154 St Albans Street Melbourne Victoria 3000

www.reedsconsulting.com.au 1300 654 444

MITCHELL SHIRE COUNCIL

WALLARA WATERS ESTATE

STAGE 10

LAYOUT PLAN

PERSON: F

VERSION: 20569E/10

SHEET: 2 OF 12

## Hilf Density Ratio Report

Client :	<b>Fortunato Group</b>	Report Number:	<b>CS-598 - 3/1</b>
Address :	<b>38A Merri Concourse, Campbellfield, VIC, 3061</b>	Report Date :	<b>11/11/2016</b>
Project Name :	<b>Wallara Waters</b>	Order Number :	
Project Number :	<b>CS-598</b>	Test Method :	<b>AS1289.5.7.1</b>
Location:	<b>Wallan</b>	<b>Page 1 of 1</b>	

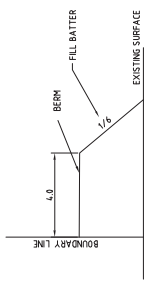
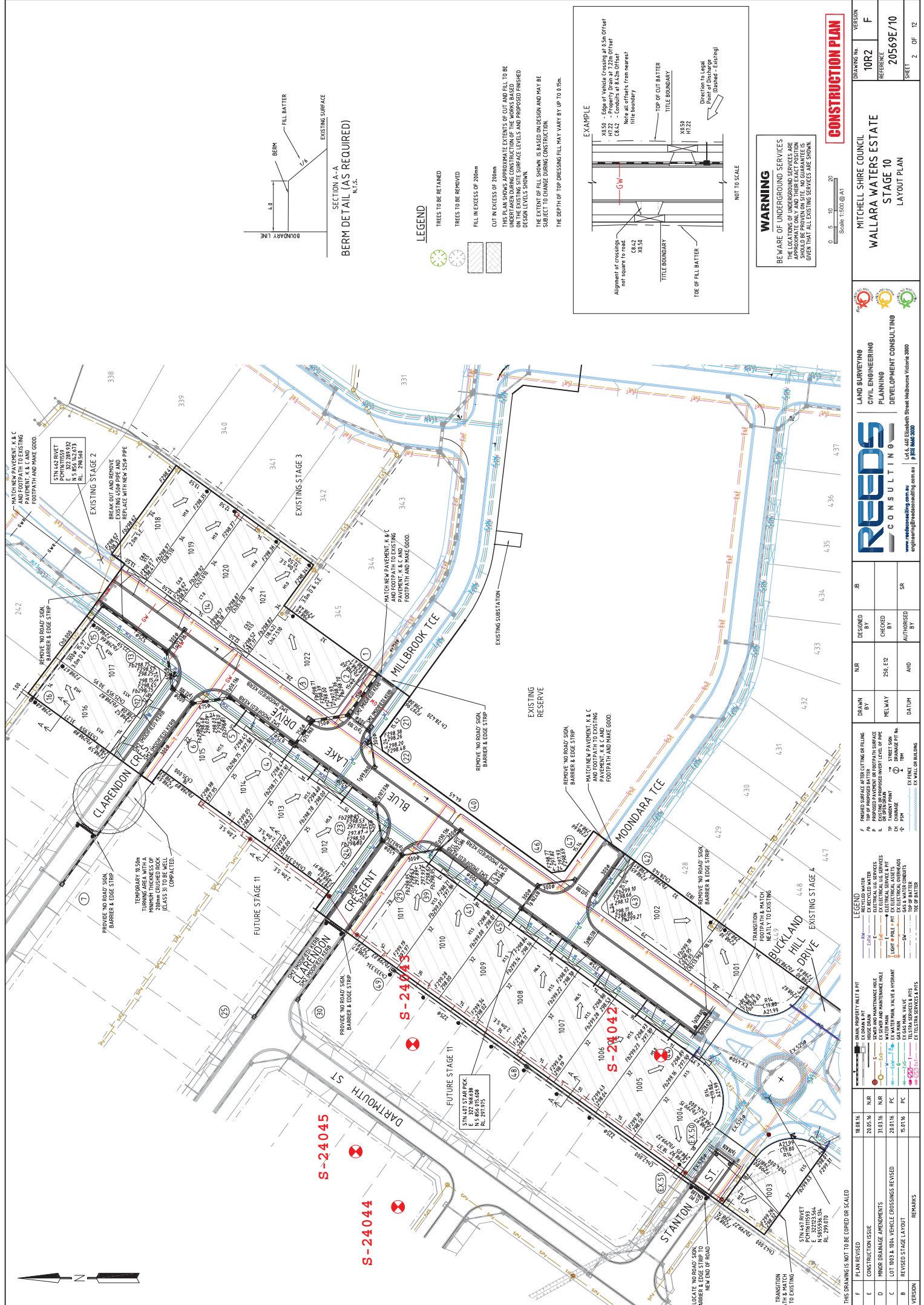
Sample Number :	S-23987	S-23988	S-23989	
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	
Date Sampled :	9/11/2016	9/11/2016	9/11/2016	
Date Tested :	9/11/2016	9/11/2016	9/11/2016	
Material Type :	Clay	Clay	Clay	
Material Source :	Imported	Imported	Imported	
Lot Number :				
Sample Location :	Building Lot Subgrade	Building Lot Subgrade	Building Lot Subgrade	
Test Depth (mm) :	175	175	175	
Layer Depth (mm) :	200	200	200	
Maximum Size (mm) :	19	19	19	
Oversize Wet (%) :	0	0	0	
Oversize Dry (%) :				
Oversize Density (t/m <sup>3</sup> ) :				
Field Moisture Content (%) :	20.0	18.9	16.8	
Hilf MDR Number :	S-23987	S-23988	S-23989	
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	
Compactive Effort :	Standard	Standard	Standard	
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1	
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	
Moisture Ratio (%) :	85	88.5	87	
Field Wet Density (t/m <sup>3</sup> ) :	2.02	1.87	1.89	
Optimum Moisture Content (%) :	23.5	21.4	19.3	
Moisture Variation :	3.5	2.5	2.5	
Peak Converted Wet Density (t/m <sup>3</sup> ) :	1.96	2.00	1.96	
Hilf Density Ratio (%) :	<b>103.0</b>	<b>93.5</b>	<b>96.5</b>	
Minimum Specification :	98% Standard	98% Standard	98% Standard	
Moisture Specification :				
Site Selection :	Random	Random	Random	
Soil Description :				
Remarks :	-			



## Hilf Density Ratio Report

Client :	<b>Fortunato Group</b>	Report Number:	<b>CS-598 - 5/1</b>
Address :	<b>38A Merri Concourse, Campbellfield, VIC, 3061</b>	Report Date :	<b>14/11/2016</b>
Project Name :	<b>Wallara Waters</b>	Order Number :	
Project Number :	<b>CS-598</b>	Test Method :	<b>AS1289.5.7.1</b>
Location:	<b>Wallan</b>	<b>Page 1 of 1</b>	

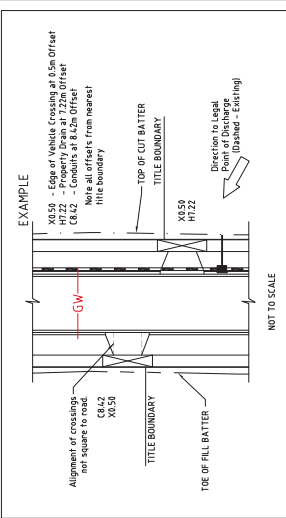
Sample Number :	S-24042	S-24043	S-24044	S-24045
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)
Date Sampled :	10/11/2016	10/11/2016	10/11/2016	10/11/2016
Date Tested :	10/11/2016	10/11/2016	10/11/2016	10/11/2016
Material Type :	Clay	Clay	Clay	Clay
Material Source :	Imported	Imported	Imported	Imported
Lot Number :				
Sample Location :	Subgrade	Subgrade Lift 1	Subgrade Lift 1	Subgrade Lift 1
Test Depth (mm) :	175	175	175	175
Layer Depth (mm) :	200	200	200	200
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	0	0	0	0
Oversize Dry (%) :			20	
Oversize Density (t/m <sup>3</sup> ) :				
Field Moisture Content (%) :	20.3	17.8	17.8	19.1
Hilf MDR Number :	S-24042	S-24043	S-24044	S-24045
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	87	89	86.5	94.5
Field Wet Density (t/m <sup>3</sup> ) :	2.02	1.99	2.00	2.01
Optimum Moisture Content (%) :	23.3	20.0	20.6	20.2
Moisture Variation :	3.0	2.0	2.5	1.0
Peak Converted Wet Density (t/m <sup>3</sup> ) :	1.94	1.99	2.00	2.02
Hilf Density Ratio (%) :	<b>104.5</b>	<b>99.5</b>	<b>100.0</b>	<b>99.5</b>
Minimum Specification :	95% Standard	95% Standard	95% Standard	95% Standard
Moisture Specification :				
Site Selection :	Random	Random	Random	Random
Soil Description :				
Remarks :	-			



SECTION A-A  
BERM DETAIL (AS REQUIRED)  
N.T.S.

**LEGEND**

- TREES TO BE RETAINED
  - TREES TO BE REMOVED
  - FILL IN EXCESS OF 200mm
  - CUT IN EXCESS OF 200mm
- THIS PLAN SHOWS APPROXIMATE EXTENS OF CUT AND FILL TO BE MADE TO THE PROPOSED ROAD AND FOOTPATH LEVELS AND PROPOSED FINISHED DESIGN LEVELS SHOWN.
- THE EXTENT OF FILL SHOWN IS BASED ON DESIGN AND MAY BE SUBJECT TO CHANGE DURING CONSTRUCTION.
- THE DEPTH OF TOP DRESSING FILL MAY VARY BY UP TO 0.5m.



**WARNING**

BEWARE OF UNDERGROUND SERVICES

THE LOCATION AND DEPTH OF UNDERGROUND SERVICES SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

**CONSTRUCTION PLAN**

Scale: 1:500 @ A1

PERSON	VERSION
MITCHELL SHIRE COUNCIL	F
WALLARA WATERS ESTATE	20569E/10
STAGE 10	SHEET 2 OF 12
LAYOUT PLAN	

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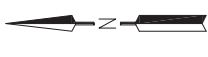
DESIGNED BY	NJR	DATE	15/01/16
CHECKED BY	250_E12	SCALE	AS SHOWN
AUTHORISED BY	SR	PROJECT NO.	20569E/10

DRAWN BY	MELWAY	DATE	15/01/16
DATE	AND	BY	SR

**LEGEND**

FINISHED SURFACE AFTER CUTTING OR FILLING	EXISTING SURFACE
PROPOSED ROAD AND FOOTPATH SURFACE	EXISTING ROAD AND FOOTPATH SURFACE
PROPOSED INVERT LEVEL OF PIPE	EXISTING INVERT LEVEL OF PIPE
TRANSITION POINT	TRANSITION POINT
STREET SIGN	STREET SIGN
EXISTING WALL OR BUILDING	EXISTING WALL OR BUILDING
EXISTENCE	EXISTENCE
EX WALL OR BUILDING	EX WALL OR BUILDING

18/01/16	NJR	PLAN REVISION	
20/01/16	NJR	CONSTRUCTION ISSUE	
31/03/16	NJR	MINOR DRAINAGE AMENDMENTS	
20/01/16	PC	LOT 1003 & 1004 VEHICLE CROSSINGS REVISED	
15/01/16	PC	REVISED STAGE LAYOUT	
		REMARKS	



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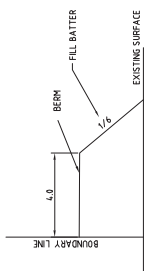
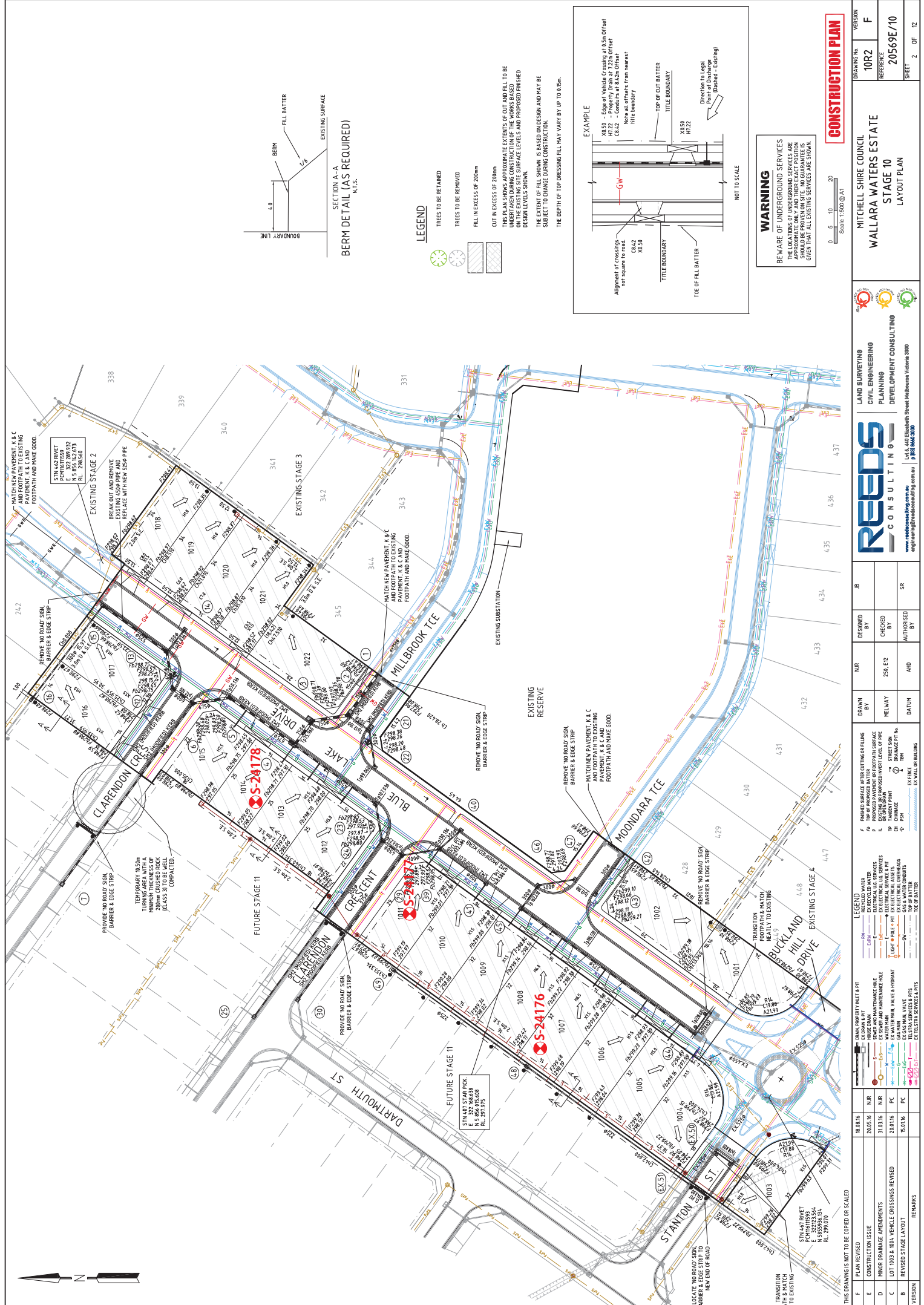
Source: Road and Drainage



## Hilf Density Ratio Report

Client :	<b>Fortunato Group</b>	Report Number:	<b>CS-598 - 6/1</b>
Address :	<b>38A Merri Concourse, Campbellfield, VIC, 3061</b>	Report Date :	<b>17/11/2016</b>
Project Name :	<b>Wallara Waters</b>	Order Number :	
Project Number :	<b>CS-598</b>	Test Method :	<b>AS1289.5.7.1</b>
Location:	<b>Wallan</b>	<b>Page 1 of 1</b>	

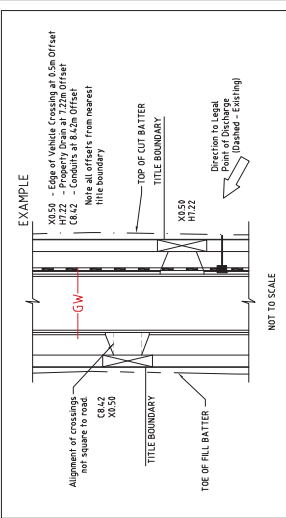
Sample Number :	S-24176	S-24177	S-24178	
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	
Date Sampled :	11/11/2016	11/11/2016	11/11/2016	
Date Tested :	11/11/2016	11/11/2016	11/11/2016	
Material Type :	Clay	Clay	Clay	
Material Source :	Imported	Imported	Imported	
Lot Number :				
Sample Location :	Lot 1007 Subgrade Refer to Plan	Lot 1011 Subgrade Refer to Plan	Lot 1014 Subgrade Refer to Plan	
Test Depth (mm) :	175	175	175	
Layer Depth (mm) :	200	200	200	
Maximum Size (mm) :	19	19	19	
Oversize Wet (%) :	0	0	0	
Oversize Dry (%) :				
Oversize Density (t/m <sup>3</sup> ) :				
Field Moisture Content (%) :	20.3	20.0	19.0	
Hilf MDR Number :	S-24176	S-24177	S-24178	
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	
Compactive Effort :	Standard	Standard	Standard	
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1	
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	
Moisture Ratio (%) :	90.5	101.5	100.5	
Field Wet Density (t/m <sup>3</sup> ) :	2.03	1.98	2.01	
Optimum Moisture Content (%) :	22.5	19.7	18.9	
Moisture Variation :	2.0	0.0	0.0	
Peak Converted Wet Density (t/m <sup>3</sup> ) :	2.01	2.09	2.08	
Hilf Density Ratio (%) :	<b>101.0</b>	<b>95.0</b>	<b>96.5</b>	
Minimum Specification :	95% Standard	95% Standard	95% Standard	
Moisture Specification :				
Site Selection :	Random	Random	Random	
Soil Description :				
Remarks :	-			



SECTION A-A  
BERM DETAIL (AS REQUIRED)  
N.T.S.

**LEGEND**

- TREES TO BE RETAINED
  - TREES TO BE REMOVED
  - FILL IN EXCESS OF 200mm
  - CUT IN EXCESS OF 200mm
- THIS PLAN SHOWS APPROXIMATE EXTENS OF CUT AND FILL TO BE MADE TO ACCOMMODATE THE PROPOSED CONSTRUCTION ON THE EXISTING SITE SURFACE LEVELS AND PROPOSED FINISHED DESIGN LEVELS SHOWN.
- THE EXTENT OF FILL SHOWN IS BASED ON DESIGN AND MAY BE SUBJECT TO CHANGE DURING CONSTRUCTION.
- THE DEPTH OF TOP DRESSING FILL MAY VARY BY UP TO 0.5m.



**WARNING**

BEWARE OF UNDERGROUND SERVICES

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**CONSTRUCTION PLAN**

Scale: 1:500 @ A1

0 5 10 20

PERSON	VERSION
DESIGNED BY	DATE
CHECKED BY	DATE
AUTHORISED BY	DATE

MITCHELL SHIRE COUNCIL  
WALLARA WATERS ESTATE  
STAGE 10  
LAYOUT PLAN

DRAWING NO. 10R2  
REFERENCE 20569E/10  
SHEET 2 OF 12

**REEDS CONSULTING**

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DEVELOPMENT CONSULTING

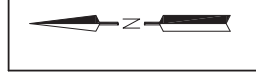
www.reedsconsulting.com.au  
145 Adelaide Street Melbourne Victoria 3000  
1300 880 880

DESIGNED BY	NJR	DATE	18/08/16
CHECKED BY	250_E12	DATE	20/05/16
AUTHORISED BY	SR	DATE	31/03/16

FINISHED SURFACE AFTER CUTTING OR FILLING	---
PROPOSED FINISHED SURFACE	---
EXISTING FINISHED SURFACE	---
PROPOSED INVERT LEVEL OF PIPE	---
TANGENT POINT	---
STREET SIGN	---
EXISTING WALL OR BUILDING	---
EXISTENCE	---
EX WALL OR BUILDING	---

DATA PROPERTY MET & PIT	---
HOUSE DRAIN	---
EX DRAIN & PIT	---
EX SAFETY AND MAINTENANCE WALE	---
EX ELECTRICAL SERVICES	---
EX WATER MAIN VALVE & HYDRANT	---
EX WATER MAIN VALVE	---
EX ELECTRICAL OVERHEADS	---
EX TELEPHONE OVERHEADS	---
EX TELEPHONE SERVICES & PITS	---
EX ELECTRICAL SERVICES & PITS	---
EX TOP OF WATER	---
EX TOP OF WATER	---

PLAN REVISION	REVISION
CONSTRUCTION ISSUE	CONSTRUCTION ISSUE
MINOR DRAINAGE AMENDMENTS	MINOR DRAINAGE AMENDMENTS
LOT 1003 & 1004 VEHICLE CROSSINGS REVISED	LOT 1003 & 1004 VEHICLE CROSSINGS REVISED
REVISED STAGE LAYOUT	REVISED STAGE LAYOUT



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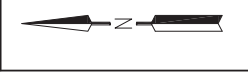
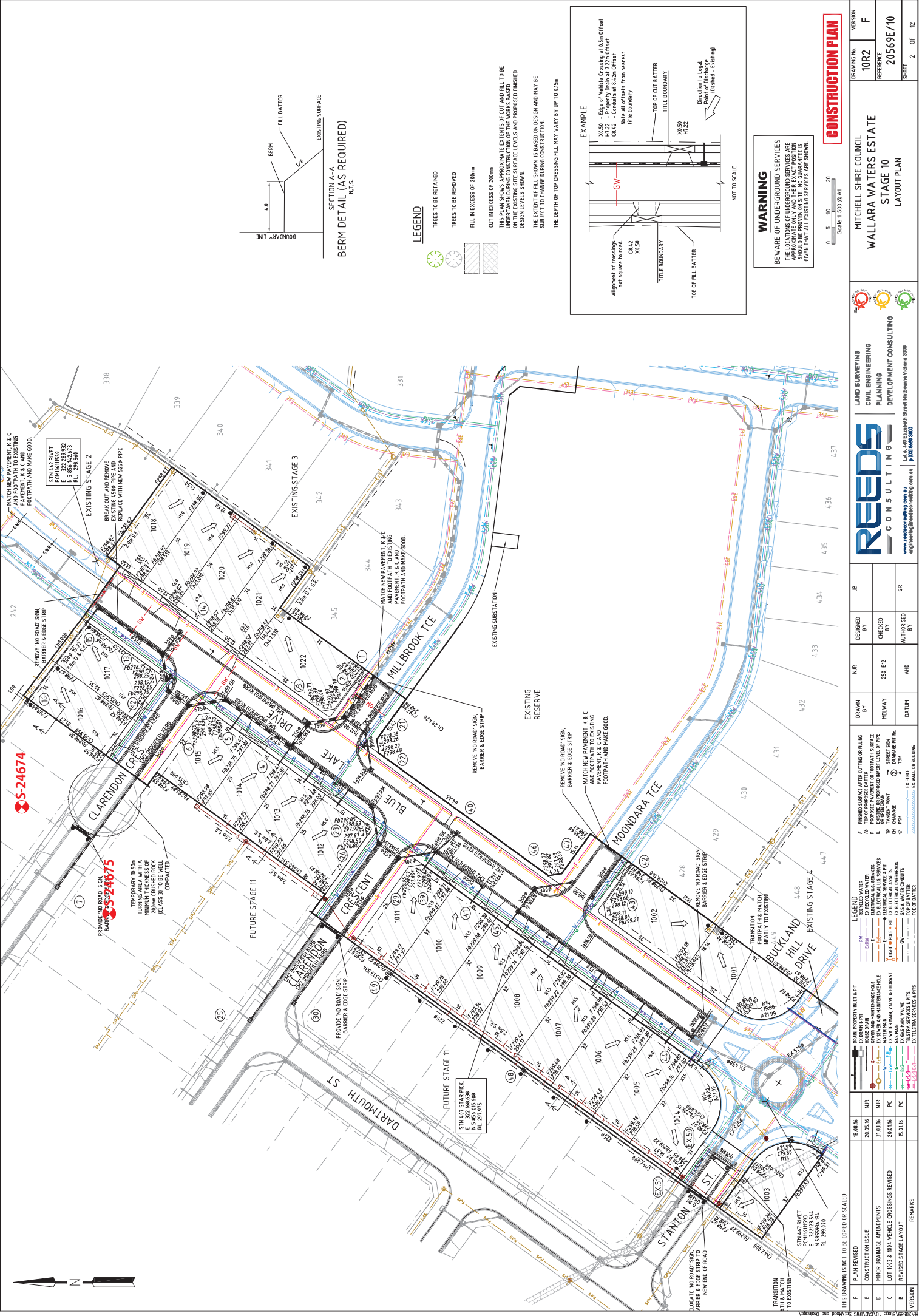
**Moolap Laboratory**  
 Pearce Geotech Pty Ltd  
 23 Nobility Street  
 Moolap VIC 3221

## Hilf Density Ratio Report

Client :	Fortunato Group	Report Number:	CS-629 - 1/1
Address :	38A Merri Concourse, Campbellfield, VIC, 3061	Report Date :	1/12/2016
Project Name :	Wallara Waters Stage 11	Order Number :	
Project Number :	CS-629	Test Method :	AS1289.5.7.1
Location:	Wallan	<b>Page 1 of 1</b>	

Sample Number :	S-24674	S-24675		
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)		
Date Sampled :	29/11/2016	29/11/2016		
Date Tested :	29/11/2016	29/11/2016		
Material Type :	Clay	Clay		
Material Source :	Insitu	Insitu		
Lot Number :				
Sample Location :	Fill Area Subgrade Lift 1 Refer to Plan	Fill Area Subgrade Lift 1 Refer to Plan		
Test Depth (mm) :	175	175		
Layer Depth (mm) :	200	200		
Maximum Size (mm) :	19	19		
Oversize Wet (%) :	0	0		
Oversize Dry (%) :				
Oversize Density (t/m <sup>3</sup> ) :				
Field Moisture Content (%) :	29.6	29.0		
Hilf MDR Number :	S-24674	S-24675		
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1		
Compactive Effort :	Standard	Standard		
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1		
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1		
Moisture Ratio (%) :	108.5	111		
Field Wet Density (t/m <sup>3</sup> ) :	1.90	1.92		
Optimum Moisture Content (%) :	27.2	26.2		
Moisture Variation :	-2.0	-2.5		
Peak Converted Wet Density (t/m <sup>3</sup> ) :	1.96	1.98		
Hilf Density Ratio (%) :	<b>96.5</b>	<b>97.0</b>		
Minimum Specification :	95% Standard	95% Standard		
Moisture Specification :				
Site Selection :	Random	Random		
Soil Description :				
Remarks :	-			

 <p style="text-align: center;"><b>The results of the tests in this report are traceable to Australian/National standards. Accredited for compliance with ISO/IEC 17025</b></p>	<p style="text-align: center;">APPROVED SIGNATORY</p> <div style="text-align: center;">         Anthony Green - Technician        NATA Accreditation Number        18877     </div>
--	--



LEGEND

TREES TO BE RETAINED

TREES TO BE REMOVED

FILL IN EXCESS OF 200mm

CUT IN EXCESS OF 200mm

THIS PLAN SHOWS APPROXIMATE EXTENTS OF CUT AND FILL TO BE MAINTAINED TO THE EXISTING SURFACE LEVELS AND PROPOSED FINISHED DESIGN LEVELS SHOWN.

THE EXTENT OF FILL SHOWN IS BASED ON DESIGN AND MAY BE SUBJECT TO CHANGE DURING CONSTRUCTION.

THE DEPTH OF TOP DRESSING/FILL MAY VARY BY UP TO 0.5m.

EXAMPLE

X550 - Edge of Vehicle Crossing at 0.5m Offset  
HT22 - Property Bound at 7.22m Offset  
E842 - Conditions at 8.42m Offset  
(nearest to service from nearest title boundary)

TOP OF CUT BATTER  
TITLE BOUNDARY  
X550 HT22

Direction to Legal Point of Discharge (shown - Existing)

NOT TO SCALE

WARNING

BE AWARE OF UNDERGROUND SERVICES  
PROVIDED FOR THIS PROJECT.  
PROVIDED FOR THIS PROJECT.  
APPROXIMATE ONLY AND THESE EXACT POSITIONS SHOULD BE PROVIDED ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

CONSTRUCTION PLAN

Scale 1:500 @ A1

0 5 10 20

PERSON	REVISION	DATE	DESCRIPTION
F	PLAN REVISED	18/08/16	NJR
E	CONSTRUCTION ISSUE	20/05/16	NJR
D	MINOR DRAINAGE AMENDMENTS	31/03/16	NJR
C	LOT 1003 & 1004 VEHICLE CROSSINGS REVISED	20/01/16	PC
B	REVISED STAGE LAYOUT	15/01/16	PC
A	REVISED STAGE LAYOUT	15/01/16	PC

DESIGNED BY	MUR	CHECKED BY	250_E12	AUTHORISED BY	SR
DRAWN BY	MELWAY	DATUM		AND	

PROJECT NO.	10R2
REVISION	20569E/10
DATE	2016
SHEET	2 OF 12

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125 WALKER STREET MELBOURNE VIC 3000 1300 660 000

MITCHELL SHIRE COUNCIL WALLARA WATERS ESTATE STAGE 10 LAYOUT PLAN
--

THIS DRAWING IS NOT TO BE COPIED OR SCALED

STANTON AVENUE TO EXISTING

NEW END OF ROAD

FINISHED SURFACE AFTER CUTTING OR FILLING

PROPOSED PROFILES AND GRADES AT SURFACE

EXISTING OR PROPOSED INVERT LEVEL OF PIPE

PROPOSED POINT OF INTERSECTION (PI)

TANGENT POINT

CHORD BEARING

CHORD DISTANCE

STREET SIGN

EXISTING

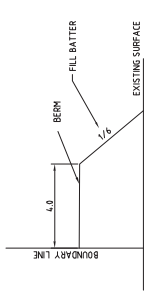
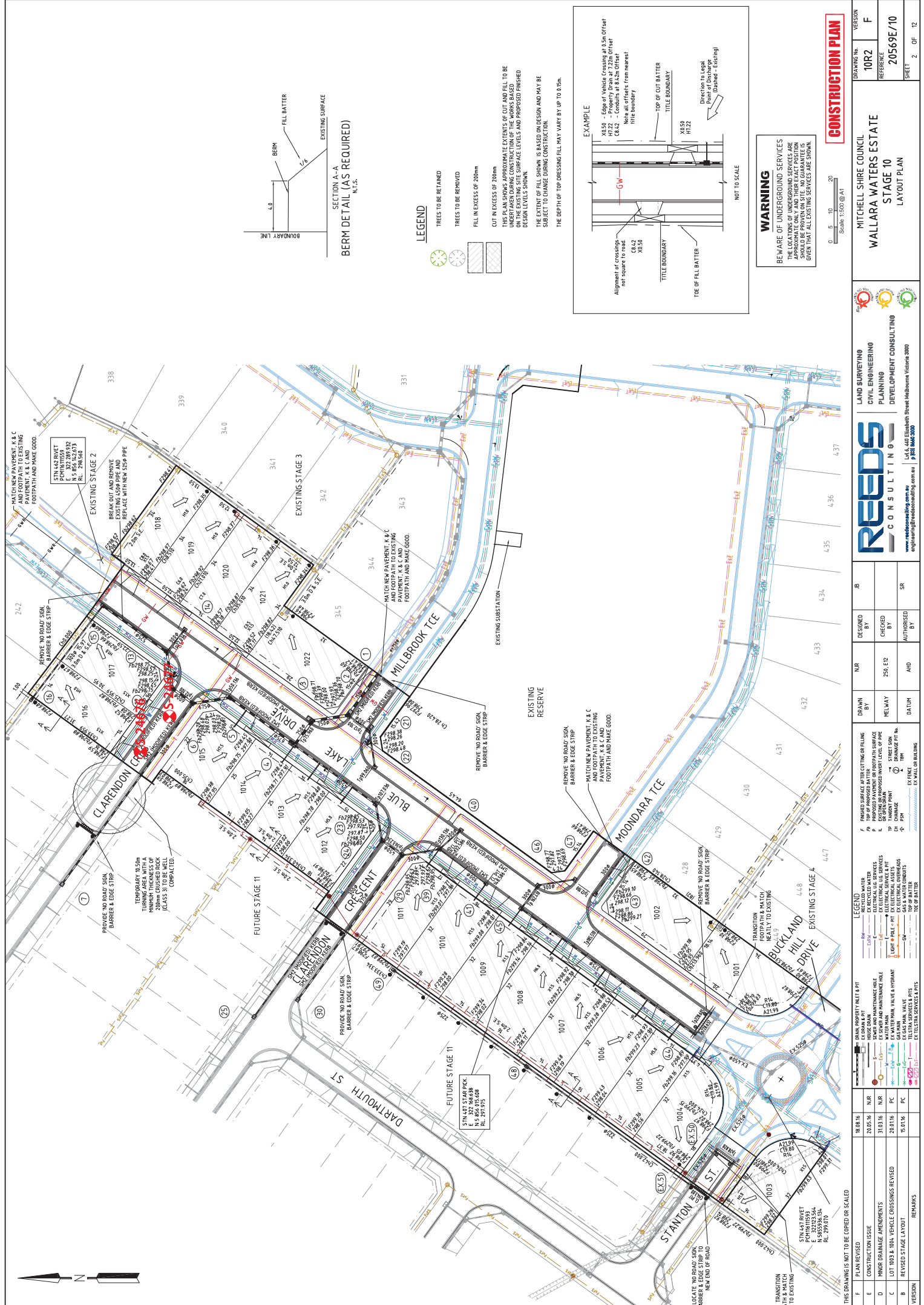
EXISTENCE

EX WALL OR BUILDING

## Hilf Density Ratio Report

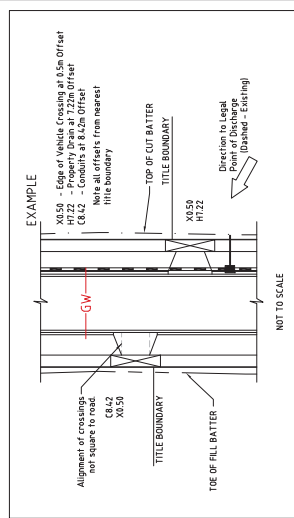
Client :	<b>Fortunato Group</b>	Report Number:	<b>CS-598 - 8/1</b>
Address :	<b>38A Merri Concourse, Campbellfield, VIC, 3061</b>	Report Date :	<b>1/12/2016</b>
Project Name :	<b>Wallara Waters</b>	Order Number :	
Project Number :	<b>CS-598</b>	Test Method :	<b>AS1289.5.7.1</b>
Location:	<b>Wallan</b>	<b>Page 1 of 1</b>	

Sample Number :	S-24676	S-24677	
Test Number :			
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	
Date Sampled :	29/11/2016	29/11/2016	
Date Tested :	29/11/2016	29/11/2016	
Material Type :	Clay	Clay	
Material Source :	Imported	Imported	
Lot Number :			
Sample Location :	Clarendon Crescent Subgrade Top of Swale Drain Refer to Plan	Clarendon Crescent Subgrade Top of Swale Drain Refer to Plan	
Test Depth (mm) :	175	175	
Layer Depth (mm) :	200	200	
Maximum Size (mm) :	19	19	
Oversize Wet (%) :	0	0	
Oversize Dry (%) :			
Oversize Density (t/m <sup>3</sup> ) :			
Field Moisture Content (%) :	16.3	20.0	
Hilf MDR Number :	S-24676	S-24677	
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	
Compactive Effort :	Standard	Standard	
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1	
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	
Moisture Ratio (%) :	88	89	
Field Wet Density (t/m <sup>3</sup> ) :	1.88	1.92	
Optimum Moisture Content (%) :	18.5	22.5	
Moisture Variation :	2.0	2.5	
Peak Converted Wet Density (t/m <sup>3</sup> ) :	1.94	1.97	
Hilf Density Ratio (%) :	<b>97.0</b>	<b>97.5</b>	
Minimum Specification :	95% Standard	95% Standard	
Moisture Specification :			
Site Selection :	Random	Random	
Soil Description :			
Remarks :	-		



**LEGEND**

- TREES TO BE RETAINED
  - TREES TO BE REMOVED
  - FILL IN EXCESS OF 200mm
  - CUT IN EXCESS OF 200mm
- THIS PLAN SHOWS APPROXIMATE EXTENS OF CUT AND FILL TO BE MADE TO THE EXISTING SURFACE LEVELS AND PROPOSED FINISHED DESIGN LEVELS SHOWN.
- THE EXTENT OF FILL SHOWN IS BASED ON DESIGN AND MAY BE SUBJECT TO CHANGE DURING CONSTRUCTION.
- THE DEPTH OF TOP DRESSING FILL MAY VARY BY UP TO 0.5m.



**WARNING**

BEWARE OF UNDERGROUND SERVICES

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**CONSTRUCTION PLAN**

Scale: 1:500 @ A1

MITCHELL SHIRE COUNCIL  
 WALLARA WATERS ESTATE  
 STAGE 10  
 LAYOUT PLAN

PERSON: F  
 DRAWING NO: 10R2  
 REFERENCE: 20569E/10  
 SHEET: 2 OF 12

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 145 Adelaide Street Melbourne Victoria 3000  
 P 03 9494 0000  
 F 03 9494 0001

DESIGNED BY	CHECKED BY	AUTHORISED BY
NUR	250_E12	SR

DRAWN BY	DATUM	AND	BY
MELWAY			

REVISION	DATE	DESCRIPTION	BY
F	18.08.16	PLAN REVISED	NUR
E	20.05.16	CONSTRUCTION ISSUE	NUR
D	31.03.16	MINOR DRAINAGE AMENDMENTS	PC
C	20.01.16	LOT 1003 & 1004 VEHICLE CROSSINGS REVISED	PC
B	15.01.16	REVISED STAGE LAYOUT	PC

THIS DRAWING IS NOT TO BE COPIED OR SCALED

LEGEND:

- FINISHED SURFACE AFTER CUTTING OR FILLING
- PROPOSED FINISHED SURFACE
- EXISTING OR PROPOSED INVERT LEVEL OF PIPE
- PROPOSED INVERT LEVEL OF PIPE
- TRANSITION POINT
- STREET SIGN
- EXISTING PAVEMENT
- PROPOSED PAVEMENT
- EXISTING WALL OR BUILDING
- EXISTENCE
- TOE OF WATER


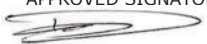


**Moolap Laboratory**  
 Pearce Geotech Pty Ltd  
 23 Nobility Street  
 Moolap VIC 3221

## Hilf Density Ratio Report

Client : <b>Fortunato Group</b> Address : <b>38A Merri Concourse, Campbellfield, VIC, 3061</b> Project Name : <b>Wallara Waters Stage 11</b> Project Number : <b>CS-629</b> Location: <b>Wallan</b>	Report Number: <b>CS-629 - 3/1</b> Report Date : <b>9/12/2016</b> Order Number : Test Method : <b>AS1289.5.7.1</b> <p style="text-align: right;"><b>Page 1 of 3</b></p>
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Sample Number :	S-24924	S-24928	S-24929	S-24930
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)
Date Sampled :	1/12/2016	1/12/2016	1/12/2016	1/12/2016
Date Tested :	1/12/2016	1/12/2016	1/12/2016	1/12/2016
Material Type :	Clay	Clay	Clay	Clay
Material Source :	Insitu	Insitu	Insitu	Insitu
Lot Number :				
Sample Location :	Fill Area Refer to Site Plan  L1	Fill Area Refer to Site Plan  L1	Fill Area Refer to Site Plan  L1	Fill Area Refer to Site Plan  L1
Test Depth (mm) :	175	175	175	175
Layer Depth (mm) :	200	200	200	200
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	0	0	0	0
Oversize Dry (%) :				
Oversize Density (t/m <sup>3</sup> ) :				
Field Moisture Content (%) :	30.7	32.2	38.6	31.2
Hilf MDR Number :	S-24924	S-24928	S-24929	S-24930
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	123	134	119	130
Field Wet Density (t/m <sup>3</sup> ) :	1.89	1.83	1.78	1.86
Optimum Moisture Content (%) :	24.9	24.0	32.5	24.0
Moisture Variation :	-5.5	-8.0	-5.5	-7.0
Peak Converted Wet Density (t/m <sup>3</sup> ) :	1.99	2.06	1.99	2.06
Hilf Density Ratio (%) :	<b>95.0</b>	<b>89.0</b>	<b>89.5</b>	<b>90.5</b>
Minimum Specification :	98% Standard	98% Standard	98% Standard	98% Standard
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

 <p><b>The results of the tests in this report are traceable to Australian/National standards. Accredited for compliance with ISO/IEC 17025</b></p>	<p>APPROVED SIGNATORY</p>  <p>Daniel Pearce - Laboratory Manager          NATA Accreditation Number          18877</p>
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**Moolap Laboratory**  
 Pearce Geotech Pty Ltd  
 23 Nobility Street  
 Moolap VIC 3221

## Hilf Density Ratio Report

Client : <b>Fortunato Group</b> Address : <b>38A Merri Concourse, Campbellfield, VIC, 3061</b> Project Name : <b>Wallara Waters Stage 11</b> Project Number : <b>CS-629</b> Location: <b>Wallan</b>	Report Number: <b>CS-629 - 3/1</b> Report Date : <b>9/12/2016</b> Order Number : Test Method : <b>AS1289.5.7.1</b> <p style="text-align: right;"><b>Page 2 of 3</b></p>
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Sample Number :	S-24931	S-24932	S-24933	S-24934
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)
Date Sampled :	1/12/2016	1/12/2016	1/12/2016	1/12/2016
Date Tested :	1/12/2016	1/12/2016	1/12/2016	1/12/2016
Material Type :	Clay	Clay	Clay	Clay
Material Source :	Insitu	Insitu	Insitu	Insitu
Lot Number :				
Sample Location :	Fill Area Refer to Site Plan  L1	Fill Area Refer to Site Plan  L1	Road Way Refer to Site Plan  L1	Road Way Refer to Site Plan  L1
Test Depth (mm) :	175	175	175	175
Layer Depth (mm) :	200	200	200	200
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	0	0	0	0
Oversize Dry (%) :				
Oversize Density (t/m <sup>3</sup> ) :				
Field Moisture Content (%) :	38.4	32.7	36.3	36.6
Hilf MDR Number :	S-24931	S-24932	S-24933	S-24934
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	119	125	120.5	121
Field Wet Density (t/m <sup>3</sup> ) :	1.79	1.79	1.85	1.79
Optimum Moisture Content (%) :	32.3	26.2	30.1	30.2
Moisture Variation :	-5.5	-6.5	-6.0	-6.0
Peak Converted Wet Density (t/m <sup>3</sup> ) :	1.99	1.98	1.96	1.96
Hilf Density Ratio (%) :	<b>90.0</b>	<b>90.5</b>	<b>94.0</b>	<b>91.0</b>
Minimum Specification :	98% Standard	98% Standard	98% Standard	98% Standard
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

 <p style="text-align: center;"><b>The results of the tests in this report are traceable to Australian/National standards. Accredited for compliance with ISO/IEC 17025</b></p>	<p>APPROVED SIGNATORY</p>  <p>Daniel Pearce - Laboratory Manager          NATA Accreditation Number          18877</p>
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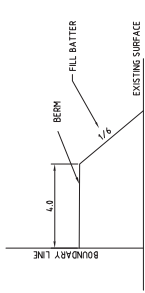
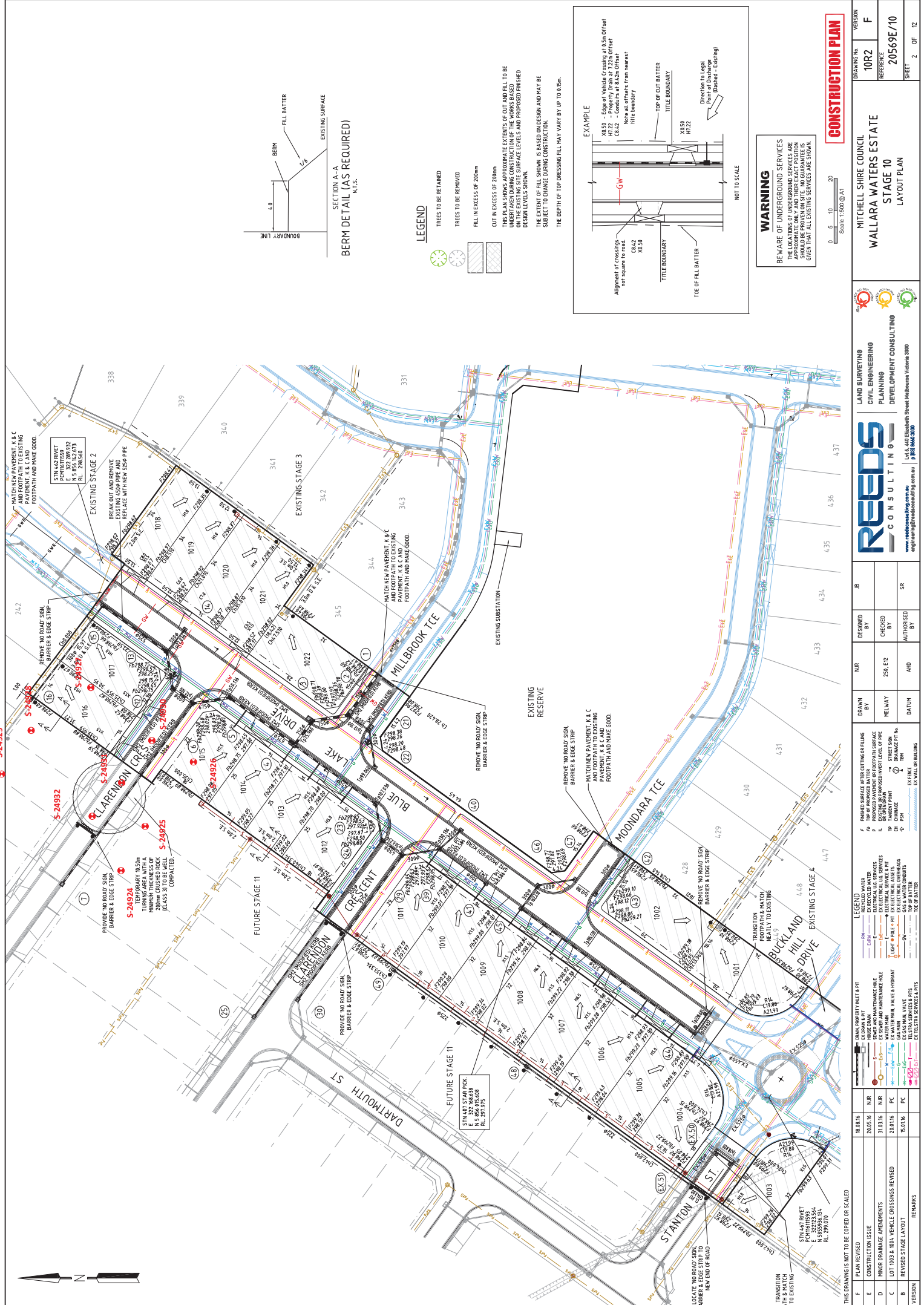
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 Pearce Geotech Pty Ltd  
 23 Nobility Street  
 Moolap VIC 3221

## Hilf Density Ratio Report

Client : <b>Fortunato Group</b> Address : <b>38A Merri Concourse, Campbellfield, VIC, 3061</b> Project Name : <b>Wallara Waters Stage 11</b> Project Number : <b>CS-629</b> Location: <b>Wallan</b>	Report Number: <b>CS-629 - 3/1</b> Report Date : <b>9/12/2016</b> Order Number : Test Method : <b>AS1289.5.7.1</b> <p style="text-align: right;"><b>Page 3 of 3</b></p>
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Sample Number :	S-24935			
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)			
Date Sampled :	1/12/2016			
Date Tested :	1/12/2016			
Material Type :	Clay			
Material Source :	Insitu			
Lot Number :				
Sample Location :	Road Way Refer to Site Plan  L1			
Test Depth (mm) :	175			
Layer Depth (mm) :	200			
Maximum Size (mm) :	19			
Oversize Wet (%) :	0			
Oversize Dry (%) :				
Oversize Density (t/m <sup>3</sup> ) :				
Field Moisture Content (%) :	30.5			
Hilf MDR Number :	S-24935			
Hilf MDR Method :	AS1289.5.7.1			
Compactive Effort :	Standard			
Field Density Method :	AS1289.5.8.1			
Moisture Method :	AS1289.2.1.1			
Moisture Ratio (%) :	122.5			
Field Wet Density (t/m <sup>3</sup> ) :	1.88			
Optimum Moisture Content (%) :	24.9			
Moisture Variation :	-5.5			
Peak Converted Wet Density (t/m <sup>3</sup> ) :	1.98			
Hilf Density Ratio (%) :	<b>95.0</b>			
Minimum Specification :	98% Standard			
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

 <p style="text-align: center;"><b>The results of the tests in this report are traceable to Australian/National standards. Accredited for compliance with ISO/IEC 17025</b></p>	<p style="text-align: center;">APPROVED SIGNATORY</p>  <p style="text-align: center;">Daniel Pearce - Laboratory Manager          NATA Accreditation Number          18877</p>
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SECTION A-A  
BERM DETAIL (AS REQUIRED)  
N.T.S.



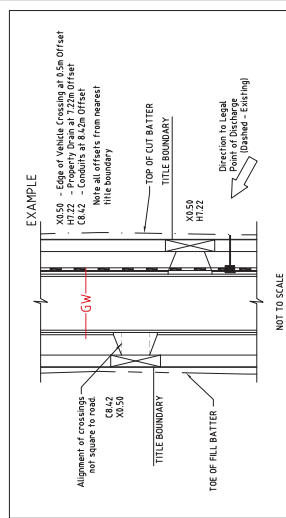
**LEGEND**

- TREES TO BE RETAINED
- TREES TO BE REMOVED
- FILL IN EXCESS OF 200mm
- CUT IN EXCESS OF 200mm

THIS PLAN SHOWS APPROXIMATE EXTENS OF CUT AND FILL TO BE REQUIRED TO BRING THE SITE TO THE PROPOSED FINISHED DESIGN LEVELS ON THE EXISTING SITE SURFACE LEVELS AND PROPOSED FINISHED DESIGN LEVELS SHOWN.

THE EXTENT OF FILL SHOWN IS BASED ON DESIGN AND MAY BE SUBJECT TO CHANGE DURING CONSTRUCTION.

THE DEPTH OF TOP DRESSING FILL MAY VARY BY UP TO 0.5m.



**WARNING**

BEWARE OF UNDERGROUND SERVICES

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**CONSTRUCTION PLAN**

Scale: 1:500 @ A1

0 5 10 20

MITCHELL SHIRE COUNCIL  
WALLARA WATERS ESTATE  
STAGE 10  
LAYOUT PLAN

PERSON: F  
DRAWING NO: 10R2  
REFERENCE: 20569E/10  
SHEET: 2 OF 12

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F 03 9494 0001

DESIGNED BY	CHECKED BY	AUTHORISED BY
NUR	250_E12	SR

DATE	DESCRIPTION
15/01/16	PLAN REVISION
20/05/16	CONSTRUCTION ISSUE
31/03/16	MINOR DRAINAGE AMENDMENTS
20/01/16	LOT 1003 & 1004 VEHICLE CROSSINGS REVISED
15/01/16	REVISED STAGE LAYOUT

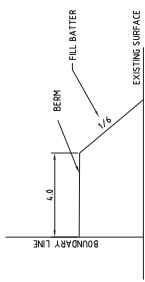
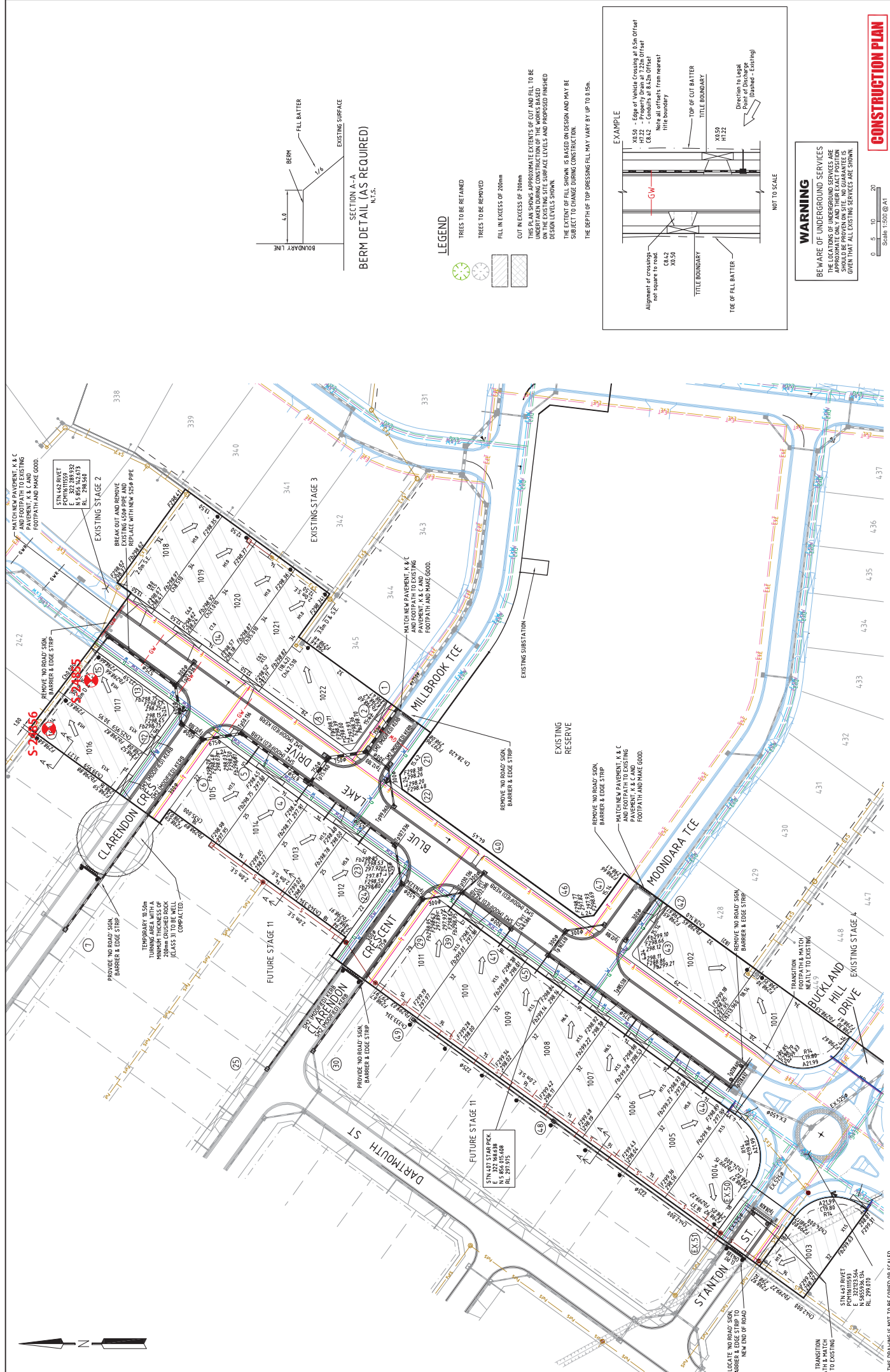
PERSON	REMARKS
F	PLAN REVISION
E	CONSTRUCTION ISSUE
D	MINOR DRAINAGE AMENDMENTS
C	LOT 1003 & 1004 VEHICLE CROSSINGS REVISED
B	REVISED STAGE LAYOUT

THIS DRAWING IS NOT TO BE COPIED OR SCALED

## Hilf Density Ratio Report

Client :	<b>Fortunato Group</b>	Report Number:	<b>CS-598 - 9/1</b>
Address :	<b>38A Merri Concourse, Campbellfield, VIC, 3061</b>	Report Date :	<b>7/12/2016</b>
Project Name :	<b>Wallara Waters Stage 10</b>	Order Number :	
Project Number :	<b>CS-598</b>	Test Method :	<b>AS1289.5.7.1</b>
Location:	<b>Wallan</b>	<b>Page 1 of 1</b>	

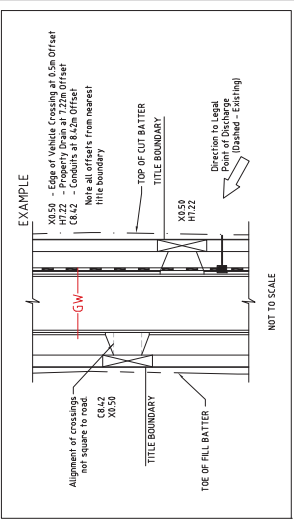
Sample Number :	S-24855	S-24856	
Test Number :			
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	
Date Sampled :	2/12/2016	2/12/2016	
Date Tested :	2/12/2016	2/12/2016	
Material Type :	Clay	Clay	
Material Source :	Insitu	Insitu	
Lot Number :			
Sample Location :	Lot 1017 Subgrade Lift 1 Refer to Plan	Lot 1016 Subgrade Lift 1 Refer to Plan	
Test Depth (mm) :	175	175	
Layer Depth (mm) :	200	200	
Maximum Size (mm) :	19	19	
Oversize Wet (%) :	0	0	
Oversize Dry (%) :			
Oversize Density (t/m <sup>3</sup> ) :			
Field Moisture Content (%) :	37.8	31.5	
Hilf MDR Number :	S-24855	S-24856	
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	
Compactive Effort :	Standard	Standard	
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1	
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	
Moisture Ratio (%) :	129	133.5	
Field Wet Density (t/m <sup>3</sup> ) :	1.80	1.91	
Optimum Moisture Content (%) :	29.4	23.6	
Moisture Variation :	-8.0	-7.5	
Peak Converted Wet Density (t/m <sup>3</sup> ) :	2.05	2.07	
Hilf Density Ratio (%) :	<b>87.5</b>	<b>89.0</b>	
Minimum Specification :	95% Standard	95% Standard	
Moisture Specification :			
Site Selection :	Random	Random	
Soil Description :			
Remarks :	-		



SECTION A-A  
BERM DETAIL (AS REQUIRED)  
N.T.S.

**LEGEND**

- TREES TO BE RETAINED
  - TREES TO BE REMOVED
  - FILL IN EXCESS OF 200mm
  - CUT IN EXCESS OF 200mm
- THIS PLAN SHOWS APPROXIMATE EXTENS OF CUT AND FILL TO BE MADE TO ACHIEVE THE PROPOSED GRADE. THE EXACT POSITIONS ON THE EXISTING SITE SURFACE LEVELS AND PROPOSED FINISHED DESIGN LEVELS SHOWN.
- THE EXTENT OF FILL SHOWN IS BASED ON DESIGN AND MAY BE SUBJECT TO CHANGE DURING CONSTRUCTION.
- THE DEPTH OF TOP DRESSING FILL MAY VARY BY UP TO 0.5m.



**WARNING**

BEWARE OF UNDERGROUND SERVICES  
THE LOCATION AND DEPTH OF UNDERGROUND SERVICES SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL CASTING SERVICES ARE SHOWN.

**CONSTRUCTION PLAN**

Scale: 1:500 @ A1

PERSON	VERSION
F	F
D	20569E/10
C	20569E/10
B	20569E/10
A	20569E/10
SHEET 2 OF 12	

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1300 659 460  
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enquiries@reedsconsulting.com.au

DESIGNED BY	NUR	DESIGNED BY	SR
CHECKED BY	MELWAY	CHECKED BY	
AUTHORISED BY	AND	AUTHORISED BY	
DRAWN BY	250_E12	DRAWN BY	

DATE	DESCRIPTION
18.08.16	PLAN REVISION
20.05.16	CONSTRUCTION ISSUE
31.03.16	MINOR DRAINAGE AMENDMENTS
20.01.16	LOT 1003 & 1004 VEHICLE CROSSINGS REVISED
15.01.16	REVISED STAGE LAYOUT
	REMARKS

THIS DRAWING IS NOT TO BE COPIED OR SCALED

## Hilf Density Ratio Report

Client :	<b>Fortunato Group</b>	Report Number :	<b>CS-629 - 2/1</b>
Address :	<b>38A Merri Concourse, Campbellfield, VIC, 3061</b>	Report Date :	<b>7/12/2016</b>
Project Name :	<b>Wallara Waters Stage 11</b>	Order Number :	
Project Number :	<b>CS-629</b>	Test Method :	<b>AS1289.5.7.1</b>
Location :	<b>Wallan</b>	<b>Page 1 of 1</b>	

Sample Number :	S-24857	S-24858	S-24859	S-24860
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)
Date Sampled :	2/12/2016	2/12/2016	2/12/2016	3/12/2016
Date Tested :	2/12/2016	2/12/2016	2/12/2016	3/12/2016
Material Type :	Clay	Clay	Clay	Clay
Material Source :	Insitu	Insitu	Insitu	Insitu
Lot Number :				
Sample Location :	Subgrade Lift 1 Refer to Plan	Subgrade Lift 1 Refer to Plan	Subgrade Lift 1 Refer to Plan	Subgrade Lift 1 Refer to Plan
Test Depth (mm) :	175	175	175	175
Layer Depth (mm) :	200	200	200	200
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	0	0	0	0
Oversize Dry (%) :				
Oversize Density (t/m <sup>3</sup> ) :				
Field Moisture Content (%) :	34.9	32.8	32.4	28.0
Hilf MDR Number :	S-24857	S-24858	S-24859	S-24860
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	122	120	120.5	126.5
Field Wet Density (t/m <sup>3</sup> ) :	1.79	1.85	1.83	1.87
Optimum Moisture Content (%) :	28.6	27.3	26.9	22.1
Moisture Variation :	-6.0	-5.0	-5.5	-6.0
Peak Converted Wet Density (t/m <sup>3</sup> ) :	2.01	2.02	2.00	2.03
Hilf Density Ratio (%) :	<b>89.0</b>	<b>91.5</b>	<b>91.5</b>	<b>92.5</b>
Minimum Specification :	95% Standard	95% Standard	95% Standard	95% Standard
Moisture Specification :				
Site Selection :	Random	Random	Random	Random
Soil Description :				
Remarks :	-			



## Hilf Density Ratio Report

Client :	<b>Fortunato Group</b>	Report Number:	<b>CS-629 - 6/1</b>
Address :	<b>38A Merri Concourse, Campbellfield, VIC, 3061</b>	Report Date :	<b>15/12/2016</b>
Project Name :	<b>Wallara Waters Stage 11</b>	Order Number :	
Project Number :	<b>CS-629</b>	Test Method :	<b>AS1289.5.7.1</b>
Location:	<b>Wallan</b>	<b>Page 1 of 1</b>	

Sample Number :	S-24725		
Test Number :			
Sampling Method :	AS1289.1.2.1 6.4(b)		
Date Sampled :	5/12/2016		
Date Tested :	5/12/2016		
Material Type :	Clay		
Material Source :	Imported + Insitu		
Lot Number :			
Sample Location :	Stage 11 Subgrade Refer to Plan		
Test Depth (mm) :	175		
Layer Depth (mm) :	200		
Maximum Size (mm) :	19		
Oversize Wet (%) :	0		
Oversize Dry (%) :			
Oversize Density (t/m <sup>3</sup> ) :			
Field Moisture Content (%) :	20.3		
Hilf MDR Number :	S-24725		
Hilf MDR Method :	AS1289.5.7.1		
Compactive Effort :	Standard		
Field Density Method :	AS1289.5.8.1		
Moisture Method :	AS1289.2.1.1		
Moisture Ratio (%) :	87.5		
Field Wet Density (t/m <sup>3</sup> ) :	1.94		
Optimum Moisture Content (%) :	23.2		
Moisture Variation :	3.0		
Peak Converted Wet Density (t/m <sup>3</sup> ) :	1.91		
Hilf Density Ratio (%) :	<b>101.5</b>		
Minimum Specification :	95% Standard		
Moisture Specification :			
Site Selection :	Random		
Soil Description :			
Remarks :	-		

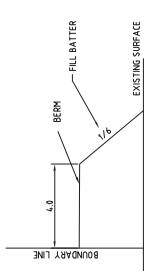
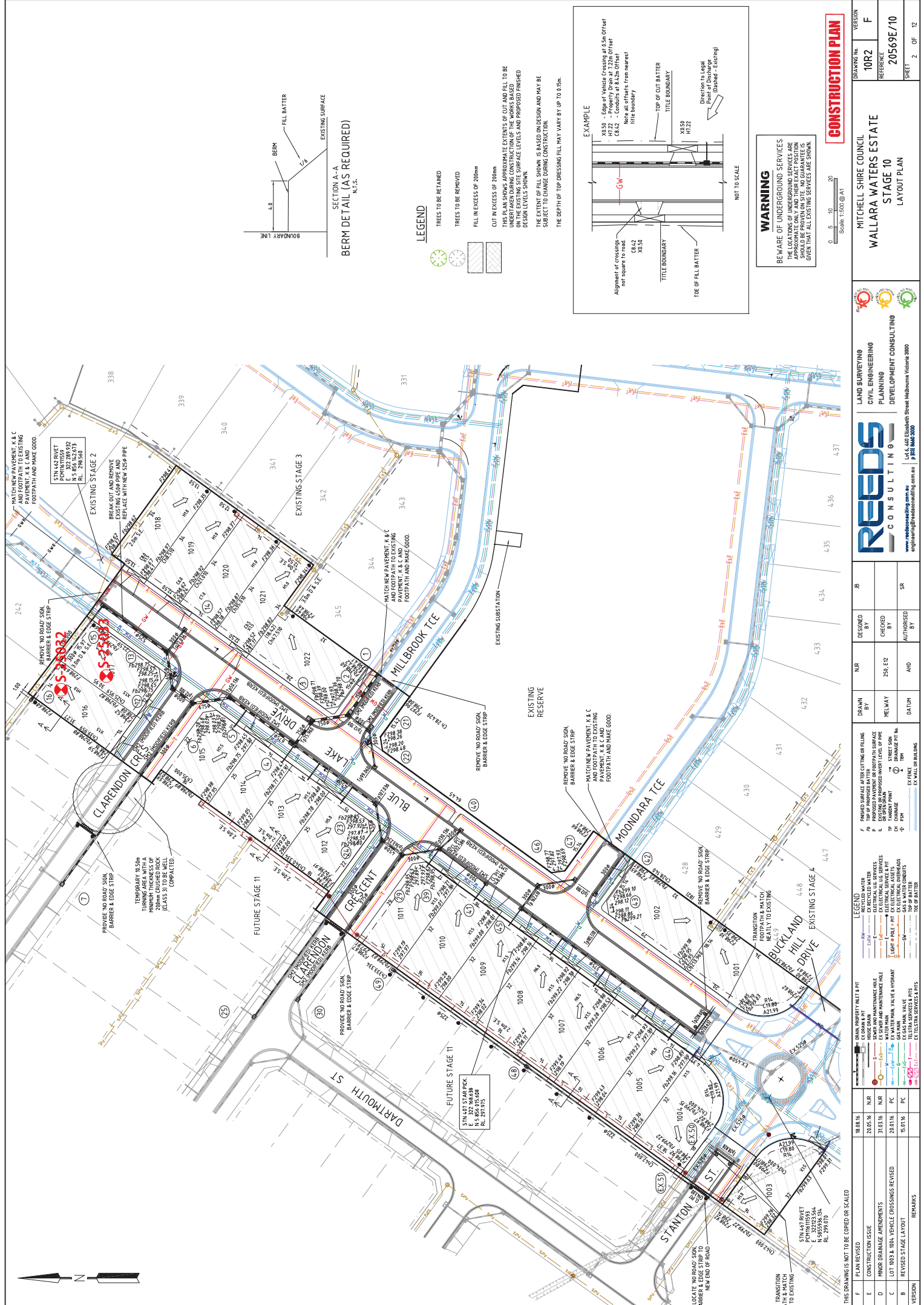




## Hilf Density Ratio Report

Client :	<b>Fortunato Group</b>	Report Number:	<b>CS-598 - 12/1</b>
Address :	<b>38A Merri Concourse, Campbellfield, VIC, 3061</b>	Report Date :	<b>13/12/2016</b>
Project Name :	<b>Wallara Waters Stage 10</b>	Order Number :	
Project Number :	<b>CS-598</b>	Test Method :	<b>AS1289.5.7.1</b>
Location:	<b>Wallan</b>	<b>Page 1 of 1</b>	

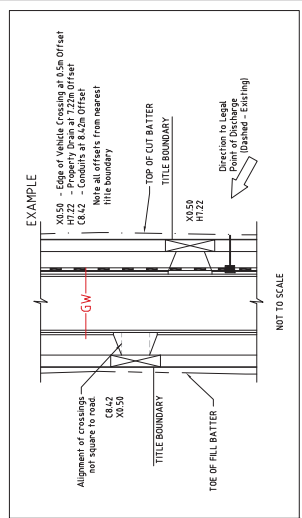
Sample Number :	S-25032	S-25033	
Test Number :			
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	
Date Sampled :	6/12/2016	6/12/2016	
Date Tested :	6/12/2016	6/12/2016	
Material Type :	Clay	Clay	
Material Source :	Insitu/Imported	Insitu/Imported	
Lot Number :			
Sample Location :	Lot 1016 Subgrade Refer to Plan	Lot 1017 Subgrade Refer to Plan	
Test Depth (mm) :	175	175	
Layer Depth (mm) :	200	200	
Maximum Size (mm) :	19	19	
Oversize Wet (%) :	0	0	
Oversize Dry (%) :			
Oversize Density (t/m <sup>3</sup> ) :			
Field Moisture Content (%) :	17.2	32.3	
Hilf MDR Number :	S-25032	S-25033	
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	
Compactive Effort :	Standard	Standard	
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1	
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	
Moisture Ratio (%) :	86.5	103	
Field Wet Density (t/m <sup>3</sup> ) :	1.96	1.92	
Optimum Moisture Content (%) :	19.8	31.4	
Moisture Variation :	2.5	-1.0	
Peak Converted Wet Density (t/m <sup>3</sup> ) :	1.96	1.96	
Hilf Density Ratio (%) :	<b>100.0</b>	<b>98.0</b>	
Minimum Specification :	95% Standard	95% Standard	
Moisture Specification :			
Site Selection :	Random	Random	
Soil Description :			
Remarks :	-		



SECTION A-A  
BERM DETAIL (AS REQUIRED)  
N.T.S.

**LEGEND**

- TREES TO BE RETAINED
  - TREES TO BE REMOVED
  - FILL IN EXCESS OF 200mm
  - CUT IN EXCESS OF 200mm
- THIS PLAN SHOWS APPROXIMATE EXTENS OF CUT AND FILL TO BE MADE TO ACCOMMODATE THE PROPOSED CONSTRUCTION ON THE EXISTING SITE SURFACE LEVELS AND PROPOSED FINISHED DESIGN LEVELS SHOWN.
- THE EXTENT OF FILL SHOWN IS BASED ON DESIGN AND MAY BE SUBJECT TO CHANGE DURING CONSTRUCTION.
- THE DEPTH OF TOP DRESSING FILL MAY VARY BY UP TO 0.5m.



**WARNING**

BEWARE OF UNDERGROUND SERVICES

THE LOCATION AND DEPTH OF UNDERGROUND SERVICES SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

**CONSTRUCTION PLAN**

Scale: 1:500 @ A1

DRAWING No.	10R2
VERSION	F
REFERENCE	20569E/10
SHEET	2 OF 12

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enquiries@reedsconsulting.com.au

DESIGNED BY	NJR	DATE	15/01/16
CHECKED BY	250_E12	DATE	15/01/16
AUTHORISED BY	SR	DATE	15/01/16

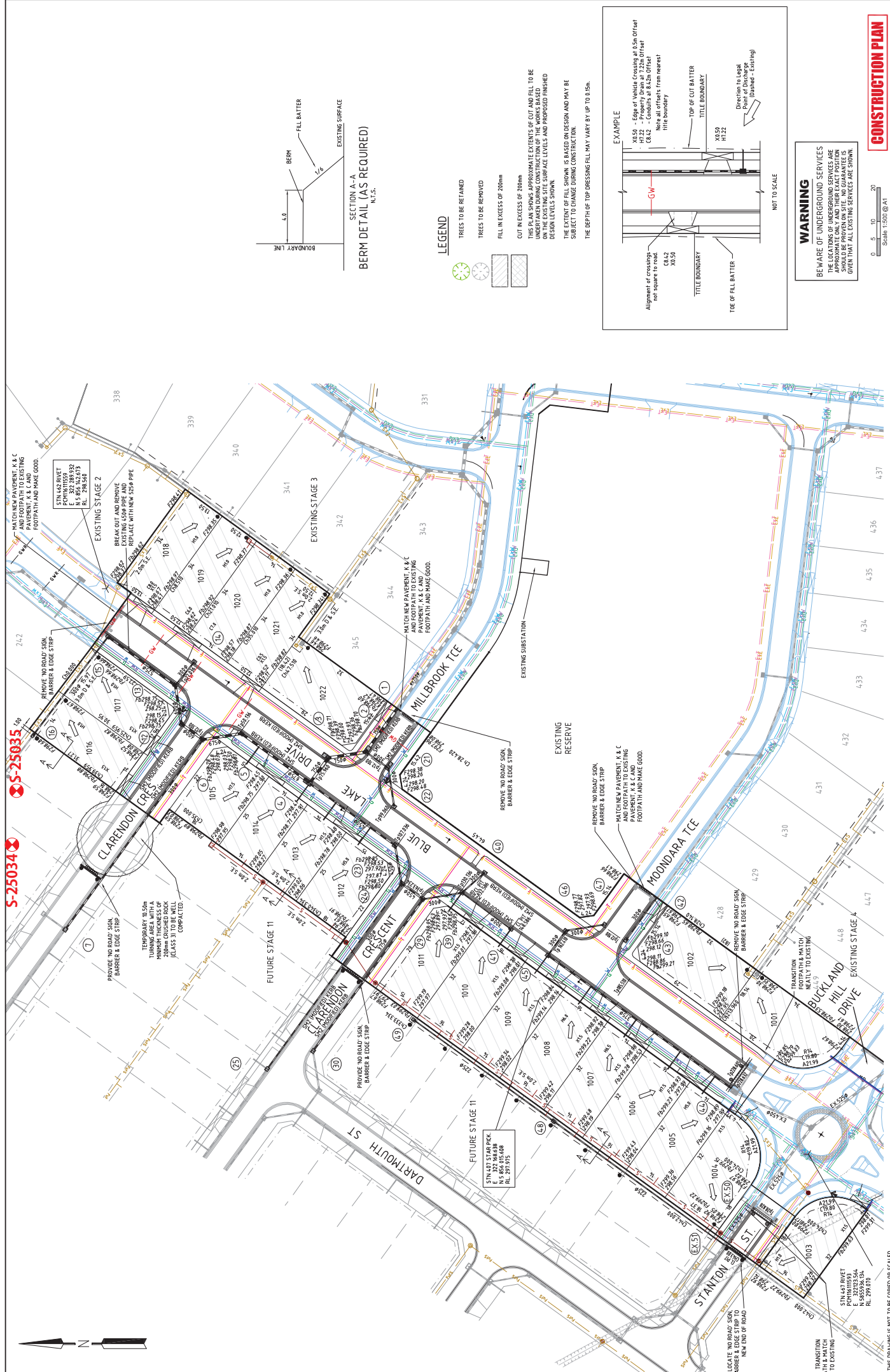
18/08/16	NJR	PLAN REVISION	F	PLAN REVISION
20/05/16	NJR	CONSTRUCTION ISSUE	E	CONSTRUCTION ISSUE
31/03/16	NJR	MINOR DRAINAGE AMENDMENTS	D	MINOR DRAINAGE AMENDMENTS
20/01/16	PC	LOT 1003 & 1004 VEHICLE CROSSINGS REVISED	C	LOT 1003 & 1004 VEHICLE CROSSINGS REVISED
15/01/16	PC	REVISED STAGE LAYOUT	B	REVISED STAGE LAYOUT

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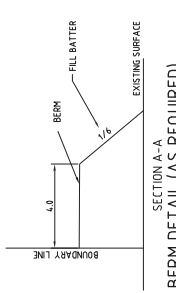
## Hilf Density Ratio Report

Client :	<b>Fortunato Group</b>	Report Number:	<b>CS-629 - 4/1</b>
Address :	<b>38A Merri Concourse, Campbellfield, VIC, 3061</b>	Report Date :	<b>13/12/2016</b>
Project Name :	<b>Wallara Waters Stage 11</b>	Order Number :	
Project Number :	<b>CS-629</b>	Test Method :	<b>AS1289.5.7.1</b>
Location:	<b>Wallan</b>	<b>Page 1 of 1</b>	

Sample Number :	S-25034	S-25035	
Test Number :			
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	
Date Sampled :	6/12/2016	6/12/2016	
Date Tested :	6/12/2016	6/12/2016	
Material Type :	Clay	Clay	
Material Source :	Insitu/Imported	Insitu/Imported	
Lot Number :			
Sample Location :	Stage 11 Subgrade Refer to Plan	Stage 11 Subgrade Refer to Plan	
Test Depth (mm) :	175	175	
Layer Depth (mm) :	200	200	
Maximum Size (mm) :	19	19	
Oversize Wet (%) :	0	0	
Oversize Dry (%) :			
Oversize Density (t/m <sup>3</sup> ) :			
Field Moisture Content (%) :	19.1	29.8	
Hilf MDR Number :	S-25034	S-25035	
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	
Compactive Effort :	Standard	Standard	
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1	
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	
Moisture Ratio (%) :	104.5	109	
Field Wet Density (t/m <sup>3</sup> ) :	1.96	1.87	
Optimum Moisture Content (%) :	18.3	27.4	
Moisture Variation :	-1.0	-2.5	
Peak Converted Wet Density (t/m <sup>3</sup> ) :	1.99	2.02	
Hilf Density Ratio (%) :	<b>98.0</b>	<b>93.0</b>	
Minimum Specification :	95% Standard	95% Standard	
Moisture Specification :			
Site Selection :	Random	Random	
Soil Description :			
Remarks :	-		

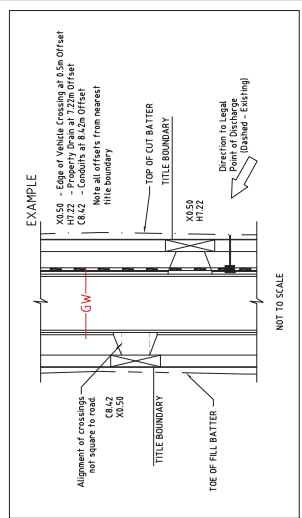


S-25034  
S-25035



**LEGEND**

- TREES TO BE RETAINED
  - TREES TO BE REMOVED
  - FILL IN EXCESS OF 200mm
  - CUT IN EXCESS OF 200mm
- THIS PLAN SHOWS APPROXIMATE EXTENTS OF CUT AND FILL TO BE MADE AND THE APPROXIMATE ELEVATIONS OF THE EXISTING AND PROPOSED SURFACE LEVELS AND PROPOSED FINISHED DESIGN LEVELS SHOWN.  
THE EXTENT OF FILL SHOWN IS BASED ON DESIGN AND MAY BE SUBJECT TO CHANGE DURING CONSTRUCTION.  
THE DEPTH OF TOP DRESSING FILL MAY VARY BY UP TO 0.5m.



**WARNING**  
BEWARE OF UNDERGROUND SERVICES  
THIS DRAWING IS FOR INFORMATION ONLY AND DOES NOT GUARANTEE THE EXISTENCE OF UNDERGROUND SERVICES. APPROXIMATE ONLY AND THERE EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

**CONSTRUCTION PLAN**

Scale: 1:500 @ A1

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185 Adelaide Street Melbourne Victoria 3000  
1300 464 404

PERSON	VERSION	DATE	DESCRIPTION	DESIGNED BY	DRAWN BY	NUR	DATE	AUTHORISED BY
				SR				

18.08.16	20.05.16	31.03.16	20.01.16	15.01.16	PC
PLAN REVISION	CONSTRUCTION ISSUE	MINOR DRAINAGE AMENDMENTS	LOT 1003 & 1004 VEHICLE CROSSINGS REVISED	REVISED STAGE LAYOUT	

LEGEND	RECYCLED WATER	EXISTING ROAD	EXISTING FOOTPATH	EXISTING SIDEWALK	EXISTING DRIVE	EXISTING DRIVE	EXISTING DRIVE	EXISTING DRIVE	EXISTING DRIVE	EXISTING DRIVE	EXISTING DRIVE	EXISTING DRIVE	EXISTING DRIVE	EXISTING DRIVE	EXISTING DRIVE	EXISTING DRIVE	EXISTING DRIVE	EXISTING DRIVE	EXISTING DRIVE
DATA PROPERTY PLAT & P/T	EXISTING WATER	EXISTING ROAD	EXISTING FOOTPATH	EXISTING SIDEWALK	EXISTING DRIVE	EXISTING DRIVE	EXISTING DRIVE	EXISTING DRIVE	EXISTING DRIVE	EXISTING DRIVE	EXISTING DRIVE	EXISTING DRIVE	EXISTING DRIVE	EXISTING DRIVE	EXISTING DRIVE	EXISTING DRIVE	EXISTING DRIVE	EXISTING DRIVE	EXISTING DRIVE



18.08.16	20.05.16	31.03.16	20.01.16	15.01.16	PC

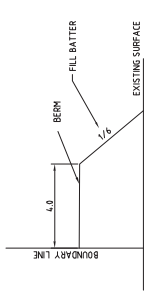
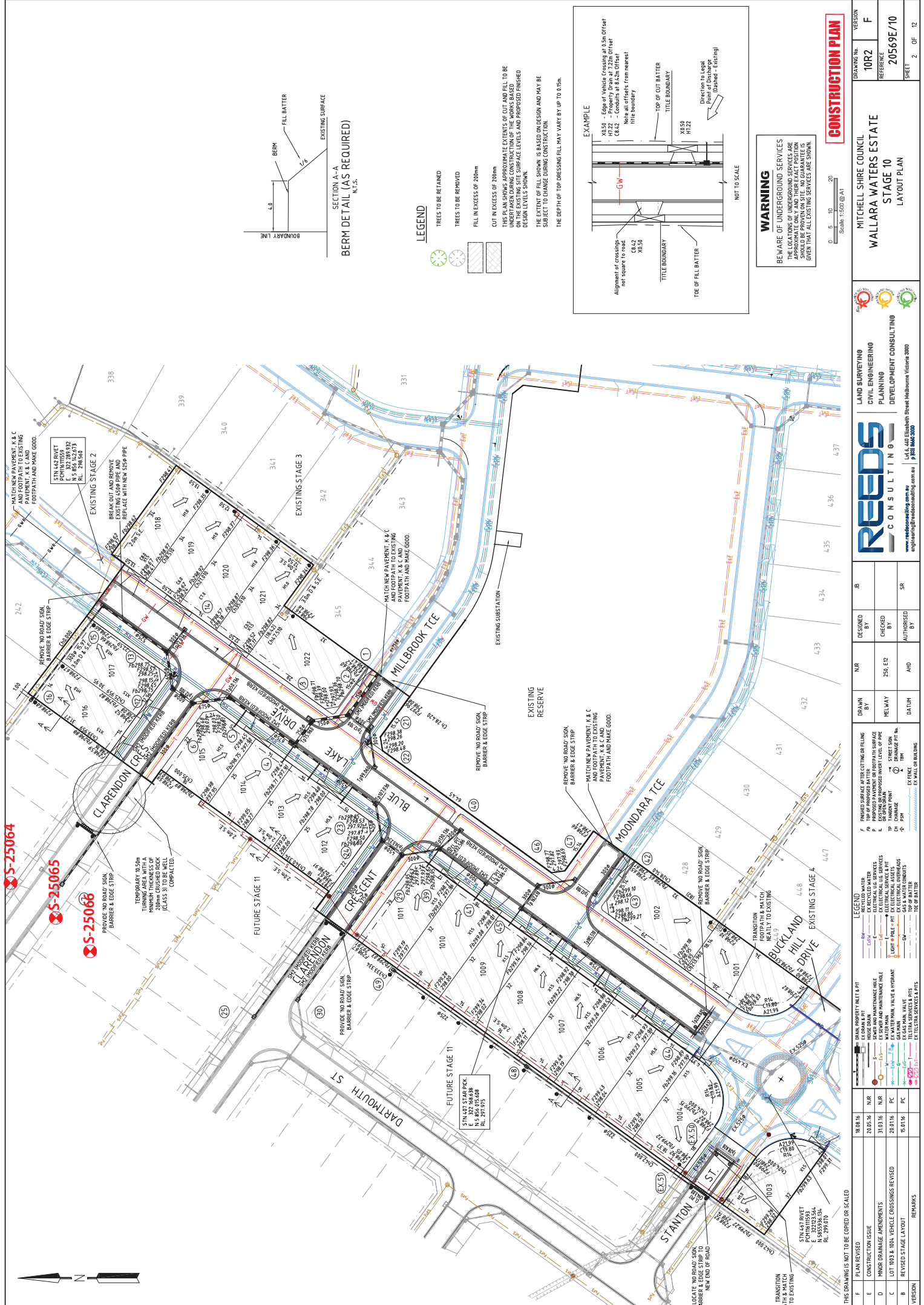
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## Hilf Density Ratio Report

Client :	Fortunato Group	Report Number:	CS-629 - 5/1
Address :	38A Merri Concourse, Campbellfield, VIC, 3061	Report Date :	13/12/2016
Project Name :	Wallara Waters Stage 11	Order Number :	
Project Number :	CS-629	Test Method :	AS1289.5.7.1
Location:	Wallan	<b>Page 1 of 1</b>	

Sample Number :	S-25064	S-25065	S-25066	
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	
Date Sampled :	7/12/2016	7/12/2016	7/12/2016	
Date Tested :	7/12/2016	7/12/2016	7/12/2016	
Material Type :	Clay	Clay	Clay	
Material Source :	Insitu and Imported	Insitu and Imported	Insitu and Imported	
Lot Number :				
Sample Location :	Stage 11 Subgrade Refer to Plan	Stage 11 Subgrade Refer to Plan	Stage 11 Subgrade Refer to Plan	
Test Depth (mm) :	175	175	175	
Layer Depth (mm) :	200	200	200	
Maximum Size (mm) :	19	19	19	
Oversize Wet (%) :	0	0	0	
Oversize Dry (%) :				
Oversize Density (t/m <sup>3</sup> ) :				
Field Moisture Content (%) :	19.8	19.9	21.3	
Hilf MDR Number :	S-25064	S-25065	S-25066	
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	
Compactive Effort :	Standard	Standard	Standard	
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1	
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	
Moisture Ratio (%) :	88	88.5	90	
Field Wet Density (t/m <sup>3</sup> ) :	1.95	1.94	1.93	
Optimum Moisture Content (%) :	22.5	22.4	23.7	
Moisture Variation :	2.5	2.5	2.5	
Peak Converted Wet Density (t/m <sup>3</sup> ) :	2.00	1.93	1.94	
Hilf Density Ratio (%) :	<b>97.5</b>	<b>100.5</b>	<b>99.5</b>	
Minimum Specification :	95% Standard	95% Standard	95% Standard	
Moisture Specification :				
Site Selection :	Random	Random	Random	
Soil Description :				
Remarks :	-			

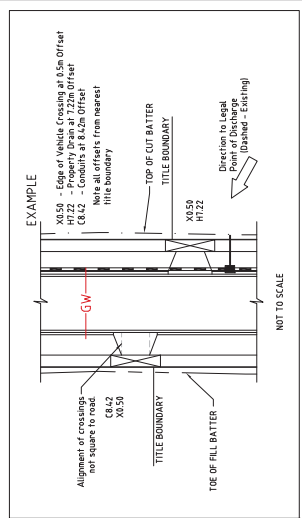
 <p><b>NATA</b> WORLD RECOGNISED ACCREDITATION</p>	<p>The results of the tests in this report are traceable to Australian/National standards. Accredited for compliance with ISO/IEC 17025</p>	<p>APPROVED SIGNATORY</p>  <p>Anthony Green - Technician        NATA Accreditation Number        18877</p>
---	---	---



SECTION A-A  
BERM DETAIL (AS REQUIRED)  
N.T.S.

**LEGEND**

- TREES TO BE RETAINED
  - TREES TO BE REMOVED
  - FILL IN EXCESS OF 200mm
  - CUT IN EXCESS OF 200mm
- THIS PLAN SHOWS APPROXIMATE EXTENS OF CUT AND FILL TO BE REQUIRED TO BRING THE SITE TO THE PROPOSED FINISHED DESIGN LEVELS ON THE EXISTING SITE SURFACE LEVELS AND PROPOSED FINISHED DESIGN LEVELS SHOWN.
- THE EXTENT OF FILL SHOWN IS BASED ON DESIGN AND MAY BE SUBJECT TO CHANGE DURING CONSTRUCTION.
- THE DEPTH OF TOP DRESSING FILL MAY VARY BY UP TO 0.5m.



**WARNING**

BEWARE OF UNDERGROUND SERVICES

THE LOCATION AND DEPTH OF UNDERGROUND SERVICES SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

**CONSTRUCTION PLAN**

Scale: 1:500 @ A1

DRAWING NO.	10RZ
VERSION	F
REFERENCE	20569E/10
SHEET	2 OF 12

MITCHELL SHIRE COUNCIL  
WALLARA WATERS ESTATE  
STAGE 10  
LAYOUT PLAN

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DESIGNED BY	JB
CHECKED BY	
AUTHORISED BY	SR
DRAWN BY	
DATE	
AND	
DATE	

18.08.16	NJR	PLAN REVISION
20.05.16	NJR	CONSTRUCTION ISSUE
31.03.16	NJR	MINOR DRAINAGE AMENDMENTS
20.01.16	PC	LOT 1003 & 1004 VEHICLE CROSSINGS REVISED
15.01.16	PC	REVISED STAGE LAYOUT

FINISHED SURFACE AFTER CUTTING OR FILLING	EX 100	EXISTING SURFACE	EX 100
PROPOSED FINISHED SURFACE	EX 150	EXISTING INVERT LEVEL OF PIPE	EX 150
PROPOSED FINISHED SURFACE	EX 200	EXISTING INVERT LEVEL OF PIPE	EX 200
PROPOSED FINISHED SURFACE	EX 250	EXISTING INVERT LEVEL OF PIPE	EX 250
PROPOSED FINISHED SURFACE	EX 300	EXISTING INVERT LEVEL OF PIPE	EX 300
PROPOSED FINISHED SURFACE	EX 350	EXISTING INVERT LEVEL OF PIPE	EX 350
PROPOSED FINISHED SURFACE	EX 400	EXISTING INVERT LEVEL OF PIPE	EX 400
PROPOSED FINISHED SURFACE	EX 450	EXISTING INVERT LEVEL OF PIPE	EX 450
PROPOSED FINISHED SURFACE	EX 500	EXISTING INVERT LEVEL OF PIPE	EX 500
PROPOSED FINISHED SURFACE	EX 550	EXISTING INVERT LEVEL OF PIPE	EX 550
PROPOSED FINISHED SURFACE	EX 600	EXISTING INVERT LEVEL OF PIPE	EX 600
PROPOSED FINISHED SURFACE	EX 650	EXISTING INVERT LEVEL OF PIPE	EX 650
PROPOSED FINISHED SURFACE	EX 700	EXISTING INVERT LEVEL OF PIPE	EX 700
PROPOSED FINISHED SURFACE	EX 750	EXISTING INVERT LEVEL OF PIPE	EX 750
PROPOSED FINISHED SURFACE	EX 800	EXISTING INVERT LEVEL OF PIPE	EX 800
PROPOSED FINISHED SURFACE	EX 850	EXISTING INVERT LEVEL OF PIPE	EX 850
PROPOSED FINISHED SURFACE	EX 900	EXISTING INVERT LEVEL OF PIPE	EX 900
PROPOSED FINISHED SURFACE	EX 950	EXISTING INVERT LEVEL OF PIPE	EX 950
PROPOSED FINISHED SURFACE	EX 1000	EXISTING INVERT LEVEL OF PIPE	EX 1000



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PERSON

REMARKS

REVISED STAGE LAYOUT

LOT 1003 & 1004 VEHICLE CROSSINGS REVISED

MINOR DRAINAGE AMENDMENTS

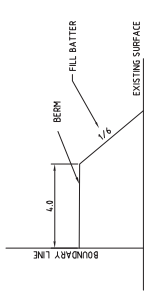
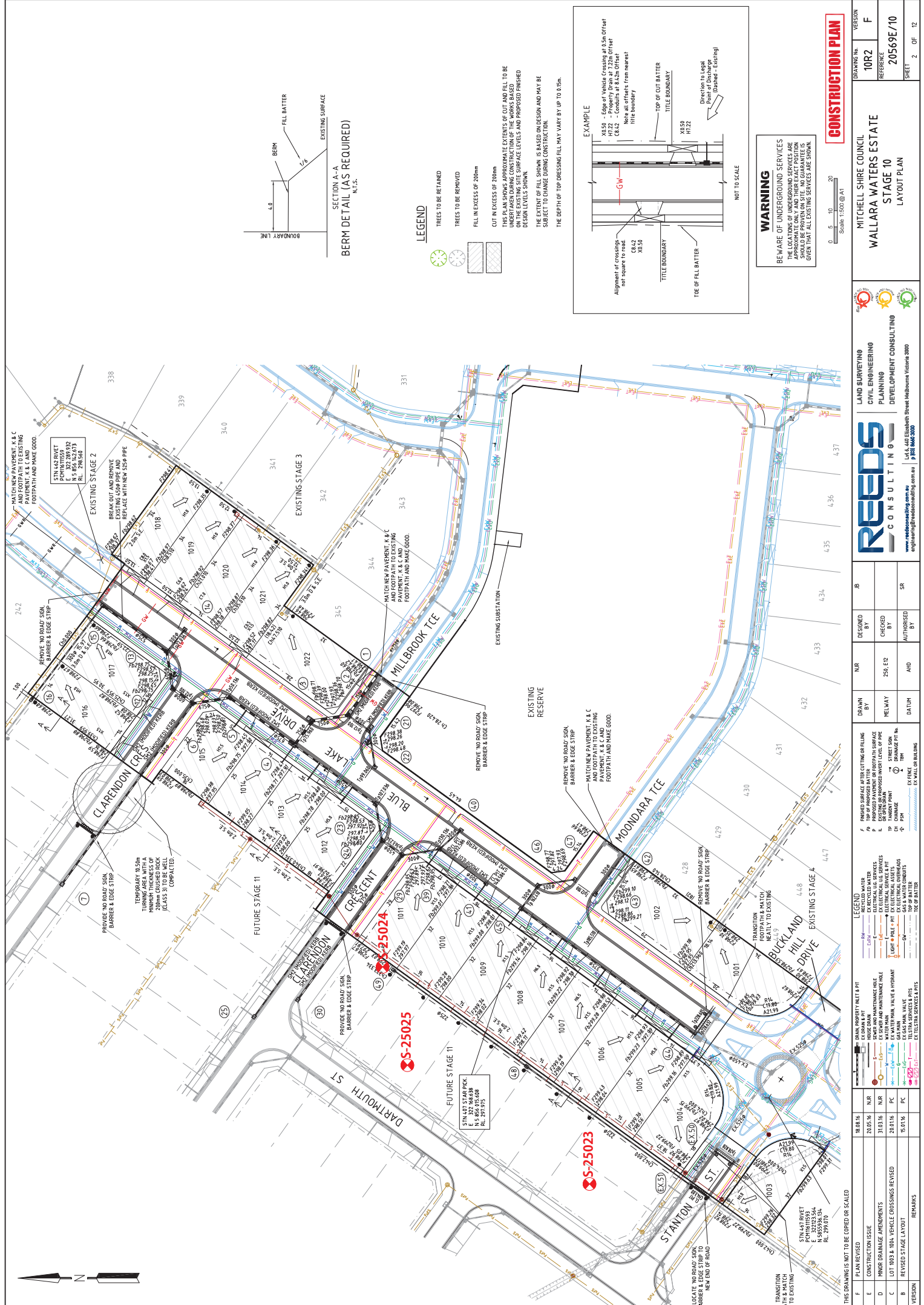
CONSTRUCTION ISSUE

PLAN REVISION

## Hilf Density Ratio Report

Client :	<b>Fortunato Group</b>	Report Number:	<b>CS-629 - 7/1</b>
Address :	<b>38A Merri Concourse, Campbellfield, VIC, 3061</b>	Report Date :	<b>16/12/2016</b>
Project Name :	<b>Wallara Waters Stage 11</b>	Order Number :	
Project Number :	<b>CS-629</b>	Test Method :	<b>AS1289.5.7.1</b>
Location:	<b>Wallan</b>	<b>Page 1 of 1</b>	

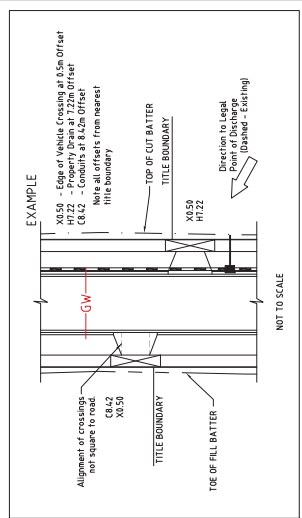
Sample Number :	S-25023	S-25024	S-25025	
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	
Date Sampled :	9/12/2016	9/12/2016	9/12/2016	
Date Tested :	9/12/2016	9/12/2016	9/12/2016	
Material Type :	Clay	Clay	Clay	
Material Source :	Imported and Insitu	Imported and Insitu	Imported and Insitu	
Lot Number :				
Sample Location :	Stage 11 Lift 2 Refer to Plan	Stage 11 Lift 2 Refer to Plan	Stage 11 Lift 2 Refer to Plan	
Test Depth (mm) :	175	175	175	
Layer Depth (mm) :	200	200	200	
Maximum Size (mm) :	19	19	19	
Oversize Wet (%) :	0	0	0	
Oversize Dry (%) :				
Oversize Density (t/m <sup>3</sup> ) :				
Field Moisture Content (%) :	26.6	29.5	22.1	
Hilf MDR Number :	S-25023	S-25024	S-25025	
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	
Compactive Effort :	Standard	Standard	Standard	
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1	
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	
Moisture Ratio (%) :	103.5	102.5	90.5	
Field Wet Density (t/m <sup>3</sup> ) :	1.91	1.86	1.93	
Optimum Moisture Content (%) :	25.7	28.8	24.4	
Moisture Variation :	-1.0	-0.5	2.0	
Peak Converted Wet Density (t/m <sup>3</sup> ) :	1.95	1.91	1.93	
Hilf Density Ratio (%) :	<b>98.5</b>	<b>97.0</b>	<b>100.0</b>	
Minimum Specification :	95% Standard	95% Standard	95% Standard	
Moisture Specification :				
Site Selection :	Random	Random	Random	
Soil Description :				
Remarks :	-			



SECTION A-A  
BERM DETAIL (AS REQUIRED)  
N.T.S.

**LEGEND**

- TREES TO BE RETAINED
  - TREES TO BE REMOVED
  - FILL IN EXCESS OF 200mm
  - CUT IN EXCESS OF 200mm
- THIS PLAN SHOWS APPROXIMATE EXTENS OF CUT AND FILL TO BE MADE TO THE EXISTING SURFACE LEVELS AND PROPOSED FINISHED DESIGN LEVELS SHOWN.
- THE EXTENT OF FILL SHOWN IS BASED ON DESIGN AND MAY BE SUBJECT TO CHANGE DURING CONSTRUCTION.
- THE DEPTH OF TOP DRESSING FILL MAY VARY BY UP TO 0.5m.



**WARNING**

BEWARE OF UNDERGROUND SERVICES

THE LOCATION AND DEPTH OF UNDERGROUND SERVICES SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

**CONSTRUCTION PLAN**

Scale: 1:500 @ A1

MITCHELL SHIRE COUNCIL  
WALLARA WATERS ESTATE  
STAGE 10  
LAYOUT PLAN

PERSON: F  
DRAWING No: 10R2  
REFERENCE: 20569E/10  
SHEET: 2 OF 12

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DESIGNED BY	CHECKED BY	AUTHORISED BY
NUR	250_E12	SR

DRAWN BY	DATUM	AND	BY
MELWAY			

REVISION	DATE	DESCRIPTION
F	18.08.16	PLAN REVISION
E	20.05.16	CONSTRUCTION ISSUE
D	31.03.16	MINOR DRAINAGE AMENDMENTS
C	20.01.16	LOT 1003 & 1004 VEHICLE CROSSINGS REVISED
B	15.01.16	REVISED STAGE LAYOUT



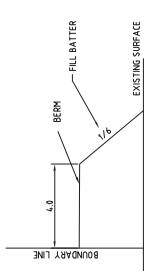
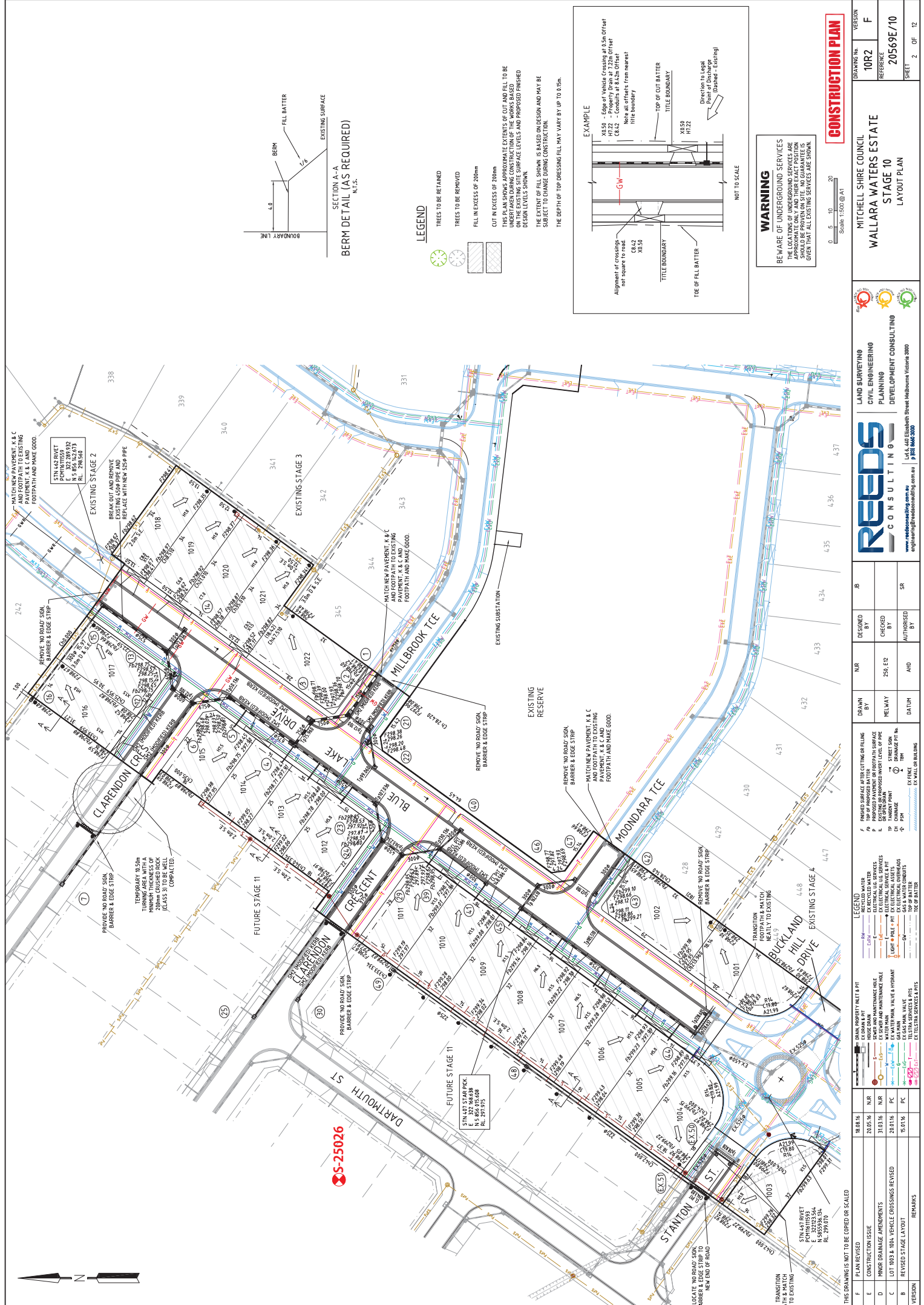
THIS DRAWING IS NOT TO BE COPIED OR SCALED



## Hilf Density Ratio Report

Client :	<b>Fortunato Group</b>	Report Number:	<b>CS-629 - 8/1</b>
Address :	<b>38A Merri Concourse, Campbellfield, VIC, 3061</b>	Report Date :	<b>16/12/2016</b>
Project Name :	<b>Wallara Waters Stage 11</b>	Order Number :	
Project Number :	<b>CS-629</b>	Test Method :	<b>AS1289.5.7.1</b>
Location:	<b>Wallan</b>	<b>Page 1 of 1</b>	

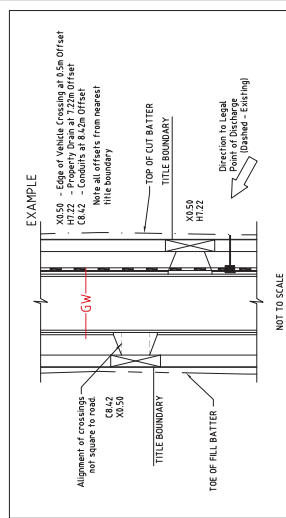
Sample Number :	S-25026		
Test Number :			
Sampling Method :	AS1289.1.2.1 6.4(b)		
Date Sampled :	12/12/2016		
Date Tested :	12/12/2016		
Material Type :	Clay		
Material Source :	Insitu		
Lot Number :			
Sample Location :	Stage 11 Subgrade Refer to Plan		
Test Depth (mm) :	175		
Layer Depth (mm) :	200		
Maximum Size (mm) :	19		
Oversize Wet (%) :	0		
Oversize Dry (%) :			
Oversize Density (t/m <sup>3</sup> ) :			
Field Moisture Content (%) :	35.2		
Hilf MDR Number :	S-25026		
Hilf MDR Method :	AS1289.5.7.1		
Compactive Effort :	Standard		
Field Density Method :	AS1289.5.8.1		
Moisture Method :	AS1289.2.1.4		
Moisture Ratio (%) :	104.5		
Field Wet Density (t/m <sup>3</sup> ) :	1.90		
Optimum Moisture Content (%) :	33.6		
Moisture Variation :	-1.5		
Peak Converted Wet Density (t/m <sup>3</sup> ) :	1.91		
Hilf Density Ratio (%) :	<b>99.5</b>		
Minimum Specification :	95% Standard		
Moisture Specification :			
Site Selection :	Random		
Soil Description :			
Remarks :	-		



SECTION A-A  
BERM DETAIL (AS REQUIRED)  
N.T.S.

**LEGEND**

- TREES TO BE RETAINED
  - TREES TO BE REMOVED
  - FILL IN EXCESS OF 200mm
  - CUT IN EXCESS OF 200mm
- THIS PLAN SHOWS APPROXIMATE EXTENS OF CUT AND FILL TO BE MADE TO ACCOMMODATE THE PROPOSED CONSTRUCTION WORKS ON THE EXISTING SITE SURFACE LEVELS AND PROPOSED FINISHED DESIGN LEVELS SHOWN.
- THE EXTENT OF FILL SHOWN IS BASED ON DESIGN AND MAY BE SUBJECT TO CHANGE DURING CONSTRUCTION.
- THE DEPTH OF TOP DRESSING FILL MAY VARY BY UP TO 0.5m.



**WARNING**

BEWARE OF UNDERGROUND SERVICES  
 THE LOCATION OF UNDERGROUND SERVICES AND DEPTHS ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

**CONSTRUCTION PLAN**

Scale: 1:500 @ A1

PERSON	VERSION
DESIGNED BY	18.08.16
CHECKED BY	20.05.16
AUTHORISED BY	31.03.16
DRAWN BY	20.01.16
DATUM	15.01.16
DATE	PC
PROJECT	PC
REVISIONS	PC
REMARKS	REVISIONS
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MITCHELL SHIRE COUNCIL  
 WALLARA WATERS ESTATE  
 STAGE 10  
 LAYOUT PLAN

FRANKING NO. 10RZ  
 REFERENCE 20569E/10  
 SHEET 2 OF 12



**Moolap Laboratory**  
 Pearce Geotech Pty Ltd  
 23 Nobility Street  
 Moolap VIC 3221

## Hilf Density Ratio Report

Client : <b>Fortunato Group</b> Address : <b>38A Merri Concourse, Campbellfield, VIC, 3061</b> Project Name : <b>Wallara Waters Stage 11</b> Project Number : <b>CS-629</b> Location: <b>Wallan</b>	Report Number: <b>CS-629 - 10/1</b> Report Date : <b>18/01/2017</b> Order Number : Test Method : <b>AS1289.5.7.1</b> <p style="text-align: right;"><b>Page 1 of 1</b></p>
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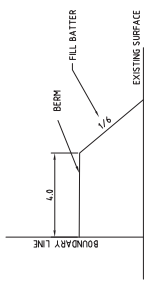
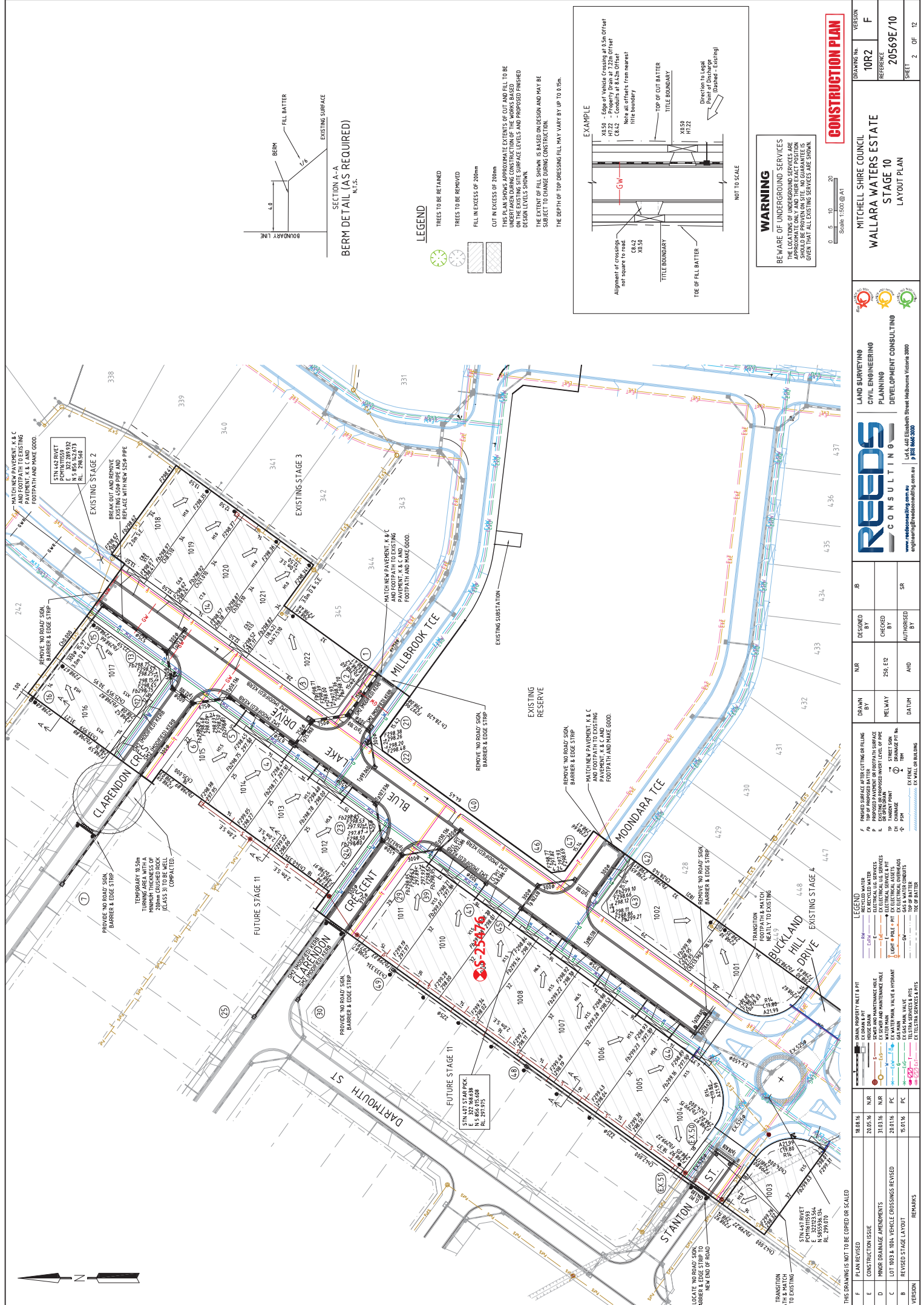
Sample Number :	S-25311	S-25312		
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)		
Date Sampled :	13/12/2016	13/12/2016		
Date Tested :	13/12/2016	13/12/2016		
Material Type :	Clay	Clay		
Material Source :	Insitu	Insitu		
Lot Number :				
Sample Location :	Stage 10/11 L1 RT S-24932	Stage 10/11 L1 RT S-24933		
Test Depth (mm) :	175	175		
Layer Depth (mm) :	200	200		
Maximum Size (mm) :	19	19		
Oversize Wet (%) :	0	0		
Oversize Dry (%) :				
Oversize Density (t/m <sup>3</sup> ) :				
Field Moisture Content (%) :	19.0	29.5		
Hilf MDR Number :	S-25311	S-25312		
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1		
Compactive Effort :	Standard	Standard		
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1		
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1		
Moisture Ratio (%) :	88	99		
Field Wet Density (t/m <sup>3</sup> ) :	1.85	1.84		
Optimum Moisture Content (%) :	21.6	29.9		
Moisture Variation :	2.5	0.5		
Peak Converted Wet Density (t/m <sup>3</sup> ) :	1.90	1.91		
Hilf Density Ratio (%) :	<b>97.5</b>	<b>96.0</b>		
Minimum Specification :	95% Standard	95% Standard		
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

 <p style="text-align: center;"><b>The results of the tests in this report are traceable to Australian/National standards. Accredited for compliance with ISO/IEC 17025</b></p>	<p>APPROVED SIGNATORY</p>  <p>Daniel Pearce - Laboratory Manager          NATA Accreditation Number          18877</p>
--	---

## Hilf Density Ratio Report

Client :	<b>Fortunato Group</b>	Report Number:	<b>CS-598 - 14/1</b>
Address :	<b>38A Merri Concourse, Campbellfield, VIC, 3061</b>	Report Date :	<b>18/01/2017</b>
Project Name :	<b>Wallara Waters Stage 10</b>	Order Number :	
Project Number :	<b>CS-598</b>	Test Method :	<b>AS1289.5.7.1</b>
Location:	<b>Wallan</b>	<b>Page 1 of 1</b>	

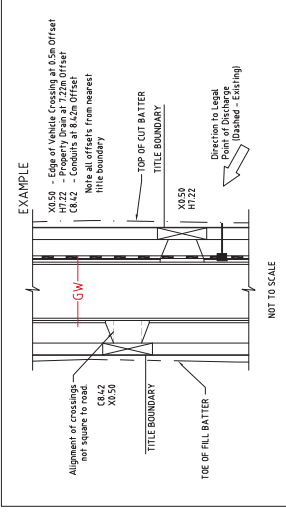
Sample Number :	S-25476		
Test Number :			
Sampling Method :	AS1289.1.2.1 6.4(b)		
Date Sampled :	16/01/2017		
Date Tested :	16/01/2017		
Material Type :	Clay		
Material Source :	Insitu/Imported		
Lot Number :			
Sample Location :	Lot 1009 Subgrade Lift 2 Refer to Plan		
Test Depth (mm) :	175		
Layer Depth (mm) :	200		
Maximum Size (mm) :	19		
Oversize Wet (%) :	0		
Oversize Dry (%) :			
Oversize Density (t/m <sup>3</sup> ) :			
Field Moisture Content (%) :	18.9		
Hilf MDR Number :	S-25476		
Hilf MDR Method :	AS1289.5.7.1		
Compactive Effort :	Standard		
Field Density Method :	AS1289.5.8.1		
Moisture Method :	AS1289.2.1.1		
Moisture Ratio (%) :	92		
Field Wet Density (t/m <sup>3</sup> ) :	1.99		
Optimum Moisture Content (%) :	20.6		
Moisture Variation :	1.5		
Peak Converted Wet Density (t/m <sup>3</sup> ) :	2.04		
Hilf Density Ratio (%) :	<b>97.0</b>		
Minimum Specification :	95% Standard		
Moisture Specification :			
Site Selection :	Random		
Soil Description :			
Remarks :	-		



SECTION A-A  
BERM DETAIL (AS REQUIRED)  
N.T.S.

**LEGEND**

- TREES TO BE RETAINED
  - TREES TO BE REMOVED
  - FILL IN EXCESS OF 200mm
  - CUT IN EXCESS OF 200mm
- THIS PLAN SHOWS APPROXIMATE EXTENS OF CUT AND FILL TO BE MADE TO ACHIEVE THE PROPOSED FINISHED SURFACE LEVELS ON THE EXISTING SITE SURFACE LEVELS AND PROPOSED FINISHED DESIGN LEVELS SHOWN.
- THE EXTENT OF FILL SHOWN IS BASED ON DESIGN AND MAY BE SUBJECT TO CHANGE DURING CONSTRUCTION.
- THE DEPTH OF TOP DRESSING FILL MAY VARY BY UP TO 0.5m.



**WARNING**

BEWARE OF UNDERGROUND SERVICES

THE LOCATION AND DEPTH OF UNDERGROUND SERVICES SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

**CONSTRUCTION PLAN**

Scale: 1:500 @ A1

PERSON	VERSION
MITCHELL SHIRE COUNCIL	F
WALLARA WATERS ESTATE	10R2
STAGE 10	20569E/10
LAYOUT PLAN	SHEET 2 OF 12

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DESIGNED BY	NJR	CHECKED BY	250_E12	AUTHORISED BY	SR
DRAWN BY	MELWAY	DATUM			

18.08.16	NJR	PLAN REVISION
20.05.16	NJR	CONSTRUCTION ISSUE
31.03.16	NJR	MINOR DRAINAGE AMENDMENTS
20.01.16	PC	LOT 1003 & 1004 VEHICLE CROSSINGS REVISED
15.01.16	PC	REVISED STAGE LAYOUT

FINISHED SURFACE AFTER CUTTING OR FILLING	PROPOSED PAVEMENT SURFACE	EXISTING OR PROPOSED INVERT LEVEL OF PIPE	TRANSIT POINT	STREET SIGN	EXISTING WALL OR BUILDING
EX WALL	EX PAV	EX PIPE	EX SIGN	EX WALL	EX BUILDING

LEGEND

- EX WALL
- EX BUILDING
- EX PIPE
- EX SIGN
- EX WALL
- EX BUILDING



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2025/03/20 10:00 AM

## Hilf Density Ratio Report

Client :	<b>Fortunato Group</b>	Report Number:	<b>CS-629 - 9/1</b>
Address :	<b>38A Merri Concourse, Campbellfield, VIC, 3061</b>	Report Date :	<b>18/01/2017</b>
Project Name :	<b>Wallara Waters Stage 11</b>	Order Number :	
Project Number :	<b>CS-629</b>	Test Method :	<b>AS1289.5.7.1</b>
Location:	<b>Wallan</b>	<b>Page 1 of 1</b>	

Sample Number :	S-25477	S-25478	
Test Number :			
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	
Date Sampled :	16/01/2017	16/01/2017	
Date Tested :	16/01/2017	16/01/2017	
Material Type :	Clay	Clay	
Material Source :	Insitu/Imported	Insitu/Imported	
Lot Number :			
Sample Location :	Stage 11 Subgrade Lift 2 Refer to Plan	Stage 11 Subgrade Lift 2 Refer to Plan	
Test Depth (mm) :	175	175	
Layer Depth (mm) :	200	200	
Maximum Size (mm) :	19	19	
Oversize Wet (%) :	0	0	
Oversize Dry (%) :			
Oversize Density (t/m <sup>3</sup> ) :			
Field Moisture Content (%) :	18.2	16.9	
Hilf MDR Number :	S-25477	S-25478	
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	
Compactive Effort :	Standard	Standard	
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1	
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	
Moisture Ratio (%) :	92	88.5	
Field Wet Density (t/m <sup>3</sup> ) :	2.02	1.97	
Optimum Moisture Content (%) :	19.8	19.1	
Moisture Variation :	1.5	2.0	
Peak Converted Wet Density (t/m <sup>3</sup> ) :	2.06	2.05	
Hilf Density Ratio (%) :	<b>98.0</b>	<b>96.0</b>	
Minimum Specification :	95% Standard	95% Standard	
Moisture Specification :			
Site Selection :	Random	Random	
Soil Description :			
Remarks :	-		

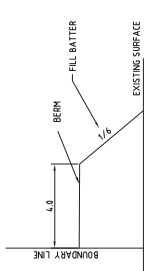
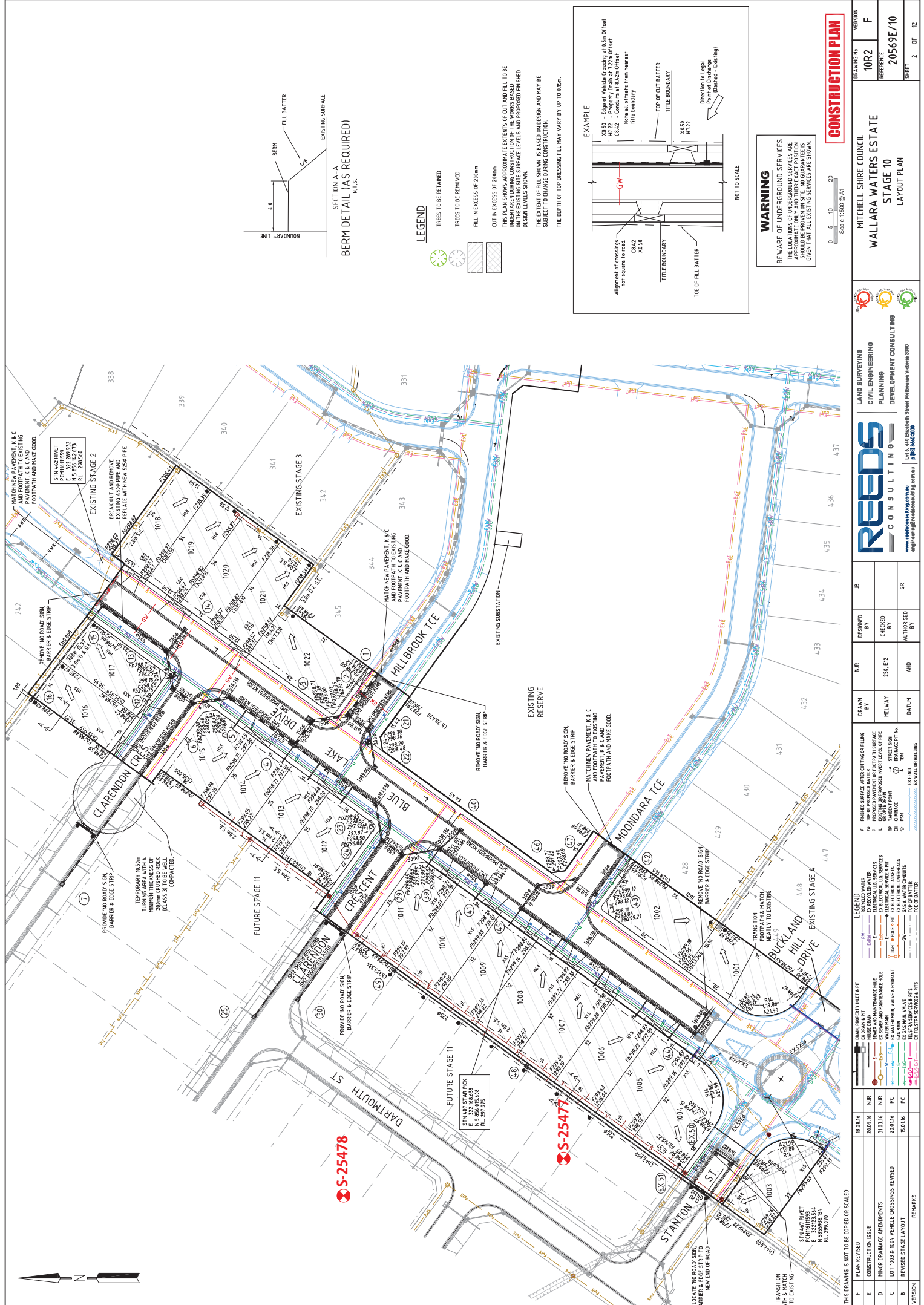


The results of the tests in this report are traceable to Australian/National standards. Accredited for compliance with ISO/IEC 17025

APPROVED SIGNATORY



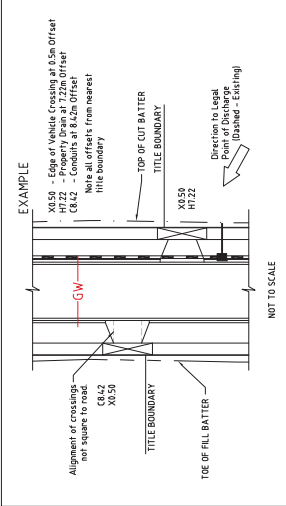
Anthony Green - Technician  
NATA Accreditation Number  
18877



SECTION A-A  
BERM DETAIL (AS REQUIRED)  
N.T.S.

**LEGEND**

- TREES TO BE RETAINED
  - TREES TO BE REMOVED
  - FILL IN EXCESS OF 200mm
  - CUT IN EXCESS OF 200mm
- THIS PLAN SHOWS APPROXIMATE EXTENS OF CUT AND FILL TO BE MADE AND THE APPROXIMATE VOLUMES OF CUT AND FILL ON THE EXISTING SITE SURFACE LEVELS AND PROPOSED FINISHED DESIGN LEVELS SHOWN.
- THE EXTENT OF FILL SHOWN IS BASED ON DESIGN AND MAY BE SUBJECT TO CHANGE DURING CONSTRUCTION.
- THE DEPTH OF TOP DRESSING/FILL MAY VARY BY UP TO 0.5m.

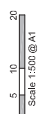


**WARNING**

BEWARE OF UNDERGROUND SERVICES

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**CONSTRUCTION PLAN**



PERSON	VERSION
F	F
DATE	20569E/10
PROJECT	MITCHELL SHIRE COUNCIL WALLARA WATERS ESTATE STAGE 10 LAYOUT PLAN
SHEET	2 OF 12

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105 Sturt Street Melbourne Victoria 3000

DESIGNED BY	NJR
CHECKED BY	250 E12
AUTHORISED BY	SR

DATE	AND	DRAWN BY	DATE
		MELWAY	

- LEGEND**
- FINISHED SURFACE AFTER CUTTING OR FILLING
  - PROPOSED FINISHED SURFACE
  - EXISTING OR PROPOSED INVERT LEVEL OF PIPE
  - TO TANGENT POINT
  - TO PVI
  - TO PPM
  - TOE OF WATER

- WATER PROPERTY MILET & PIT
- HOUSE DRAIN
- EX MAIN & P
- EX SAFETY AND MAINTENANCE WALE
- EX ELECTRICAL ALIVE SERVICES
- EX ELECTRICAL DEAD SERVICES
- EX WATER MAIN VALVE & HYDRANT
- EX WATER MAIN VALVE
- EX TELEPHONE SERVICES & PITS
- EX ELECTRICAL SERVICES & PITS

18.08.16	NJR
20.05.16	NJR
31.03.16	NJR
20.01.16	PC
15.01.16	PC

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REVISIONS:

- F PLAN REVISION
- E CONSTRUCTION ISSUE
- D MINOR DRAINAGE AMENDMENTS
- C LOT 1003 & 1004 VEHICLE CROSSINGS REVISED
- B REVISED STAGE LAYOUT

REMARKS:



**Moolap Laboratory**  
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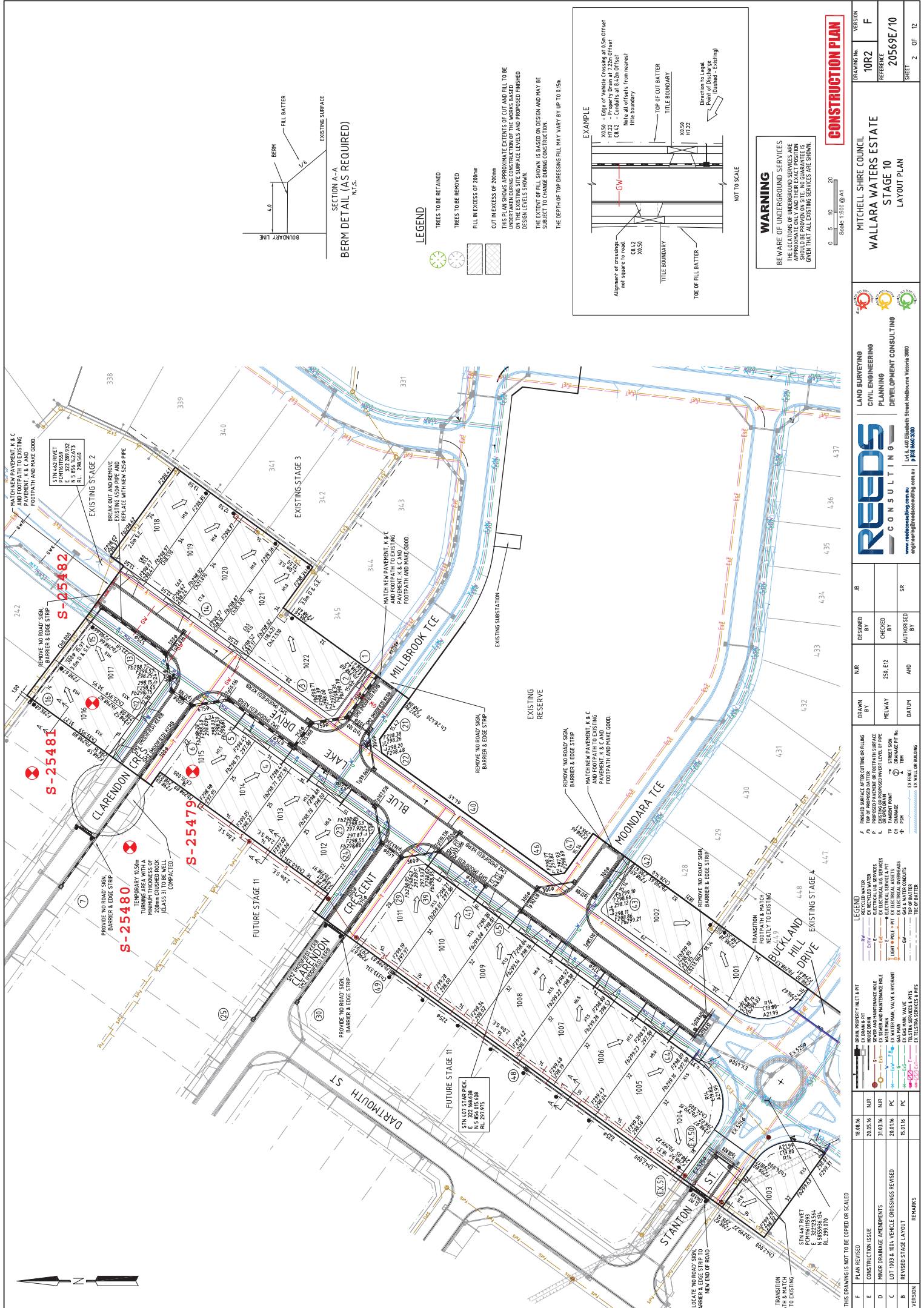
## Hilf Density Ratio Report

Client : <b>Fortunato Group</b> Address : <b>38A Merri Concourse, Campbellfield, VIC, 3061</b> Project Name : <b>Wallara Waters Stage 11</b> Project Number : <b>CS-629</b> Location: <b>Wallan</b>	Report Number: <b>CS-629 - 11/1</b> Report Date : <b>18/01/2017</b> Order Number : Test Method : <b>AS1289.5.7.1</b> <p style="text-align: right;"><b>Page 1 of 1</b></p>
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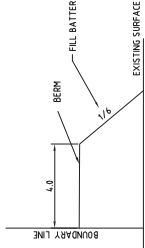
Sample Number :	S-25479	S-25480	S-25481	S-25482
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)
Date Sampled :	17/01/2017	17/01/2017	17/01/2017	17/01/2017
Date Tested :	17/01/2017	17/01/2017	17/01/2017	17/01/2017
Material Type :	Clay	Clay	Clay	Clay
Material Source :	Insitu/Imported	Insitu/Imported	Insitu/Imported	Insitu/Imported
Lot Number :				
Sample Location :	Stage 10/11	Stage 10/11	Stage 10/11	Stage 10/11
Test Depth (mm) :	175	175	175	175
Layer Depth (mm) :	200	200	200	200
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	0	0	0	0
Oversize Dry (%) :				
Oversize Density (t/m <sup>3</sup> ) :				
Field Moisture Content (%) :	18.4	21.3	20.5	25.8
Hilf MDR Number :	S-25479	S-25480	S-25481	S-25482
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	88.5	89.5	89	89.5
Field Wet Density (t/m <sup>3</sup> ) :	1.90	1.98	1.98	1.97
Optimum Moisture Content (%) :	20.8	23.8	23.1	28.8
Moisture Variation :	2.5	2.5	2.5	2.5
Peak Converted Wet Density (t/m <sup>3</sup> ) :	1.96	2.04	2.03	2.02
Hilf Density Ratio (%) :	<b>97.0</b>	<b>97.0</b>	<b>97.5</b>	<b>97.5</b>
Minimum Specification :	95% Standard	95% Standard	95% Standard	95% Standard
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

 <p><b>The results of the tests in this report are traceable to Australian/National standards. Accredited for compliance with ISO/IEC 17025</b></p>	<p>APPROVED SIGNATORY</p>  <p>Daniel Pearce - Laboratory Manager          NATA Accreditation Number          18877</p>
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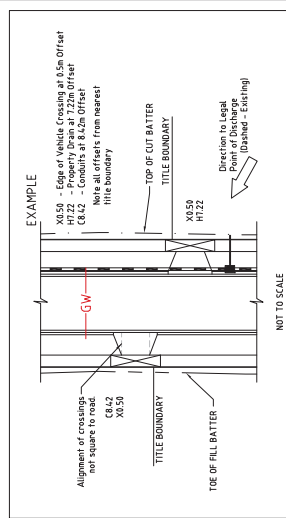
SECTION A-A  
(AS REQUIRED)  
N.T.S.



**LEGEND**

- TREES TO BE RETAINED
- TREES TO BE REMOVED
- FILL IN EXCESS OF 200mm
- CUT IN EXCESS OF 200mm

THIS PLAN SHOWS APPROXIMATE EXTENS OF CUT AND FILL TO BE COMPLETED. THE EXACT SURFACE LEVELS AND PROPOSED FINISHED DESIGN LEVELS SHOWN.  
THE EXTENT OF FILL SHOWN IS BASED ON DESIGN AND MAY BE SUBJECT TO CHANGE DURING CONSTRUCTION.  
THE DEPTH OF TOP DRESSING FILL MAY VARY BY UP TO 0.5m.



**WARNING**  
BEWARE OF UNDERGROUND SERVICES  
THE LOCATION AND DEPTHS OF UNDERGROUND SERVICES SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

**CONSTRUCTION PLAN**

Scale: 1:500 @ A1

DATE: 20/12/2016

PERSON: SR

DATE: 20/12/2016

PERSON: F

DATE: 20/12/2016

PERSON: 2 OF 12

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DESIGNED BY	CHECKED BY	AUTHORISED BY
NUR	250, E12	SR

DATE	DESCRIPTION
18/08/16	PLAN REVISED
20/05/16	CONSTRUCTION ISSUE
31/03/16	MINOR DRAINAGE AMENDMENTS
20/01/16	LOT 1003 & 1004 VEHICLE CROSSINGS REVISED
15/01/16	REVISED STAGE LAYOUT

THIS DRAWING IS NOT TO BE COPIED OR SCALED





**Moolap Laboratory**  
 Pearce Geotech Pty Ltd  
 23 Nobility Street  
 Moolap VIC 3221

## Hilf Density Ratio Report

Client : <b>Fortunato Group</b> Address : <b>38A Merri Concourse, Campbellfield, VIC, 3061</b> Project Name : <b>Wallara Waters Stage 10</b> Project Number : <b>CS-598</b> Location: <b>Wallan</b>	Report Number: <b>CS-598 - 16/1</b> Report Date : <b>24/01/2017</b> Order Number : Test Method : <b>AS1289.5.7.1</b> <p style="text-align: right;"><b>Page 1 of 1</b></p>
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Sample Number :	S-25633	S-25634	S-25635	
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	
Date Sampled :	18/01/2017	18/01/2017	18/01/2017	
Date Tested :	18/01/2017	18/01/2017	18/01/2017	
Material Type :	Clay	Clay	Clay	
Material Source :	Insitu	Insitu	Insitu	
Lot Number :				
Sample Location :	Fill Area See Site Plan	Fill Area See Site Plan	Fill Area See Site Plan	
Test Depth (mm) :	175	175	175	
Layer Depth (mm) :	200	200	200	
Maximum Size (mm) :	19	19	19	
Oversize Wet (%) :	0	0	0	
Oversize Dry (%) :				
Oversize Density (t/m <sup>3</sup> ) :				
Field Moisture Content (%) :	27.0	24.5	22.4	
Hilf MDR Number :	S-25633	S-25634	S-25635	
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	
Compactive Effort :	Standard	Standard	Standard	
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1	
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	
Moisture Ratio (%) :	93.5	86.5	83	
Field Wet Density (t/m <sup>3</sup> ) :	1.86	1.88	1.96	
Optimum Moisture Content (%) :	28.9	28.3	27.0	
Moisture Variation :	2.0	3.5	4.5	
Peak Converted Wet Density (t/m <sup>3</sup> ) :	1.89	1.88	1.91	
Hilf Density Ratio (%) :	<b>98.0</b>	<b>100.5</b>	<b>103.0</b>	
Minimum Specification :	95% Standard	95% Standard	95% Standard	
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	Proof roll conducted on test area. No deflection sited.			

 <p><b>The results of the tests in this report are traceable to Australian/National standards. Accredited for compliance with ISO/IEC 17025</b></p>	<p>APPROVED SIGNATORY</p>  <p>Daniel Pearce - Laboratory Manager          NATA Accreditation Number          18877</p>
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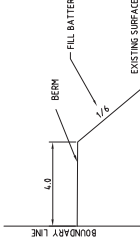
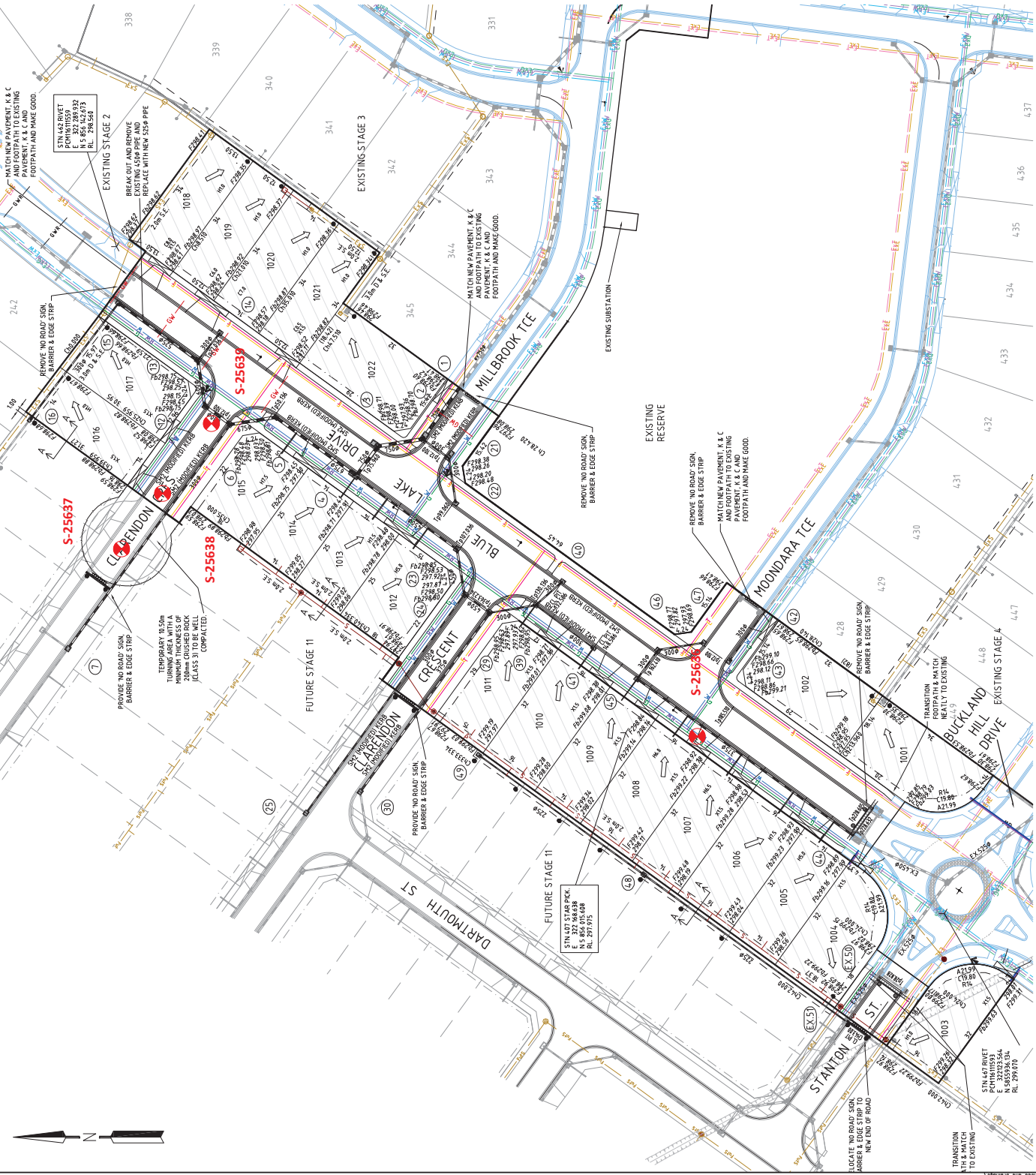
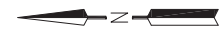
**Moolap Laboratory**  
Pearce Geotech Pty Ltd  
23 Nobility Street  
Moolap VIC 3221

## Hilf Density Ratio Report

Client :	<b>Fortunato Group</b>	Report Number:	<b>CS-598 - 15/1</b>
Address :	<b>38A Merri Concourse, Campbellfield, VIC, 3061</b>	Report Date :	<b>24/01/2017</b>
Project Name :	<b>Wallara Waters Stage 10</b>	Order Number :	
Project Number :	<b>CS-598</b>	Test Method :	<b>AS1289.5.7.1</b>
Location:	<b>Wallan</b>	<b>Page 1 of 1</b>	

Sample Number :	S-25636	S-25637	S-25638	S-25639
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)
Date Sampled :	19/01/2017	19/01/2017	19/01/2017	19/01/2017
Date Tested :	19/01/2017	19/01/2017	19/01/2017	19/01/2017
Material Type :	Clay	Clay	Clay	Clay
Material Source :	Insitu	Insitu	Insitu	Insitu
Lot Number :				
Sample Location :	Fill Area See Site Plan  L2	Clarendon Cres See Site Plan  Subgrade	Clarendon Cres See Site Plan  Subgrade	Clarendon Cres See Site Plan  Subgrade
Test Depth (mm) :	175	175	175	175
Layer Depth (mm) :	200	200	200	200
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	0	0	0	0
Oversize Dry (%) :				
Oversize Density (t/m <sup>3</sup> ) :				
Field Moisture Content (%) :	20.5	20.3	23.0	23.5
Hilf MDR Number :	S-25636	S-25637	S-25638	S-25639
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	96	90	92.5	89.5
Field Wet Density (t/m <sup>3</sup> ) :	1.93	1.96	1.94	1.94
Optimum Moisture Content (%) :	21.3	22.5	24.9	26.2
Moisture Variation :	1.0	2.0	2.0	2.5
Peak Converted Wet Density (t/m <sup>3</sup> ) :	1.96	1.96	1.94	1.89
Hilf Density Ratio (%) :	<b>98.5</b>	<b>100.0</b>	<b>100.5</b>	<b>102.5</b>
Minimum Specification :	95% Standard	100% Standard	95% Standard	95% Standard
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	Proof roll conducted on test area. No deflection sited.			

 <p><b>The results of the tests in this report are traceable to Australian/National standards. Accredited for compliance with ISO/IEC 17025</b></p>	<p style="text-align: center;">APPROVED SIGNATORY</p>  <p style="text-align: center;">Daniel Pearce - Laboratory Manager NATA Accreditation Number 18877</p>
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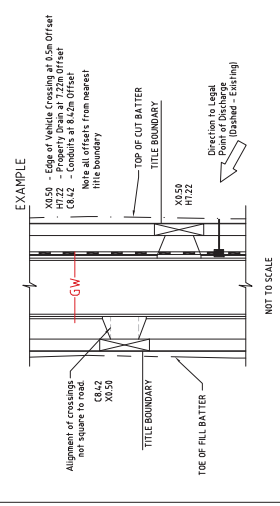


SECTION A-A  
BERM DETAIL (AS REQUIRED)  
N.T.S.

LEGEND

- TREES TO BE RETAINED
- TREES TO BE REMOVED
- FILL IN EXCESS OF 200mm
- CUT IN EXCESS OF 200mm

THIS PLAN SHOWS APPROXIMATE EXTENS OF CUT AND FILL TO BE MADE. APPROXIMATE EXACT POSITIONS OF CUTS AND FILLS WILL BE DETERMINED ON THE EXISTING SITE SURFACE LEVELS AND PROPOSED FINISHED DESIGN LEVELS SHOWN.  
THE EXTENT OF FILL SHOWN IS BASED ON DESIGN AND MAY BE SUBJECT TO CHANGE DURING CONSTRUCTION.  
THE DEPTH OF TOP DRESSING FILL MAY VARY BY UP TO 0.5m.



**WARNING**  
BEWARE OF UNDERGROUND SERVICES  
THESE SERVICES ARE LOCATED AT VARIOUS DEPTHS AND SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

**CONSTRUCTION PLAN**

Scale 1:500 @ A1

PERSON	DATE	REVISIONS	REMARKS
F	2015/16	PLAN REVISION	THIS DRAWING IS NOT TO BE COPIED OR SCALED
E	2015/16	CONSTRUCTION ISSUE	
D	2015/16	MINOR DRAINAGE AMENDMENTS	
C	2011/16	LOT 1003 & 1004 VEHICLE CROSSINGS REVISIED	
B	15/10/16	REVISED STAGE LAYOUT	

DATE	BY	CHECKED	DATE	BY
15/10/16	250/ EJE			

NO	DESCRIPTION	DATE	BY	CHECKED	DATE	BY
1	FINISHED SURFACE AFTER CUTTING OR FILLING					
2	PROPOSED FINISHED SURFACE					
3	EXISTING FINISHED SURFACE					
4	PROPOSED INVERT LEVEL OF PIPE					
5	EXISTING INVERT LEVEL OF PIPE					
6	TANGENT POINT					
7	STREET LIGHT					
8	PO					
9	TPM					
10	EX EXISTING					
11	EX EXISTING					

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E info@reedsconsulting.com.au

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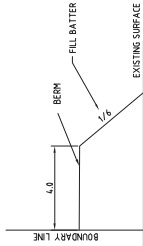
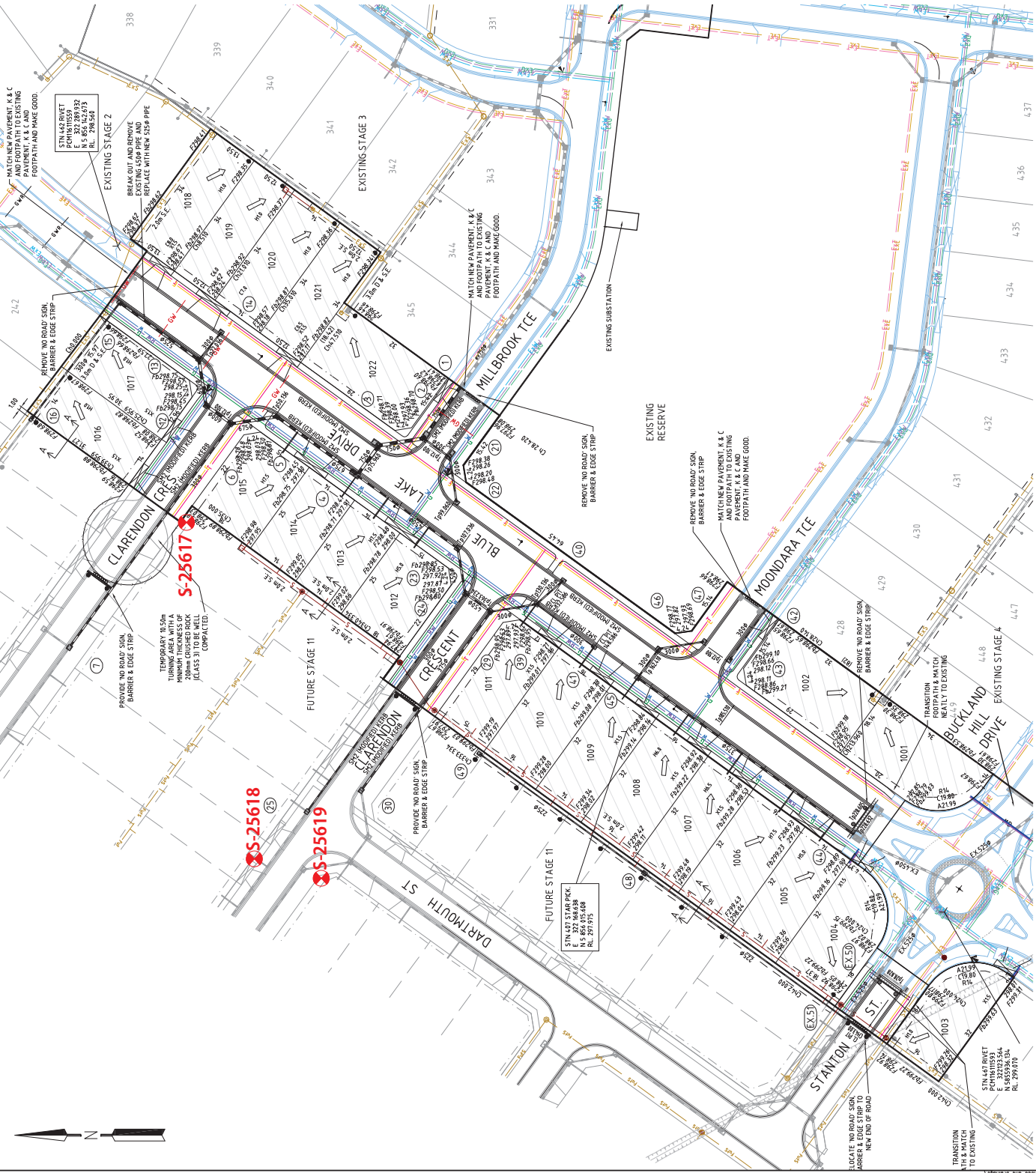
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PROJECT NO	VERSION
10R2	F
REFERENCE	201569E/10
SHEET	2 OF 12
TITLE	LAYOUT PLAN
CLIENT	MITCHELL SHIRE COUNCIL WALLARA WATERS ESTATE STAGE 10

## Hilf Density Ratio Report

Client :	<b>Fortunato Group</b>	Report Number:	<b>CS-629 - 12/1</b>
Address :	<b>38A Merri Concourse, Campbellfield, VIC, 3061</b>	Report Date :	<b>30/01/2017</b>
Project Name :	<b>Wallara Waters Stage 11</b>	Order Number :	
Project Number :	<b>CS-629</b>	Test Method :	<b>AS1289.5.7.1</b>
Location:	<b>Wallan</b>	<b>Page 1 of 1</b>	

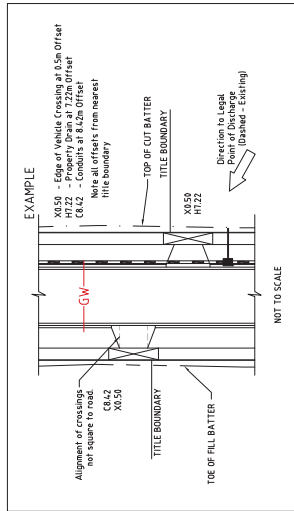
Sample Number :	S-25617	S-25618	S-25619	
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	
Date Sampled :	23/01/2017	23/01/2017	23/01/2017	
Date Tested :	23/01/2017	23/01/2017	23/01/2017	
Material Type :	Clay	Clay	Clay	
Material Source :	Imported & Insitu	Imported & Insitu	Imported & Insitu	
Lot Number :				
Sample Location :	Road Shoulder Lift 2 Refer to map	Road Shoulder Lift 2 Refer to map	Road Shoulder Lift 2 Refer to map	
Test Depth (mm) :	175	175	175	
Layer Depth (mm) :	200	200	200	
Maximum Size (mm) :	19	19	19	
Oversize Wet (%) :	0	0	0	
Oversize Dry (%) :				
Oversize Density (t/m <sup>3</sup> ) :				
Field Moisture Content (%) :	13.4	14.7	17.5	
Hilf MDR Number :	S-25617	S-25618	S-25619	
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	
Compactive Effort :	Standard	Standard	Standard	
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1	
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	
Moisture Ratio (%) :	83	83	85.5	
Field Wet Density (t/m <sup>3</sup> ) :	1.93	2.08	1.88	
Optimum Moisture Content (%) :	16.1	17.7	20.4	
Moisture Variation :	2.5	3.0	3.0	
Peak Converted Wet Density (t/m <sup>3</sup> ) :	1.97	2.01	1.92	
Hilf Density Ratio (%) :	<b>97.5</b>	<b>104.0</b>	<b>98.0</b>	
Minimum Specification :	95% Standard	95% Standard	95% Standard	
Moisture Specification :				
Site Selection :	Random	Random	Random	
Soil Description :				
Remarks :	-			



SECTION A-A (AS REQUIRED) N.T.S.

LEGEND

- TREES TO BE RETAINED
  - TREES TO BE REMOVED
  - FILL IN EXCESS OF 200mm
  - CUT IN EXCESS OF 200mm
- THIS PLAN SHOWS APPROXIMATE EXTENS OF CUT AND FILL TO BE MAINTAINED TO MATCH EXISTING SURFACE LEVELS AND PROPOSED FINISHED DESIGN LEVELS SHOWN.  
THE EXTENT OF FILL SHOWN IS BASED ON DESIGN AND MAY BE SUBJECT TO CHANGE DURING CONSTRUCTION.  
THE DEPTH OF TOP DRESSING FILL MAY VARY BY UP TO 0.5m.



**WARNING**  
BEWARE OF UNDERGROUND SERVICES  
THE LOCATION AND DEPTH OF UNDERGROUND SERVICES SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL CASTING SERVICES ARE SHOWN.

**CONSTRUCTION PLAN**

Scale: 1:500 @ A1

PERSON	VERSION
MITCHELL SHIRE COUNCIL	F
WALLARA WATERS ESTATE	20569E/10
STAGE 10	SHEET 2 OF 12
LAYOUT PLAN	

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DESIGNED BY	CHECKED BY	AUTHORISED BY
NJR	250_E12	SR
DRAWN BY	DATUM	AND
HELVAY		

DATE	DESCRIPTION
18.08.16	PLAN REVISION
20.05.16	CONSTRUCTION ISSUE
31.03.16	MINOR DRAINAGE AMENDMENTS
20.01.16	LOT 1003 & 1004 VEHICLE CROSSINGS REVISED
15.01.16	REVISED STAGE LAYOUT

PERSON	REMARKS
	THIS DRAWING IS NOT TO BE COPIED OR SCALED
F	PLAN REVISION
E	CONSTRUCTION ISSUE
D	MINOR DRAINAGE AMENDMENTS
C	LOT 1003 & 1004 VEHICLE CROSSINGS REVISED
B	REVISED STAGE LAYOUT

## Hilf Density Ratio Report

Client :	<b>Fortunato Group</b>	Report Number:	<b>CS-598 - 17/1</b>
Address :	<b>38A Merri Concourse, Campbellfield, VIC, 3061</b>	Report Date :	<b>30/01/2017</b>
Project Name :	<b>Wallara Waters Stage 10</b>	Order Number :	
Project Number :	<b>CS-598</b>	Test Method :	<b>AS1289.5.7.1</b>
Location:	<b>Wallan</b>	<b>Page 1 of 1</b>	

Sample Number :	S-25721		
Test Number :			
Sampling Method :	AS1289.1.2.1 6.4(b)		
Date Sampled :	24/01/2017		
Date Tested :	24/01/2017		
Material Type :	Clay		
Material Source :	In situ & Imported		
Lot Number :			
Sample Location :	Lot 1013 Lift 2 Refer to Plan		
Test Depth (mm) :	175		
Layer Depth (mm) :	200		
Maximum Size (mm) :	19		
Oversize Wet (%) :	0		
Oversize Dry (%) :			
Oversize Density (t/m <sup>3</sup> ) :			
Field Moisture Content (%) :	18.4		
Hilf MDR Number :	S-25721		
Hilf MDR Method :	AS1289.5.7.1		
Compactive Effort :	Standard		
Field Density Method :	AS1289.5.8.1		
Moisture Method :	AS1289.2.1.1		
Moisture Ratio (%) :	97.5		
Field Wet Density (t/m <sup>3</sup> ) :	1.94		
Optimum Moisture Content (%) :	18.8		
Moisture Variation :	0.5		
Peak Converted Wet Density (t/m <sup>3</sup> ) :	2.03		
Hilf Density Ratio (%) :	<b>96.0</b>		
Minimum Specification :	95% Standard		
Moisture Specification :			
Site Selection :	Random		
Soil Description :			
Remarks :	-		



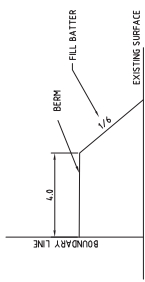
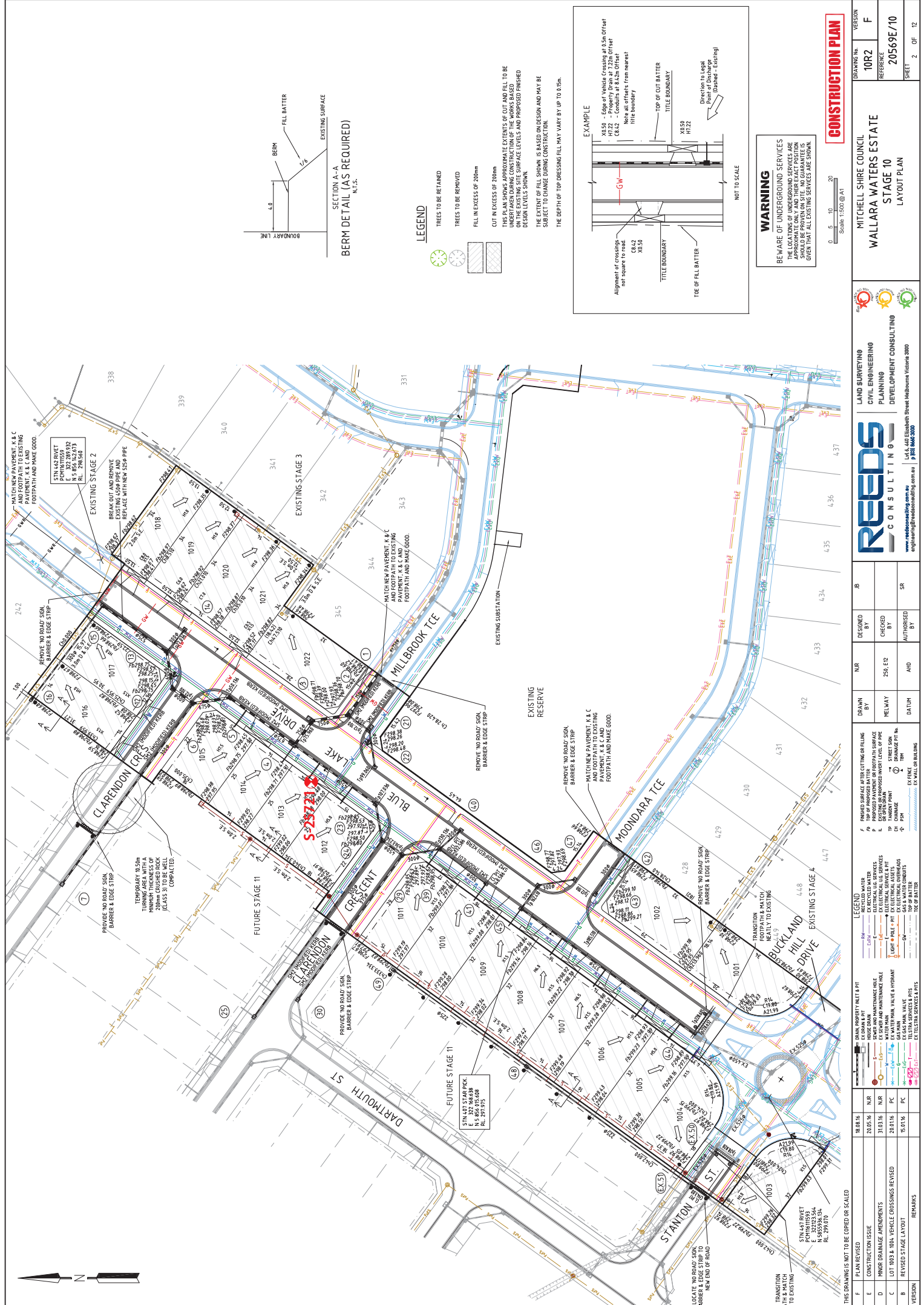
The results of the tests in this report are traceable to Australian/National standards. Accredited for compliance with ISO/IEC 17025

APPROVED SIGNATORY



Anthony Green - Technician  
NATA Accreditation Number  
18877

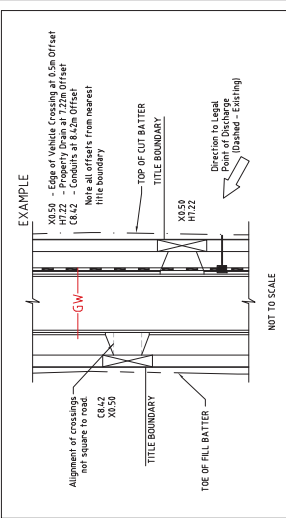




SECTION A-A  
BERM DETAIL (AS REQUIRED)  
N.T.S.

**LEGEND**

- TREES TO BE RETAINED
  - TREES TO BE REMOVED
  - FILL IN EXCESS OF 200mm
  - CUT IN EXCESS OF 200mm
- THIS PLAN SHOWS APPROXIMATE EXTENS OF CUT AND FILL TO BE MADE TO THE EXISTING SURFACE LEVELS AND PROPOSED FINISHED DESIGN LEVELS SHOWN.
- THE EXTENT OF FILL SHOWN IS BASED ON DESIGN AND MAY BE SUBJECT TO CHANGE DURING CONSTRUCTION.
- THE DEPTH OF TOP DRESSING FILL MAY VARY BY UP TO 0.5m.



**WARNING**

BEWARE OF UNDERGROUND SERVICES

THE LOCATION AND DEPTH OF UNDERGROUND SERVICES SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

**CONSTRUCTION PLAN**

Scale: 1:500 @ A1

0 5 10 20

PERSON	VERSION
DESIGNED BY	18/08/16
CHECKED BY	20/05/16
AUTHORISED BY	31/03/16
DRAWN BY	20/01/16
DATE	15/01/16
PROJECT	STANTON ROAD
CLIENT	MITCHELL SHIRE COUNCIL
PROJECT NAME	WALLARA WATERS ESTATE
PROJECT NUMBER	205569E/10
PROJECT TYPE	STAGE 10
PROJECT DESCRIPTION	LAYOUT PLAN
PROJECT LOCATION	
PROJECT STATUS	
PROJECT PHASE	
PROJECT VALUE	
PROJECT RISK	
PROJECT COMPLEXITY	
PROJECT UNUSUAL ASPECTS	
PROJECT CHALLENGES	
PROJECT RISKS	
PROJECT OPPORTUNITIES	
PROJECT CONSTRAINTS	
PROJECT GOALS	
PROJECT OBJECTIVES	
PROJECT DELIVERABLES	
PROJECT MILESTONES	
PROJECT BENCHMARKS	
PROJECT KPIs	
PROJECT SUCCESS CRITERIA	
PROJECT RISK REGISTER	
PROJECT CHANGE LOG	
PROJECT COMMUNICATION PLAN	
PROJECT STAKEHOLDER ENGAGEMENT	
PROJECT SUSTAINABILITY PLAN	
PROJECT SOCIAL RESPONSIBILITY PLAN	
PROJECT ETHICS PLAN	
PROJECT COMPLIANCE PLAN	
PROJECT LEGAL PLAN	
PROJECT FINANCIAL PLAN	
PROJECT RESOURCE PLAN	
PROJECT RISK REGISTER	
PROJECT CHANGE LOG	
PROJECT COMMUNICATION PLAN	
PROJECT STAKEHOLDER ENGAGEMENT	
PROJECT SUSTAINABILITY PLAN	
PROJECT SOCIAL RESPONSIBILITY PLAN	
PROJECT ETHICS PLAN	
PROJECT COMPLIANCE PLAN	
PROJECT FINANCIAL PLAN	
PROJECT RESOURCE PLAN	

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DESIGNED BY	NJR	DATE	18/08/16
CHECKED BY	250_E12	PROJECT	STANTON ROAD
AUTHORISED BY	SR	CLIENT	MITCHELL SHIRE COUNCIL

PERSON	VERSION
DESIGNED BY	18/08/16
CHECKED BY	20/05/16
AUTHORISED BY	31/03/16
DRAWN BY	20/01/16
DATE	15/01/16
PROJECT	STANTON ROAD
CLIENT	MITCHELL SHIRE COUNCIL
PROJECT NAME	WALLARA WATERS ESTATE
PROJECT NUMBER	205569E/10
PROJECT TYPE	STAGE 10
PROJECT DESCRIPTION	LAYOUT PLAN
PROJECT LOCATION	
PROJECT STATUS	
PROJECT PHASE	
PROJECT VALUE	
PROJECT RISK	
PROJECT COMPLEXITY	
PROJECT UNUSUAL ASPECTS	
PROJECT CHALLENGES	
PROJECT RISKS	
PROJECT OPPORTUNITIES	
PROJECT CONSTRAINTS	
PROJECT GOALS	
PROJECT OBJECTIVES	
PROJECT DELIVERABLES	
PROJECT MILESTONES	
PROJECT BENCHMARKS	
PROJECT KPIs	
PROJECT SUCCESS CRITERIA	
PROJECT RISK REGISTER	
PROJECT CHANGE LOG	
PROJECT COMMUNICATION PLAN	
PROJECT STAKEHOLDER ENGAGEMENT	
PROJECT SUSTAINABILITY PLAN	
PROJECT SOCIAL RESPONSIBILITY PLAN	
PROJECT ETHICS PLAN	
PROJECT COMPLIANCE PLAN	
PROJECT FINANCIAL PLAN	
PROJECT RESOURCE PLAN	

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PERSON	VERSION
DESIGNED BY	18/08/16
CHECKED BY	20/05/16
AUTHORISED BY	31/03/16
DRAWN BY	20/01/16
DATE	15/01/16
PROJECT	STANTON ROAD
CLIENT	MITCHELL SHIRE COUNCIL
PROJECT NAME	WALLARA WATERS ESTATE
PROJECT NUMBER	205569E/10
PROJECT TYPE	STAGE 10
PROJECT DESCRIPTION	LAYOUT PLAN
PROJECT LOCATION	
PROJECT STATUS	
PROJECT PHASE	
PROJECT VALUE	
PROJECT RISK	
PROJECT COMPLEXITY	
PROJECT UNUSUAL ASPECTS	
PROJECT CHALLENGES	
PROJECT RISKS	
PROJECT OPPORTUNITIES	
PROJECT CONSTRAINTS	
PROJECT GOALS	
PROJECT OBJECTIVES	
PROJECT DELIVERABLES	
PROJECT MILESTONES	
PROJECT BENCHMARKS	
PROJECT KPIs	
PROJECT SUCCESS CRITERIA	
PROJECT RISK REGISTER	
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PROJECT STAKEHOLDER ENGAGEMENT	
PROJECT SUSTAINABILITY PLAN	
PROJECT SOCIAL RESPONSIBILITY PLAN	
PROJECT ETHICS PLAN	
PROJECT COMPLIANCE PLAN	
PROJECT FINANCIAL PLAN	
PROJECT RESOURCE PLAN	

## Hilf Density Ratio Report

Client :	<b>Fortunato Group</b>	Report Number:	<b>CS-629 - 13/1</b>
Address :	<b>38A Merri Concourse, Campbellfield, VIC, 3061</b>	Report Date :	<b>30/01/2017</b>
Project Name :	<b>Wallara Waters Stage 11</b>	Order Number :	
Project Number :	<b>CS-629</b>	Test Method :	<b>AS1289.5.7.1</b>
Location:	<b>Wallan</b>	<b>Page 1 of 1</b>	

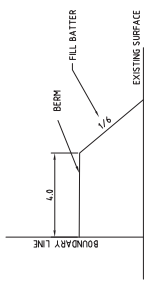
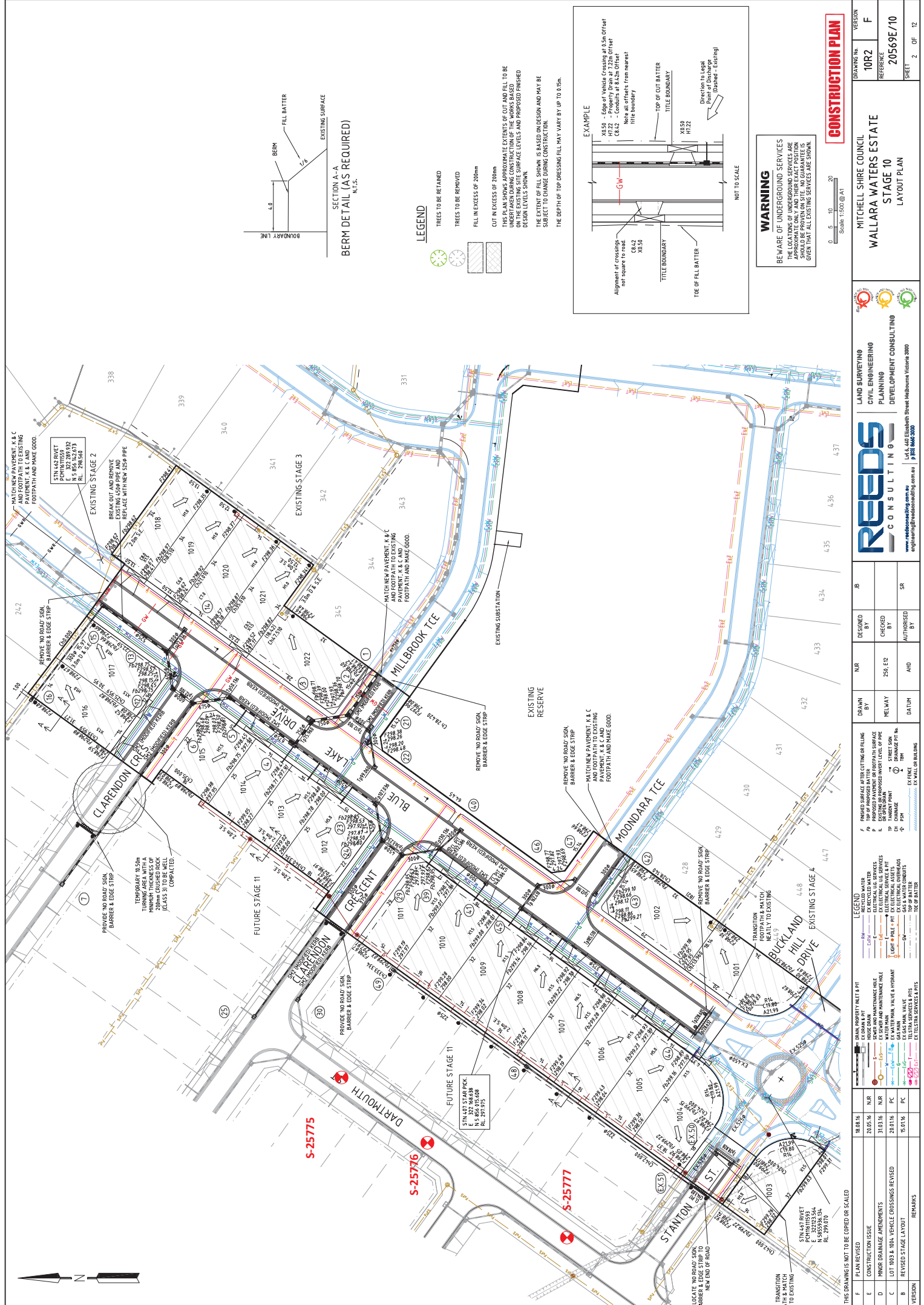
Sample Number :	S-25722	S-25723	S-25724	
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	
Date Sampled :	25/01/2017	25/01/2017	25/01/2017	
Date Tested :	25/01/2017	25/01/2017	25/01/2017	
Material Type :	Clay	Clay	Clay	
Material Source :	Insitu & Imported	Insitu & Imported	Insitu & Imported	
Lot Number :				
Sample Location :	Road Shoulder Lift 2 Refer to Plan	Road Shoulder Lift 2 Refer to Plan	Road Shoulder Lift 2 Refer to Plan	
Test Depth (mm) :	175	175	175	
Layer Depth (mm) :	200	200	200	
Maximum Size (mm) :	19	19	19	
Oversize Wet (%) :	0	0	0	
Oversize Dry (%) :				
Oversize Density (t/m <sup>3</sup> ) :				
Field Moisture Content (%) :	15.4	17.7	23.7	
Hilf MDR Number :	S-25722	S-25723	S-25724	
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	
Compactive Effort :	Standard	Standard	Standard	
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1	
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	
Moisture Ratio (%) :	90	97	104.5	
Field Wet Density (t/m <sup>3</sup> ) :	2.07	1.99	1.98	
Optimum Moisture Content (%) :	17.1	18.3	22.7	
Moisture Variation :	1.5	0.5	-1.0	
Peak Converted Wet Density (t/m <sup>3</sup> ) :	2.13	2.12	2.07	
Hilf Density Ratio (%) :	<b>97.5</b>	<b>95.0</b>	<b>96.0</b>	
Minimum Specification :	95% Standard	95% Standard	95% Standard	
Moisture Specification :				
Site Selection :	Random	Random	Random	
Soil Description :				
Remarks :	-			



## Hilf Density Ratio Report

Client :	<b>Fortunato Group</b>	Report Number:	<b>CS-629 - 14/1</b>
Address :	<b>38A Merri Concourse, Campbellfield, VIC, 3061</b>	Report Date :	<b>8/02/2017</b>
Project Name :	<b>Wallara Waters Stage 11</b>	Order Number :	
Project Number :	<b>CS-629</b>	Test Method :	<b>AS1289.5.7.1</b>
Location:	<b>Wallan</b>	<b>Page 1 of 1</b>	

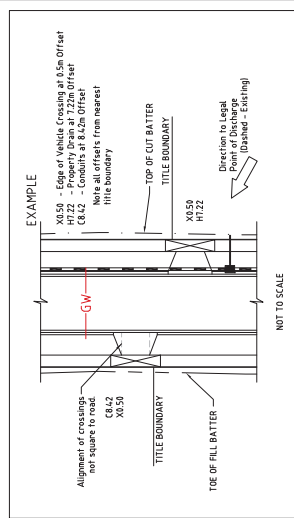
Sample Number :	S-25775	S-25776	S-25777	
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	
Date Sampled :	31/01/2017	31/01/2017	31/01/2017	
Date Tested :	31/01/2017	31/01/2017	31/01/2017	
Material Type :	Clay	Clay	Clay	
Material Source :	Insitu	Insitu	Insitu	
Lot Number :				
Sample Location :	Allotment Fill Subgrade Lift 1	Allotment Fill Subgrade Lift 1	Allotment Fill Subgrade Lift 1	
Test Depth (mm) :	175	175	175	
Layer Depth (mm) :	200	200	200	
Maximum Size (mm) :	19	19	19	
Oversize Wet (%) :	0	0	0	
Oversize Dry (%) :				
Oversize Density (t/m <sup>3</sup> ) :				
Field Moisture Content (%) :	19.5	16.7	29.6	
Hilf MDR Number :	S-25775	S-25776	S-25777	
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	
Compactive Effort :	Standard	Standard	Standard	
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1	
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	
Moisture Ratio (%) :	102	100	110	
Field Wet Density (t/m <sup>3</sup> ) :	1.93	2.02	1.90	
Optimum Moisture Content (%) :	19.2	16.7	26.9	
Moisture Variation :	-0.5	0.0	-2.5	
Peak Converted Wet Density (t/m <sup>3</sup> ) :	2.01	2.03	2.01	
Hilf Density Ratio (%) :	<b>96.0</b>	<b>99.5</b>	<b>94.5</b>	
Minimum Specification :	95% Standard	95% Standard	95% Standard	
Moisture Specification :				
Site Selection :	Random	Random	Random	
Soil Description :				
Remarks :	-			



SECTION A-A  
BERM DETAIL (AS REQUIRED)  
N.T.S.

**LEGEND**

- TREES TO BE RETAINED
  - TREES TO BE REMOVED
  - FILL IN EXCESS OF 200mm
  - CUT IN EXCESS OF 200mm
- THIS PLAN SHOWS APPROXIMATE EXTENS OF CUT AND FILL TO BE MADE TO ACHIEVE THE PROPOSED GRADE. THE EXACT POSITIONS ON THE EXISTING SITE SURFACE LEVELS AND PROPOSED FINISHED DESIGN LEVELS SHOWN.
- THE EXTENT OF FILL SHOWN IS BASED ON DESIGN AND MAY BE SUBJECT TO CHANGE DURING CONSTRUCTION.
- THE DEPTH OF TOP DRESSING FILL MAY VARY BY UP TO 0.5m.



**WARNING**

BEWARE OF UNDERGROUND SERVICES

THE LOCATION AND DEPTH OF UNDERGROUND SERVICES SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

**CONSTRUCTION PLAN**

Scale: 1:500 @ A1

MITCHELL SHIRE COUNCIL  
WALLARA WATERS ESTATE  
STAGE 10  
LAYOUT PLAN

PERSON: F  
DRAWING NO: 10R2  
REFERENCE: 20569E/10  
SHEET: 2 OF 12

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PLANNING  
DEVELOPMENT CONSULTING

www.reedsconsulting.com.au  
1800 688 888  
145 Adelaide Street Melbourne Victoria 3000

DESIGNED BY	CHECKED BY	AUTHORISED BY
NUR	250_E12	SR

DRAWN BY	DATUM	AND	BY
MELWAY			

18.08.16	20.05.16	31.03.16	20.01.16	15.01.16	PC
PLAN REVISION	CONSTRUCTION ISSUE	MINOR DRAINAGE AMENDMENTS	LOT 1003 & 1004 VEHICLE CROSSINGS REVISED	REVISED STAGE LAYOUT	

PERSON	REMARKS

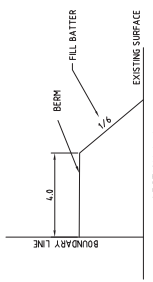
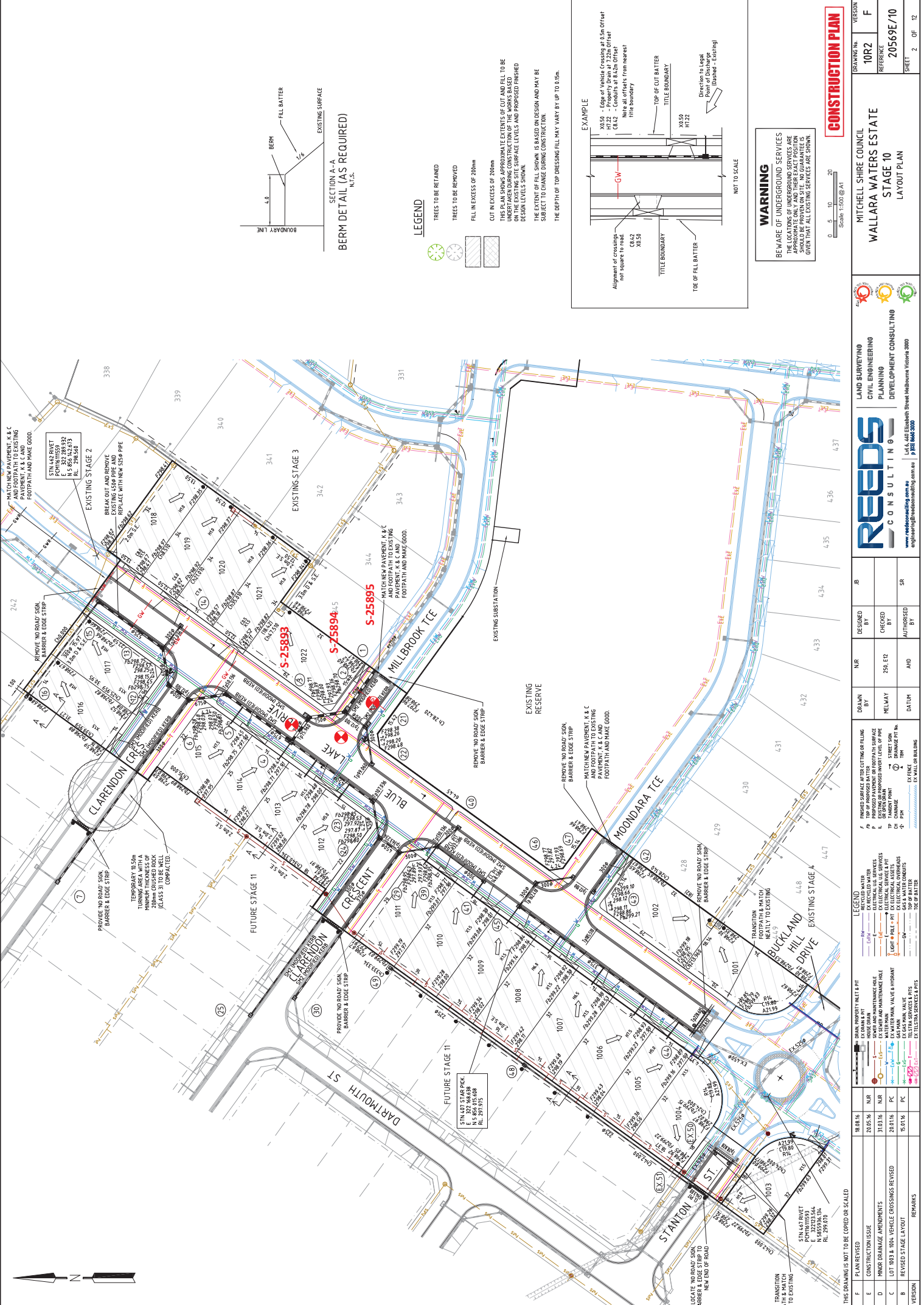
LEGEND	DESCRIPTION
EX	EXISTING WATER
RECY	RECYCLED WATER
EX	EXISTING DRAIN
EX	EXISTING PROPERTY MILET & PIT
EX	EXISTING DRAIN & PIT
EX	EXISTING MAINTENANCE WALE
EX	EXISTING ELECTRICAL SERVICES
EX	EXISTING TELEPHONE SERVICES
EX	EXISTING GAS MAIN
EX	EXISTING WATER MAIN VALVE & HYDRANT
EX	EXISTING WATER MAIN VALVE
EX	EXISTING TELEPHONE SERVICES & PITS
EX	EXISTING TOP OF WATER

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## Hilf Density Ratio Report

Client :	<b>Fortunato Group</b>	Report Number:	<b>CS-629 - 15/1</b>
Address :	<b>38A Merri Concourse, Campbellfield, VIC, 3061</b>	Report Date :	<b>8/02/2017</b>
Project Name :	<b>Wallara Waters Stage 11</b>	Order Number :	
Project Number :	<b>CS-629</b>	Test Method :	<b>AS1289.5.7.1</b>
Location:	<b>Wallan</b>	<b>Page 1 of 1</b>	

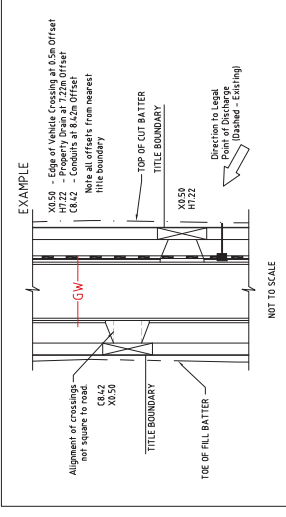
Sample Number :	S-25893	S-25894	S-25895	
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	
Date Sampled :	1/02/2017	1/02/2017	1/02/2017	
Date Tested :	1/02/2017	1/02/2017	1/02/2017	
Material Type :	Clay	Clay	Clay	
Material Source :	Insitu	Insitu	Insitu	
Lot Number :				
Sample Location :	Blue Lake Drive Swale Drain Subgrade Lift 1	Blue Lake Drive Swale Drain Subgrade Lift 2	Millbrook Terrace Swale Drain Subgrade Lift 1	
Test Depth (mm) :	175	175	175	
Layer Depth (mm) :	200	200	200	
Maximum Size (mm) :	19	19	19	
Oversize Wet (%) :	0	0	0	
Oversize Dry (%) :				
Oversize Density (t/m <sup>3</sup> ) :				
Field Moisture Content (%) :	26.8	17.7	17.8	
Hilf MDR Number :	S-25893	S-25894	S-25895	
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	
Compactive Effort :	Standard	Standard	Standard	
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1	
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	
Moisture Ratio (%) :	110.5	98	96.5	
Field Wet Density (t/m <sup>3</sup> ) :	1.90	2.03	1.93	
Optimum Moisture Content (%) :	24.3	18.0	18.4	
Moisture Variation :	-2.5	0.5	0.5	
Peak Converted Wet Density (t/m <sup>3</sup> ) :	2.02	2.06	2.07	
Hilf Density Ratio (%) :	<b>94.5</b>	<b>98.5</b>	<b>93.0</b>	
Minimum Specification :	95% Standard	95% Standard	95% Standard	
Moisture Specification :				
Site Selection :	Random	Random	Random	
Soil Description :				
Remarks :	-			



SECTION A-A  
BERM DETAIL (AS REQUIRED)  
N.T.S.

**LEGEND**

- TREES TO BE RETAINED
  - TREES TO BE REMOVED
  - FILL IN EXCESS OF 200mm
  - CUT IN EXCESS OF 200mm
- THIS PLAN SHOWS APPROXIMATE EXTENS OF CUT AND FILL TO BE MADE TO THE PROPOSED ROAD AND FOOTPATHS. THE EXACT POSITIONS ON THE EXISTING SITE SURFACE LEVELS AND PROPOSED FINISHED DESIGN LEVELS SHOWN.
- THE EXTENT OF FILL SHOWN IS BASED ON DESIGN AND MAY BE SUBJECT TO CHANGE DURING CONSTRUCTION.
- THE DEPTH OF TOP DRESSING FILL MAY VARY BY UP TO 0.5m.



**WARNING**

BEWARE OF UNDERGROUND SERVICES

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APPROXIMATE ONLY AND THESE EXACT POSITIONS SHOULD BE PROVIDED ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

**CONSTRUCTION PLAN**



PERSON	VERSION
DESIGNED BY	201816
CHECKED BY	201816
AUTHORISED BY	201816
DATE	15/01/16
DESCRIPTION	REVISIONS
DATE	DESCRIPTION
15/01/16	PLAN REVISION
31/03/16	CONSTRUCTION ISSUE
20/01/16	MINOR DRAINAGE AMENDMENTS
15/01/16	LOT 1003 & 1004 VEHICLE CROSSINGS REVISED
	REVISED STAGE LAYOUT
	REMARKS

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1/45 Adelaide Street Melbourne Victoria 3000  
T 03 9494 0000  
www.reedsconsulting.com.au  
enquiries@reedsconsulting.com.au

PROJECT NO	10RZ
REFERENCE	20569E/10
SHEET	2 OF 12

18/08/16	NJR	DESIGNED BY	SR
20/05/16	NJR	CHECKED BY	
31/03/16	NJR	AUTHORISED BY	
20/01/16	PC	DATE	
15/01/16	PC	DESCRIPTION	

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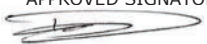


**Moolap Laboratory**  
 Pearce Geotech Pty Ltd  
 23 Nobility Street  
 Moolap VIC 3221

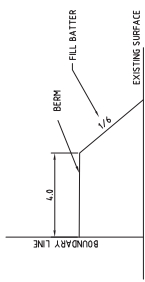
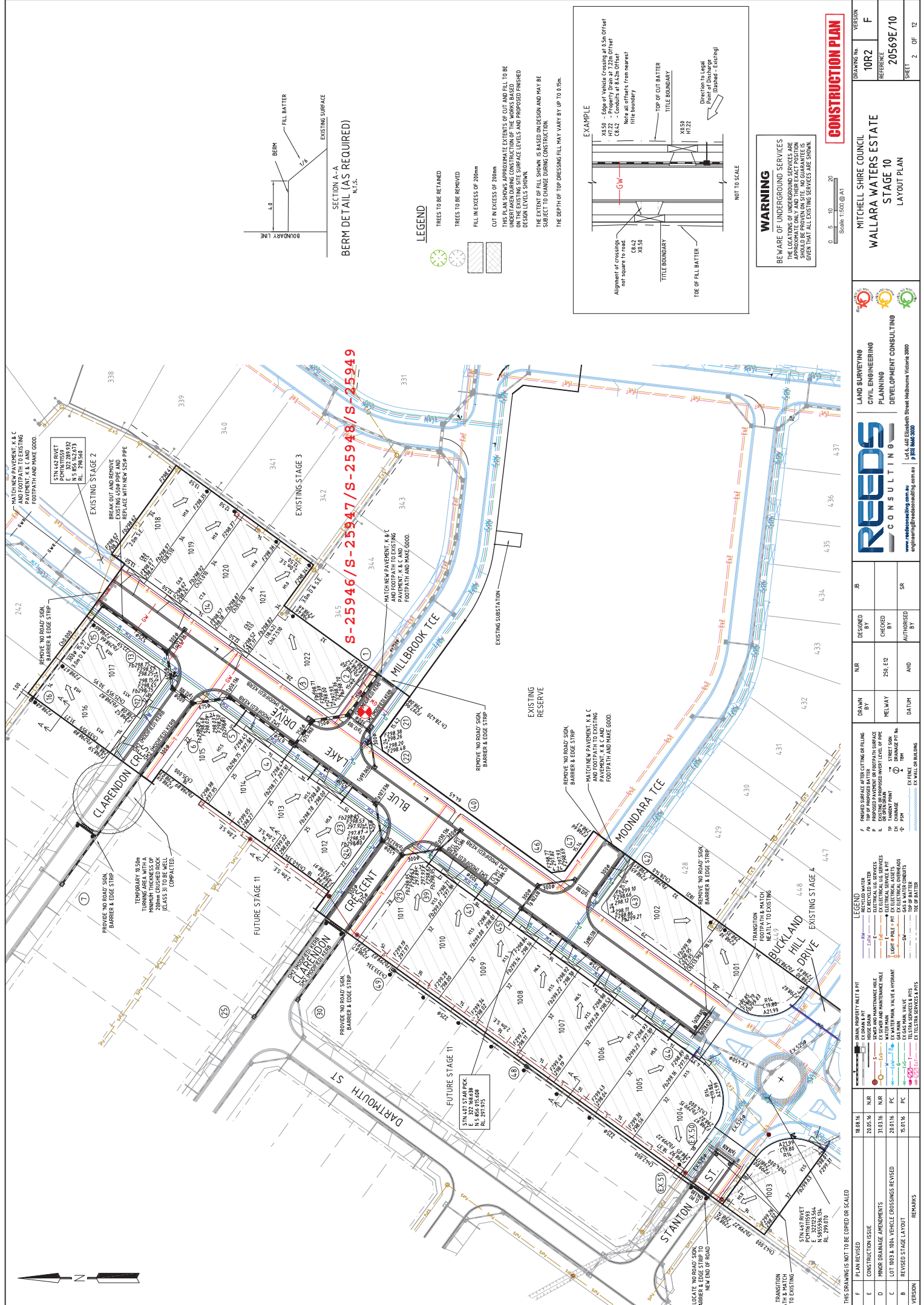
## Hilf Density Ratio Report

Client : <b>Fortunato Group</b> Address : <b>38A Merri Concourse, Campbellfield, VIC, 3061</b> Project Name : <b>Wallara Waters Stage 10</b> Project Number : <b>CS-598</b> Location: <b>Wallan</b>	Report Number: <b>CS-598 - 19/1</b> Report Date : <b>12/02/2017</b> Order Number : Test Method : <b>AS1289.5.7.1</b> <p style="text-align: right;"><b>Page 1 of 1</b></p>
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Sample Number :	S-25946	S-25947	S-25948	S-25949
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)
Date Sampled :	1/02/2017	1/02/2017	1/02/2017	1/02/2017
Date Tested :	1/02/2017	1/02/2017	1/02/2017	1/02/2017
Material Type :	Clay	Clay	Clay	Clay
Material Source :	Imported	Imported	Imported	Imported
Lot Number :				
Sample Location :	See Site Plan  Lift 1	See Site Plan  Lift 2	See Site Plan  Lift 3	See Site Plan  Lift 4
Test Depth (mm) :	175	175	175	175
Layer Depth (mm) :	200	200	200	200
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	0	0	0	0
Oversize Dry (%) :				
Oversize Density (t/m <sup>3</sup> ) :				
Field Moisture Content (%) :	15.2	20.7	16.3	18.5
Hilf MDR Number :	S-25946	S-25947	S-25948	S-25949
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	88	91.5	90	86.5
Field Wet Density (t/m <sup>3</sup> ) :	1.97	1.85	2.04	1.92
Optimum Moisture Content (%) :	17.3	22.6	18.1	21.4
Moisture Variation :	2.0	2.0	1.5	2.5
Peak Converted Wet Density (t/m <sup>3</sup> ) :	2.05	1.94	2.06	1.97
Hilf Density Ratio (%) :	<b>96.0</b>	<b>95.5</b>	<b>99.0</b>	<b>97.5</b>
Minimum Specification :	95% Standard	95% Standard	95% Standard	95% Standard
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

 <p><b>The results of the tests in this report are traceable to Australian/National standards. Accredited for compliance with ISO/IEC 17025</b></p>	<p style="text-align: center;">APPROVED SIGNATORY</p>  <p style="text-align: center;">Daniel Pearce - Laboratory Manager          NATA Accreditation Number          18877</p>
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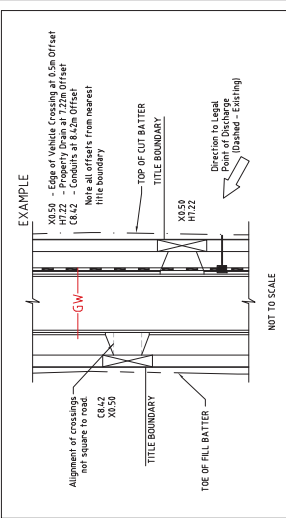




SECTION A-A  
BERM DETAIL (AS REQUIRED)  
N.T.S.

**LEGEND**

- TREES TO BE RETAINED
  - TREES TO BE REMOVED
  - FILL IN EXCESS OF 200mm
  - CUT IN EXCESS OF 200mm
- THIS PLAN SHOWS APPROXIMATE EXTENS OF CUT AND FILL TO BE MADE TO ACCOMMODATE THE PROPOSED ROADWAY AND UTILITIES ON THE EXISTING SITE SURFACE LEVELS AND PROPOSED FINISHED DESIGN LEVELS SHOWN.
- THE EXTENT OF FILL SHOWN IS BASED ON DESIGN AND MAY BE SUBJECT TO CHANGE DURING CONSTRUCTION.
- THE DEPTH OF TOP DRESSING FILL MAY VARY BY UP TO 0.5m.



**WARNING**

BEWARE OF UNDERGROUND SERVICES

THE LOCATION AND DEPTH OF UNDERGROUND SERVICES SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

**CONSTRUCTION PLAN**

Scale: 1:500 @ A1

MITCHELL SHIRE COUNCIL  
WALLARA WATERS ESTATE  
STAGE 10  
LAYOUT PLAN

PERSON: F  
DRAWING NO: 10R2  
REFERENCE: 20569E/10  
SHEET: 2 OF 12

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145 Adelaide Street Melbourne Victoria 3000  
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DESIGNED BY	CHECKED BY	AUTHORISED BY
NUR	250_E12	SR

DRAWN BY	DATE	AND	BY
MELWAY			

18/08/16	20/05/16	31/03/16	20/01/16	15/01/16	PC
PLAN REVISION	CONSTRUCTION ISSUE	MINOR DRAINAGE AMENDMENTS	LOT 1003 & 1004 VEHICLE CROSSINGS REVISED	REVISED STAGE LAYOUT	REMARKS

LEGEND	EXISTING	PROPOSED
FINISHED SURFACE AFTER CUTTING OR FILLING	EXISTING SURFACE	PROPOSED SURFACE
PROPOSED ROADWAY	EXISTING ROADWAY	PROPOSED ROADWAY
EXISTING OR PROPOSED INVERT LEVEL OF PIPE	EXISTING INVERT LEVEL	PROPOSED INVERT LEVEL
PROPOSED STREET LIGHT	EXISTING STREET LIGHT	PROPOSED STREET LIGHT
PROPOSED STREET SIGN	EXISTING STREET SIGN	PROPOSED STREET SIGN
PROPOSED WATER MAIN	EXISTING WATER MAIN	PROPOSED WATER MAIN
PROPOSED SANITARY MAIN	EXISTING SANITARY MAIN	PROPOSED SANITARY MAIN
PROPOSED GAS MAIN	EXISTING GAS MAIN	PROPOSED GAS MAIN
PROPOSED TELEPHONE MAIN	EXISTING TELEPHONE MAIN	PROPOSED TELEPHONE MAIN
PROPOSED POWER MAIN	EXISTING POWER MAIN	PROPOSED POWER MAIN
PROPOSED FUTURE MAIN	EXISTING FUTURE MAIN	PROPOSED FUTURE MAIN
PROPOSED FUTURE SERVICE	EXISTING FUTURE SERVICE	PROPOSED FUTURE SERVICE

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 Pearce Geotech Pty Ltd  
 23 Nobility Street  
 Moolap VIC 3221

## Hilf Density Ratio Report

Client : <b>Fortunato Group</b> Address : <b>38A Merri Concourse, Campbellfield, VIC, 3061</b> Project Name : <b>Wallara Waters Stage 10</b> Project Number : <b>CS-598</b> Location: <b>Wallan</b>	Report Number: <b>CS-598 - 20/1</b> Report Date : <b>12/02/2017</b> Order Number : Test Method : <b>AS1289.5.7.1</b> <p style="text-align: right;"><b>Page 1 of 2</b></p>
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Sample Number :	S-25950	S-25951	S-25952	S-25953
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)
Date Sampled :	2/02/2017	2/02/2017	2/02/2017	2/02/2017
Date Tested :	2/02/2017	2/02/2017	2/02/2017	2/02/2017
Material Type :	Clay	Clay	Clay	Clay
Material Source :	Imported	Imported	Imported	Imported
Lot Number :				
Sample Location :	Swale Drain See Site Plan  Lift 2	Swale Drain See Site Plan  Lift 3	Swale Drain See Site Plan  Lift 3	Swale Drain See Site Plan  Lift 4
Test Depth (mm) :	175	175	175	175
Layer Depth (mm) :	200	200	200	200
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	0	0	0	0
Oversize Dry (%) :				
Oversize Density (t/m <sup>3</sup> ) :				
Field Moisture Content (%) :	20.1	26.4	20.5	19.9
Hilf MDR Number :	S-25950	S-25951	S-25952	S-25953
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	90	97.5	92.5	89.5
Field Wet Density (t/m <sup>3</sup> ) :	2.00	1.97	2.02	2.02
Optimum Moisture Content (%) :	22.3	27.0	22.1	22.3
Moisture Variation :	2.0	0.5	1.5	2.0
Peak Converted Wet Density (t/m <sup>3</sup> ) :	2.06	2.01	2.06	2.05
Hilf Density Ratio (%) :	<b>97.0</b>	<b>98.0</b>	<b>98.0</b>	<b>99.0</b>
Minimum Specification :	95% Standard	95% Standard	95% Standard	95% Standard
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

	APPROVED SIGNATORY  Daniel Pearce - Laboratory Manager NATA Accreditation Number 18877
--	--



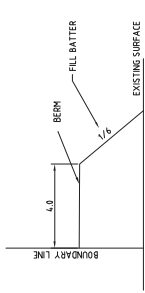
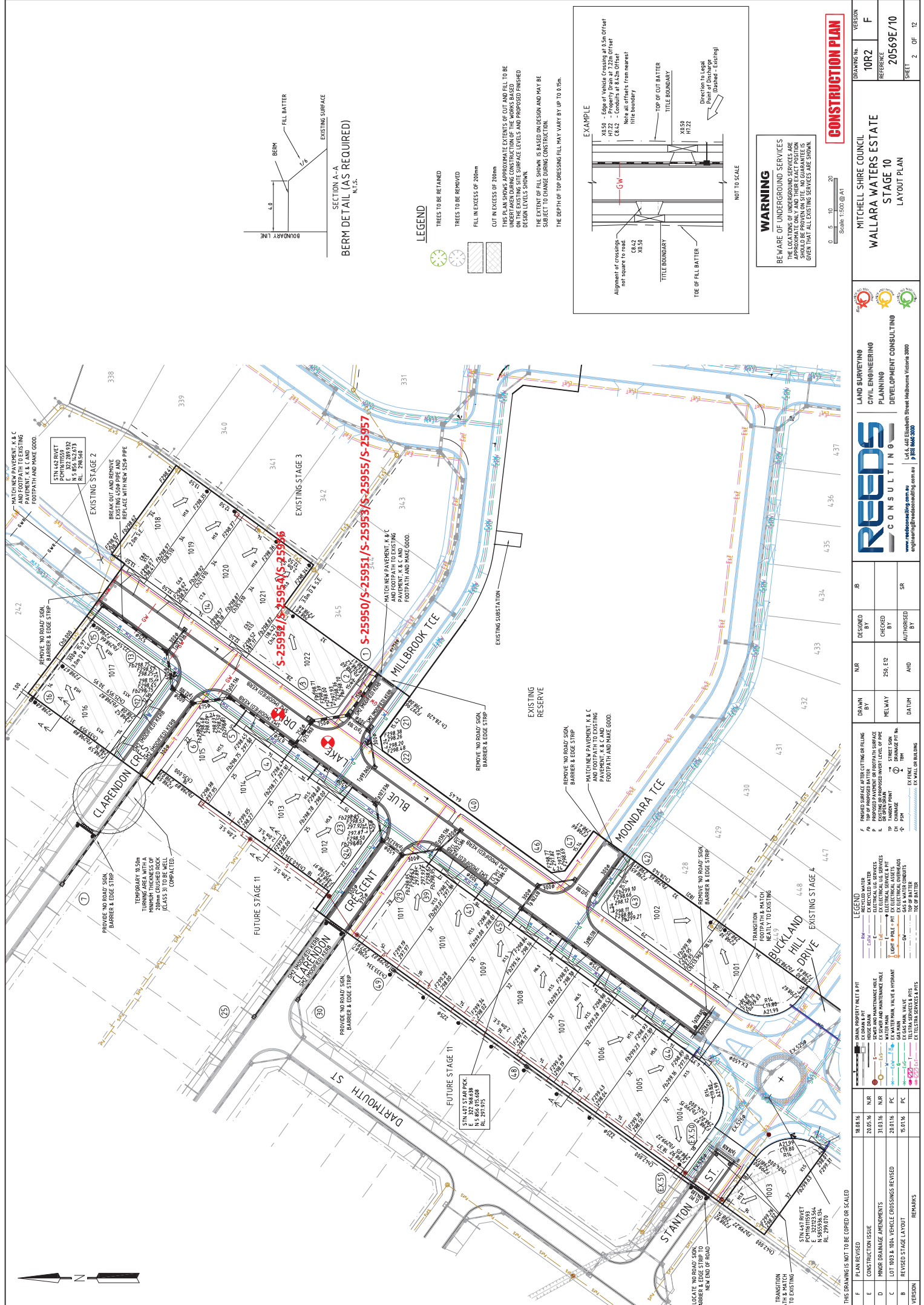
**Moolap Laboratory**  
 Pearce Geotech Pty Ltd  
 23 Nobility Street  
 Moolap VIC 3221

## Hilf Density Ratio Report

Client : <b>Fortunato Group</b> Address : <b>38A Merri Concourse, Campbellfield, VIC, 3061</b> Project Name : <b>Wallara Waters Stage 10</b> Project Number : <b>CS-598</b> Location: <b>Wallan</b>	Report Number: <b>CS-598 - 20/1</b> Report Date : <b>12/02/2017</b> Order Number : Test Method : <b>AS1289.5.7.1</b> <p style="text-align: right;"><b>Page 2 of 2</b></p>
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Sample Number :	S-25954	S-25955	S-25956	S-25957
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)
Date Sampled :	2/02/2017	2/02/2017	2/02/2017	2/02/2017
Date Tested :	2/02/2017	2/02/2017	2/02/2017	2/02/2017
Material Type :	Clay	Clay	Clay	Clay
Material Source :	Imported	Imported	Imported	Imported
Lot Number :				
Sample Location :	Swale Drain See Site Plan  Lift 4	Swale Drain See Site Plan  Lift 5	Swale Drain See Site Plan  Lift 5	Swale Drain See Site Plan  Lift 6
Test Depth (mm) :	175	175	175	175
Layer Depth (mm) :	200	200	200	200
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	0	0	0	0
Oversize Dry (%) :				
Oversize Density (t/m <sup>3</sup> ) :				
Field Moisture Content (%) :	17.6	20.3	22.7	18.8
Hilf MDR Number :	S-25954	S-25955	S-25956	S-25957
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	86.5	90	91	89.5
Field Wet Density (t/m <sup>3</sup> ) :	1.98	2.00	2.07	2.01
Optimum Moisture Content (%) :	20.3	22.6	25.0	21.0
Moisture Variation :	2.5	2.0	2.0	2.0
Peak Converted Wet Density (t/m <sup>3</sup> ) :	2.04	2.07	2.08	2.03
Hilf Density Ratio (%) :	<b>97.0</b>	<b>96.5</b>	<b>99.5</b>	<b>99.0</b>
Minimum Specification :	95% Standard	95% Standard	95% Standard	95% Standard
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

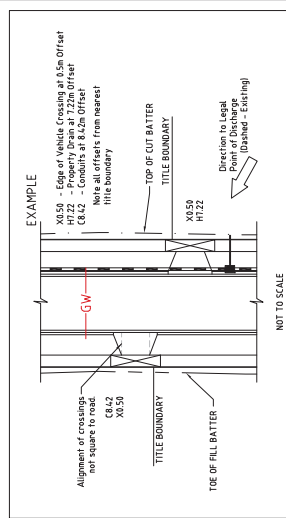
	APPROVED SIGNATORY  Daniel Pearce - Laboratory Manager NATA Accreditation Number 18877
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SECTION A-A  
BERM DETAIL (AS REQUIRED)  
N.T.S.

**LEGEND**

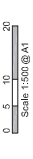
- TREES TO BE RETAINED
  - TREES TO BE REMOVED
  - FILL IN EXCESS OF 200mm
  - CUT IN EXCESS OF 200mm
- THIS PLAN SHOWS APPROXIMATE EXTENS OF CUT AND FILL TO BE MADE TO ACCOMMODATE THE PROPOSED ROADWAY AND UTILITIES ON THE EXISTING SITE SURFACE LEVELS AND PROPOSED FINISHED DESIGN LEVELS SHOWN.
- THE EXTENT OF FILL SHOWN IS BASED ON DESIGN AND MAY BE SUBJECT TO CHANGE DURING CONSTRUCTION.
- THE DEPTH OF TOP DRESSING FILL MAY VARY BY UP TO 0.5m.



**WARNING**

BEWARE OF UNDERGROUND SERVICES  
THE LOCATION AND DEPTH OF UNDERGROUND SERVICES SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

**CONSTRUCTION PLAN**



DRAWING NO.	10R2
VERSION	F
REFERENCE	20569E/10
SHEET	2 OF 12

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PLANNING  
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MITCHELL SHIRE COUNCIL  
WALLARA WATERS ESTATE  
STAGE 10  
LAYOUT PLAN

DESIGNED BY	NJR	DATE	15/01/16
CHECKED BY	250, E12	DATE	15/01/16
AUTHORISED BY	SR	DATE	15/01/16

FINISHED SURFACE AFTER CUTTING OR FILLING	---
PROPOSED PAVED SURFACE	---
EXISTING OR PROPOSED INVERT LEVEL OF PIPE	---
TOP OF TANGENT POINT	---
STREET LIGHT	---
EXISTING CURB	---
PROPOSED CURB	---
EXISTING WALL OR BUILDING	---
EXISTENCE	---

RECYCLED WATER	---
EX RECYCLED WATER	---
EX MAINTENANCE CANAL	---
EX ELECTRICAL SERVICES	---
EX TELEPHONE SERVICES	---
EX GAS SERVICES	---
EX WATER MAIN VALVE & HYDRANT	---
EX ELECTRICAL SERVICES	---
EX TELEPHONE SERVICES	---
EX GAS SERVICES	---
EX ELECTRICAL SERVICES & PITS	---
EX TELEPHONE SERVICES & PITS	---
EX GAS SERVICES & PITS	---
EX WATER	---

DATE	15/01/16	BY	NJR
DATE	20/05/16	BY	NJR
DATE	31/03/16	BY	NJR
DATE	20/01/16	BY	PC
DATE	15/01/16	BY	PC

REVISION	DESCRIPTION	DATE	BY
F	PLAN REVISION		
E	CONSTRUCTION ISSUE		
D	MINOR DRAINAGE AMENDMENTS		
C	LOT 1003 & 1004 VEHICLE CROSSINGS REVISED		
B	REVISED STAGE LAYOUT		
A	ISSUE FOR PERMIT		

THIS DRAWING IS NOT TO BE COPIED OR SCALED



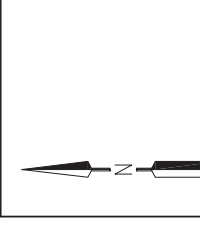
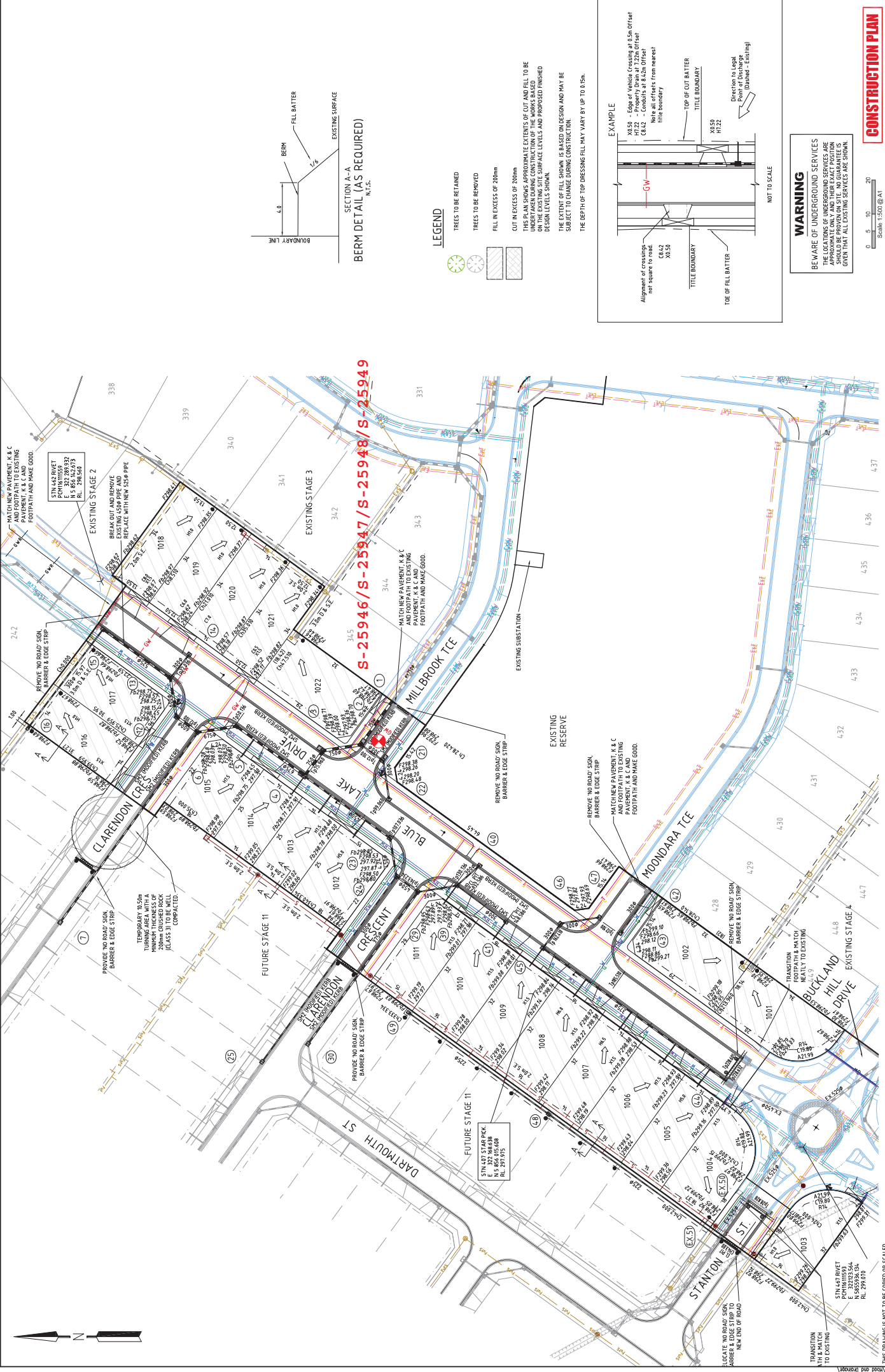
**Moolap Laboratory**  
 Pearce Geotech Pty Ltd  
 23 Nobility Street  
 Moolap VIC 3221

## Hilf Density Ratio Report

Client : <b>Fortunato Group</b> Address : <b>38A Merri Concourse, Campbellfield, VIC, 3061</b> Project Name : <b>Wallara Waters Stage 10</b> Project Number : <b>CS-598</b> Location: <b>Wallan</b>	Report Number: <b>CS-598 - 19/1</b> Report Date : <b>12/02/2017</b> Order Number : Test Method : <b>AS1289.5.7.1</b> <p style="text-align: right;"><b>Page 1 of 1</b></p>
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Sample Number :	S-25946	S-25947	S-25948	S-25949
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)
Date Sampled :	1/02/2017	1/02/2017	1/02/2017	1/02/2017
Date Tested :	1/02/2017	1/02/2017	1/02/2017	1/02/2017
Material Type :	Clay	Clay	Clay	Clay
Material Source :	Imported	Imported	Imported	Imported
Lot Number :				
Sample Location :	See Site Plan  Lift 1	See Site Plan  Lift 2	See Site Plan  Lift 3	See Site Plan  Lift 4
Test Depth (mm) :	175	175	175	175
Layer Depth (mm) :	200	200	200	200
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	0	0	0	0
Oversize Dry (%) :				
Oversize Density (t/m <sup>3</sup> ) :				
Field Moisture Content (%) :	15.2	20.7	16.3	18.5
Hilf MDR Number :	S-25946	S-25947	S-25948	S-25949
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	88	91.5	90	86.5
Field Wet Density (t/m <sup>3</sup> ) :	1.97	1.85	2.04	1.92
Optimum Moisture Content (%) :	17.3	22.6	18.1	21.4
Moisture Variation :	2.0	2.0	1.5	2.5
Peak Converted Wet Density (t/m <sup>3</sup> ) :	2.05	1.94	2.06	1.97
Hilf Density Ratio (%) :	<b>96.0</b>	<b>95.5</b>	<b>99.0</b>	<b>97.5</b>
Minimum Specification :	95% Standard	95% Standard	95% Standard	95% Standard
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

 <p><b>The results of the tests in this report are traceable to Australian/National standards. Accredited for compliance with ISO/IEC 17025</b></p>	<p>APPROVED SIGNATORY</p>  <p>Daniel Pearce - Laboratory Manager          NATA Accreditation Number          18877</p>
--	---



**LEGEND**

TREES TO BE RETAINED

TREES TO BE REMOVED

FILL IN EXCESS OF 200mm

CUT IN EXCESS OF 200mm

THIS PLAN SHOWS APPROXIMATE EXTENS OF CUT AND FILL TO BE REQUIRED. THE EXACT EXTENTS WILL BE DETERMINED BY THE SURVEY AND DESIGN ON THE EXISTING SITE SURFACE LEVELS AND PROPOSED FINISHED DESIGN LEVELS SHOWN.

THE EXTENT OF FILL SHOWN IS BASED ON DESIGN AND MAY BE SUBJECT TO CHANGE DURING CONSTRUCTION.

THE DEPTH OF TOP DRESSING FILL MAY VARY BY UP TO 0.5m.



**WARNING**

BE AWARE OF UNDERGROUND SERVICES

THESE SERVICES ARE APPROXIMATE POSITIONS AND SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

REVISIONS		DRAWING IS NOT TO BE COPIED OR SCALED		REVISIONS		REVISIONS		REVISIONS		REVISIONS		REVISIONS	
NO	DESCRIPTION	DATE	BY	DATE	BY	DATE	BY	DATE	BY	DATE	BY	DATE	BY
F	PLAN REVISION	18/08/16	NJR										
E	CONSTRUCTION ISSUE	20/05/16	NJR										
D	MINOR DRAINAGE AMENDMENTS	31/03/16	NJR										
C	LOT 1003 & 1004 VEHICLE CROSSINGS REVISED	20/01/16	PC										
B	REVISED STAGE LAYOUT	15/01/16	PC										

LEGEND		LEGEND		LEGEND		LEGEND		LEGEND		LEGEND		LEGEND	
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
[Symbol]	DRAIN PROPERTY PLOTS & PITS	[Symbol]	FINISHED SURFACE AFTER CUTTING OR FILLING	[Symbol]	EXISTING SURFACE	[Symbol]	PROPOSED SURFACE	[Symbol]	EXISTING OR PROPOSED INVERT LEVEL OF PIPE	[Symbol]	TARGET POINT	[Symbol]	STREET SIGN
[Symbol]	HOUSE DRAIN	[Symbol]	EX RECYCLED WATER	[Symbol]	EXISTING ROAD SURFACE	[Symbol]	PROPOSED ROAD SURFACE	[Symbol]	EXISTING OR PROPOSED INVERT LEVEL OF PIPE	[Symbol]	EXISTING OR PROPOSED STREET SIGN	[Symbol]	EXISTING OR PROPOSED STREET SIGN
[Symbol]	EX DRAIN & P	[Symbol]	EX RECYCLED WATER	[Symbol]	EXISTING ROAD SURFACE	[Symbol]	PROPOSED ROAD SURFACE	[Symbol]	EXISTING OR PROPOSED INVERT LEVEL OF PIPE	[Symbol]	EXISTING OR PROPOSED STREET SIGN	[Symbol]	EXISTING OR PROPOSED STREET SIGN
[Symbol]	EX SAFE AND MAINTENANCE WALK	[Symbol]	EX ELECTRICAL SERVICES	[Symbol]	EXISTING ROAD SURFACE	[Symbol]	PROPOSED ROAD SURFACE	[Symbol]	EXISTING OR PROPOSED INVERT LEVEL OF PIPE	[Symbol]	EXISTING OR PROPOSED STREET SIGN	[Symbol]	EXISTING OR PROPOSED STREET SIGN
[Symbol]	EX WATER MAIN VALVE & HYDRANT	[Symbol]	EX LIGHT & PALE PIP	[Symbol]	EXISTING ROAD SURFACE	[Symbol]	PROPOSED ROAD SURFACE	[Symbol]	EXISTING OR PROPOSED INVERT LEVEL OF PIPE	[Symbol]	EXISTING OR PROPOSED STREET SIGN	[Symbol]	EXISTING OR PROPOSED STREET SIGN
[Symbol]	EX WATER MAIN VALVE & HYDRANT	[Symbol]	EX ELECTRICAL SERVICES	[Symbol]	EXISTING ROAD SURFACE	[Symbol]	PROPOSED ROAD SURFACE	[Symbol]	EXISTING OR PROPOSED INVERT LEVEL OF PIPE	[Symbol]	EXISTING OR PROPOSED STREET SIGN	[Symbol]	EXISTING OR PROPOSED STREET SIGN
[Symbol]	GAS MAIN VALVE	[Symbol]	EX ELECTRICAL SERVICES	[Symbol]	EXISTING ROAD SURFACE	[Symbol]	PROPOSED ROAD SURFACE	[Symbol]	EXISTING OR PROPOSED INVERT LEVEL OF PIPE	[Symbol]	EXISTING OR PROPOSED STREET SIGN	[Symbol]	EXISTING OR PROPOSED STREET SIGN
[Symbol]	EX TELEPHONE SERVICES & PITS	[Symbol]	EX ELECTRICAL SERVICES	[Symbol]	EXISTING ROAD SURFACE	[Symbol]	PROPOSED ROAD SURFACE	[Symbol]	EXISTING OR PROPOSED INVERT LEVEL OF PIPE	[Symbol]	EXISTING OR PROPOSED STREET SIGN	[Symbol]	EXISTING OR PROPOSED STREET SIGN
[Symbol]	EX TELEPHONE SERVICES & PITS	[Symbol]	EX ELECTRICAL SERVICES	[Symbol]	EXISTING ROAD SURFACE	[Symbol]	PROPOSED ROAD SURFACE	[Symbol]	EXISTING OR PROPOSED INVERT LEVEL OF PIPE	[Symbol]	EXISTING OR PROPOSED STREET SIGN	[Symbol]	EXISTING OR PROPOSED STREET SIGN
[Symbol]	EX TELEPHONE SERVICES & PITS	[Symbol]	EX ELECTRICAL SERVICES	[Symbol]	EXISTING ROAD SURFACE	[Symbol]	PROPOSED ROAD SURFACE	[Symbol]	EXISTING OR PROPOSED INVERT LEVEL OF PIPE	[Symbol]	EXISTING OR PROPOSED STREET SIGN	[Symbol]	EXISTING OR PROPOSED STREET SIGN

MITCHELL SHIRE COUNCIL  
WALLARA WATERS ESTATE  
STAGE 10  
LAYOUT PLAN

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145 Adelaide Street Melbourne Victoria 3000  
1300 608 240

DESIGNED BY  
CHECKED BY  
AUTHORISED BY

NUR  
MELWAY  
AND  
DATE

25/01/16

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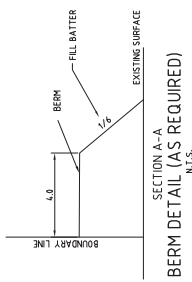
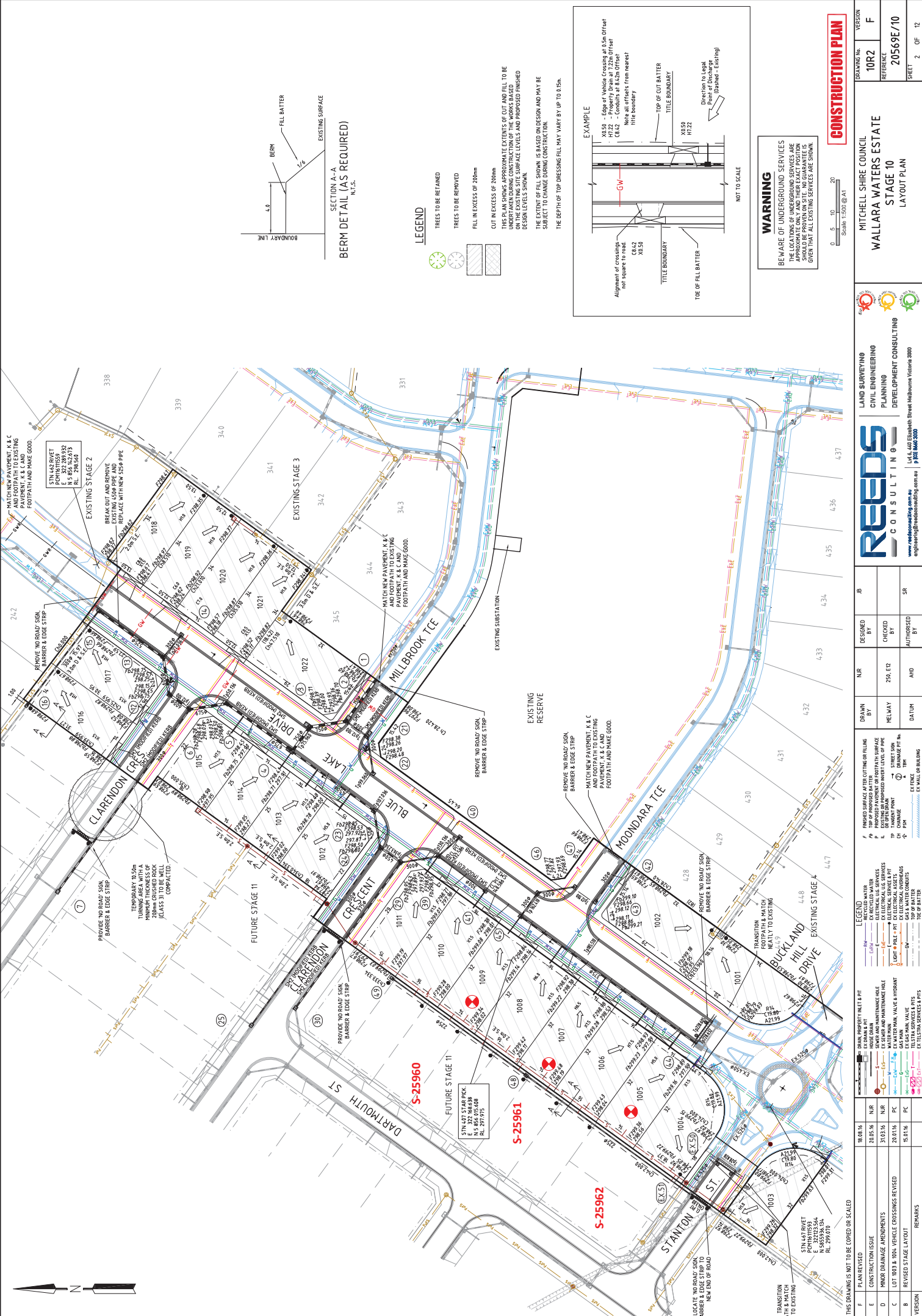
**Moolap Laboratory**  
 Pearce Geotech Pty Ltd  
 23 Nobility Street  
 Moolap VIC 3221

## Hilf Density Ratio Report

Client : <b>Fortunato Group</b> Address : <b>38A Merri Concourse, Campbellfield, VIC, 3061</b> Project Name : <b>Wallara Waters Stage 10</b> Project Number : <b>CS-598</b> Location: <b>Wallan</b>	Report Number: <b>CS-598 - 21/1</b> Report Date : <b>12/02/2017</b> Order Number : Test Method : <b>AS1289.5.7.1</b> <p style="text-align: right;"><b>Page 1 of 1</b></p>
---	---

Sample Number :	S-25960	S-25961	S-25962	
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	
Date Sampled :	7/02/2017	7/02/2017	7/02/2017	
Date Tested :	7/02/2017	7/02/2017	7/02/2017	
Material Type :	Clay	Clay	Clay	
Material Source :	Imported	Imported	Imported	
Lot Number :				
Sample Location :	Allotment Fill See Site Plan  Lift 3	Allotment Fill See Site Plan  Lift 4	Allotment Fill See Site Plan  Lift 4	
Test Depth (mm) :	175	175	175	
Layer Depth (mm) :	200	200	200	
Maximum Size (mm) :	19	19	19	
Oversize Wet (%) :	0	0	0	
Oversize Dry (%) :				
Oversize Density (t/m <sup>3</sup> ) :				
Field Moisture Content (%) :	29.4	18.8	24.5	
Hilf MDR Number :	S-25960	S-25961	S-25962	
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	
Compactive Effort :	Standard	Standard	Standard	
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1	
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	
Moisture Ratio (%) :	115	86.5	98	
Field Wet Density (t/m <sup>3</sup> ) :	1.88	1.93	1.90	
Optimum Moisture Content (%) :	25.6	21.7	25.0	
Moisture Variation :	-3.5	2.5	0.5	
Peak Converted Wet Density (t/m <sup>3</sup> ) :	1.95	1.97	1.97	
Hilf Density Ratio (%) :	<b>96.5</b>	<b>98.0</b>	<b>96.5</b>	
Minimum Specification :	95% Standard	95% Standard	95% Standard	
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

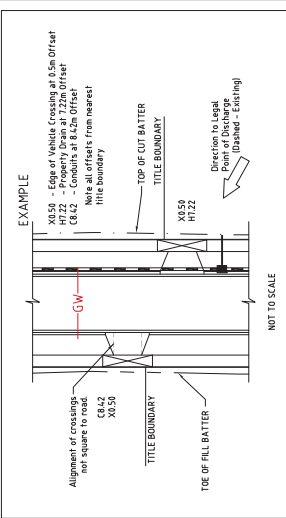
 <p><b>The results of the tests in this report are traceable to Australian/National standards. Accredited for compliance with ISO/IEC 17025</b></p>	<p>APPROVED SIGNATORY</p>  <p>Daniel Pearce - Laboratory Manager          NATA Accreditation Number          18877</p>
--	---



**LEGEND**

- TREES TO BE RETAINED
- TREES TO BE REMOVED
- FILL IN EXCESS OF 200mm
- CUT IN EXCESS OF 200mm

THIS PLAN SHOWS APPROXIMATE EXTENS OF CUT AND FILL TO BE MADE TO LEVEL THE SITE TO CONFORM WITH THE PROPOSED DESIGN LEVELS SHOWN. THE EXTENT OF FILL SHOWN IS BASED ON DESIGN AND MAY BE SUBJECT TO CHANGE DURING CONSTRUCTION. THE DEPTH OF TOP DRESSING FILL MAY VARY BY UP TO 0.1m.



**WARNING**

BEWARE OF UNDERGROUND SERVICES. THIS DRAWING IS A REPRESENTATION OF THE PROPOSED WORKS AND SHOULD BE PROVIDED TO ALL CONTRACTORS AND SUBCONTRACTORS PRIOR TO ANY WORK BEING COMMENCED. APPROXIMATE ONLY AND THESE EXACT POSITIONS SHOULD BE PROVIDED ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

**CONSTRUCTION PLAN**

Scale: 1:500 @ A1

MITCHELL SHIRE COUNCIL  
WALLARA WATERS ESTATE  
STAGE 10  
LAYOUT PLAN

PERSON: F  
DRAWING NO: 10RZ  
REFERENCE: 20569E/10  
SHEET: 2 OF 12

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PLANNING  
DEVELOPMENT CONSULTING

DESIGNED BY	NUR	CHECKED BY	250_E12	AUTHORISED BY	SR
DRAWN BY	HEWLEY	DATUM			

18.08.16	NUR	PLAN REVISED	
20.05.16	NUR	CONSTRUCTION ISSUE	
31.03.16	NUR	MINOR DRAINAGE AMENDMENTS	
20.01.16	PC	LOT 1003 & 1004 VEHICLE CROSSINGS REVISED	
15.01.16	PC	REVISED STAGE LAYOUT	
PERSON		REMARKS	

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**Moolap Laboratory**  
 Pearce Geotech Pty Ltd  
 23 Nobility Street  
 Moolap VIC 3221

## Hilf Density Ratio Report

Client : <b>Fortunato Group</b> Address : <b>38A Merri Concourse, Campbellfield, VIC, 3061</b> Project Name : <b>Wallara Waters Stage 10</b> Project Number : <b>CS-598</b> Location: <b>Wallan</b>	Report Number: <b>CS-598 - 22/1</b> Report Date : <b>12/02/2017</b> Order Number : Test Method : <b>AS1289.5.7.1</b> <p style="text-align: right;"><b>Page 1 of 1</b></p>
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Sample Number :	S-25963	S-25964	S-25965	
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	
Date Sampled :	9/02/2017	9/02/2017	9/02/2017	
Date Tested :	9/02/2017	9/02/2017	9/02/2017	
Material Type :	Clay	Clay	Clay	
Material Source :	Imported	Imported	Imported	
Lot Number :				
Sample Location :	Allotment Fill See Site Plan  Lift 2	Allotment Fill See Site Plan  Lift 2	Allotment Fill See Site Plan  Lift 2	
Test Depth (mm) :	175	175	175	
Layer Depth (mm) :	200	200	200	
Maximum Size (mm) :	19	19	19	
Oversize Wet (%) :	0	0	0	
Oversize Dry (%) :				
Oversize Density (t/m <sup>3</sup> ) :				
Field Moisture Content (%) :	22.2	20.8	22.3	
Hilf MDR Number :	S-25963	S-25964	S-25965	
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	
Compactive Effort :	Standard	Standard	Standard	
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1	
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	
Moisture Ratio (%) :	89.5	88	90	
Field Wet Density (t/m <sup>3</sup> ) :	1.98	2.02	2.02	
Optimum Moisture Content (%) :	24.8	23.6	24.8	
Moisture Variation :	2.5	2.5	2.0	
Peak Converted Wet Density (t/m <sup>3</sup> ) :	2.03	2.05	2.05	
Hilf Density Ratio (%) :	<b>97.5</b>	<b>98.5</b>	<b>99.0</b>	
Minimum Specification :	95% Standard	95% Standard	95% Standard	
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

 <p style="text-align: center;"><b>The results of the tests in this report are traceable to Australian/National standards. Accredited for compliance with ISO/IEC 17025</b></p>	<p>APPROVED SIGNATORY</p>  <p>Daniel Pearce - Laboratory Manager          NATA Accreditation Number          18877</p>
--	---




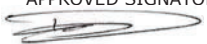


**Moolap Laboratory**  
 Pearce Geotech Pty Ltd  
 23 Nobility Street  
 Moolap VIC 3221

## Hilf Density Ratio Report

Client : <b>Fortunato Group</b> Address : <b>38A Merri Concourse, Campbellfield, VIC, 3061</b> Project Name : <b>Wallara Waters Stage 11</b> Project Number : <b>CS-629</b> Location: <b>Wallan</b>	Report Number: <b>CS-629 - 20/1</b> Report Date : <b>16/03/2017</b> Order Number : Test Method : <b>AS1289.5.7.1</b> <p style="text-align: right;"><b>Page 1 of 2</b></p>
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Sample Number :	S-26957	S-26958	S-26959	S-26960
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)
Date Sampled :	13/02/2017	13/02/2017	13/02/2017	13/02/2017
Date Tested :	13/02/2017	13/02/2017	13/02/2017	13/02/2017
Material Type :	Clay	Clay	Clay	Clay
Material Source :	Insitu + Imported	Insitu + Imported	Insitu + Imported	Insitu + Imported
Lot Number :				
Sample Location :	Swale Drain Subgrade L1 Refer to site plan	Swale Drain Subgrade L2 Refer to site plan	Swale Drain Subgrade L3 Refer to site plan	Swale Drain Subgrade L4 Refer to site plan
Test Depth (mm) :	175	175	175	175
Layer Depth (mm) :	200	200	200	200
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	0	0	0	0
Oversize Dry (%) :				
Oversize Density (t/m <sup>3</sup> ) :				
Field Moisture Content (%) :	18.3	19.9	21.0	20.2
Hilf MDR Number :	S-26957	S-26958	S-26959	S-26960
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	98	99.5	97.5	98.5
Field Wet Density (t/m <sup>3</sup> ) :	1.97	1.98	1.96	1.99
Optimum Moisture Content (%) :	18.6	20.0	21.6	20.5
Moisture Variation :	0.5	0.0	0.5	0.5
Peak Converted Wet Density (t/m <sup>3</sup> ) :	2.05	2.06	2.03	2.08
Hilf Density Ratio (%) :	<b>96.5</b>	<b>96.0</b>	<b>96.0</b>	<b>95.5</b>
Minimum Specification :	95% Standard	95% Standard	95% Standard	95% Standard
Moisture Specification :				
Site Selection :	Random	Random	Random	Random
Soil Description :				
Remarks :	-			

 <p><b>The results of the tests in this report are traceable to Australian/National standards. Accredited for compliance with ISO/IEC 17025</b></p>	<p>APPROVED SIGNATORY</p>  <p>Daniel Pearce - Laboratory Manager          NATA Accreditation Number          18877</p>
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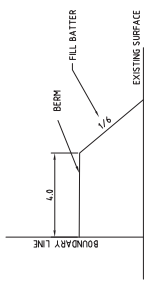
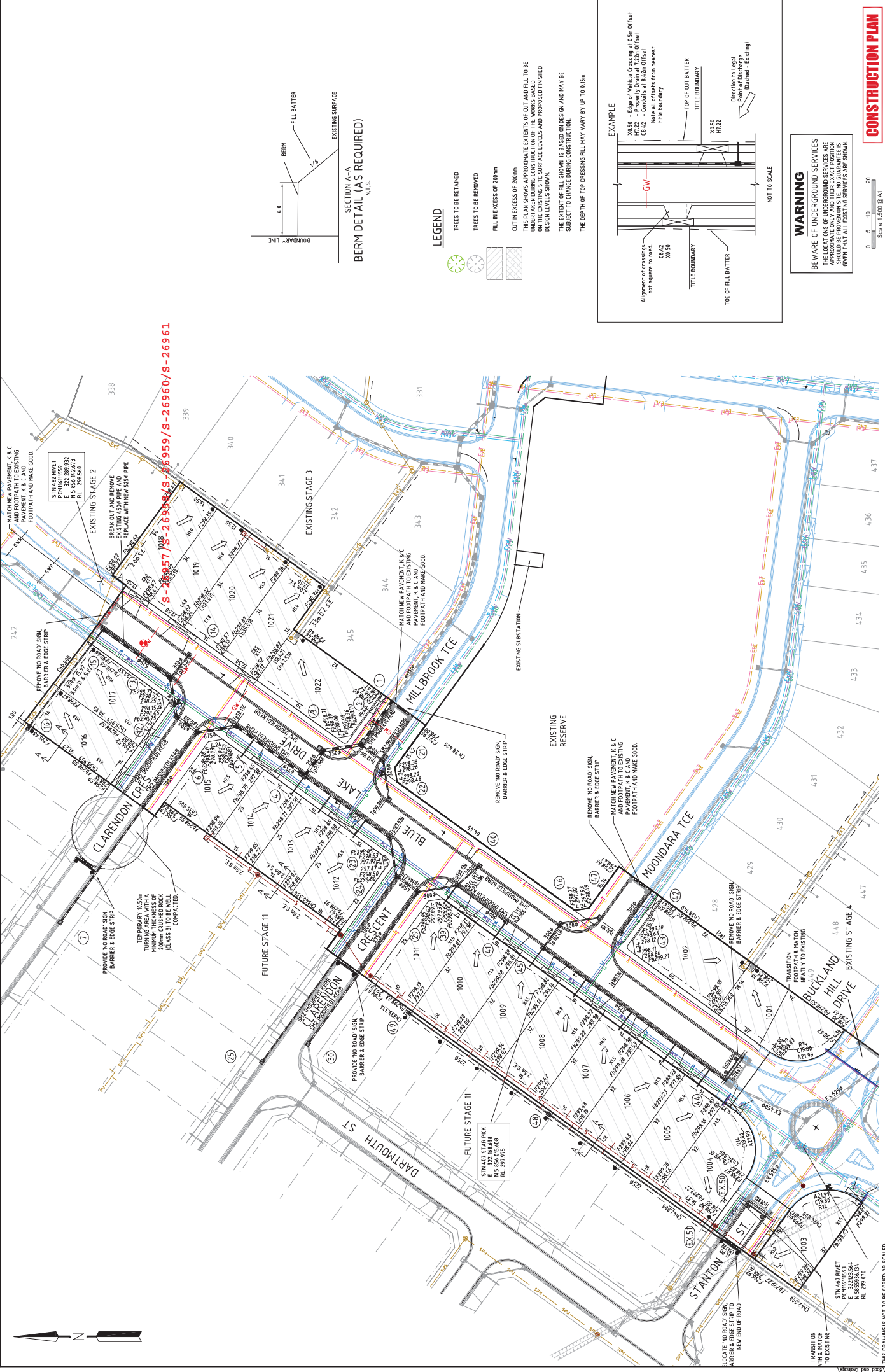
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 Pearce Geotech Pty Ltd  
 23 Nobility Street  
 Moolap VIC 3221

## Hilf Density Ratio Report

Client : <b>Fortunato Group</b> Address : <b>38A Merri Concourse, Campbellfield, VIC, 3061</b> Project Name : <b>Wallara Waters Stage 11</b> Project Number : <b>CS-629</b> Location: <b>Wallan</b>	Report Number: <b>CS-629 - 20/1</b> Report Date : <b>16/03/2017</b> Order Number : Test Method : <b>AS1289.5.7.1</b> <p style="text-align: right;"><b>Page 2 of 2</b></p>
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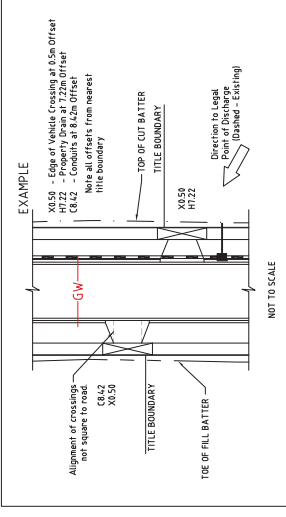
Sample Number :	S-26961			
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)			
Date Sampled :	13/02/2017			
Date Tested :	13/02/2017			
Material Type :	Clay			
Material Source :	Insitu + Imported			
Lot Number :				
Sample Location :	Swale Drain Subgrade L5 Refer to site plan			
Test Depth (mm) :	175			
Layer Depth (mm) :	200			
Maximum Size (mm) :	19			
Oversize Wet (%) :	0			
Oversize Dry (%) :				
Oversize Density (t/m <sup>3</sup> ) :				
Field Moisture Content (%) :	21.0			
Hilf MDR Number :	S-26961			
Hilf MDR Method :	AS1289.5.7.1			
Compactive Effort :	Standard			
Field Density Method :	AS1289.5.8.1			
Moisture Method :	AS1289.2.1.1			
Moisture Ratio (%) :	100			
Field Wet Density (t/m <sup>3</sup> ) :	1.97			
Optimum Moisture Content (%) :	21.0			
Moisture Variation :	0.0			
Peak Converted Wet Density (t/m <sup>3</sup> ) :	2.06			
Hilf Density Ratio (%) :	<b>96.0</b>			
Minimum Specification :	95% Standard			
Moisture Specification :				
Site Selection :	Random			
Soil Description :				
Remarks :	-			

 <p style="text-align: center;"><b>The results of the tests in this report are traceable to Australian/National standards. Accredited for compliance with ISO/IEC 17025</b></p>	<p style="text-align: center;">APPROVED SIGNATORY</p>  <p style="text-align: center;">Daniel Pearce - Laboratory Manager          NATA Accreditation Number          18877</p>
--	---



**LEGEND**

- TREES TO BE RETAINED
  - TREES TO BE REMOVED
  - FILL IN EXCESS OF 200mm
  - CUT IN EXCESS OF 200mm
- THIS PLAN SHOWS APPROXIMATE EXTENS OF CUT AND FILL TO BE MADE TO THE EXISTING SURFACE LEVELS AND PROPOSED FINISHED DESIGN LEVELS SHOWN.
- THE EXTENT OF FILL SHOWN IS BASED ON DESIGN AND MAY BE SUBJECT TO CHANGE DURING CONSTRUCTION.
- THE DEPTH OF TOP DRESSING FILL MAY VARY BY UP TO 0.5m.



**WARNING**

BEWARE OF UNDERGROUND SERVICES

THE LOCATION AND DEPTH OF UNDERGROUND SERVICES SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

**CONSTRUCTION PLAN**

Scale: 1:500 @ A1

PERSON	VERSION
MITCHELL SHIRE COUNCIL	F
WALLARA WATERS ESTATE	20569E/10
STAGE 10	
LAYOUT PLAN	
SHEET	2 OF 12

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1800 600 000

DESIGNED BY	NJR	CHECKED BY	250_E12
DRAWN BY	MELWAY	AUTHORISED BY	SR

DATE	18/08/16	DESCRIPTION	PLAN REVISION
DATE	20/05/16	DESCRIPTION	CONSTRUCTION ISSUE
DATE	31/03/16	DESCRIPTION	MINOR DRAINAGE AMENDMENTS
DATE	20/01/16	DESCRIPTION	LOT 1003 & 1004 VEHICLE CROSSINGS REVISED
DATE	15/01/16	DESCRIPTION	REVISED STAGE LAYOUT

FINISHED SURFACE AFTER CUTTING OR FILLING	---
PROPOSED FINISHED SURFACE	---
EXISTING FINISHED SURFACE	---
PROPOSED INVERT LEVEL OF PIPE	---
TANGENT POINT	---
STREET LIGHT	---
STREET SIGN	---
EXISTING WALL OR BUILDING	---
EXISTENCE	---
EX WALL OR BUILDING	---

THIS DRAWING IS NOT TO BE COPIED OR SCALED


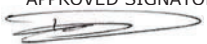


**Moolap Laboratory**  
 Pearce Geotech Pty Ltd  
 23 Nobility Street  
 Moolap VIC 3221

## Hilf Density Ratio Report

Client : <b>Fortunato Group</b> Address : <b>38A Merri Concourse, Campbellfield, VIC, 3061</b> Project Name : <b>Wallara Waters Stage 10</b> Project Number : <b>CS-598</b> Location: <b>Wallan</b>	Report Number: <b>CS-598 - 23/1</b> Report Date : <b>10/03/2017</b> Order Number : Test Method : <b>AS1289.5.7.1</b> <p style="text-align: right;"><b>Page 1 of 2</b></p>
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Sample Number :	S-26816	S-26817	S-26818	S-26819
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)
Date Sampled :	14/02/2017	14/02/2017	14/02/2017	14/02/2017
Date Tested :	14/02/2017	14/02/2017	14/02/2017	14/02/2017
Material Type :	Clay	Clay	Clay	Clay
Material Source :	Imported	Imported	Imported	Imported
Lot Number :				
Sample Location :	Swale Drain See Site Plan  L7	Allotment Fill See Site Plan  L3	Allotment Fill See Site Plan  L3	Allotment Fill See Site Plan  L3
Test Depth (mm) :	175	175	175	175
Layer Depth (mm) :	200	200	200	200
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	0	0	0	0
Oversize Dry (%) :				
Oversize Density (t/m <sup>3</sup> ) :				
Field Moisture Content (%) :	23.4	21.8	22.9	21.9
Hilf MDR Number :	S-26816	S-26817	S-26818	S-26819
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	92	92	91	91.5
Field Wet Density (t/m <sup>3</sup> ) :	1.98	1.98	2.00	1.98
Optimum Moisture Content (%) :	25.5	23.7	25.1	23.9
Moisture Variation :	2.0	2.0	2.0	2.0
Peak Converted Wet Density (t/m <sup>3</sup> ) :	1.99	2.00	1.98	2.00
Hilf Density Ratio (%) :	<b>99.0</b>	<b>99.0</b>	<b>101.5</b>	<b>99.0</b>
Minimum Specification :	95% Standard	95% Standard	95% Standard	95% Standard
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

 <p><b>The results of the tests in this report are traceable to Australian/National standards. Accredited for compliance with ISO/IEC 17025</b></p>	<p style="text-align: center;">APPROVED SIGNATORY</p>  <p style="text-align: center;">Daniel Pearce - Laboratory Manager          NATA Accreditation Number          18877</p>
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**Moolap Laboratory**  
 Pearce Geotech Pty Ltd  
 23 Nobility Street  
 Moolap VIC 3221

## Hilf Density Ratio Report

Client : <b>Fortunato Group</b> Address : <b>38A Merri Concourse, Campbellfield, VIC, 3061</b> Project Name : <b>Wallara Waters Stage 10</b> Project Number : <b>CS-598</b> Location: <b>Wallan</b>	Report Number: <b>CS-598 - 23/1</b> Report Date : <b>10/03/2017</b> Order Number : Test Method : <b>AS1289.5.7.1</b> <p style="text-align: right;"><b>Page 2 of 2</b></p>
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Sample Number :	S-26820		
Test Number :			
Sampling Method :	AS1289.1.2.1 6.4(b)		
Date Sampled :	14/02/2017		
Date Tested :	14/02/2017		
Material Type :	Clay		
Material Source :	Imported		
Lot Number :			
Sample Location :	Allotment Fill See Site Plan  L2		
Test Depth (mm) :	175		
Layer Depth (mm) :	200		
Maximum Size (mm) :	19		
Oversize Wet (%) :	0		
Oversize Dry (%) :			
Oversize Density (t/m <sup>3</sup> ) :			
Field Moisture Content (%) :	31.0		
Hilf MDR Number :	S-26820		
Hilf MDR Method :	AS1289.5.7.1		
Compactive Effort :	Standard		
Field Density Method :	AS1289.5.8.1		
Moisture Method :	AS1289.2.1.1		
Moisture Ratio (%) :	109.5		
Field Wet Density (t/m <sup>3</sup> ) :	1.87		
Optimum Moisture Content (%) :	28.3		
Moisture Variation :	-2.5		
Peak Converted Wet Density (t/m <sup>3</sup> ) :	1.90		
Hilf Density Ratio (%) :	<b>98.5</b>		
Minimum Specification :	95% Standard		
Moisture Specification :			
Site Selection :			
Soil Description :			
Remarks :	-		

 <p style="text-align: center;"><b>The results of the tests in this report are traceable to Australian/National standards. Accredited for compliance with ISO/IEC 17025</b></p>	<p style="text-align: center;">APPROVED SIGNATORY</p>  <p style="text-align: center;">Daniel Pearce - Laboratory Manager          NATA Accreditation Number          18877</p>
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**Moolap Laboratory**  
 Pearce Geotech Pty Ltd  
 23 Nobility Street  
 Moolap VIC 3221

## Hilf Density Ratio Report

Client : <b>Fortunato Group</b> Address : <b>38A Merri Concourse, Campbellfield, VIC, 3061</b> Project Name : <b>Wallara Waters Stage 10</b> Project Number : <b>CS-598</b> Location: <b>Wallan</b>	Report Number: <b>CS-598 - 24/1</b> Report Date : <b>10/03/2017</b> Order Number : Test Method : <b>AS1289.5.7.1</b> <p style="text-align: right;"><b>Page 1 of 1</b></p>
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Sample Number :	S-26822	S-26823		
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)		
Date Sampled :	15/02/2017	15/02/2017		
Date Tested :	15/02/2017	15/02/2017		
Material Type :	Clay	Clay		
Material Source :	Imported	Imported		
Lot Number :				
Sample Location :	Blue Lake Drive See Site Plan  Subgrade	Blue Lake Drive See Site Plan  Subgrade		
Test Depth (mm) :	175	175		
Layer Depth (mm) :	200	200		
Maximum Size (mm) :	19	19		
Oversize Wet (%) :	0	0		
Oversize Dry (%) :				
Oversize Density (t/m <sup>3</sup> ) :				
Field Moisture Content (%) :	19.5	19.8		
Hilf MDR Number :	S-26822	S-26823		
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1		
Compactive Effort :	Standard	Standard		
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1		
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1		
Moisture Ratio (%) :	87	87.5		
Field Wet Density (t/m <sup>3</sup> ) :	2.02	2.04		
Optimum Moisture Content (%) :	22.4	22.6		
Moisture Variation :	2.5	2.5		
Peak Converted Wet Density (t/m <sup>3</sup> ) :	1.99	1.99		
Hilf Density Ratio (%) :	<b>101.5</b>	<b>102.0</b>		
Minimum Specification :	95% Standard	95% Standard		
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

 <p>The results of the tests in this report are traceable to Australian/National standards. Accredited for compliance with ISO/IEC 17025</p>	<p>APPROVED SIGNATORY</p>  <p>Daniel Pearce - Laboratory Manager          NATA Accreditation Number          18877</p>
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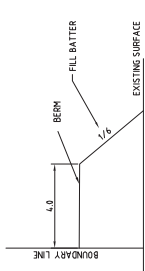
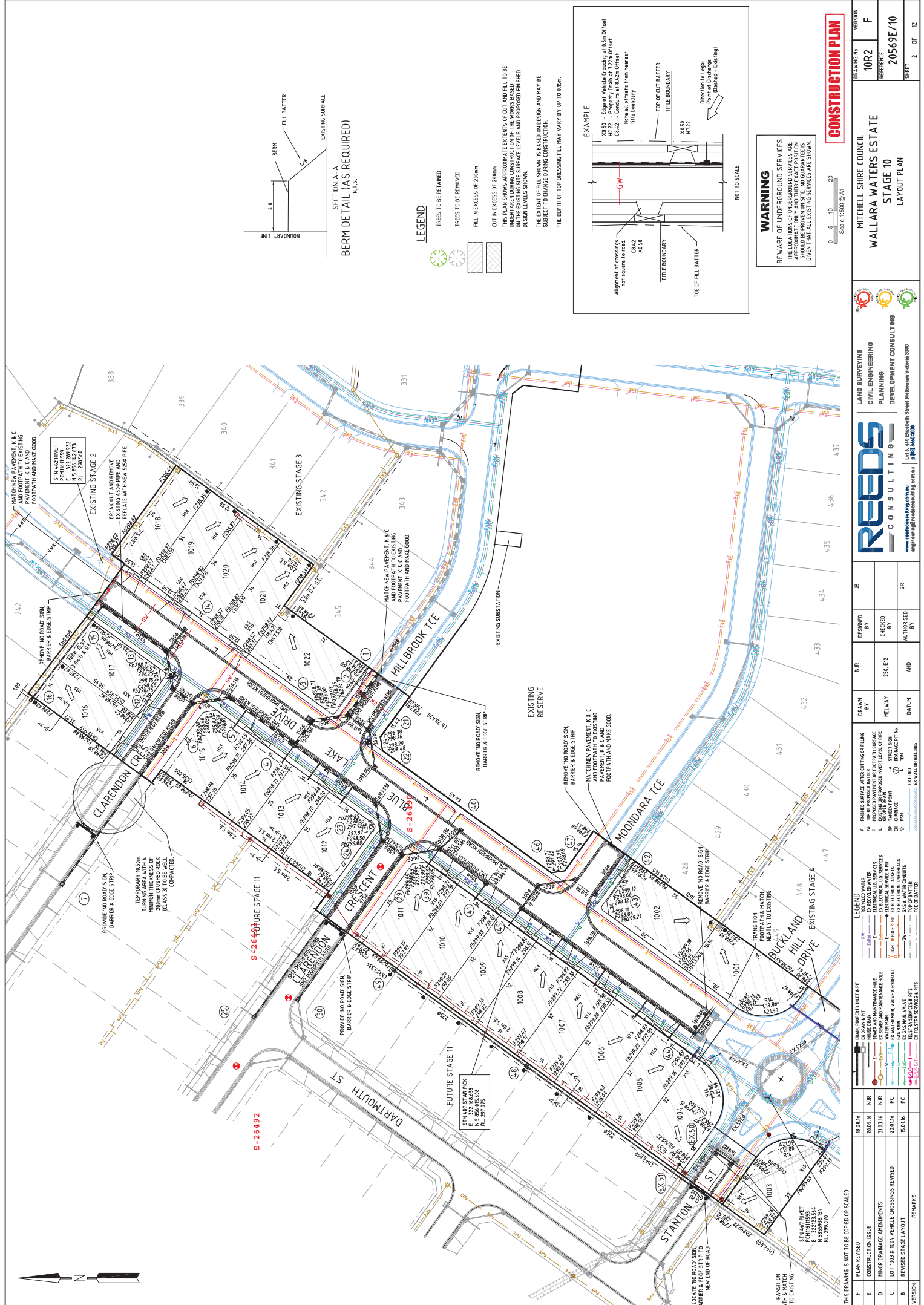
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Pearce Geotech Pty Ltd  
23 Nobility Street  
Moolap VIC 3221

## Hilf Density Ratio Report

Client : <b>Fortunato Group</b>	Report Number: <b>CS-629 - 16/1</b>
Address : <b>38A Merri Concourse, Campbellfield, VIC, 3061</b>	Report Date : <b>28/02/2017</b>
Project Name : <b>Wallara Waters Stage 11</b>	Order Number :
Project Number : <b>CS-629</b>	Test Method : <b>AS1289.5.7.1</b>
Location: <b>Wallan</b>	<b>Page 1 of 1</b>

Sample Number :	S-26490	S-26491	S-26492	
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	
Date Sampled :	16/02/2017	16/02/2017	16/02/2017	
Date Tested :	16/02/2017	16/02/2017	16/02/2017	
Material Type :	Clay	Clay	Clay	
Material Source :	Imported	Imported	Imported	
Lot Number :				
Sample Location :	Clarendon Crescent (South) Subgrade Refer to site plan	Clarendon Crescent (South) Subgrade Refer to site plan	Clarendon Crescent (South) Subgrade Refer to site plan	
Test Depth (mm) :	175	175	175	
Layer Depth (mm) :	200	200	200	
Maximum Size (mm) :	19	19	19	
Oversize Wet (%) :	0	0	0	
Oversize Dry (%) :				
Oversize Density (t/m <sup>3</sup> ) :				
Field Moisture Content (%) :	19.8	17.2	18.3	
Hilf MDR Number :	S-26490	S-26491	S-26492	
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	
Compactive Effort :	Standard	Standard	Standard	
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1	
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	
Moisture Ratio (%) :	79	83.5	84	
Field Wet Density (t/m <sup>3</sup> ) :	2.04	2.01	2.06	
Optimum Moisture Content (%) :	25.0	20.6	21.7	
Moisture Variation :	5.0	3.5	3.5	
Peak Converted Wet Density (t/m <sup>3</sup> ) :	1.89	1.89	1.96	
Hilf Density Ratio (%) :	<b>108.0</b>	<b>106.0</b>	<b>105.5</b>	
Minimum Specification :	100% Standard	100% Standard	100% Standard	
Moisture Specification :				
Site Selection :	Random	Random	Random	
Soil Description :				
Remarks :	-			

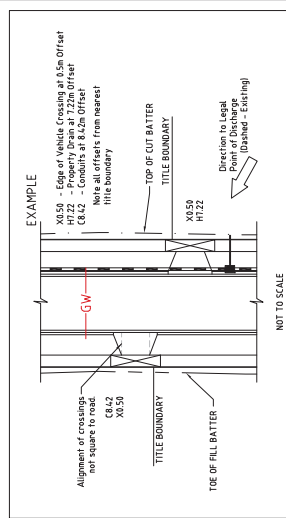
 <p><b>The results of the tests in this report are traceable to Australian/National standards. Accredited for compliance with ISO/IEC 17025</b></p>	<p>APPROVED SIGNATORY</p>  <p>Daniel Pearce - Laboratory Manager NATA Accreditation Number 18877</p>
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SECTION A-A  
BERM DETAIL (AS REQUIRED)  
N.T.S.

**LEGEND**

- TREES TO BE RETAINED
  - TREES TO BE REMOVED
  - FILL IN EXCESS OF 200mm
  - CUT IN EXCESS OF 200mm
- THIS PLAN SHOWS APPROXIMATE EXTENS OF CUT AND FILL TO BE MADE TO ACHIEVE THE PROPOSED GRADE. THE EXACT POSITIONS ON THE EXISTING SITE SURFACE LEVELS AND PROPOSED FINISHED DESIGN LEVELS SHOWN.
- THE EXTENT OF FILL SHOWN IS BASED ON DESIGN AND MAY BE SUBJECT TO CHANGE DURING CONSTRUCTION.
- THE DEPTH OF TOP DRESSING FILL MAY VARY BY UP TO 0.5m.



**WARNING**

BEWARE OF UNDERGROUND SERVICES

THE LOCATION AND DEPTH OF UNDERGROUND SERVICES SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

**CONSTRUCTION PLAN**

Scale: 1:500 @ A1

MITCHELL SHIRE COUNCIL  
WALLARA WATERS ESTATE  
STAGE 10  
LAYOUT PLAN

PERSON: F  
DRAWING NO: 10R2  
REFERENCE: 20569E/10  
SHEET: 2 OF 12

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DESIGNED BY	CHECKED BY	AUTHORISED BY
NUR	250_E12	SR

DRAWN BY	DATUM	AND	BY
MELWAY			

18/08/16	20/05/16	31/03/16	20/01/16	15/01/16	PC
F	E	D	C	B	A

PLAN REVISION	CONSTRUCTION ISSUE	MINOR DRAINAGE AMENDMENTS	LOT 1003 & 1004 VEHICLE CROSSINGS REVISED	REVISED STAGE LAYOUT

PERSON	REMARKS



THIS DRAWING IS NOT TO BE COPIED OR SCALED

DATE OF THIS DRAWING: 20/05/16  
DRAWN BY: MELWAY  
CHECKED BY: 250\_E12  
AUTHORISED BY: SR



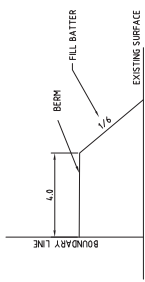
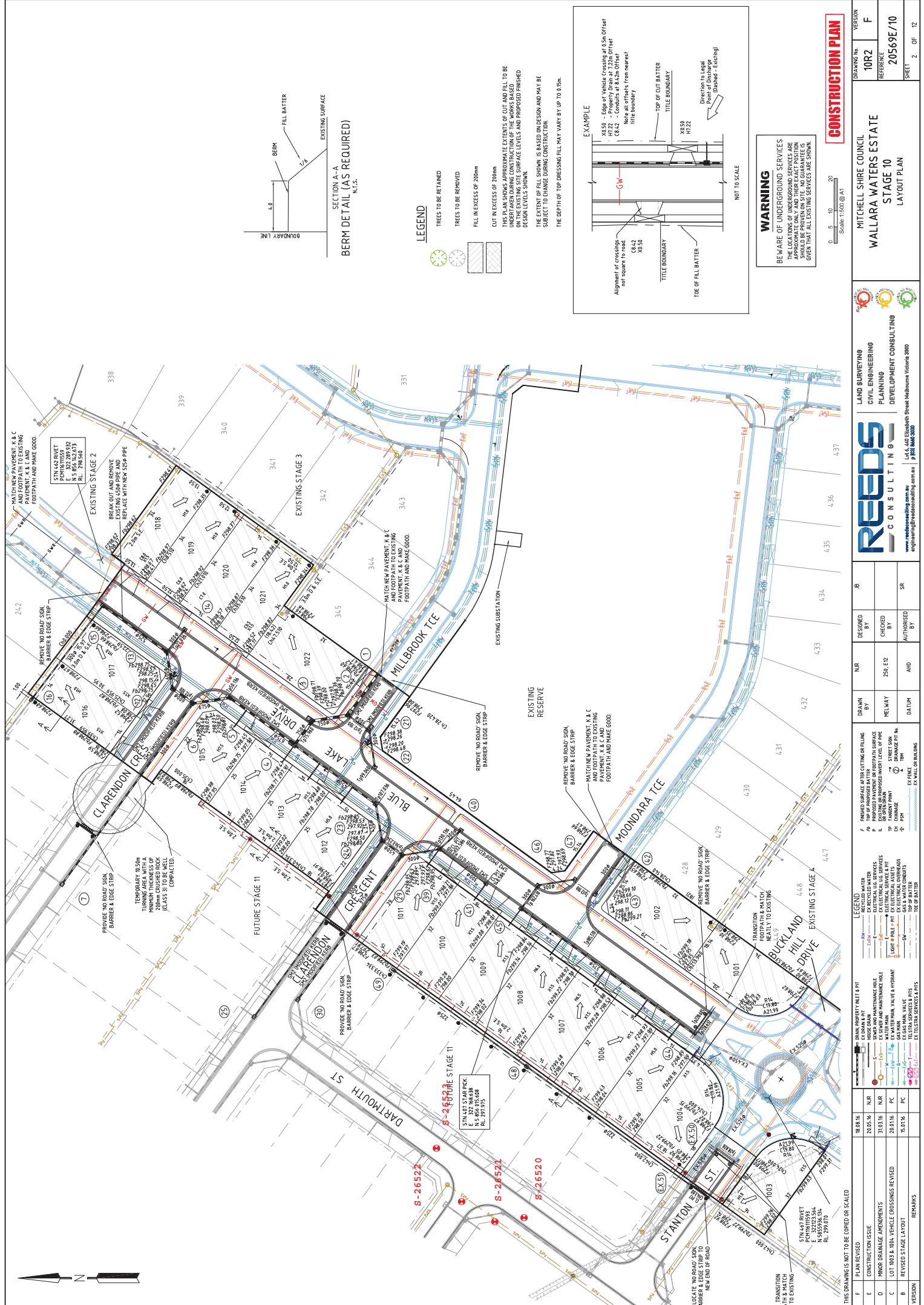
**Moolap Laboratory**  
 Pearce Geotech Pty Ltd  
 23 Nobility Street  
 Moolap VIC 3221

## Hilf Density Ratio Report

Client : <b>Fortunato Group</b> Address : <b>38A Merri Concourse, Campbellfield, VIC, 3061</b> Project Name : <b>Wallara Waters Stage 11</b> Project Number : <b>CS-629</b> Location: <b>Wallan</b>	Report Number: <b>CS-629 - 17/1</b> Report Date : <b>10/03/2017</b> Order Number : Test Method : <b>AS1289.5.7.1</b> <p style="text-align: right;"><b>Page 1 of 1</b></p>
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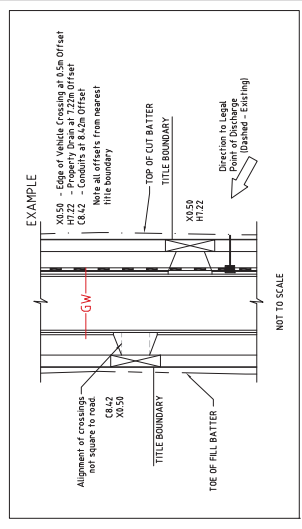
Sample Number :	S-26520	S-26521	S-26522	S-26523
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)
Date Sampled :	17/02/2017	17/02/2017	17/02/2017	17/02/2017
Date Tested :	17/02/2017	17/02/2017	17/02/2017	17/02/2017
Material Type :	Clay	Clay	Clay	Clay
Material Source :	Insitu	Insitu	Insitu	Insitu
Lot Number :				
Sample Location :	Allotment Fill Subgrade Lift 3 Refer to site plan	Allotment Fill Subgrade Lift 4 Refer to site plan	Allotment Fill Subgrade Lift 3 Refer to site plan	Allotment Fill Subgrade Lift 3 Refer to site plan
Test Depth (mm) :	175	175	175	175
Layer Depth (mm) :	200	200	200	200
Maximum Size (mm) :	19	19	19	19
Oversize Wet (%) :	0	0	0	0
Oversize Dry (%) :				
Oversize Density (t/m <sup>3</sup> ) :				
Field Moisture Content (%) :	20.0	25.7	21.2	19.7
Hilf MDR Number :	S-26520	S-26521	S-26522	S-26523
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1
Compactive Effort :	Standard	Standard	Standard	Standard
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1
Moisture Ratio (%) :	88	90	87	87.5
Field Wet Density (t/m <sup>3</sup> ) :	2.05	2.04	2.07	2.01
Optimum Moisture Content (%) :	22.8	28.6	24.4	22.5
Moisture Variation :	2.5	2.5	3.0	2.5
Peak Converted Wet Density (t/m <sup>3</sup> ) :	2.02	2.06	2.08	2.02
Hilf Density Ratio (%) :	<b>101.5</b>	<b>99.5</b>	<b>99.5</b>	<b>99.5</b>
Minimum Specification :	95% Standard	95% Standard	95% Standard	95% Standard
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

<p>The results of the tests in this report are traceable to Australian/National standards. Accredited for compliance with ISO/IEC 17025</p>	<p>APPROVED SIGNATORY</p> <p>Daniel Pearce - Laboratory Manager          NATA Accreditation Number          18877</p>
---	---



**LEGEND**

- TREES TO BE RETAINED
  - TREES TO BE REMOVED
  - FILL IN EXCESS OF 200mm
  - CUT IN EXCESS OF 200mm
- THIS PLAN SHOWS APPROXIMATE EXTENS OF CUT AND FILL TO BE MADE DURING CONSTRUCTION. THE EXACT EXTENT OF CUT AND FILL TO BE MADE ON THE EXISTING SITE SURFACE LEVELS AND PROPOSED FINISHED DESIGN LEVELS SHOWN.
- THE EXTENT OF FILL SHOWN IS BASED ON DESIGN AND MAY BE SUBJECT TO CHANGE DURING CONSTRUCTION.
- THE DEPTH OF TOP DRESSING FILL MAY VARY BY UP TO 0.5m.



**WARNING**

BEWARE OF UNDERGROUND SERVICES

THE LOCATION AND DEPTH OF UNDERGROUND SERVICES SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

**CONSTRUCTION PLAN**

Scale: 1:500 @ A1

MITCHELL SHIRE COUNCIL  
WALLARA WATERS ESTATE  
STAGE 10  
LAYOUT PLAN

DRAWING No.	10R2
VERSION	F
REFERENCE	20569E/10
SHEET	2 OF 12

**REEDS CONSULTING**

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CIVIL ENGINEERING  
PLANNING  
DEVELOPMENT CONSULTING

www.reedsconsulting.com.au  
1845 Sturt Street Melbourne Victoria 3000  
P 03 9594 2000  
F 03 9594 2001

DESIGNED BY	NJR	DATE	18/08/16
CHECKED BY	250_E12	DATE	20/05/16
AUTHORISED BY	SR	DATE	15/01/16

FINISHED SURFACE AFTER CUTTING OR FILLING	---
PROPOSED FINISHED SURFACE	---
EXISTING FINISHED SURFACE	---
PROPOSED INVERT LEVEL OF PIPE	---
TANGENT POINT	---
STREET SIGN	---
EXISTING WALL OR BUILDING	---
EXISTENCE	---
EX WALL OR BUILDING	---

RECYCLED WATER	---
EX RECYCLED WATER	---
EX MAINTENANCE CANAL	---
EX ELECTRICAL SERVICES	---
EX WATER MAIN VALVE & HYDRANT	---
EX ELECTRICAL SERVICES	---
EX ELECTRICAL SERVICES	---
EX ELECTRICAL SERVICES	---
EX ELECTRICAL SERVICES	---
EX ELECTRICAL SERVICES	---
EX ELECTRICAL SERVICES	---

DATA PROPERTY MET & P/T	---
HOUSE DRAIN	---
EX SAFETY AND MAINTENANCE CANAL	---
EX ELECTRICAL SERVICES	---
EX WATER MAIN VALVE & HYDRANT	---
EX ELECTRICAL SERVICES	---
EX ELECTRICAL SERVICES	---
EX ELECTRICAL SERVICES	---
EX ELECTRICAL SERVICES	---
EX ELECTRICAL SERVICES	---

PLAN REVISION	18/08/16	NJR	20/05/16	PC	20/01/16	PC	15/01/16	PC
CONSTRUCTION ISSUE	31/03/16	NJR	31/03/16	PC	20/01/16	PC	15/01/16	PC
MINOR DRAINAGE AMENDMENTS	31/03/16	NJR	31/03/16	PC	20/01/16	PC	15/01/16	PC
LOT 1003 & 1004 VEHICLE CROSSINGS REVISED	20/01/16	PC	20/01/16	PC	20/01/16	PC	15/01/16	PC
REVISED STAGE LAYOUT	15/01/16	PC	15/01/16	PC	15/01/16	PC	15/01/16	PC

THIS DRAWING IS NOT TO BE COPIED OR SCALED



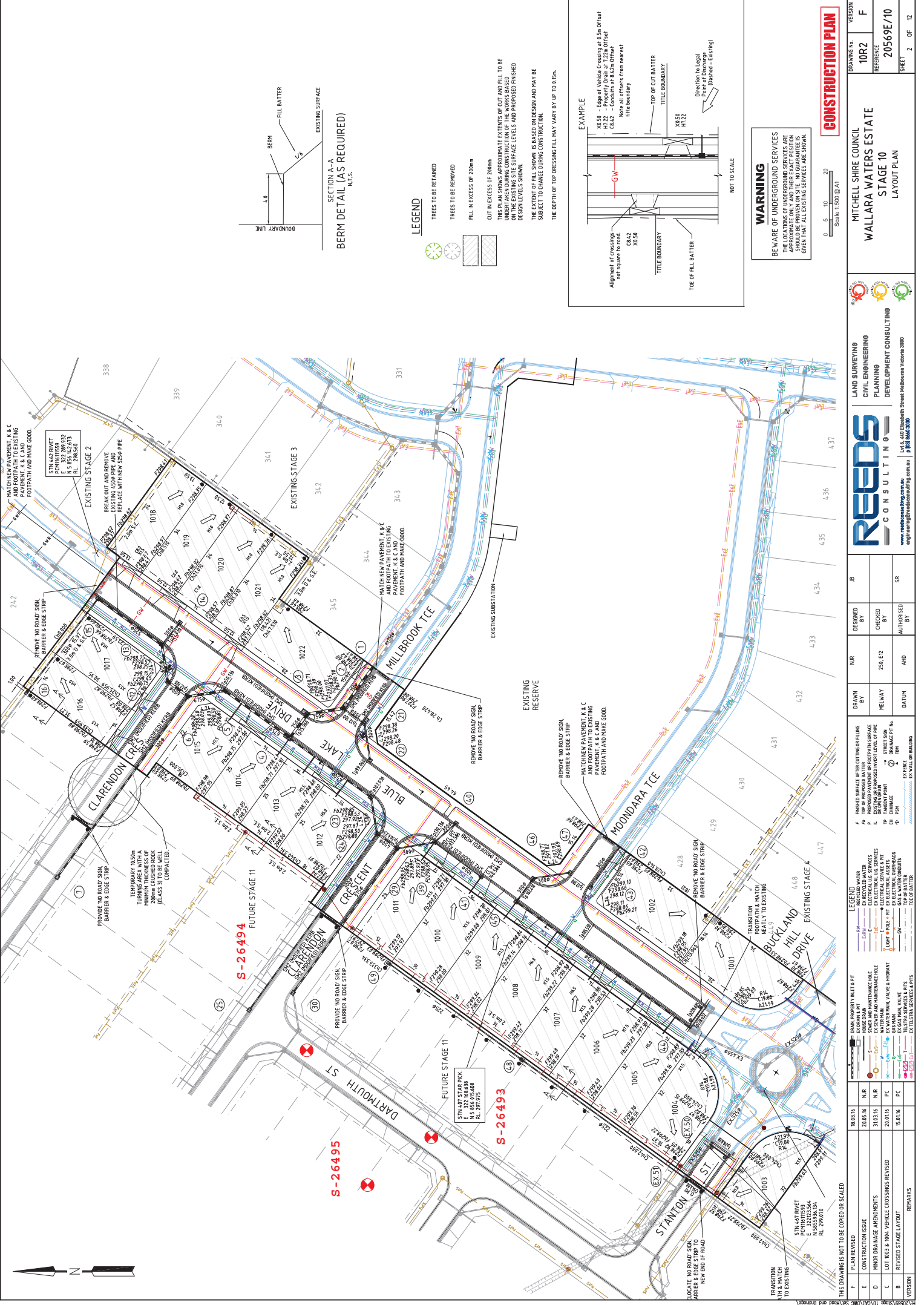
**Moolap Laboratory**  
 Pearce Geotech Pty Ltd  
 23 Nobility Street  
 Moolap VIC 3221

## Hilf Density Ratio Report

Client : <b>Fortunato Group</b> Address : <b>38A Merri Concourse, Campbellfield, VIC, 3061</b> Project Name : <b>Wallara Waters Stage 11</b> Project Number : <b>CS-629</b> Location: <b>Wallan</b>	Report Number: <b>CS-629 - 23/1</b> Report Date : <b>29/03/2017</b> Order Number : Test Method : <b>AS1289.5.7.1</b> <p style="text-align: right;"><b>Page 1 of 1</b></p>
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Sample Number :	S-26493	S-26494	S-26495	
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	
Date Sampled :	20/02/2017	20/02/2017	20/02/2017	
Date Tested :	20/02/2017	20/02/2017	20/02/2017	
Material Type :	Clay	Clay	Clay	
Material Source :	Imported	Imported	Imported	
Lot Number :				
Sample Location :	Dartmouth Street Subgrade Refer to site plan	Dartmouth Street Subgrade Refer to site plan	Allotment Fill  Refer to site plan Lift 3	
Test Depth (mm) :	175	175	175	
Layer Depth (mm) :	200	200	200	
Maximum Size (mm) :	19	19	19	
Oversize Wet (%) :	14	15	0	
Oversize Dry (%) :				
Oversize Density (t/m <sup>3</sup> ) :	2.856	2.809		
Field Moisture Content (%) :	18.0	16.6	34.0	
Hilf MDR Number :	S-26493	S-26494	S-26495	
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	
Compactive Effort :	Standard	Standard	Standard	
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1	
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	
Moisture Ratio (%) :	93.5	93.5	96.5	
Field Wet Density (t/m <sup>3</sup> ) :	2.04	2.07	1.84	
Optimum Moisture Content (%) :	19.3	17.8	35.2	
Moisture Variation :	1.5	1.0	1.0	
Peak Converted Wet Density (t/m <sup>3</sup> ) :	2.03	2.00	1.87	
Hilf Density Ratio (%) :	<b>100.5</b>	<b>103.5</b>	<b>98.5</b>	
Minimum Specification :	98% Standard	98% Standard	98% Standard	
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

 <p><b>The results of the tests in this report are traceable to Australian/National standards. Accredited for compliance with ISO/IEC 17025</b></p>	<p style="text-align: center;">APPROVED SIGNATORY</p>  <p style="text-align: center;">Daniel Pearce - Laboratory Manager          NATA Accreditation Number          18877</p>
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**SECTION A-A  
N.T.S.**



**BERM DETAIL (AS REQUIRED)**

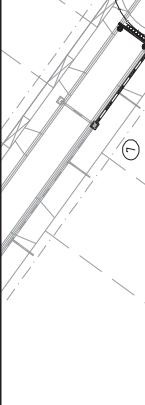
**LEGEND**

- TREES TO BE RETAINED
- TREES TO BE REMOVED
- FILL IN EXCESS OF 200mm
- CUT IN EXCESS OF 200mm

THIS PLAN SHOWS APPROXIMATE EXTENS OF CUT AND FILL TO BE TAKEN INTO ACCOUNT FOR THE EXISTING SITE SURFACE LEVELS AND PROPOSED FINISHED DESIGN LEVELS SHOWN.

THE EXTENT OF FILL SHOWN IS BASED ON DESIGN AND MAY BE SUBJECT TO CHANGE DURING CONSTRUCTION.

THE DEPTH OF TOP DRESSING FILL MAY VARY BY UP TO 0.5m.



**WARNING**

BEWARE OF UNDERGROUND SERVICES

THE LOCATION OF UNDERGROUND SERVICES IS APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL CASTING SERVICES ARE SHOWN.



PERSON	REMARKS
F	PLAN REVISION
E	CONSTRUCTION ISSUE
D	MINOR DRAINAGE AMENDMENTS
C	LOT 1003 & 1004 VEHICLE CROSSINGS REVISED
B	REVISED STAGE LAYOUT

DATE	BY	DESIGNED	DRAWN	DATE	BY	AUTHORISED
18.08.16	NJR					
20.05.16	NJR					
31.03.16	NJR					
20.01.16	PC					
15.01.16	PC					

NO.	DESCRIPTION	DATE
1	FINISHED SURFACE AFTER CUTTING OR FILLING	
2	PROPOSED FINISHED SURFACE	
3	EXISTING OR PROPOSED INVERT LEVEL OF PIPE	
4	EXISTING OR PROPOSED GROUND SURFACE	
5	PROPOSED UNDERGROUND SERVICES	
6	PROPOSED EXISTING UNDERGROUND SERVICES	
7	PROPOSED EXISTING UNDERGROUND SERVICES	
8	PROPOSED EXISTING UNDERGROUND SERVICES	
9	PROPOSED EXISTING UNDERGROUND SERVICES	
10	PROPOSED EXISTING UNDERGROUND SERVICES	

NO.	DESCRIPTION
1	FINISHED SURFACE AFTER CUTTING OR FILLING
2	PROPOSED FINISHED SURFACE
3	EXISTING OR PROPOSED INVERT LEVEL OF PIPE
4	EXISTING OR PROPOSED GROUND SURFACE
5	PROPOSED UNDERGROUND SERVICES
6	PROPOSED EXISTING UNDERGROUND SERVICES
7	PROPOSED EXISTING UNDERGROUND SERVICES
8	PROPOSED EXISTING UNDERGROUND SERVICES
9	PROPOSED EXISTING UNDERGROUND SERVICES
10	PROPOSED EXISTING UNDERGROUND SERVICES

NO.	DESCRIPTION
1	FINISHED SURFACE AFTER CUTTING OR FILLING
2	PROPOSED FINISHED SURFACE
3	EXISTING OR PROPOSED INVERT LEVEL OF PIPE
4	EXISTING OR PROPOSED GROUND SURFACE
5	PROPOSED UNDERGROUND SERVICES
6	PROPOSED EXISTING UNDERGROUND SERVICES
7	PROPOSED EXISTING UNDERGROUND SERVICES
8	PROPOSED EXISTING UNDERGROUND SERVICES
9	PROPOSED EXISTING UNDERGROUND SERVICES
10	PROPOSED EXISTING UNDERGROUND SERVICES

NO.	DESCRIPTION
1	FINISHED SURFACE AFTER CUTTING OR FILLING
2	PROPOSED FINISHED SURFACE
3	EXISTING OR PROPOSED INVERT LEVEL OF PIPE
4	EXISTING OR PROPOSED GROUND SURFACE
5	PROPOSED UNDERGROUND SERVICES
6	PROPOSED EXISTING UNDERGROUND SERVICES
7	PROPOSED EXISTING UNDERGROUND SERVICES
8	PROPOSED EXISTING UNDERGROUND SERVICES
9	PROPOSED EXISTING UNDERGROUND SERVICES
10	PROPOSED EXISTING UNDERGROUND SERVICES

NO.	DESCRIPTION
1	FINISHED SURFACE AFTER CUTTING OR FILLING
2	PROPOSED FINISHED SURFACE
3	EXISTING OR PROPOSED INVERT LEVEL OF PIPE
4	EXISTING OR PROPOSED GROUND SURFACE
5	PROPOSED UNDERGROUND SERVICES
6	PROPOSED EXISTING UNDERGROUND SERVICES
7	PROPOSED EXISTING UNDERGROUND SERVICES
8	PROPOSED EXISTING UNDERGROUND SERVICES
9	PROPOSED EXISTING UNDERGROUND SERVICES
10	PROPOSED EXISTING UNDERGROUND SERVICES

NO.	DESCRIPTION
1	FINISHED SURFACE AFTER CUTTING OR FILLING
2	PROPOSED FINISHED SURFACE
3	EXISTING OR PROPOSED INVERT LEVEL OF PIPE
4	EXISTING OR PROPOSED GROUND SURFACE
5	PROPOSED UNDERGROUND SERVICES
6	PROPOSED EXISTING UNDERGROUND SERVICES
7	PROPOSED EXISTING UNDERGROUND SERVICES
8	PROPOSED EXISTING UNDERGROUND SERVICES
9	PROPOSED EXISTING UNDERGROUND SERVICES
10	PROPOSED EXISTING UNDERGROUND SERVICES

NO.	DESCRIPTION
1	FINISHED SURFACE AFTER CUTTING OR FILLING
2	PROPOSED FINISHED SURFACE
3	EXISTING OR PROPOSED INVERT LEVEL OF PIPE
4	EXISTING OR PROPOSED GROUND SURFACE
5	PROPOSED UNDERGROUND SERVICES
6	PROPOSED EXISTING UNDERGROUND SERVICES
7	PROPOSED EXISTING UNDERGROUND SERVICES
8	PROPOSED EXISTING UNDERGROUND SERVICES
9	PROPOSED EXISTING UNDERGROUND SERVICES
10	PROPOSED EXISTING UNDERGROUND SERVICES





**Moolap Laboratory**  
 Pearce Geotech Pty Ltd  
 23 Nobility Street  
 Moolap VIC 3221

## Hilf Density Ratio Report

Client : <b>Fortunato Group</b> Address : <b>38A Merri Concourse, Campbellfield, VIC, 3061</b> Project Name : <b>Wallara Waters Stage 11</b> Project Number : <b>CS-629</b> Location: <b>Wallan</b>	Report Number: <b>CS-629 - 19/1</b> Report Date : <b>10/03/2017</b> Order Number : Test Method : <b>AS1289.5.7.1</b> <p style="text-align: right;"><b>Page 1 of 1</b></p>
---	---

Sample Number :	S-26405			
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)			
Date Sampled :	21/02/2017			
Date Tested :	21/02/2017			
Material Type :	Clay			
Material Source :	Insitu			
Lot Number :				
Sample Location :	Dartmouth Street Subgrade Refer to site plan			
Test Depth (mm) :	175			
Layer Depth (mm) :	200			
Maximum Size (mm) :	19			
Oversize Wet (%) :	0			
Oversize Dry (%) :				
Oversize Density (t/m <sup>3</sup> ) :				
Field Moisture Content (%) :	14.1			
Hilf MDR Number :	S-26405			
Hilf MDR Method :	AS1289.5.7.1			
Compactive Effort :	Standard			
Field Density Method :	AS1289.5.8.1			
Moisture Method :	AS1289.2.1.1			
Moisture Ratio (%) :	83.5			
Field Wet Density (t/m <sup>3</sup> ) :	2.07			
Optimum Moisture Content (%) :	16.9			
Moisture Variation :	2.5			
Peak Converted Wet Density (t/m <sup>3</sup> ) :	2.05			
Hilf Density Ratio (%) :	<b>101.0</b>			
Minimum Specification :	95% Standard			
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

 <p><b>The results of the tests in this report are traceable to Australian/National standards. Accredited for compliance with ISO/IEC 17025</b></p>	<p>APPROVED SIGNATORY</p>  <p>Daniel Pearce - Laboratory Manager          NATA Accreditation Number          18877</p>
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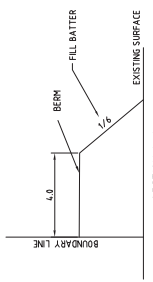
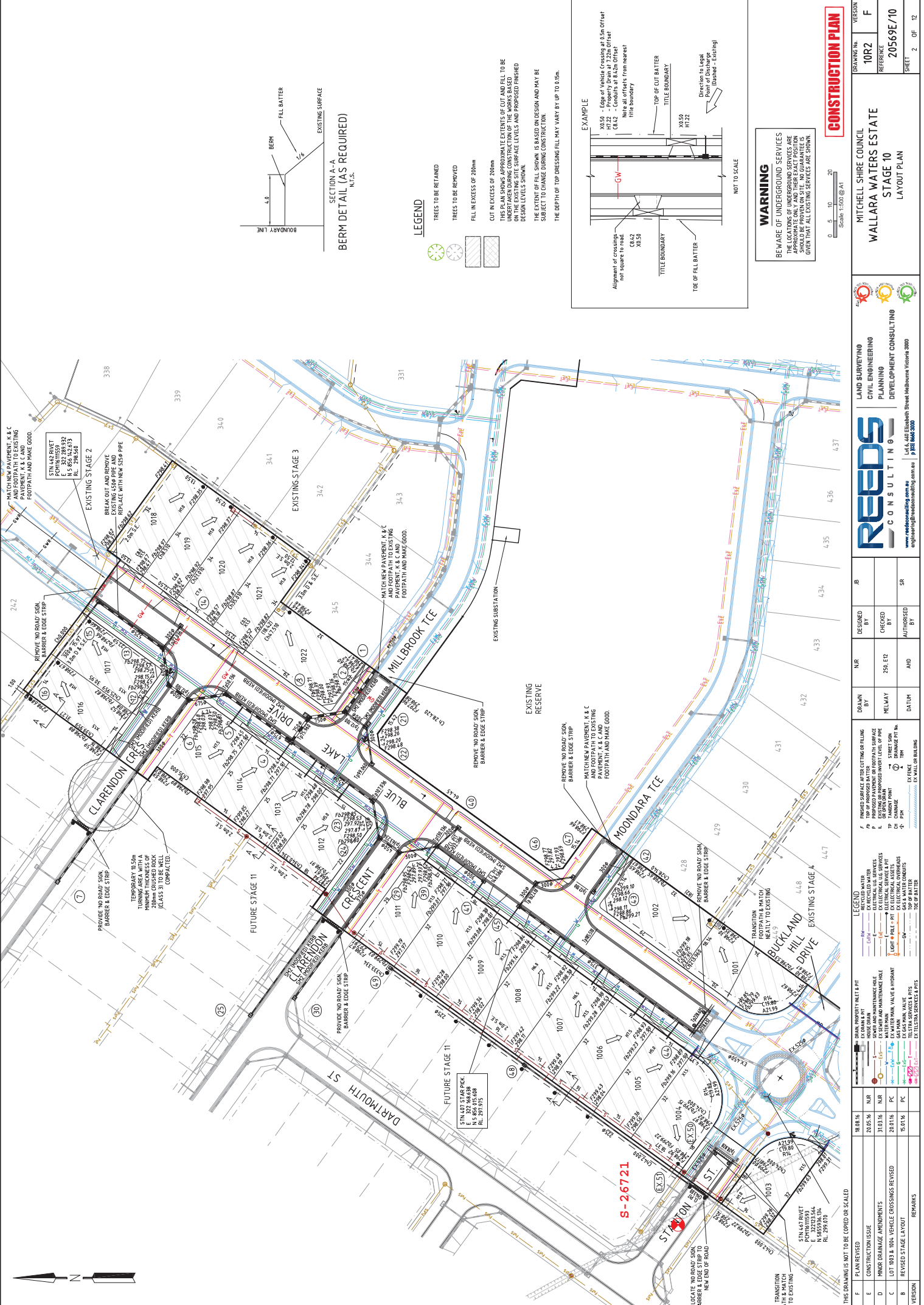
**Moolap Laboratory**  
 Pearce Geotech Pty Ltd  
 23 Nobility Street  
 Moolap VIC 3221

## Hilf Density Ratio Report

Client : <b>Fortunato Group</b> Address : <b>38A Merri Concourse, Campbellfield, VIC, 3061</b> Project Name : <b>Wallara Waters Stage 11</b> Project Number : <b>CS-629</b> Location: <b>Wallan</b>	Report Number: <b>CS-629 - 24/1</b> Report Date : <b>29/03/2017</b> Order Number : Test Method : <b>AS1289.5.7.1</b> <p style="text-align: right;"><b>Page 1 of 1</b></p>
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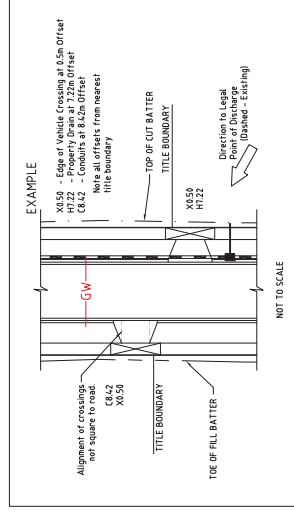
Sample Number :	S-26721			
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)			
Date Sampled :	28/02/2017			
Date Tested :	28/02/2017			
Material Type :	Clay			
Material Source :	Insitu			
Lot Number :				
Sample Location :	Station Street Subgrade			
Test Depth (mm) :	175			
Layer Depth (mm) :	200			
Maximum Size (mm) :	19			
Oversize Wet (%) :	0			
Oversize Dry (%) :				
Oversize Density (t/m <sup>3</sup> ) :				
Field Moisture Content (%) :	24.6			
Hilf MDR Number :	S-26721			
Hilf MDR Method :	AS1289.5.7.1			
Compactive Effort :	Standard			
Field Density Method :	AS1289.5.8.1			
Moisture Method :	AS1289.2.1.1			
Moisture Ratio (%) :	89.5			
Field Wet Density (t/m <sup>3</sup> ) :	1.98			
Optimum Moisture Content (%) :	27.4			
Moisture Variation :	2.5			
Peak Converted Wet Density (t/m <sup>3</sup> ) :	1.95			
Hilf Density Ratio (%) :	<b>101.5</b>			
Minimum Specification :	98% Standard			
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

 <p style="text-align: center;">The results of the tests in this report are traceable to Australian/National standards. Accredited for compliance with ISO/IEC 17025</p>	<p style="text-align: center;">APPROVED SIGNATORY</p>  <p style="text-align: center;">Daniel Pearce - Laboratory Manager          NATA Accreditation Number          18877</p>
---	---



**LEGEND**

- TREES TO BE RETAINED
  - TREES TO BE REMOVED
  - FILL IN EXCESS OF 200mm
  - CUT IN EXCESS OF 200mm
- THIS PLAN SHOWS APPROXIMATE EXTENS OF CUT AND FILL TO BE MADE TO ACCOMMODATE THE PROPOSED ROADS AND UTILITIES ON THE EXISTING SITE SURFACE LEVELS AND PROPOSED FINISHED DESIGN LEVELS SHOWN.
- THE EXTENT OF FILL SHOWN IS BASED ON DESIGN AND MAY BE SUBJECT TO CHANGE DURING CONSTRUCTION.
- THE DEPTH OF TOP DRESSING FILL MAY VARY BY UP TO 0.5m.



**WARNING**

BEWARE OF UNDERGROUND SERVICES

THIS DRAWING IS A PRELIMINARY DESIGN AND DOES NOT REPRESENT THE EXACT POSITION OF ANY UNDERGROUND SERVICES. THE EXACT POSITION OF ALL EXISTING SERVICES ARE SHOWN.

**CONSTRUCTION PLAN**



PERSON	VERSION
F	F
DATE	DATE
20/05/16	20/05/16
15/01/16	15/01/16
20/01/16	20/01/16
31/03/16	31/03/16
18/08/16	18/08/16

**REEDS CONSULTING**

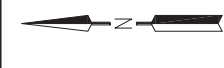
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145 Adelaide Street Melbourne Victoria 3000

DESIGNED BY	SR
CHECKED BY	SR
AUTHORISED BY	SR
DATE	
AND	
25.01.16	
20.01.16	
31.03.16	
18.08.16	

PERSON	DATE	REVISIONS	REMARKS
F	18/08/16	PLAN REVISION	
E	20/05/16	CONSTRUCTION ISSUE	
D	31/03/16	MINOR DRAINAGE AMENDMENTS	
C	20/01/16	LOT 1003 & 1004 VEHICLE CROSSINGS REVISED	
B	15/01/16	REVISED STAGE LAYOUT	
A			





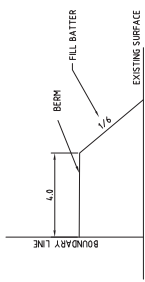
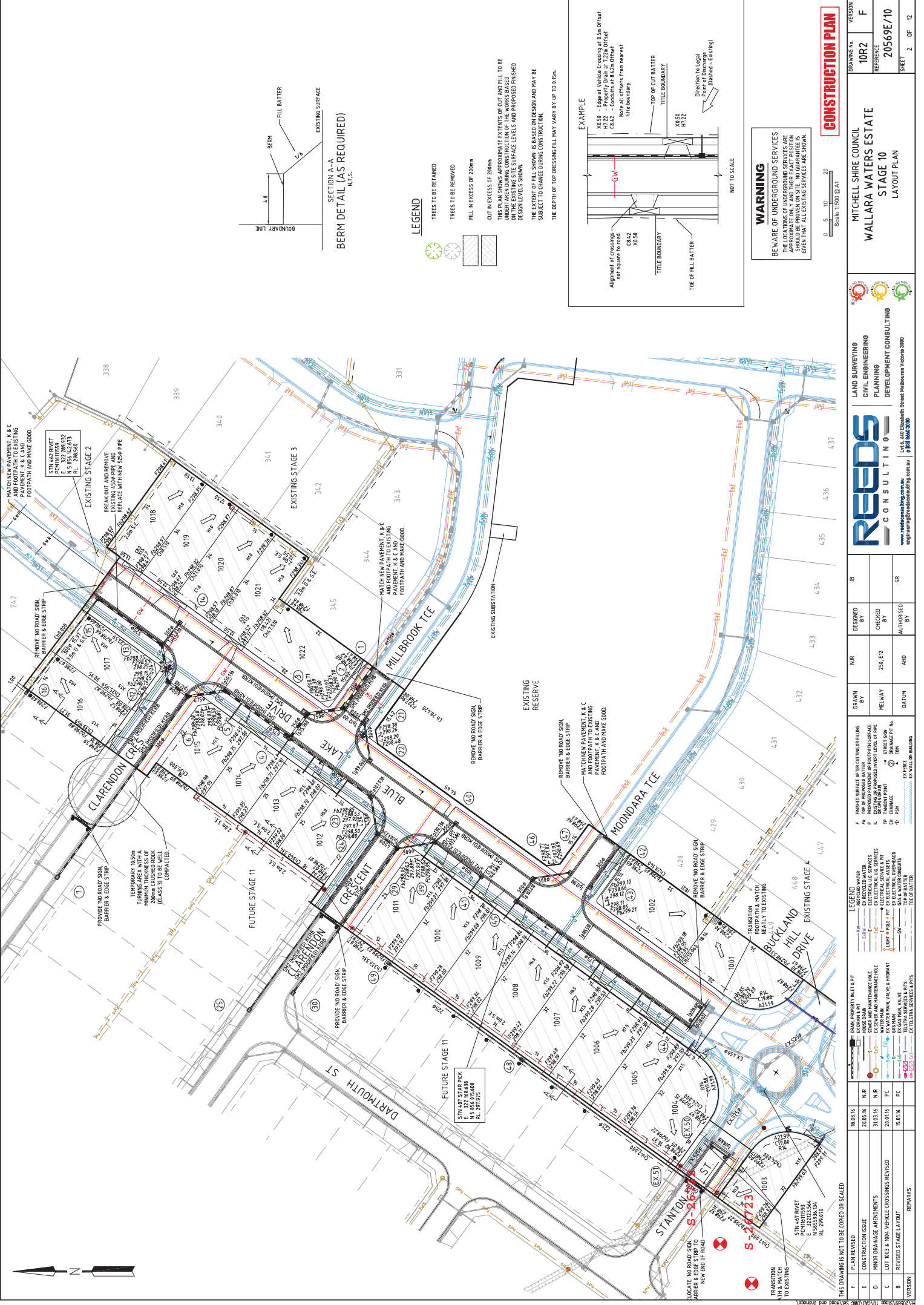
**Moolap Laboratory**  
 Pearce Geotech Pty Ltd  
 23 Nobility Street  
 Moolap VIC 3221

## Hilf Density Ratio Report

Client : <b>Fortunato Group</b> Address : <b>38A Merri Concourse, Campbellfield, VIC, 3061</b> Project Name : <b>Wallara Waters Stage 11</b> Project Number : <b>CS-629</b> Location: <b>Wallan</b>	Report Number: <b>CS-629 - 25/1</b> Report Date : <b>29/03/2017</b> Order Number : Test Method : <b>AS1289.5.7.1</b> <p style="text-align: right;"><b>Page 1 of 1</b></p>
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Sample Number :	S-26722	S-26723		
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)		
Date Sampled :	28/02/2017	28/02/2017		
Date Tested :	28/02/2017	28/02/2017		
Material Type :	Clay	Clay		
Material Source :	Insitu	Insitu		
Lot Number :				
Sample Location :	Allotment Fill  Lift 1	Allotment Fill  Lift 1		
Test Depth (mm) :	175	175		
Layer Depth (mm) :	200	200		
Maximum Size (mm) :	19	19		
Oversize Wet (%) :	0	0		
Oversize Dry (%) :				
Oversize Density (t/m <sup>3</sup> ) :				
Field Moisture Content (%) :	24.8	24.2		
Hilf MDR Number :	S-26722	S-26723		
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1		
Compactive Effort :	Standard	Standard		
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1		
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1		
Moisture Ratio (%) :	91.5	89		
Field Wet Density (t/m <sup>3</sup> ) :	2.03	1.91		
Optimum Moisture Content (%) :	27.1	27.2		
Moisture Variation :	2.0	3.0		
Peak Converted Wet Density (t/m <sup>3</sup> ) :	2.03	1.93		
Hilf Density Ratio (%) :	<b>100.0</b>	<b>99.5</b>		
Minimum Specification :	98% Standard	98% Standard		
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

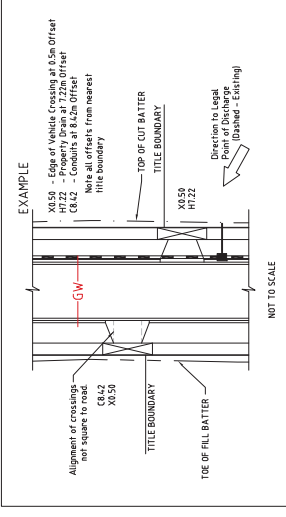
 <p><b>The results of the tests in this report are traceable to Australian/National standards. Accredited for compliance with ISO/IEC 17025</b></p>	<p>APPROVED SIGNATORY</p>  <p>Daniel Pearce - Laboratory Manager          NATA Accreditation Number          18877</p>
--	---



SECTION A-A  
BERM DETAIL (AS REQUIRED)  
N.T.S.

**LEGEND**

- TREES TO BE RETAINED
  - TREES TO BE REMOVED
  - FILL IN EXCESS OF 200mm
  - CUT IN EXCESS OF 200mm
- THIS PLAN SHOWS APPROXIMATE EXTENS OF CUT AND FILL TO BE MADE TO THE PROPOSED ROAD AND FOOTPATH LEVELS AND PROPOSED FINISHED DESIGN LEVELS SHOWN.
- THE EXTENT OF FILL SHOWN IS BASED ON DESIGN AND MAY BE SUBJECT TO CHANGE DURING CONSTRUCTION.
- THE DEPTH OF TOP DRESSING FILL MAY VARY BY UP TO 0.5m.



**WARNING**

BEWARE OF UNDERGROUND SERVICES

THE LOCATION AND DEPTH OF UNDERGROUND SERVICES SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

**CONSTRUCTION PLAN**

Scale: 1:500 @ A1

PERSON	VERSION
DESIGNED BY	10R2
CHECKED BY	20569E/10
AUTHORISED BY	SR
DRAWN BY	SR
NUR	SR
DATE	2 OF 12

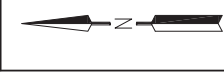
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18.08.16	PLAN REVISION
20.05.16	CONSTRUCTION ISSUE
31.03.16	MINOR DRAINAGE AMENDMENTS
20.01.16	LOT 1003 & 1004 VEHICLE CROSSINGS REVISED
15.01.16	REVISED STAGE LAYOUT

FINISHED SURFACE AFTER CUTTING OR FILLING	EXISTING PROPOSED ROAD OR FOOTPATH SURFACE	EXISTING OR PROPOSED INVERT LEVEL OF PIPE	STREET LIGHT	STREET SIGN	EXISTING WALL OR BUILDING
RECYCLED WATER	RECYCLED WATER	EXISTING ELECTRICAL SERVICES	EXISTING ELECTRICAL SERVICES	EXISTING ELECTRICAL SERVICES	EXISTING ELECTRICAL SERVICES
EXISTING WATER	EXISTING WATER	EXISTING TELEPHONE SERVICES	EXISTING TELEPHONE SERVICES	EXISTING TELEPHONE SERVICES	EXISTING TELEPHONE SERVICES
EXISTING GAS SERVICES	EXISTING GAS SERVICES	EXISTING TELEVISION SERVICES	EXISTING TELEVISION SERVICES	EXISTING TELEVISION SERVICES	EXISTING TELEVISION SERVICES



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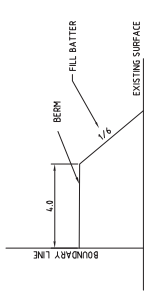
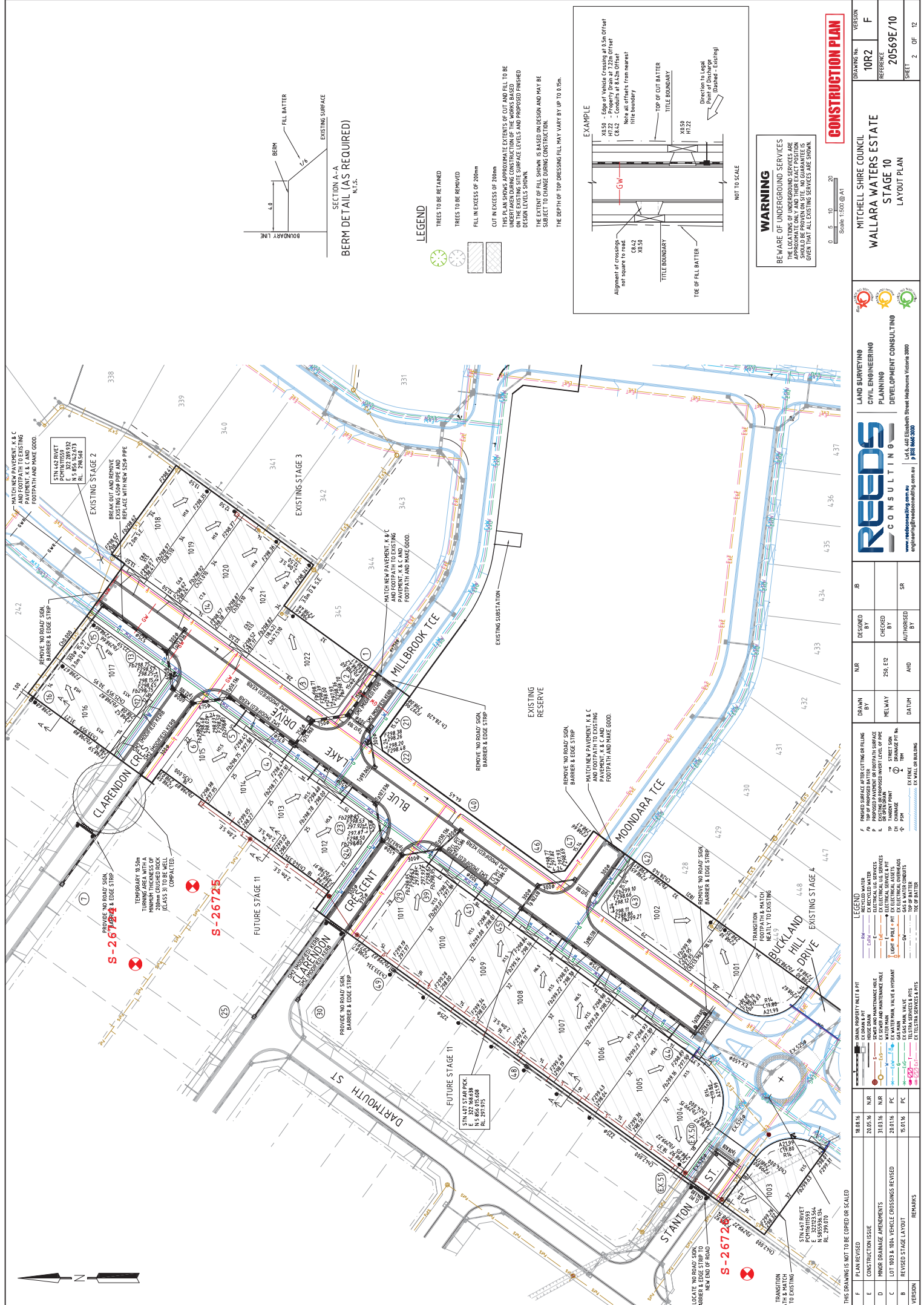
**Moolap Laboratory**  
 Pearce Geotech Pty Ltd  
 23 Nobility Street  
 Moolap VIC 3221

## Hilf Density Ratio Report

Client : <b>Fortunato Group</b> Address : <b>38A Merri Concourse, Campbellfield, VIC, 3061</b> Project Name : <b>Wallara Waters Stage 11</b> Project Number : <b>CS-629</b> Location: <b>Wallan</b>	Report Number: <b>CS-629 - 26/1</b> Report Date : <b>29/03/2017</b> Order Number : Test Method : <b>AS1289.5.7.1</b> <p style="text-align: right;"><b>Page 1 of 1</b></p>
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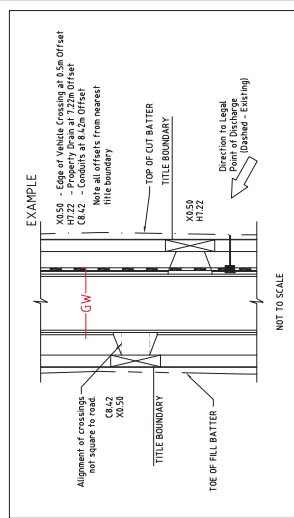
Sample Number :	S-26724	S-26725	S-26726	
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	
Date Sampled :	1/03/2017	1/03/2017	1/03/2017	
Date Tested :	1/03/2017	1/03/2017	1/03/2017	
Material Type :	Clay	Clay	Clay	
Material Source :	Insitu	Insitu	Insitu	
Lot Number :				
Sample Location :	Allotment Fill  Lift 3	Allotment Fill  Lift 3	Allotment Fill  Lift 4	
Test Depth (mm) :	175	175	175	
Layer Depth (mm) :	200	200	200	
Maximum Size (mm) :	19	19	19	
Oversize Wet (%) :	0	0	0	
Oversize Dry (%) :				
Oversize Density (t/m <sup>3</sup> ) :				
Field Moisture Content (%) :	22.3	24.7	23.1	
Hilf MDR Number :	S-26724	S-26725	S-26726	
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	
Compactive Effort :	Standard	Standard	Standard	
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1	
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	
Moisture Ratio (%) :	90.5	89	90	
Field Wet Density (t/m <sup>3</sup> ) :	1.89	1.97	1.99	
Optimum Moisture Content (%) :	24.6	27.7	25.7	
Moisture Variation :	2.0	2.5	2.5	
Peak Converted Wet Density (t/m <sup>3</sup> ) :	1.89	1.99	2.01	
Hilf Density Ratio (%) :	<b>99.5</b>	<b>99.0</b>	<b>99.0</b>	
Minimum Specification :	98% Standard	98% Standard	98% Standard	
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

 <p><b>The results of the tests in this report are traceable to Australian/National standards. Accredited for compliance with ISO/IEC 17025</b></p>	<p>APPROVED SIGNATORY</p>  Daniel Pearce - Laboratory Manager NATA Accreditation Number 18877
--	---



**LEGEND**

- TREES TO BE RETAINED
  - TREES TO BE REMOVED
  - FILL IN EXCESS OF 200mm
  - CUT IN EXCESS OF 200mm
- THIS PLAN SHOWS APPROXIMATE EXTENS OF CUT AND FILL TO BE MADE TO THE PROPOSED ROAD AND FOOTPATH LEVELS AND PROPOSED FINISHED DESIGN LEVELS SHOWN.
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- THE DEPTH OF TOP DRESSING FILL MAY VARY BY UP TO 0.5m.



**WARNING**

BEWARE OF UNDERGROUND SERVICES

THIS DRAWING IS NOT TO BE CONSIDERED AS A GUARANTEE OF THE ACCURACY OF THE INFORMATION SHOWN. IT IS THE RESPONSIBILITY OF THE USER TO VERIFY THE POSITION OF ALL EXISTING SERVICES PRIOR TO CONSTRUCTION.

**CONSTRUCTION PLAN**

Scale: 1:500 @ A1

PERSON	VERSION
MITCHELL SHIRE COUNCIL	F
WALLARA WATERS ESTATE	10R2
STAGE 10	20569E/10
LAYOUT PLAN	SHEET 2 OF 12

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DESIGNED BY	NUR	DATE	SR
CHECKED BY	250 E12		
AUTHORISED BY			

DRAWN BY	HELVAY	DATE	
DATE			

18/08/16	NUR	PLAN REVISION	
20/05/16	NUR	CONSTRUCTION ISSUE	
31/03/16	NUR	MINOR DRAINAGE AMENDMENTS	
20/01/16	PC	LOT 1003 & 1004 VEHICLE CROSSINGS REVISED	
15/01/16	PC	REVISED STAGE LAYOUT	

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**Moolap Laboratory**  
 Pearce Geotech Pty Ltd  
 23 Nobility Street  
 Moolap VIC 3221

## Hilf Density Ratio Report

Client : <b>Fortunato Group</b> Address : <b>38A Merri Concourse, Campbellfield, VIC, 3061</b> Project Name : <b>Wallara Waters Stage 11</b> Project Number : <b>CS-629</b> Location: <b>Wallan</b>	Report Number: <b>CS-629 - 27/1</b> Report Date : <b>29/03/2017</b> Order Number : Test Method : <b>AS1289.5.7.1</b> <p style="text-align: right;"><b>Page 1 of 1</b></p>
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Sample Number :	S-26700	S-26701	S-26702	
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	
Date Sampled :	2/03/2017	2/03/2017	2/03/2017	
Date Tested :	2/03/2017	2/03/2017	2/03/2017	
Material Type :	Clay	Clay	Clay	
Material Source :	Insitu	Insitu	Insitu	
Lot Number :				
Sample Location :	Allotment Fill  Lift 4  Refer to site plan	Allotment Fill  Lift 4  Refer to site plan	Allotment Fill  Lift 4  Refer to site plan	
Test Depth (mm) :	175	175	175	
Layer Depth (mm) :	200	200	200	
Maximum Size (mm) :	19	19	19	
Oversize Wet (%) :	0	0	0	
Oversize Dry (%) :				
Oversize Density (t/m <sup>3</sup> ) :				
Field Moisture Content (%) :	35.4	24.3	21.8	
Hilf MDR Number :	S-26700	S-26701	S-26702	
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	
Compactive Effort :	Standard	Standard	Standard	
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1	
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	
Moisture Ratio (%) :	109.5	92	87	
Field Wet Density (t/m <sup>3</sup> ) :	1.79	1.88	1.82	
Optimum Moisture Content (%) :	32.3	26.4	25.1	
Moisture Variation :	-3.0	2.0	3.0	
Peak Converted Wet Density (t/m <sup>3</sup> ) :	1.86	1.92	1.90	
Hilf Density Ratio (%) :	<b>96.0</b>	<b>98.0</b>	<b>95.5</b>	
Minimum Specification :	98% Standard	98% Standard	98% Standard	
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

 <p style="text-align: center;"><b>The results of the tests in this report are traceable to Australian/National standards. Accredited for compliance with ISO/IEC 17025</b></p>	<p>APPROVED SIGNATORY</p>  <p>Daniel Pearce - Laboratory Manager          NATA Accreditation Number          18877</p>
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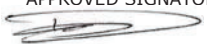


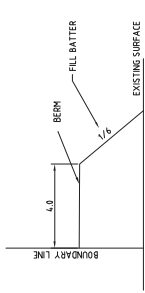
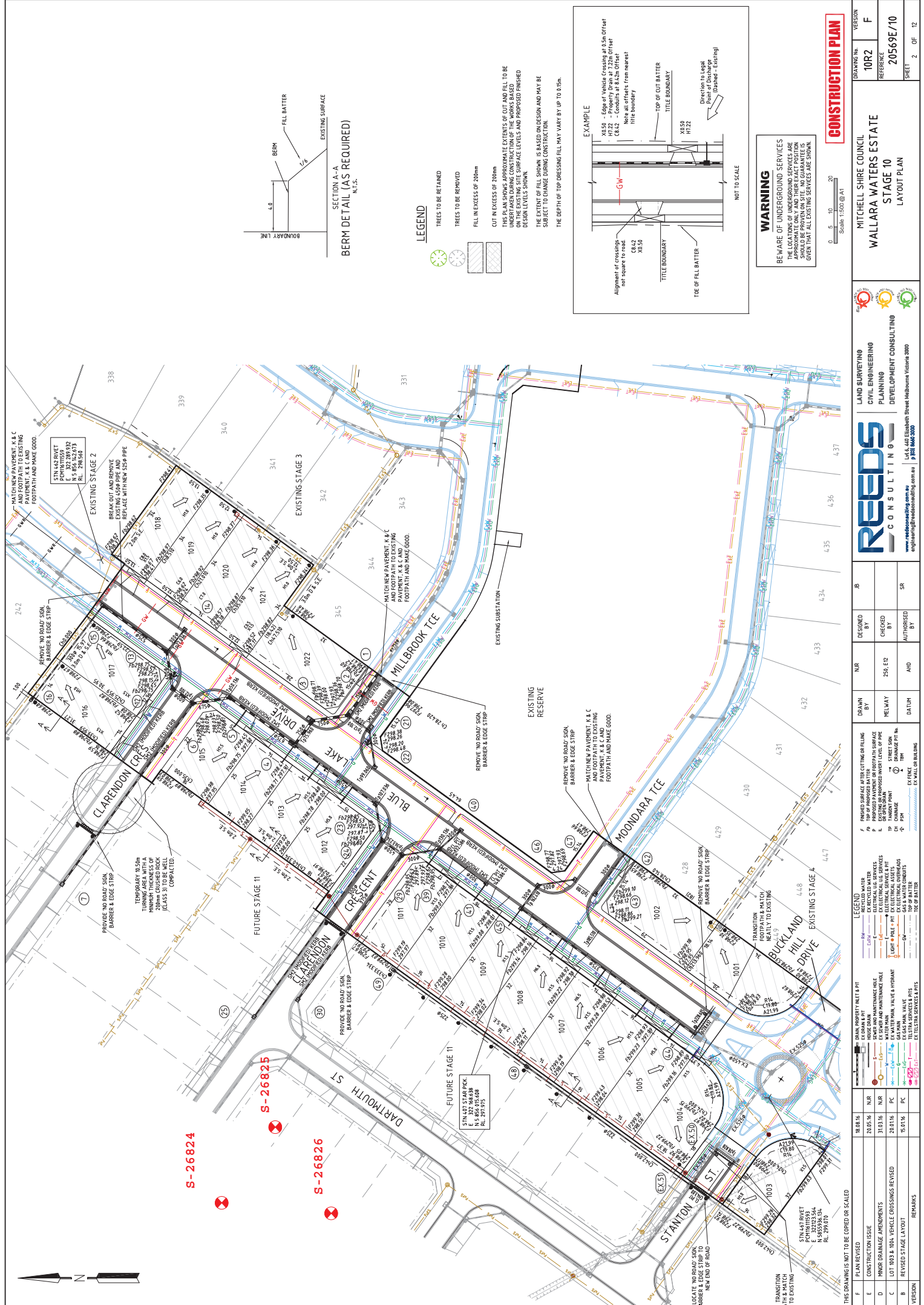
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 23 Nobility Street  
 Moolap VIC 3221

## Hilf Density Ratio Report

Client : <b>Fortunato Group</b> Address : <b>38A Merri Concourse, Campbellfield, VIC, 3061</b> Project Name : <b>Wallara Waters Stage 10</b> Project Number : <b>CS-598</b> Location: <b>Wallan</b>	Report Number: <b>CS-598 - 25/1</b> Report Date : <b>29/03/2017</b> Order Number : Test Method : <b>AS1289.5.7.1</b> <p style="text-align: right;"><b>Page 1 of 1</b></p>
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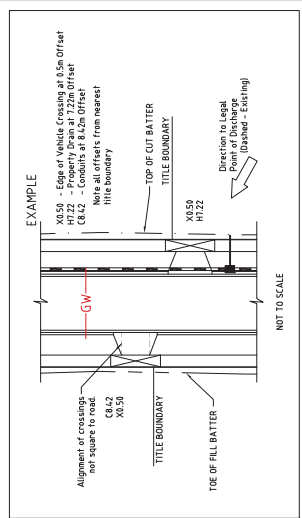
Sample Number :	S-26824	S-26825	S-26826	
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	
Date Sampled :	3/03/2017	3/03/2017	3/03/2017	
Date Tested :	3/03/2017	3/03/2017	3/03/2017	
Material Type :	Clay	Clay	Clay	
Material Source :	Imported	Imported	Imported	
Lot Number :				
Sample Location :	Allotment Fill See Site Plan  FL	Allotment Fill See Site Plan  FL	Allotment Fill See Site Plan  FL	
Test Depth (mm) :	175	175	175	
Layer Depth (mm) :	200	200	200	
Maximum Size (mm) :	19	19	19	
Oversize Wet (%) :	0	0	0	
Oversize Dry (%) :				
Oversize Density (t/m <sup>3</sup> ) :				
Field Moisture Content (%) :	22.5	26.9	22.9	
Hilf MDR Number :	S-26824	S-26825	S-26826	
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	
Compactive Effort :	Standard	Standard	Standard	
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1	
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	
Moisture Ratio (%) :	88.5	88	87.5	
Field Wet Density (t/m <sup>3</sup> ) :	1.98	1.90	1.92	
Optimum Moisture Content (%) :	25.4	30.6	26.1	
Moisture Variation :	2.5	3.5	3.0	
Peak Converted Wet Density (t/m <sup>3</sup> ) :	1.99	1.96	1.97	
Hilf Density Ratio (%) :	<b>99.0</b>	<b>97.0</b>	<b>97.0</b>	
Minimum Specification :	95% Standard	95% Standard	95% Standard	
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

 <p>The results of the tests in this report are traceable to Australian/National standards. Accredited for compliance with ISO/IEC 17025</p>	<p>APPROVED SIGNATORY</p>  <p>Daniel Pearce - Laboratory Manager          NATA Accreditation Number          18877</p>
---	---



**LEGEND**

- TREES TO BE RETAINED
  - TREES TO BE REMOVED
  - FILL IN EXCESS OF 200mm
  - CUT IN EXCESS OF 200mm
- THIS PLAN SHOWS APPROXIMATE EXTENS OF CUT AND FILL TO BE MADE TO ACHIEVE THE PROPOSED DESIGN LEVELS AND PROPOSED FINISHED DESIGN LEVELS SHOWN.
- THE EXTENT OF FILL SHOWN IS BASED ON DESIGN AND MAY BE SUBJECT TO CHANGE DURING CONSTRUCTION.
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**WARNING**

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THE LOCATION AND DEPTH OF UNDERGROUND SERVICES SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

**CONSTRUCTION PLAN**



PERSON	VERSION
DESIGNED BY	10R2
CHECKED BY	20S69E/10
AUTHORISED BY	SR
DRAWN BY	SR
NUR	SR
DATE	2 OF 12
DATE	
DATE	

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enquiries@reedsconsulting.com.au

DESIGNED BY	10R2
CHECKED BY	20S69E/10
AUTHORISED BY	SR
DRAWN BY	SR
NUR	SR
DATE	
DATE	

18.08.16	NJR	PLAN REVISION
20.05.16	NJR	CONSTRUCTION ISSUE
31.03.16	NJR	MINOR DRAINAGE AMENDMENTS
20.01.16	PC	LOT 1003 & 1004 VEHICLE CROSSINGS REVISED
15.01.16	PC	REVISED STAGE LAYOUT
		REMARKS



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PLAN REVISION

CONSTRUCTION ISSUE

MINOR DRAINAGE AMENDMENTS

LOT 1003 & 1004 VEHICLE CROSSINGS REVISED

REVISED STAGE LAYOUT

REMARKS

PERSON

VERSION

10R2

20S69E/10

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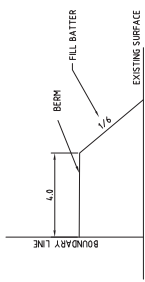
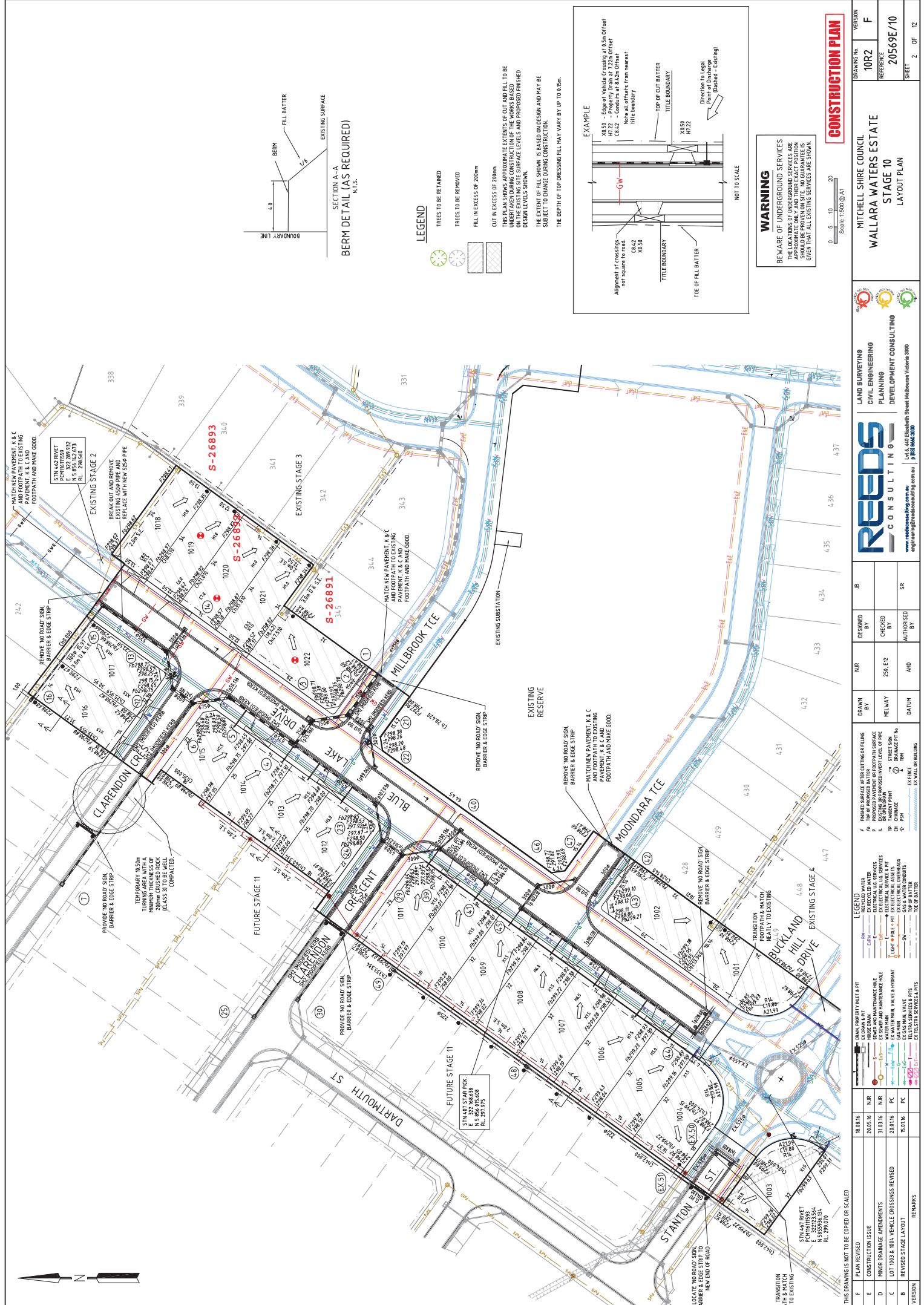
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 Pearce Geotech Pty Ltd  
 23 Nobility Street  
 Moolap VIC 3221

## Hilf Density Ratio Report

Client : <b>Fortunato Group</b> Address : <b>38A Merri Concourse, Campbellfield, VIC, 3061</b> Project Name : <b>Wallara Waters Stage 11</b> Project Number : <b>CS-629</b> Location: <b>Wallan</b>	Report Number: <b>CS-629 - 21/1</b> Report Date : <b>16/03/2017</b> Order Number : Test Method : <b>AS1289.5.7.1</b> <p style="text-align: right;"><b>Page 1 of 1</b></p>
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Sample Number :	S-26891	S-26892	S-26893	
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	
Date Sampled :	6/03/2017	6/03/2017	6/03/2017	
Date Tested :	6/03/2017	6/03/2017	6/03/2017	
Material Type :	Clay	Clay	Clay	
Material Source :	Insitu	Insitu	Insitu	
Lot Number :				
Sample Location :	Allotment Fill Subgrade L1 Refer to site plan	Allotment Fill Subgrade L2 Refer to site plan	Allotment Fill Subgrade L2 Refer to site plan	
Test Depth (mm) :	175	175	175	
Layer Depth (mm) :	200	200	200	
Maximum Size (mm) :	19	19	19	
Oversize Wet (%) :	0	0	0	
Oversize Dry (%) :				
Oversize Density (t/m <sup>3</sup> ) :				
Field Moisture Content (%) :	19.1	17.1	18.2	
Hilf MDR Number :	S-26891	S-26892	S-26893	
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	
Compactive Effort :	Standard	Standard	Standard	
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1	
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	
Moisture Ratio (%) :	89	87.5	87.5	
Field Wet Density (t/m <sup>3</sup> ) :	1.93	1.97	1.94	
Optimum Moisture Content (%) :	21.5	19.6	20.8	
Moisture Variation :	2.5	2.5	2.5	
Peak Converted Wet Density (t/m <sup>3</sup> ) :	2.02	2.07	2.02	
Hilf Density Ratio (%) :	<b>95.5</b>	<b>95.0</b>	<b>96.0</b>	
Minimum Specification :	95% Standard	95% Standard	95% Standard	
Moisture Specification :				
Site Selection :	Random	Random	Random	
Soil Description :				
Remarks :	-			

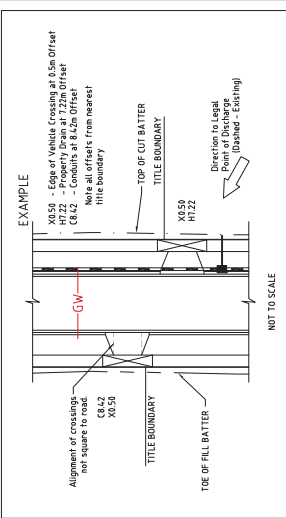
	APPROVED SIGNATORY  Daniel Pearce - Laboratory Manager NATA Accreditation Number 18877
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SECTION A-A  
BERM DETAIL (AS REQUIRED)  
N.T.S.

**LEGEND**

- TREES TO BE RETAINED
  - TREES TO BE REMOVED
  - FILL IN EXCESS OF 200mm
  - CUT IN EXCESS OF 200mm
- THIS PLAN SHOWS APPROXIMATE EXTENS OF CUT AND FILL TO BE MADE TO ACHIEVE THE PROPOSED GRADE. THE EXACT POSITIONS ON THE EXISTING SITE SURFACE LEVELS AND PROPOSED FINISHED DESIGN LEVELS SHOWN.
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**WARNING**

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**CONSTRUCTION PLAN**

Scale: 1:500 @ A1

MITCHELL SHIRE COUNCIL  
WALLARA WATERS ESTATE  
STAGE 10  
LAYOUT PLAN

PERSON: VERSION  
DRAWING No: 10R2 F  
REFERENCE: 20569E/10  
SHEET 2 OF 12

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DESIGNED BY	NUR	DESIGNED BY	SR
CHECKED BY	250_E12	CHECKED BY	
AUTHORISED BY		AUTHORISED BY	

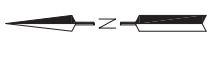
DRAWN BY	MELWAY	DRAWN BY	
DATE	AND	DATE	

18.08.16	NUR	18.08.16	PC
20.05.16	NUR	31.03.16	NUR
20.01.16	PC	20.01.16	PC
15.01.16	PC	15.01.16	PC

PLAN REVISION	CONSTRUCTION ISSUE	MINOR DRAINAGE AMENDMENTS	LOT 1003 & 1004 VEHICLE CROSSINGS REVISED	REVISED STAGE LAYOUT
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PERSON	REMARKS

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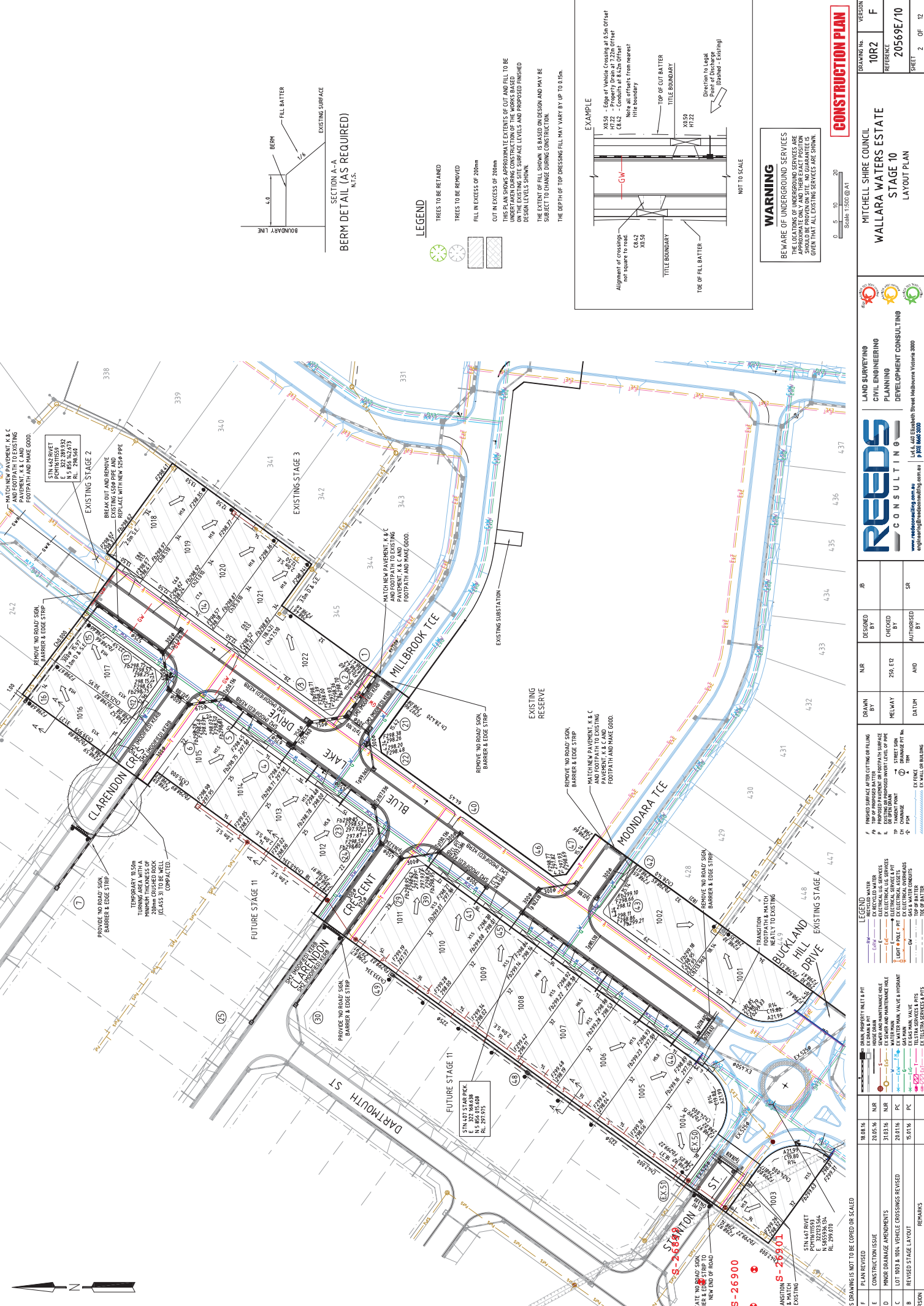
**Moolap Laboratory**  
 Pearce Geotech Pty Ltd  
 23 Nobility Street  
 Moolap VIC 3221

## Hilf Density Ratio Report

Client : <b>Fortunato Group</b> Address : <b>38A Merri Concourse, Campbellfield, VIC, 3061</b> Project Name : <b>Wallara Waters Stage 11</b> Project Number : <b>CS-629</b> Location: <b>Wallan</b>	Report Number: <b>CS-629 - 22/1</b> Report Date : <b>16/03/2017</b> Order Number : Test Method : <b>AS1289.5.7.1</b> <p style="text-align: right;"><b>Page 1 of 1</b></p>
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Sample Number :	S-26899	S-26900	S-26901	
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	
Date Sampled :	7/03/2017	7/03/2017	7/03/2017	
Date Tested :	7/03/2017	7/03/2017	7/03/2017	
Material Type :	Clay	Clay	Clay	
Material Source :	Insitu + Imported	Insitu + Imported	Insitu + Imported	
Lot Number :				
Sample Location :	Allotment Fill Subgrade L4 Refer to site plan	Allotment Fill Subgrade L5 Refer to site plan	Allotment Fill Subgrade L5 Refer to site plan	
Test Depth (mm) :	175	175	175	
Layer Depth (mm) :	200	200	200	
Maximum Size (mm) :	19	19	19	
Oversize Wet (%) :	0	0	0	
Oversize Dry (%) :				
Oversize Density (t/m <sup>3</sup> ) :				
Field Moisture Content (%) :	22.0	16.1	13.7	
Hilf MDR Number :	S-26899	S-26900	S-26901	
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	
Compactive Effort :	Standard	Standard	Standard	
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1	
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	
Moisture Ratio (%) :	110	85.5	84.5	
Field Wet Density (t/m <sup>3</sup> ) :	1.94	1.91	2.04	
Optimum Moisture Content (%) :	20.0	18.8	16.2	
Moisture Variation :	-2.0	2.5	2.5	
Peak Converted Wet Density (t/m <sup>3</sup> ) :	2.02	1.99	2.14	
Hilf Density Ratio (%) :	<b>95.5</b>	<b>96.0</b>	<b>95.5</b>	
Minimum Specification :	95% Standard	95% Standard	95% Standard	
Moisture Specification :				
Site Selection :	Random	Random	Random	
Soil Description :				
Remarks :	-			

<p><b>The results of the tests in this report are traceable to Australian/National standards. Accredited for compliance with ISO/IEC 17025</b></p>	<p>APPROVED SIGNATORY</p> <p>Daniel Pearce - Laboratory Manager          NATA Accreditation Number          18877</p>
--	---



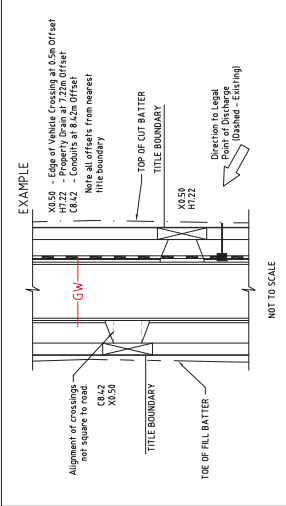
STN 442 BIVET  
PC 1011559  
N 5 855 42.973  
RL 298.547

EXISTING STAGE 2

BERM DETAIL (AS REQUIRED)  
N.T.S.

**LEGEND**

- TREES TO BE RETAINED
  - TREES TO BE REMOVED
  - FILL IN EXCESS OF 200mm
  - CUT IN EXCESS OF 200mm
- THIS PLAN SHOWS APPROXIMATE EXTENS OF CUT AND FILL TO BE REQUIRED TO BRING THE PROPOSED ROAD AND FOOTPATH TO THE EXISTING SITE SURFACE LEVELS AND PROPOSED FINISHED DESIGN LEVELS SHOWN.
- THE EXTENT OF FILL SHOWN IS BASED ON DESIGN AND MAY BE SUBJECT TO CHANGE DURING CONSTRUCTION.
- THE DEPTH OF TOP DRESSING FILL MAY VARY BY UP TO 0.5m.



**WARNING**

BEWARE OF UNDERGROUND SERVICES

THE LOCATION AND DEPTH OF UNDERGROUND SERVICES SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

**CONSTRUCTION PLAN**

Scale: 1:500 @ A1

DRAWING No.	10R2
VERSION	F
REFERENCE	20569E/10
SHEET	2 OF 12

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1/45 Adelaide Street Melbourne Victoria 3000  
Tel: 03 9494 4000  
www.reedsconsulting.com.au  
enquiries@reedsconsulting.com.au

DESIGNED BY	NJR	CHECKED BY	250_EJZ	AUTHORISED BY	SR
DRAWN BY	MELWAY	DATUM	AND	BY	

18/08/16	NJR	PLAN REVISION	F
20/05/16	NJR	CONSTRUCTION ISSUE	E
31/03/16	NJR	MINOR DRAINAGE AMENDMENTS	D
20/01/16	PC	LOT 1003 & 1004 VEHICLE CROSSINGS REVISED	C
15/01/16	PC	REVISED STAGE LAYOUT	B

18/08/16	NJR	FINISHED SURFACE AFTER CUTTING OR FILLING	F
20/05/16	NJR	PROPOSED PAVED SURFACE	P
31/03/16	NJR	EXISTING OR PROPOSED INVERT LEVEL OF PIPE	IL
20/01/16	PC	STREET SIGN	Q
15/01/16	PC	EXISTING SURFACE FINISH	Q
		EXISTENCE EX WALL OR BUILDING	EX WALL OR BUILDING
		EXISTENCE EX FENCE	EX FENCE
		EXISTENCE EX PAVEMENT	EX PAVEMENT
		EXISTENCE EX TIE	EX TIE
		EXISTENCE EX WATER	EX WATER

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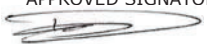


**Moolap Laboratory**  
 Pearce Geotech Pty Ltd  
 23 Nobility Street  
 Moolap VIC 3221

## Hilf Density Ratio Report

Client : <b>Fortunato Group</b> Address : <b>38A Merri Concourse, Campbellfield, VIC, 3061</b> Project Name : <b>Wallara Waters Stage 10</b> Project Number : <b>CS-598</b> Location: <b>Wallan</b>	Report Number: <b>CS-598 - 25/1</b> Report Date : <b>29/03/2017</b> Order Number : Test Method : <b>AS1289.5.7.1</b> <p style="text-align: right;"><b>Page 1 of 1</b></p>
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Sample Number :	S-26824	S-26825	S-26826	
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	
Date Sampled :	3/03/2017	3/03/2017	3/03/2017	
Date Tested :	3/03/2017	3/03/2017	3/03/2017	
Material Type :	Clay	Clay	Clay	
Material Source :	Imported	Imported	Imported	
Lot Number :				
Sample Location :	Allotment Fill See Site Plan  FL	Allotment Fill See Site Plan  FL	Allotment Fill See Site Plan  FL	
Test Depth (mm) :	175	175	175	
Layer Depth (mm) :	200	200	200	
Maximum Size (mm) :	19	19	19	
Oversize Wet (%) :	0	0	0	
Oversize Dry (%) :				
Oversize Density (t/m <sup>3</sup> ) :				
Field Moisture Content (%) :	22.5	26.9	22.9	
Hilf MDR Number :	S-26824	S-26825	S-26826	
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	
Compactive Effort :	Standard	Standard	Standard	
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1	
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	
Moisture Ratio (%) :	88.5	88	87.5	
Field Wet Density (t/m <sup>3</sup> ) :	1.98	1.90	1.92	
Optimum Moisture Content (%) :	25.4	30.6	26.1	
Moisture Variation :	2.5	3.5	3.0	
Peak Converted Wet Density (t/m <sup>3</sup> ) :	1.99	1.96	1.97	
Hilf Density Ratio (%) :	<b>99.0</b>	<b>97.0</b>	<b>97.0</b>	
Minimum Specification :	95% Standard	95% Standard	95% Standard	
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

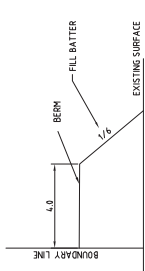
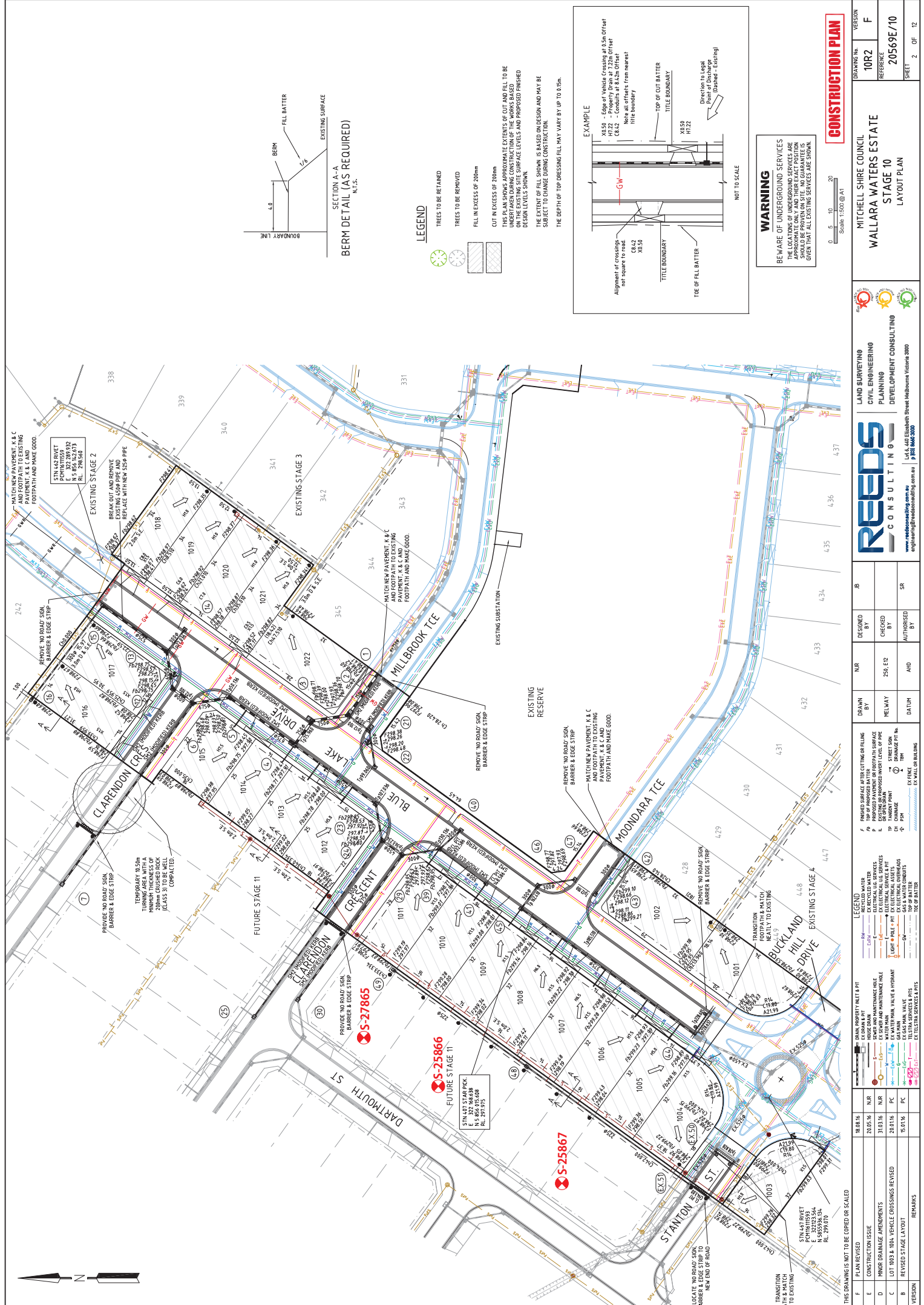
 <p><b>The results of the tests in this report are traceable to Australian/National standards. Accredited for compliance with ISO/IEC 17025</b></p>	<p>APPROVED SIGNATORY</p>  <p>Daniel Pearce - Laboratory Manager          NATA Accreditation Number          18877</p>
--	---



## Hilf Density Ratio Report

Client :	<b>Fortunato Group</b>	Report Number:	<b>CS-598 - 27/1</b>
Address :	<b>38A Merri Concourse, Campbellfield, VIC, 3061</b>	Report Date :	<b>10/04/2017</b>
Project Name :	<b>Wallara Waters Stage 10</b>	Order Number :	
Project Number :	<b>CS-598</b>	Test Method :	<b>AS1289.5.7.1</b>
Location:	<b>Wallan</b>	<b>Page 1 of 1</b>	

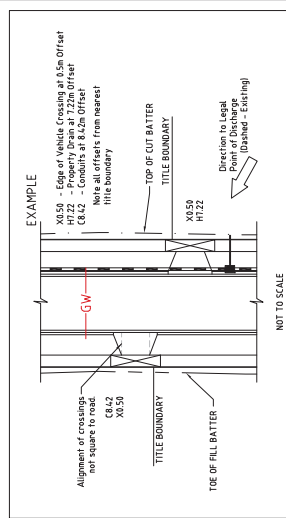
Sample Number :	S-27865	S-27866	S-27867	
Test Number :				
Sampling Method :	AS 1141.3.1	AS 1141.3.1	AS 1141.3.1	
Date Sampled :	16/03/2017	16/03/2017	16/03/2017	
Date Tested :	16/03/2017	16/03/2017	16/03/2017	
Material Type :	Clay	Clay	Clay	
Material Source :	Insitu	Insitu	Insitu	
Lot Number :				
Sample Location :	Allotment Fill Subgrade Refer to Plan Lift 4	Allotment Fill Subgrade Refer to Plan Lift 5	Allotment Fill Subgrade Refer to Plan Lift 5	
Test Depth (mm) :	175	175	175	
Layer Depth (mm) :	200	200	200	
Maximum Size (mm) :	19	19	19	
Oversize Wet (%) :	0	0	0	
Oversize Dry (%) :				
Oversize Density (t/m <sup>3</sup> ) :				
Field Moisture Content (%) :	13.3	21.4	24.3	
Hilf MDR Number :	S-27865	S-27866	S-27867	
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	
Compactive Effort :	Standard	Standard	Standard	
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1	
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	
Moisture Ratio (%) :	88	91	91.5	
Field Wet Density (t/m <sup>3</sup> ) :	1.94	1.91	1.93	
Optimum Moisture Content (%) :	15.1	23.5	26.5	
Moisture Variation :	2.0	2.0	2.0	
Peak Converted Wet Density (t/m <sup>3</sup> ) :	1.97	1.96	1.97	
Hilf Density Ratio (%) :	<b>99.0</b>	<b>98.0</b>	<b>98.0</b>	
Minimum Specification :	95% Standard	95% Standard	95% Standard	
Moisture Specification :				
Site Selection :	Random	Random	Random	
Soil Description :				
Remarks :	-			



SECTION A-A  
(AS REQUIRED)  
N.T.S.

**LEGEND**

- TREES TO BE RETAINED
  - TREES TO BE REMOVED
  - FILL IN EXCESS OF 200mm
  - CUT IN EXCESS OF 200mm
- THIS PLAN SHOWS APPROXIMATE EXTENS OF CUT AND FILL TO BE MADE TO THE EXISTING SURFACE LEVELS AND PROPOSED FINISHED DESIGN LEVELS SHOWN.
- THE EXTENT OF FILL SHOWN IS BASED ON DESIGN AND MAY BE SUBJECT TO CHANGE DURING CONSTRUCTION.
- THE DEPTH OF TOP DRESSING FILL MAY VARY BY UP TO 0.5m.



**WARNING**

BEWARE OF UNDERGROUND SERVICES

THE LOCATION AND DEPTH OF UNDERGROUND SERVICES SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

**CONSTRUCTION PLAN**

Scale: 1:500 @ A1

0 5 10 20

PERSON	VERSION
DESIGNED BY	DATE
CHECKED BY	DATE
AUTHORISED BY	DATE

MITCHELL SHIRE COUNCIL  
WALLARA WATERS ESTATE  
STAGE 10  
LAYOUT PLAN

DRAWING NO. 10R2  
REFERENCE 20569E/10  
SHEET 2 OF 12

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18.08.16	NJR	PLAN REVISION
20.05.16	NJR	CONSTRUCTION ISSUE
31.03.16	NJR	MINOR DRAINAGE AMENDMENTS
20.01.16	PC	LOT 1003 & 1004 VEHICLE CROSSINGS REVISED
15.01.16	PC	REVISED STAGE LAYOUT

THIS DRAWING IS NOT TO BE COPIED OR SCALED

LEGEND

- EXISTING WATER
- RECYCLED WATER
- EXISTING WATER
- PROPOSED WATER
- EXISTING SEWER
- PROPOSED SEWER
- EXISTING GAS
- PROPOSED GAS
- EXISTING POWER
- PROPOSED POWER
- EXISTING TELEPHONE
- PROPOSED TELEPHONE
- EXISTING OTHER
- PROPOSED OTHER

STATIONING: STA 142 BIVET, STA 140 START PIP, STA 141 END PIP

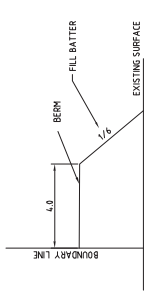
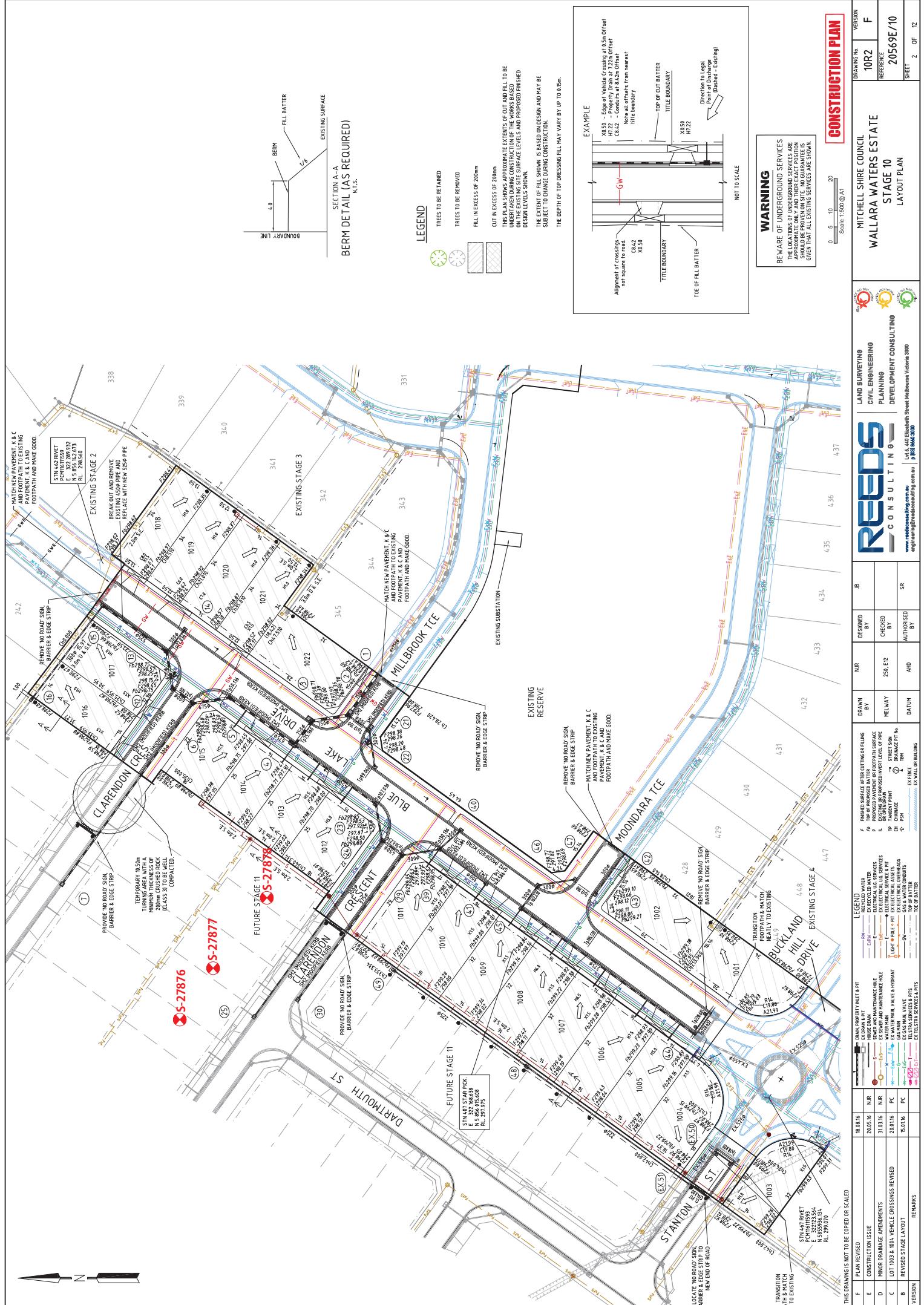
REVISIONS:

NO. 1	DATE	DESCRIPTION
1	15/01/16	ISSUE FOR PERMIT
2	20/01/16	ISSUE FOR CONSTRUCTION

## Hilf Density Ratio Report

Client :	<b>Fortunato Group</b>	Report Number:	<b>CS-598 - 28/1</b>
Address :	<b>38A Merri Concourse, Campbellfield, VIC, 3061</b>	Report Date :	<b>11/04/2017</b>
Project Name :	<b>Wallara Waters Stage 10</b>	Order Number :	
Project Number :	<b>CS-598</b>	Test Method :	<b>AS1289.5.7.1</b>
Location:	<b>Wallan</b>	<b>Page 1 of 1</b>	

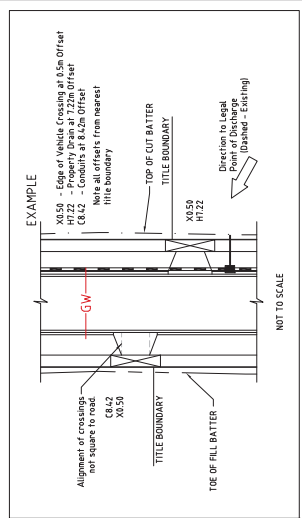
Sample Number :	S-27876	S-27877	S-27878	
Test Number :				
Sampling Method :	AS 1141.3.1	AS 1141.3.1	AS 1141.3.1	
Date Sampled :	28/03/2017	28/03/2017	28/03/2017	
Date Tested :	28/03/2017	28/03/2017	28/03/2017	
Material Type :	Clay	Clay	Clay	
Material Source :	Insitu & Imported	Insitu & Imported	Insitu & Imported	
Lot Number :				
Sample Location :	Allotment Fill Subgrade Refer to Plan Lift 3	Allotment Fill Subgrade Refer to Plan Lift 3	Allotment Fill Subgrade Refer to Plan Lift 3	
Test Depth (mm) :	175	175	175	
Layer Depth (mm) :	200	200	200	
Maximum Size (mm) :	19	19	19	
Oversize Wet (%) :	0	0	0	
Oversize Dry (%) :				
Oversize Density (t/m <sup>3</sup> ) :				
Field Moisture Content (%) :	19.1	17.7	18.5	
Hilf MDR Number :	S-27876	S-27877	S-27878	
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	
Compactive Effort :	Standard	Standard	Standard	
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1	
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	
Moisture Ratio (%) :	89.5	88.5	89	
Field Wet Density (t/m <sup>3</sup> ) :	2.01	1.97	1.95	
Optimum Moisture Content (%) :	21.3	20.0	20.7	
Moisture Variation :	2.0	2.0	2.0	
Peak Converted Wet Density (t/m <sup>3</sup> ) :	2.03	2.00	2.00	
Hilf Density Ratio (%) :	<b>99.0</b>	<b>98.0</b>	<b>97.5</b>	
Minimum Specification :	95% Standard	95% Standard	95% Standard	
Moisture Specification :				
Site Selection :	Random	Random	Random	
Soil Description :				
Remarks :	-			



SECTION A-A  
BERM DETAIL (AS REQUIRED)  
N.T.S.

**LEGEND**

- TREES TO BE RETAINED
  - TREES TO BE REMOVED
  - FILL IN EXCESS OF 200mm
  - CUT IN EXCESS OF 200mm
- THIS PLAN SHOWS APPROXIMATE EXTENS OF CUT AND FILL TO BE MADE TO ACHIEVE THE PROPOSED GRADE. THE EXACT POSITIONS ON THE EXISTING SITE SURFACE LEVELS AND PROPOSED FINISHED DESIGN LEVELS SHOWN.
- THE EXTENT OF FILL SHOWN IS BASED ON DESIGN AND MAY BE SUBJECT TO CHANGE DURING CONSTRUCTION.
- THE DEPTH OF TOP DRESSING FILL MAY VARY BY UP TO 0.5m.



**WARNING**

BEWARE OF UNDERGROUND SERVICES

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**CONSTRUCTION PLAN**

Scale: 1:500 @ A1

MITCHELL SHIRE COUNCIL  
WALLARA WATERS ESTATE  
STAGE 10  
LAYOUT PLAN

PERSON: F  
DRAWING NO: 10R2  
REFERENCE: 20569E/10  
SHEET: 2 OF 12

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F 03 9494 0001

DESIGNED BY	NJR	CHECKED BY	250_EJZ	AUTHORISED BY	SR
DRAWN BY	MELWAY	DATE			

18.08.16	NJR	PLAN REVISION	
20.05.16	NJR	CONSTRUCTION ISSUE	
31.03.16	NJR	MINOR DRAINAGE AMENDMENTS	
20.01.16	PC	LOT 1003 & 1004 VEHICLE CROSSINGS REVISED	
15.01.16	PC	REVISED STAGE LAYOUT	

FINISHED SURFACE AFTER CUTTING OR FILLING	EXISTING PROPOSED FINISHED SURFACE	EXISTING OR PROPOSED INVERT LEVEL OF PIPE	STREET POINT	STREET POINT	EXISTING WALL OR BUILDING
RECYCLED WATER	RECYCLED WATER	EXISTING ELECTRICAL SERVICES	EXISTING ELECTRICAL SERVICES	EXISTING ELECTRICAL SERVICES	EXISTING ELECTRICAL SERVICES
EXISTING WATER	EXISTING WATER	EXISTING GAS SERVICES	EXISTING GAS SERVICES	EXISTING GAS SERVICES	EXISTING GAS SERVICES
EXISTING TELEPHONE SERVICES	EXISTING TELEPHONE SERVICES	EXISTING TELEPHONE SERVICES	EXISTING TELEPHONE SERVICES	EXISTING TELEPHONE SERVICES	EXISTING TELEPHONE SERVICES



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## Hilf Density Ratio Report

Client :	<b>Fortunato Group</b>	Report Number:	<b>CS-629 - 28/1</b>
Address :	<b>38A Merri Concourse, Campbellfield, VIC, 3061</b>	Report Date :	<b>27/04/2017</b>
Project Name :	<b>Wallara Waters Stage 11</b>	Order Number :	
Project Number :	<b>CS-629</b>	Test Method :	<b>AS1289.5.7.1</b>
Location:	<b>Wallan</b>	<b>Page 1 of 1</b>	

Sample Number :	S-27522	S-27523	S-27524	
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	
Date Sampled :	29/03/2017	29/03/2017	29/03/2017	
Date Tested :	29/03/2017	29/03/2017	29/03/2017	
Material Type :	Clay	Clay	Clay	
Material Source :	Insitu/Imported	Insitu/Imported	Insitu/Imported	
Lot Number :				
Sample Location :	Allotment Fill Subgrade Lift 4 Refer to Plan	Allotment Fill Subgrade Lift 4 Refer to Plan	Allotment Fill Subgrade Lift 4 Refer to Plan	
Test Depth (mm) :	175	175	175	
Layer Depth (mm) :	200	200	200	
Maximum Size (mm) :	19	19	19	
Oversize Wet (%) :	0	0	0	
Oversize Dry (%) :				
Oversize Density (t/m <sup>3</sup> ) :				
Field Moisture Content (%) :	18.9	16.2	16.2	
Hilf MDR Number :	S-27522	S-27523	S-27524	
Hilf MDR Method :	AS1289.5.7.1	AS1289.5.7.1	AS1289.5.7.1	
Compactive Effort :	Standard	Standard	Standard	
Field Density Method :	AS1289.5.8.1	AS1289.5.8.1	AS1289.5.8.1	
Moisture Method :	AS1289.2.1.1	AS1289.2.1.1	AS1289.2.1.1	
Moisture Ratio (%) :	88	84	84.5	
Field Wet Density (t/m <sup>3</sup> ) :	2.07	2.09	2.04	
Optimum Moisture Content (%) :	21.4	19.3	19.2	
Moisture Variation :	2.5	3.0	3.0	
Peak Converted Wet Density (t/m <sup>3</sup> ) :	1.97	1.96	1.98	
Hilf Density Ratio (%) :	<b>105.0</b>	<b>106.5</b>	<b>103.0</b>	
Minimum Specification :	95% Standard	95% Standard	95% Standard	
Moisture Specification :				
Site Selection :	Random	Random	Random	
Soil Description :				
Remarks :	-			





## Hilf Density Ratio Report

Client :	<b>Fortunato Group</b>	Report Number:	<b>CS-598 - 43/1</b>
Address :	<b>38A Merri Concourse, Campbellfield, VIC, 3061</b>	Report Date :	<b>21/08/2017</b>
Project Name :	<b>Wallara Waters Stage 10</b>	Order Number :	
Project Number :	<b>CS-598</b>	Test Method :	<b>AS1289.5.7.1</b>
Location:	<b>Wallan</b>	<b>Page 1 of 1</b>	

Sample Number :	S-31597		
Test Number :			
Sampling Method :	AS1289.1.2.1 6.4(b)		
Date Sampled :	16/08/2017		
Date Tested :	16/08/2017		
Material Type :	Clay		
Material Source :	Insitu		
Lot Number :			
Sample Location :	Allotment Fill  Refer to Plan		
Test Depth (mm) :	175		
Layer Depth (mm) :	200		
Maximum Size (mm) :	19		
Oversize Wet (%) :	0		
Oversize Dry (%) :			
Oversize Density (t/m <sup>3</sup> ) :			
Field Moisture Content (%) :	17.2		
Hilf MDR Number :	S-31597		
Hilf MDR Method :	AS1289.5.7.1		
Compactive Effort :	Standard		
Field Density Method :	AS1289.5.8.1		
Moisture Method :	AS1289.2.1.1		
Moisture Ratio (%) :	100		
Field Wet Density (t/m <sup>3</sup> ) :	2.10		
Optimum Moisture Content (%) :	17.2		
Moisture Variation :	0.0		
Peak Converted Wet Density (t/m <sup>3</sup> ) :	2.06		
Hilf Density Ratio (%) :	<b>102.5</b>		
Minimum Specification :	95% Standard		
Moisture Specification :			
Site Selection :	Random		
Soil Description :			
Remarks :	-		

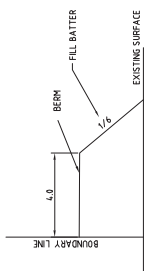
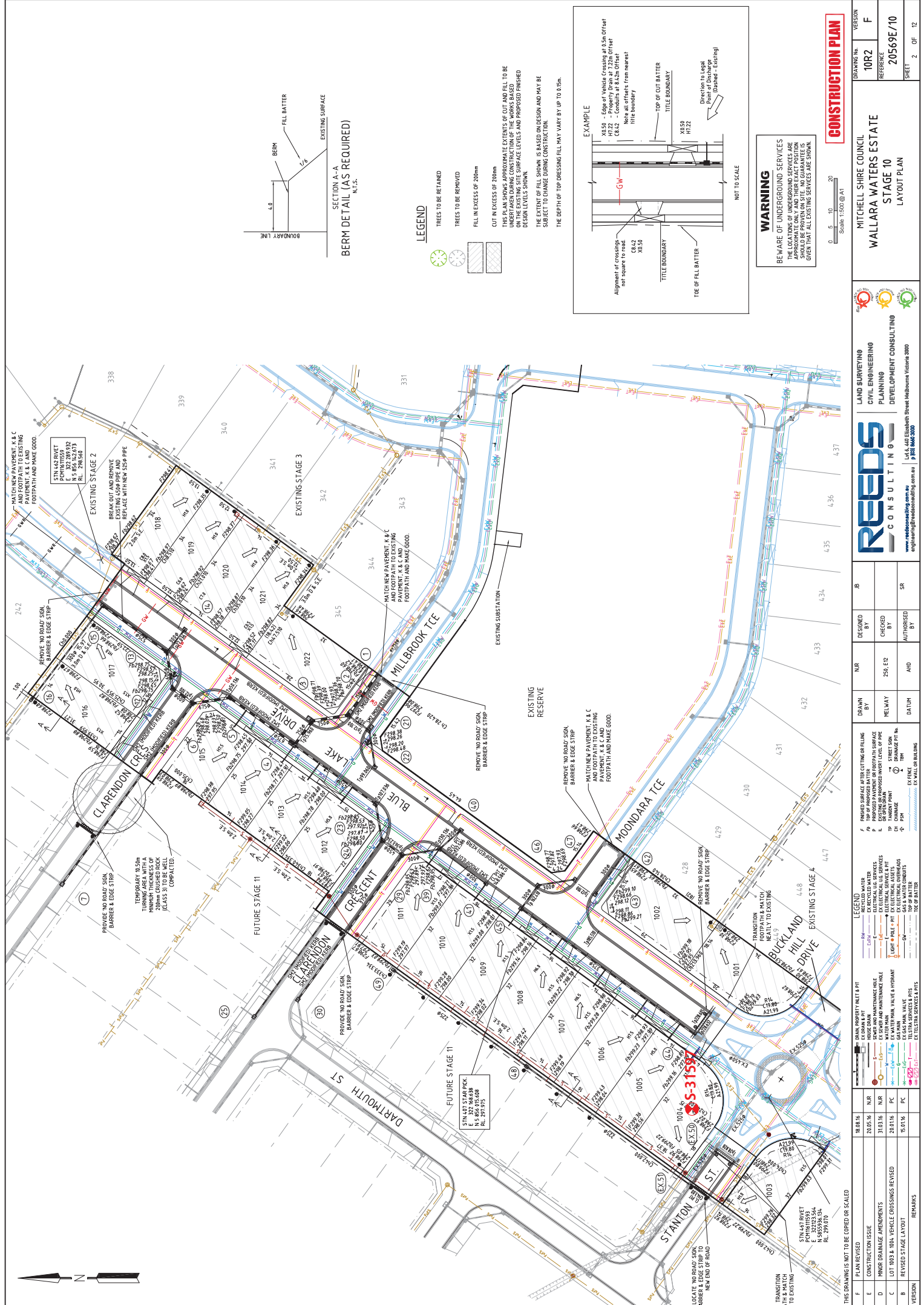


The results of the tests in this report are traceable to Australian/National standards. Accredited for compliance with ISO/IEC 17025

APPROVED SIGNATORY



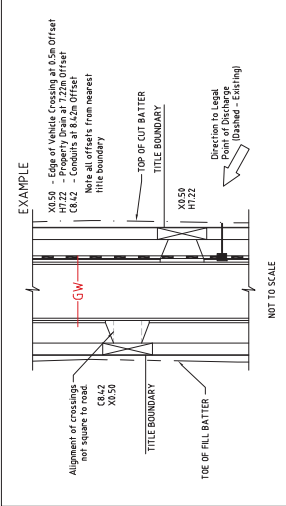
Anthony Green - Technician  
NATA Accreditation Number  
18877



SECTION A-A  
BERM DETAIL (AS REQUIRED)  
N.T.S.

**LEGEND**

- TREES TO BE RETAINED
  - TREES TO BE REMOVED
  - FILL IN EXCESS OF 200mm
  - CUT IN EXCESS OF 200mm
- THIS PLAN SHOWS APPROXIMATE EXTENS OF CUT AND FILL TO BE MADE TO THE PROPOSED ROAD AND FOOTPATH LEVELS AND PROPOSED FINISHED DESIGN LEVELS SHOWN.
- THE EXTENT OF FILL SHOWN IS BASED ON DESIGN AND MAY BE SUBJECT TO CHANGE DURING CONSTRUCTION.
- THE DEPTH OF TOP DRESSING FILL MAY VARY BY UP TO 0.5m.



**WARNING**

BEWARE OF UNDERGROUND SERVICES

THE LOCATION AND DEPTH OF UNDERGROUND SERVICES SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

**CONSTRUCTION PLAN**

Scale: 1:500 @ A1

PERSON	VERSION
MITCHELL SHIRE COUNCIL	F
WALLARA WATERS ESTATE	20569E/10
STAGE 10	
LAYOUT PLAN	SHEET 2 OF 12

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DESIGNED BY	NJR	CHECKED BY	250_EJZ	AUTHORISED BY	SR
DRAWN BY	HEWLEY	DATE			

18/08/16	NJR	PLAN REVISION	F	PLAN REVISION	
20/05/16	NJR	CONSTRUCTION ISSUE	E	CONSTRUCTION ISSUE	
31/03/16	NJR	MINOR DRAINAGE AMENDMENTS	D	MINOR DRAINAGE AMENDMENTS	
20/01/16	PC	LOT 1003 & 1004 VEHICLE CROSSINGS REVISED	C	LOT 1003 & 1004 VEHICLE CROSSINGS REVISED	
15/01/16	PC	REVISED STAGE LAYOUT	B	REVISED STAGE LAYOUT	

REMARKS

THIS DRAWING IS NOT TO BE COPIED OR SCALED

**LEGEND**

EX. WATER	EXISTING WATER
EX. RECYCLED WATER	EXISTING RECYCLED WATER
EX. RAIN PITS	EXISTING RAIN PITS
EX. SANITARY WASTE & PITS	EXISTING SANITARY WASTE & PITS
EX. DRAIN PITS	EXISTING DRAIN PITS
EX. HOUSE DRAIN	EXISTING HOUSE DRAIN
EX. MAIN WASTE WATER	EXISTING MAIN WASTE WATER
EX. 150mm DIA. WATER MAIN	EXISTING 150mm DIA. WATER MAIN
EX. 100mm DIA. WATER MAIN	EXISTING 100mm DIA. WATER MAIN
EX. 75mm DIA. WATER MAIN	EXISTING 75mm DIA. WATER MAIN
EX. 50mm DIA. WATER MAIN	EXISTING 50mm DIA. WATER MAIN
EX. 25mm DIA. WATER MAIN	EXISTING 25mm DIA. WATER MAIN
EX. 150mm DIA. SANITARY WASTE	EXISTING 150mm DIA. SANITARY WASTE
EX. 100mm DIA. SANITARY WASTE	EXISTING 100mm DIA. SANITARY WASTE
EX. 75mm DIA. SANITARY WASTE	EXISTING 75mm DIA. SANITARY WASTE
EX. 50mm DIA. SANITARY WASTE	EXISTING 50mm DIA. SANITARY WASTE
EX. 25mm DIA. SANITARY WASTE	EXISTING 25mm DIA. SANITARY WASTE
EX. 150mm DIA. DRAIN	EXISTING 150mm DIA. DRAIN
EX. 100mm DIA. DRAIN	EXISTING 100mm DIA. DRAIN
EX. 75mm DIA. DRAIN	EXISTING 75mm DIA. DRAIN
EX. 50mm DIA. DRAIN	EXISTING 50mm DIA. DRAIN
EX. 25mm DIA. DRAIN	EXISTING 25mm DIA. DRAIN
EX. 150mm DIA. GAS MAIN	EXISTING 150mm DIA. GAS MAIN
EX. 100mm DIA. GAS MAIN	EXISTING 100mm DIA. GAS MAIN
EX. 75mm DIA. GAS MAIN	EXISTING 75mm DIA. GAS MAIN
EX. 50mm DIA. GAS MAIN	EXISTING 50mm DIA. GAS MAIN
EX. 25mm DIA. GAS MAIN	EXISTING 25mm DIA. GAS MAIN
EX. 150mm DIA. TELECOM SERVICES & PITS	EXISTING 150mm DIA. TELECOM SERVICES & PITS
EX. 100mm DIA. TELECOM SERVICES & PITS	EXISTING 100mm DIA. TELECOM SERVICES & PITS
EX. 75mm DIA. TELECOM SERVICES & PITS	EXISTING 75mm DIA. TELECOM SERVICES & PITS
EX. 50mm DIA. TELECOM SERVICES & PITS	EXISTING 50mm DIA. TELECOM SERVICES & PITS
EX. 25mm DIA. TELECOM SERVICES & PITS	EXISTING 25mm DIA. TELECOM SERVICES & PITS
EX. WALL OR BUILDING	EXISTING WALL OR BUILDING
EX. FENCE	EXISTING FENCE
EX. PPM	EXISTING PPM
EX. STREET SIGN	EXISTING STREET SIGN
EX. TANGENT POINT	EXISTING TANGENT POINT
EX. EXISTING INVERT LEVEL OF PIPE	EXISTING INVERT LEVEL OF PIPE
EX. PROPOSED INVERT LEVEL OF PIPE	PROPOSED INVERT LEVEL OF PIPE
EX. FINISHED SURFACE AFTER CUTTING OR FILLING	FINISHED SURFACE AFTER CUTTING OR FILLING

