WALLARA WATERS STAGE 10 & 11

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

25th August 2017 **REV:2**

Pearce Geotech Pty Ltd ABN 96 155 312 879
23 Nobility Street, Moolap, VIC 3221 Australia
PH: (03) 5248 7887

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

CONTENTS

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

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

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

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

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

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

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

Appendix A

Test Results/Site Plan

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

Hilf Density Ratio Report

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

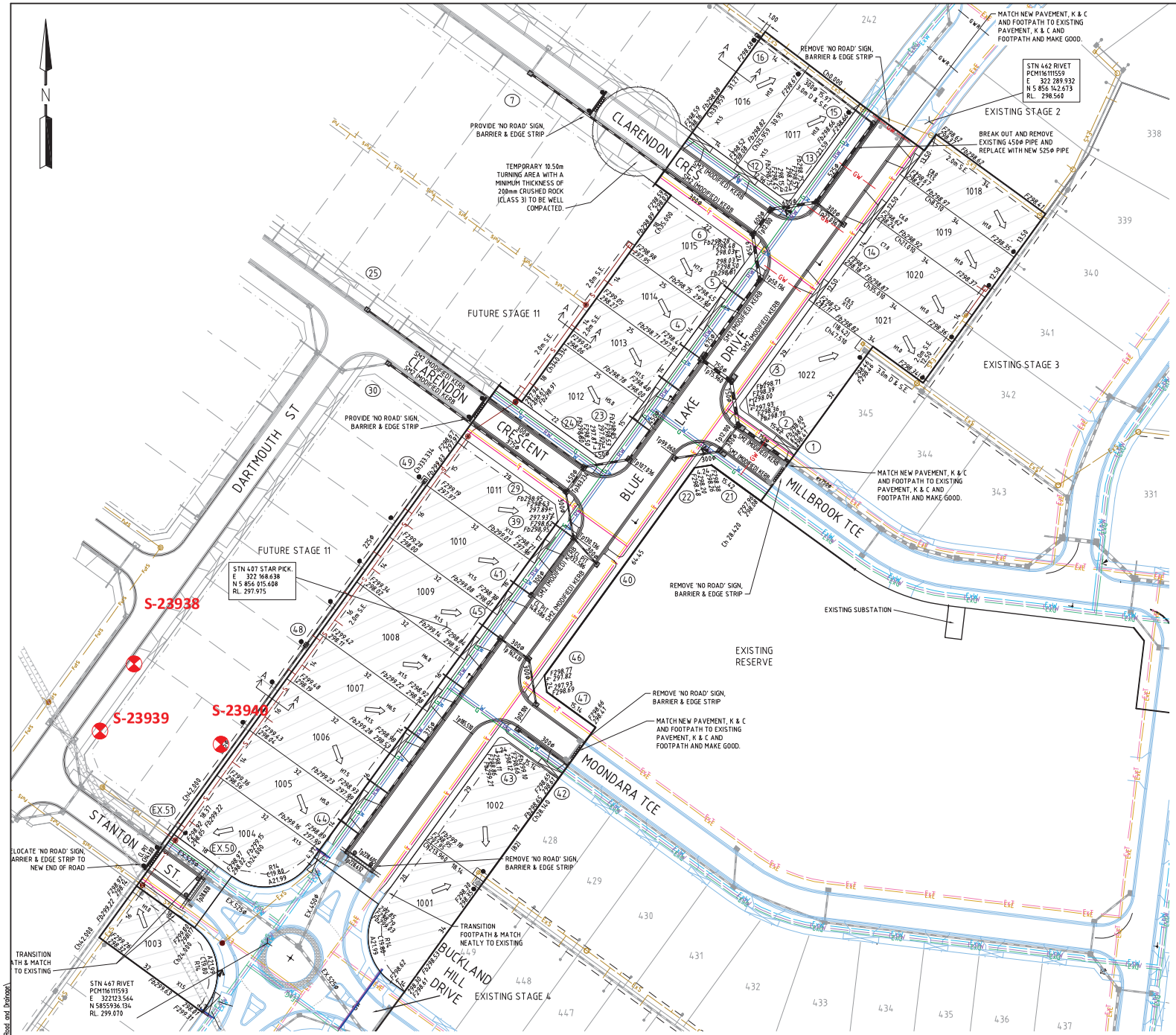
Sample Number :	S-23938	S-23939	S-23940	
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	
Date Sampled :	4/11/2016	4/11/2016	4/11/2016	
Date Tested :	4/11/2016	4/11/2016	4/11/2016	
Material Type :	Clay	Clay	Clay	
Material Source :	Imported	Imported	Imported	
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/m³) :				
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/m³) :	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/m³) :	2.09	2.06	2.08	
Hilf Density Ratio (%) :	**92.0**	**94.5**	**98.5**	
Minimum Specification :	98% Standard	98% Standard	98% Standard	
Moisture Specification :				
Site Selection :	Random	Random	Random	
Soil Description :				
Remarks :	-			

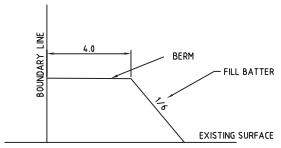
NATA
WORLD RECOGNISED ACCREDITATION

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.

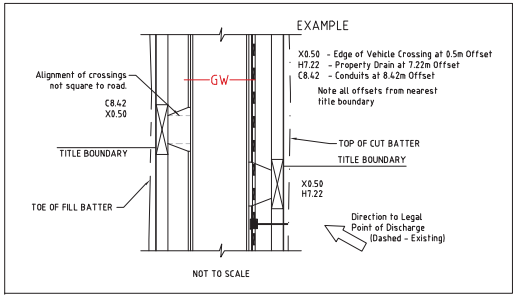
LEGEND

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

THIS PLAN SHOWS APPROXIMATE EXTENTS OF CUT AND FILL TO BE UNDERTAKEN DURING CONSTRUCTION OF THE WORKS BASED 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 0.15m.



WARNING

BEWARE OF UNDERGROUND SERVICES

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

0 5 10 20
Scale 1:500 @ A1

CONSTRUCTION PLAN

THIS DRAWING IS NOT TO BE COPIED OR SCALED

VERSION	REMARKS		
F	PLAN REVISED	18.08.16	
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

H:\20569\Stage_10\CAD\DWG Set\Road and Drainage\

DRAIN, PROPERTY INLET & PIT
EX DRAIN & PIT
HOUSE DRAIN
SEWER AND MAINTENANCE HOLE
EX SEWER AND MAINTENANCE HOLE
WATER MAIN
EX WATER MAIN, VALVE & HYDRANT
GAS MAIN
EX GAS MAIN, VALVE
TELSTRA SERVICES & PITS
EX TELSTRA SERVICES & PITS

LEGEND

RECYCLED WATER
EX RECYCLED WATER
ELECTRICAL U.G. SERVICES
EX ELECTRICAL U.G. SERVICES
ELECTRICAL SERVICE & PIT
EX ELECTRICAL ASSETS
EX ELECTRICAL OVERHEADS
GAS & WATER CONDUITS
TOP OF BATTER
TOE OF BATTER

F FINISHED SURFACE AFTER CUTTING OR FILLING
Fb TOP OF PROPOSED BATTER
P PROPOSED PAVEMENT OR FOOTPATH SURFACE
IL EXISTING OR PROPOSED INVERT LEVEL OF PIPE OR OPEN DRAIN
TP TANGENT POINT
CH CHAINAGE
PSM
STREET SIGN
DRAINAGE PIT No.
TBM
EX FENCE
EX WALL OR BUILDING

DRAWN BY	NJR	DESIGNED BY	JB
MELWAY	250, E12	CHECKED BY	
DATUM	AHD	AUTHORISED BY	SR

REEDS CONSULTING
LAND SURVEYING
CIVIL ENGINEERING
PLANNING
DEVELOPMENT CONSULTING
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Lvl 6, 440 Elizabeth Street Melbourne Victoria 3000
p (03) 8660 3000

MITCHELL SHIRE COUNCIL
WALLARA WATERS ESTATE
STAGE 10
LAYOUT PLAN

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

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

Hilf Density Ratio Report

Client :	**Fortunato Group**	Report Number:	**CS-598 - 2/1**
Address :	**38A Merri Concourse, Campbellfield, VIC, 3061**	Report Date :	**9/11/2016**
Project Name :	**Wallara Waters**	Order Number :	
Project Number :	**CS-598**	Test Method :	**AS1289.5.7.1**
Location:	**Wallan**	**Page 1 of 1**	

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/m³) :				
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/m³) :	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/m³) :	2.10	2.05	2.03	
Hilf Density Ratio (%) :	**97.5**	**99.5**	**98.0**	
Minimum Specification :	98% Standard	98% Standard	98% Standard	
Moisture Specification :				
Site Selection :	Random	Random	Random	
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

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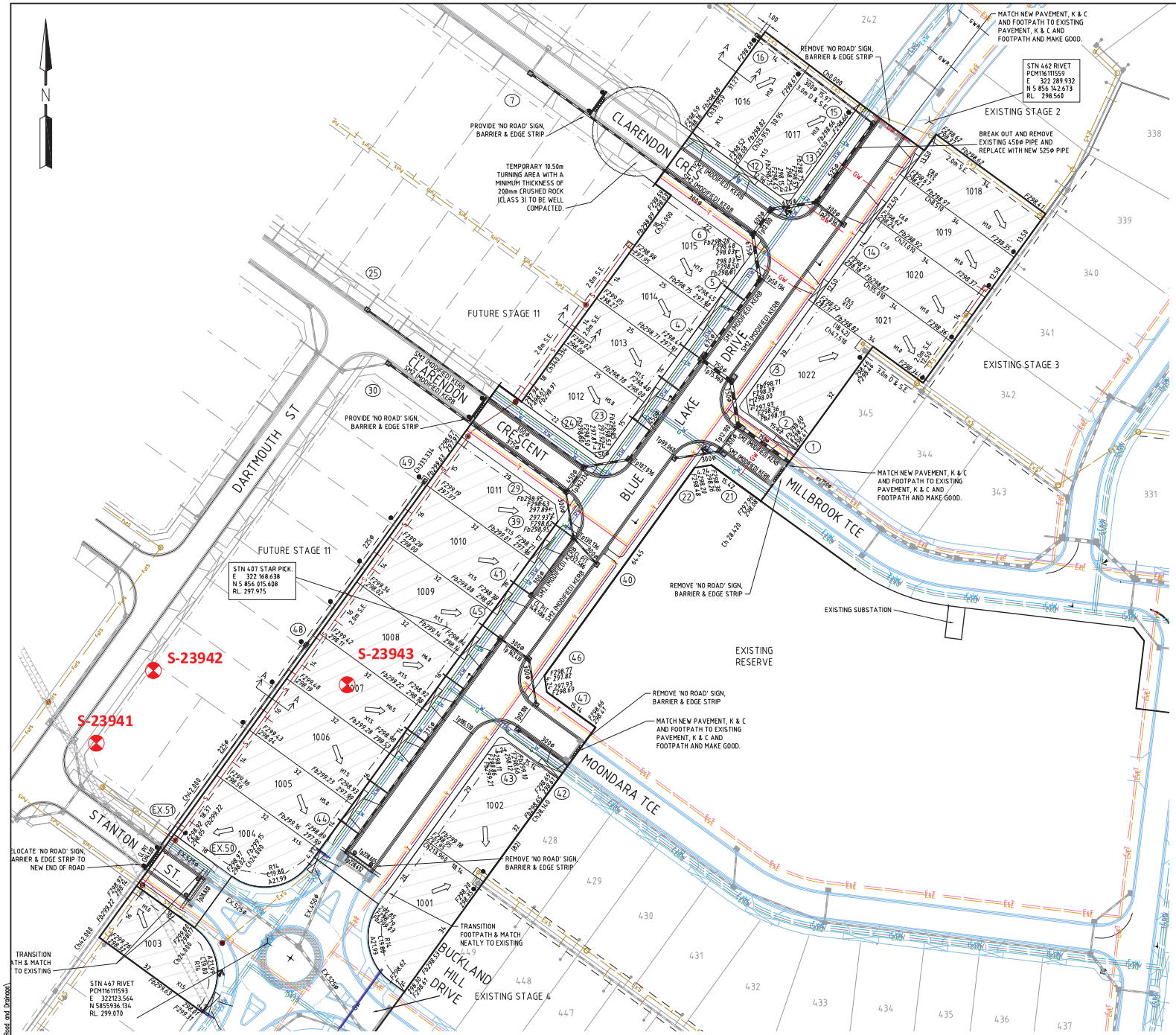
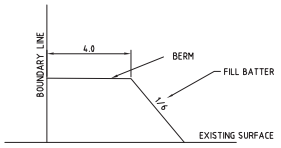
APPROVED SIGNATORY

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

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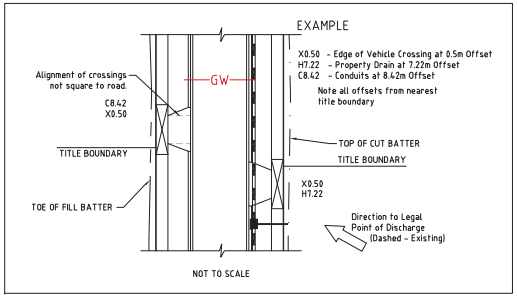

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0 5 10 20
Scale 1:500 @ A1

CONSTRUCTION PLAN

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VERSION	REMARKS		
F	PLAN REVISED	18.08.16	
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

H:\20569\Stage_10\CAD\DWG Set\Road and Drainage\

DRAIN, PROPERTY INLET & PIT
EX DRAIN & PIT
HOUSE DRAIN
SEWER AND MAINTENANCE HOLE
EX SEWER AND MAINTENANCE HOLE
WATER MAIN
EX WATER MAIN, VALVE & HYDRANT
GAS MAIN
EX GAS MAIN, VALVE
TELSTRA SERVICES & PITS
EX TELSTRA SERVICES & PITS

LEGEND

RECYCLED WATER
EX RECYCLED WATER
ELECTRICAL U.G. SERVICES
EX ELECTRICAL U.G. SERVICES
ELECTRICAL SERVICE & PIT
EX ELECTRICAL ASSETS
EX ELECTRICAL OVERHEADS
GAS & WATER CONDUITS
TOP OF BATTER
TOE OF BATTER

F FINISHED SURFACE AFTER CUTTING OR FILLING
Fb TOP OF PROPOSED BATTER
P PROPOSED PAVEMENT OR FOOTPATH SURFACE
IL EXISTING OR PROPOSED INVERT LEVEL OF PIPE OR OPEN DRAIN
TP TANGENT POINT
CH CHAINAGE
PSM
STREET SIGN
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TBM
EX FENCE
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DRAWN BY	NJR	DESIGNED BY	JB
MELWAY	250, E12	CHECKED BY	
DATUM	AHD	AUTHORISED BY	SR

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MITCHELL SHIRE COUNCIL

WALLARA WATERS ESTATE STAGE 10

LAYOUT PLAN

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

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

Hilf Density Ratio Report

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

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/m³) :				
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/m³) :	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/m³) :	1.98	1.97	1.86	
Hilf Density Ratio (%) :	**102.5**	**100.0**	**103.5**	
Minimum Specification :	98% Standard	98% Standard	98% Standard	
Moisture Specification :				
Site Selection :	Random	Random	Random	
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

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Anthony Green - Technician
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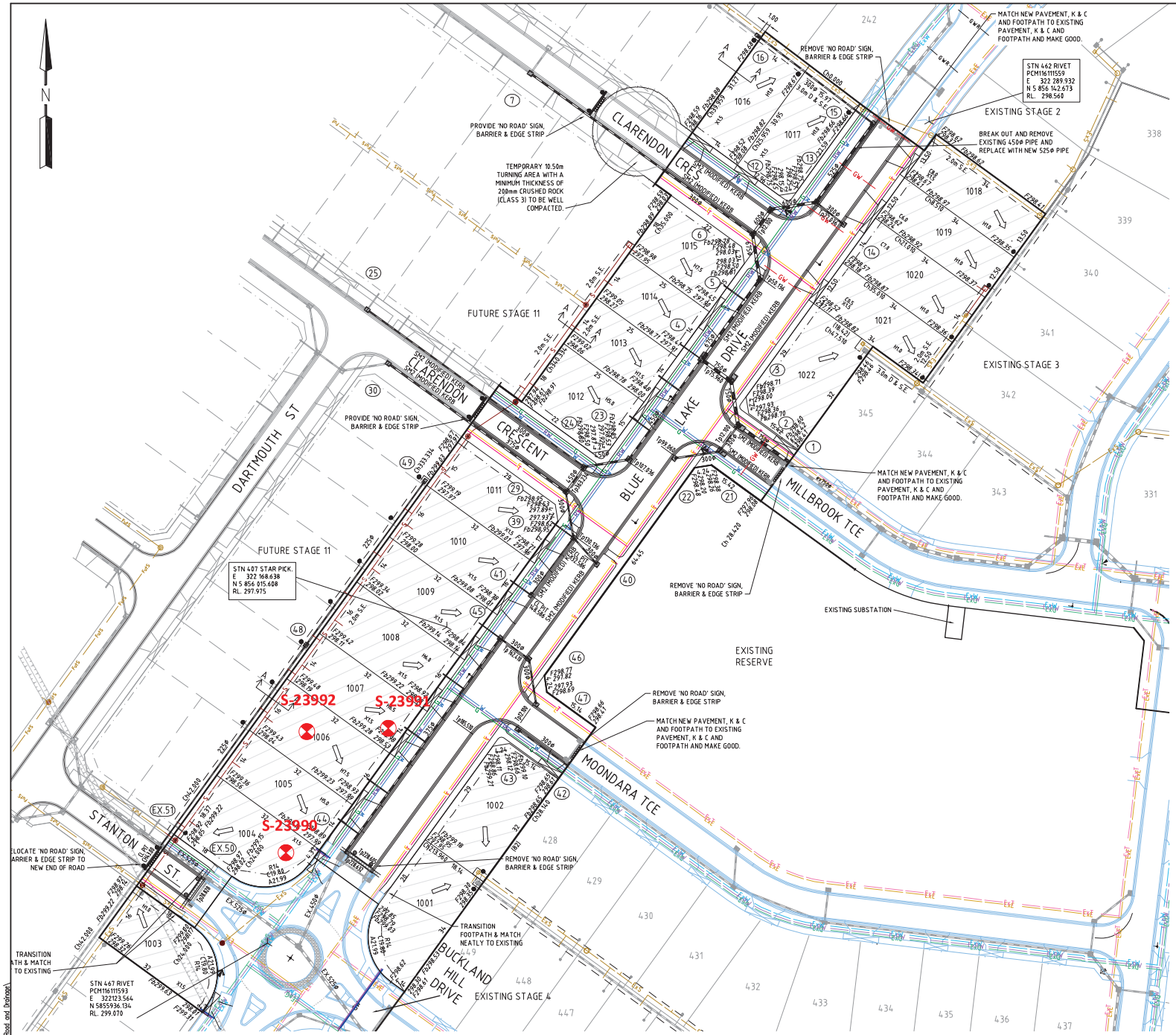

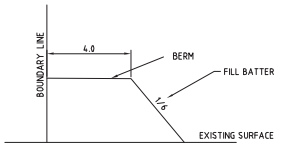

SECTION A-A

BERM DETAIL (AS REQUIRED)

N.T.S.

LEGEND

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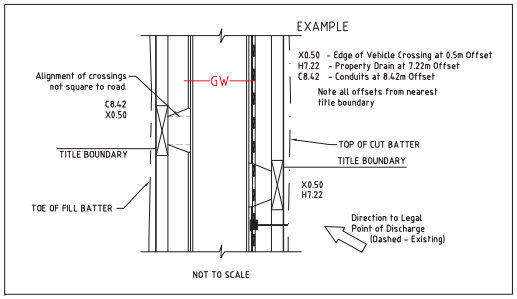

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Scale 1:500 @ A1

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B	REVISED STAGE LAYOUT	15.01.16	PC

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LEGEND

- DRAIN, PROPERTY INLET & PIT
- EX DRAIN & PIT
- HOUSE DRAIN
- SEWER AND MAINTENANCE HOLE
- EX SEWER AND MAINTENANCE HOLE
- WATER MAIN
- EX WATER MAIN, VALVE & HYDRANT
- GAS MAIN
- EX GAS MAIN, VALVE
- TELSTRA SERVICES & PITS
- EX TELSTRA SERVICES & PITS
- RECYCLED WATER
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- EX ELECTRICAL U.G. SERVICES
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DRAWN BY	NJR	DESIGNED BY	JB
MELWAY	250, E12	CHECKED BY	
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WALLARA WATERS ESTATE STAGE 10

LAYOUT PLAN

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

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

Hilf Density Ratio Report

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

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/m³) :				
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/m³) :	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/m³) :	1.96	2.00	1.96	
Hilf Density Ratio (%) :	**103.0**	**93.5**	**96.5**	
Minimum Specification :	98% Standard	98% Standard	98% Standard	
Moisture Specification :				
Site Selection :	Random	Random	Random	
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

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APPROVED SIGNATORY

Anthony Green - Technician
NATA Accreditation Number
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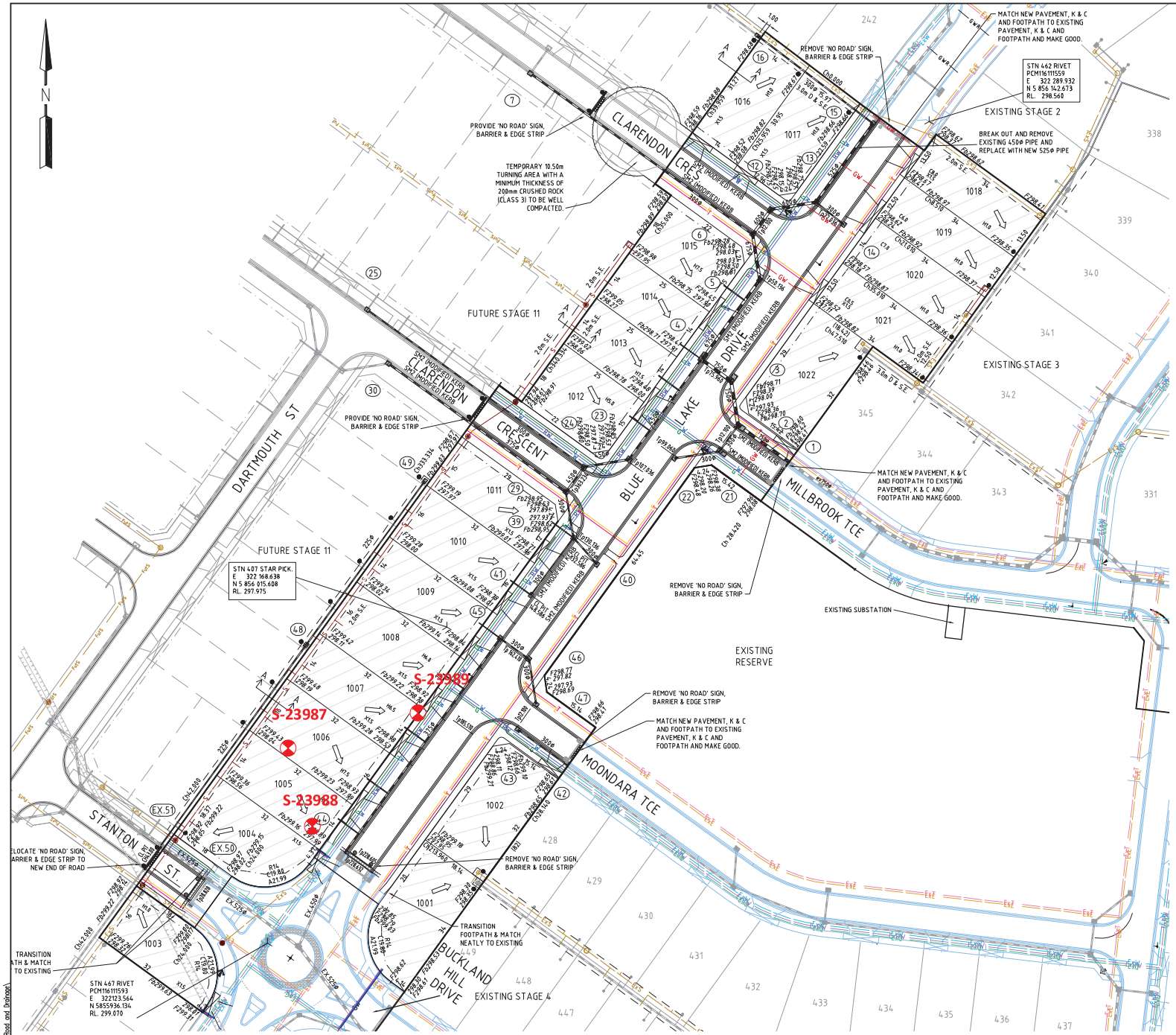

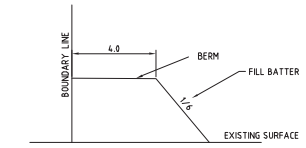

SECTION A-A

BERM DETAIL (AS REQUIRED)

N.T.S.

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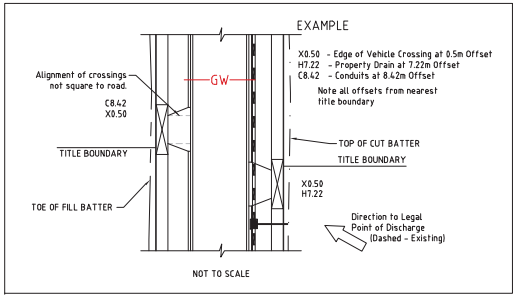

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DRAIN, PROPERTY INLET & PIT
EX DRAIN & PIT
HOUSE DRAIN
SEWER AND MAINTENANCE HOLE
EX SEWER AND MAINTENANCE HOLE
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EX WATER MAIN, VALVE & HYDRANT
GAS MAIN
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EX TELSTRA SERVICES & PITS

LEGEND

RECYCLED WATER
EX RECYCLED WATER
ELECTRICAL U.G. SERVICES
EX ELECTRICAL U.G. SERVICES
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DRAWN BY	NJR	DESIGNED BY	JB
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WALLARA WATERS ESTATE STAGE 10

LAYOUT PLAN

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

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

Hilf Density Ratio Report

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

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/m³) :				
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/m³) :	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/m³) :	1.94	1.99	2.00	2.02
Hilf Density Ratio (%) :	**104.5**	**99.5**	**100.0**	**99.5**
Minimum Specification :	95% Standard	95% Standard	95% Standard	95% Standard
Moisture Specification :				
Site Selection :	Random	Random	Random	Random
Soil Description :				
Remarks :	-			

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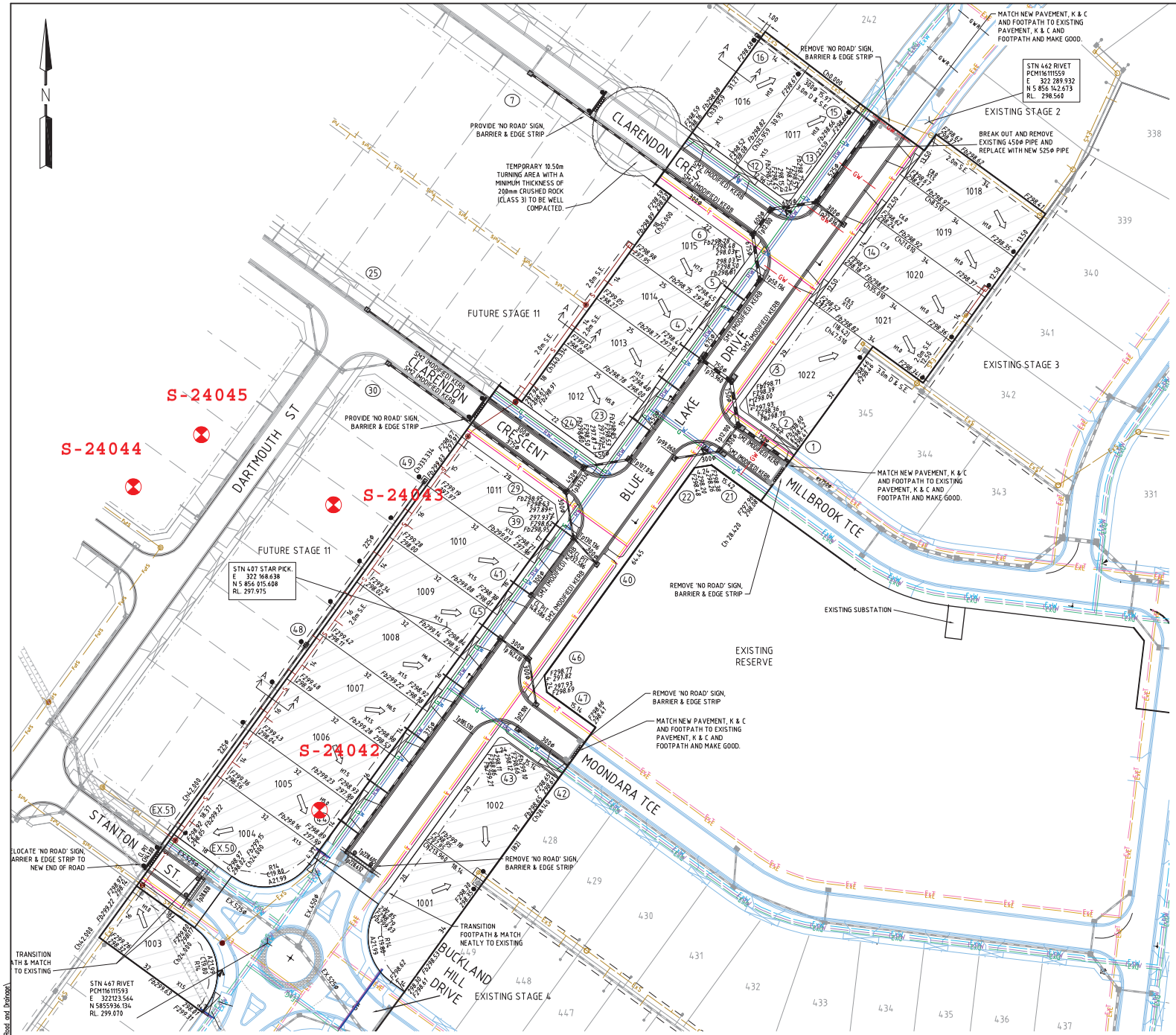

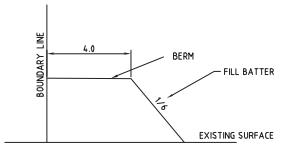

SECTION A-A

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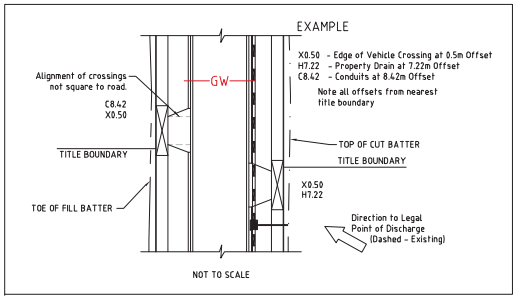

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LEGEND

- DRAIN, PROPERTY INLET & PIT
- EX DRAIN & PIT
- HOUSE DRAIN
- SEWER AND MAINTENANCE HOLE
- EX SEWER AND MAINTENANCE HOLE
- WATER MAIN
- EX WATER MAIN, VALVE & HYDRANT
- GAS MAIN
- EX GAS MAIN, VALVE
- TELSTRA SERVICES & PITS
- EX TELSTRA SERVICES & PITS
- RECYCLED WATER
- EX RECYCLED WATER
- ELECTRICAL U.G. SERVICES
- EX ELECTRICAL U.G. SERVICES
- ELECTRICAL SERVICE & PIT
- EX ELECTRICAL ASSETS
- EX ELECTRICAL OVERHEADS
- GAS & WATER CONDUITS
- TOP OF BATTER
- TOE OF BATTER
- F FINISHED SURFACE AFTER CUTTING OR FILLING
- Fb TOP OF PROPOSED BATTER
- P PROPOSED PAVEMENT OR FOOTPATH SURFACE
- IL EXISTING OR PROPOSED INVERT LEVEL OF PIPE OR OPEN DRAIN
- TP TANGENT POINT
- CH CHAINAGE
- PSM
- STREET SIGN
- DRAINAGE PIT No.
- TBM
- EX FENCE
- EX WALL OR BUILDING

DRAWN BY	NJR	DESIGNED BY	JB
MELWAY	250, E12	CHECKED BY	
DATUM	AHD	AUTHORISED BY	SR

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WALLARA WATERS ESTATE STAGE 10

LAYOUT PLAN

DRAWING No.	VERSION
10R2	F

REFERENCE 20569E/10

SHEET 2 OF 12

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

Hilf Density Ratio Report

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

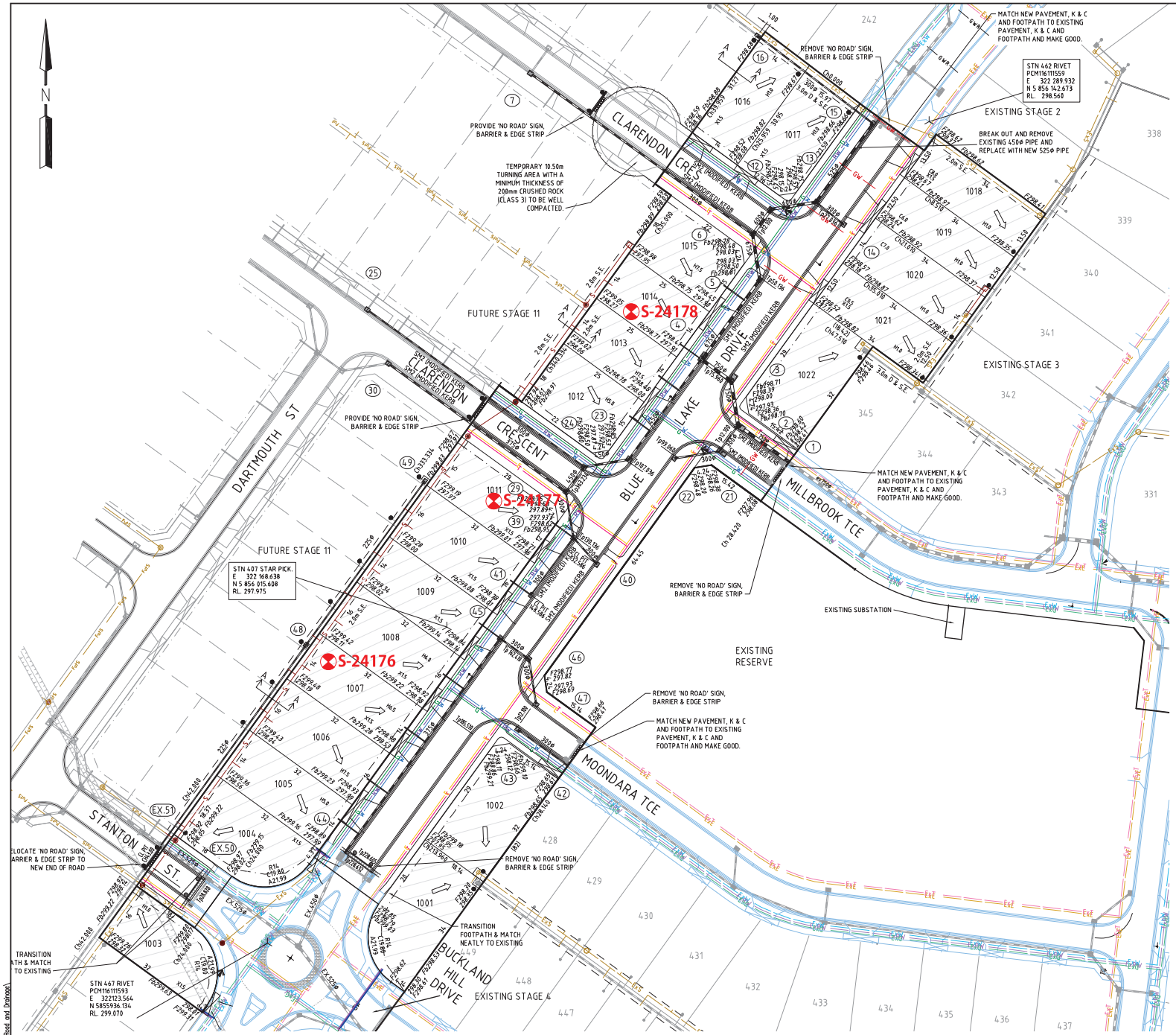
Sample Number :	S-24176	S-24177	S-24178	
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	
Date Sampled :	11/11/2016	11/11/2016	11/11/2016	
Date Tested :	11/11/2016	11/11/2016	11/11/2016	
Material Type :	Clay	Clay	Clay	
Material Source :	Imported	Imported	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/m³) :				
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/m³) :	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/m³) :	2.01	2.09	2.08	
Hilf Density Ratio (%) :	**101.0**	**95.0**	**96.5**	
Minimum Specification :	95% Standard	95% Standard	95% Standard	
Moisture Specification :				
Site Selection :	Random	Random	Random	
Soil Description :				
Remarks :	-			

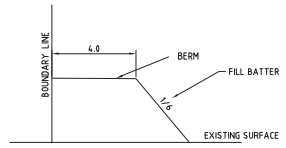
NATA
WORLD RECOGNISED ACCREDITATION

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.

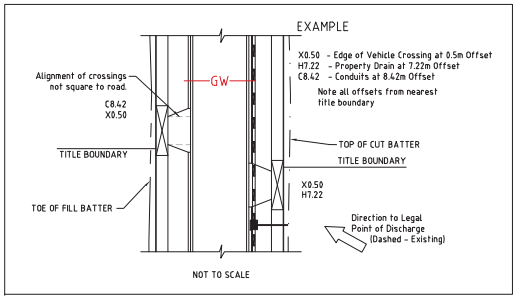
LEGEND

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

THIS PLAN SHOWS APPROXIMATE EXTENTS OF CUT AND FILL TO BE UNDERTAKEN DURING CONSTRUCTION OF THE WORKS BASED 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 0.15m.



WARNING

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0 5 10 20
Scale 1:500 @ A1

CONSTRUCTION PLAN

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VERSION	REMARKS		
F	PLAN REVISED	18.08.16	
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

H:\20569\Stage_10\CAD\DWG Set\Road and Drainage\

DRAIN, PROPERTY INLET & PIT
EX DRAIN & PIT
HOUSE DRAIN
SEWER AND MAINTENANCE HOLE
EX SEWER AND MAINTENANCE HOLE
WATER MAIN
EX WATER MAIN, VALVE & HYDRANT
GAS MAIN
EX GAS MAIN, VALVE
TELSTRA SERVICES & PITS
EX TELSTRA SERVICES & PITS

LEGEND

RECYCLED WATER
EX RECYCLED WATER
ELECTRICAL U.G. SERVICES
EX ELECTRICAL U.G. SERVICES
ELECTRICAL SERVICE & PIT
EX ELECTRICAL ASSETS
EX ELECTRICAL OVERHEADS
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PSM
STREET SIGN
DRAINAGE PIT No.
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EX FENCE
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DRAWN BY	NJR	DESIGNED BY	JB
MELWAY	250, E12	CHECKED BY	
DATUM	AHD	AUTHORISED BY	SR

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WALLARA WATERS ESTATE STAGE 10

LAYOUT PLAN

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

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**	**Page 1 of 1**	

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/m³) :				
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/m³) :	1.90	1.92		
Optimum Moisture Content (%) :	27.2	26.2		
Moisture Variation :	-2.0	-2.5		
Peak Converted Wet Density (t/m³) :	1.96	1.98		
Hilf Density Ratio (%) :	**96.5**	**97.0**		
Minimum Specification :	95% Standard	95% Standard		
Moisture Specification :				
Site Selection :	Random	Random		
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

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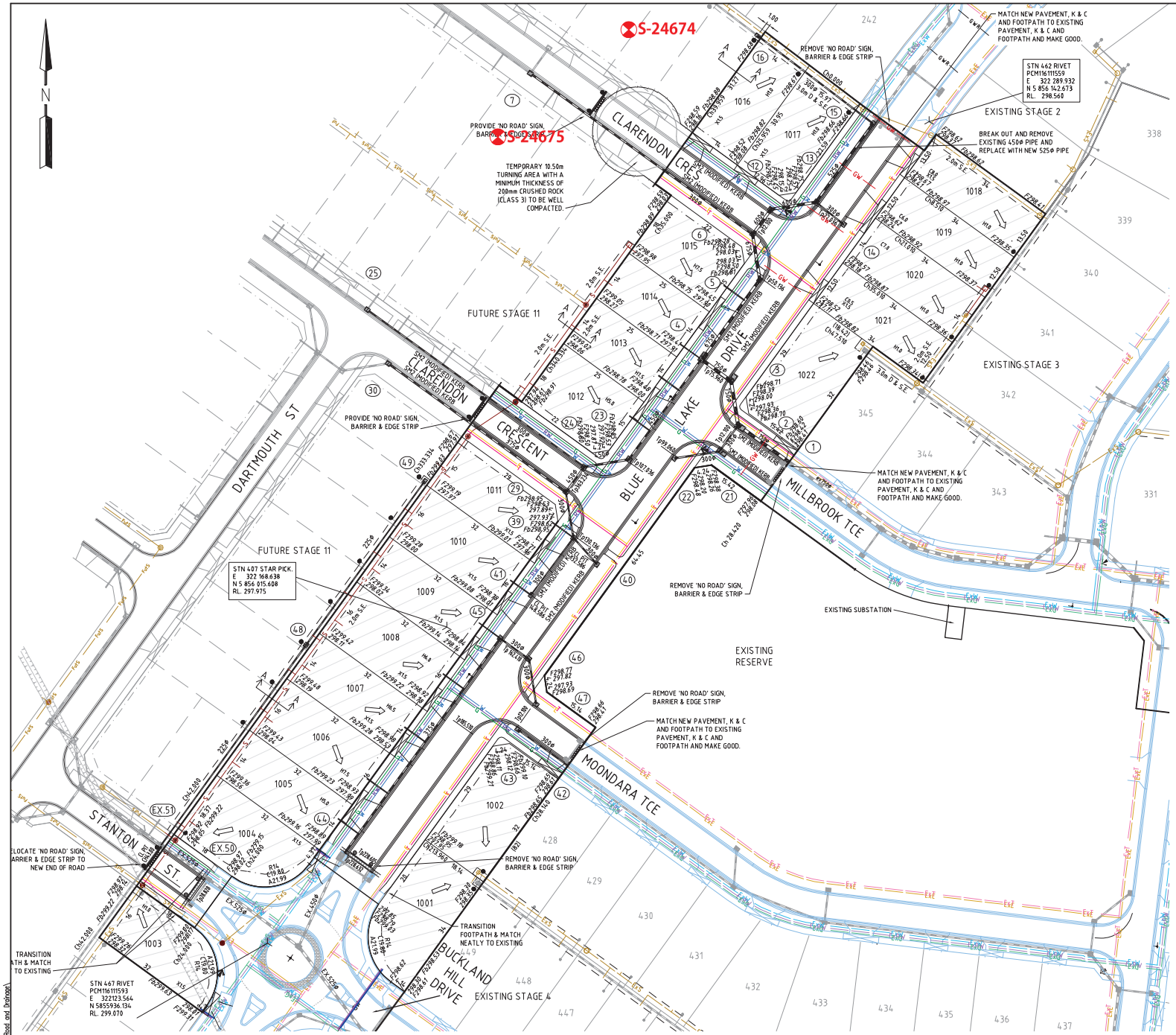
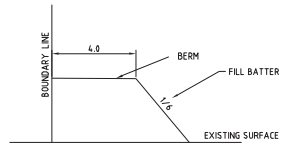
APPROVED SIGNATORY

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

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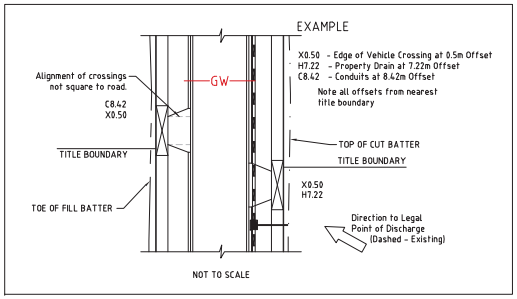

WARNING

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Scale 1:500 @ A1

CONSTRUCTION PLAN

VERSION	REMARKS		
F	PLAN REVISED	18.08.16	
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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

DRAIN, PROPERTY INLET & PIT; EX DRAIN & PIT; HOUSE DRAIN; SEWER AND MAINTENANCE HOLE; EX SEWER AND MAINTENANCE HOLE; WATER MAIN; EX WATER MAIN, VALVE & HYDRANT; GAS MAIN; EX GAS MAIN, VALVE; TELSTRA SERVICES & PITS; EX TELSTRA SERVICES & PITS

RECYCLED WATER; EX RECYCLED WATER; ELECTRICAL U.G. SERVICES; EX ELECTRICAL U.G. SERVICES; ELECTRICAL SERVICE & PIT; EX ELECTRICAL ASSETS; EX ELECTRICAL OVERHEADS; GAS & WATER CONDUITS; TOP OF BATTER; TOE OF BATTER

F FINISHED SURFACE AFTER CUTTING OR FILLING; Fb TOP OF PROPOSED BATTER; P PROPOSED PAVEMENT OR FOOTPATH SURFACE; IL EXISTING OR PROPOSED INVERT LEVEL OF PIPE OR OPEN DRAIN; TP TANGENT POINT; CH CHAINAGE; PSM; STREET SIGN; DRAINAGE PIT No.; TBM; EX FENCE; EX WALL OR BUILDING

DRAWN BY	NJR	DESIGNED BY	JB
MELWAY	250, E12	CHECKED BY	
DATUM	AHD	AUTHORISED BY	SR

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MITCHELL SHIRE COUNCIL
WALLARA WATERS ESTATE
STAGE 10
LAYOUT PLAN

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

H:\20569\Stage_10\CAD\DWG Set\Road and Drainage\

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

Hilf Density Ratio Report

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

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/m³) :				
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/m³) :	1.88	1.92		
Optimum Moisture Content (%) :	18.5	22.5		
Moisture Variation :	2.0	2.5		
Peak Converted Wet Density (t/m³) :	1.94	1.97		
Hilf Density Ratio (%) :	**97.0**	**97.5**		
Minimum Specification :	95% Standard	95% Standard		
Moisture Specification :				
Site Selection :	Random	Random		
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

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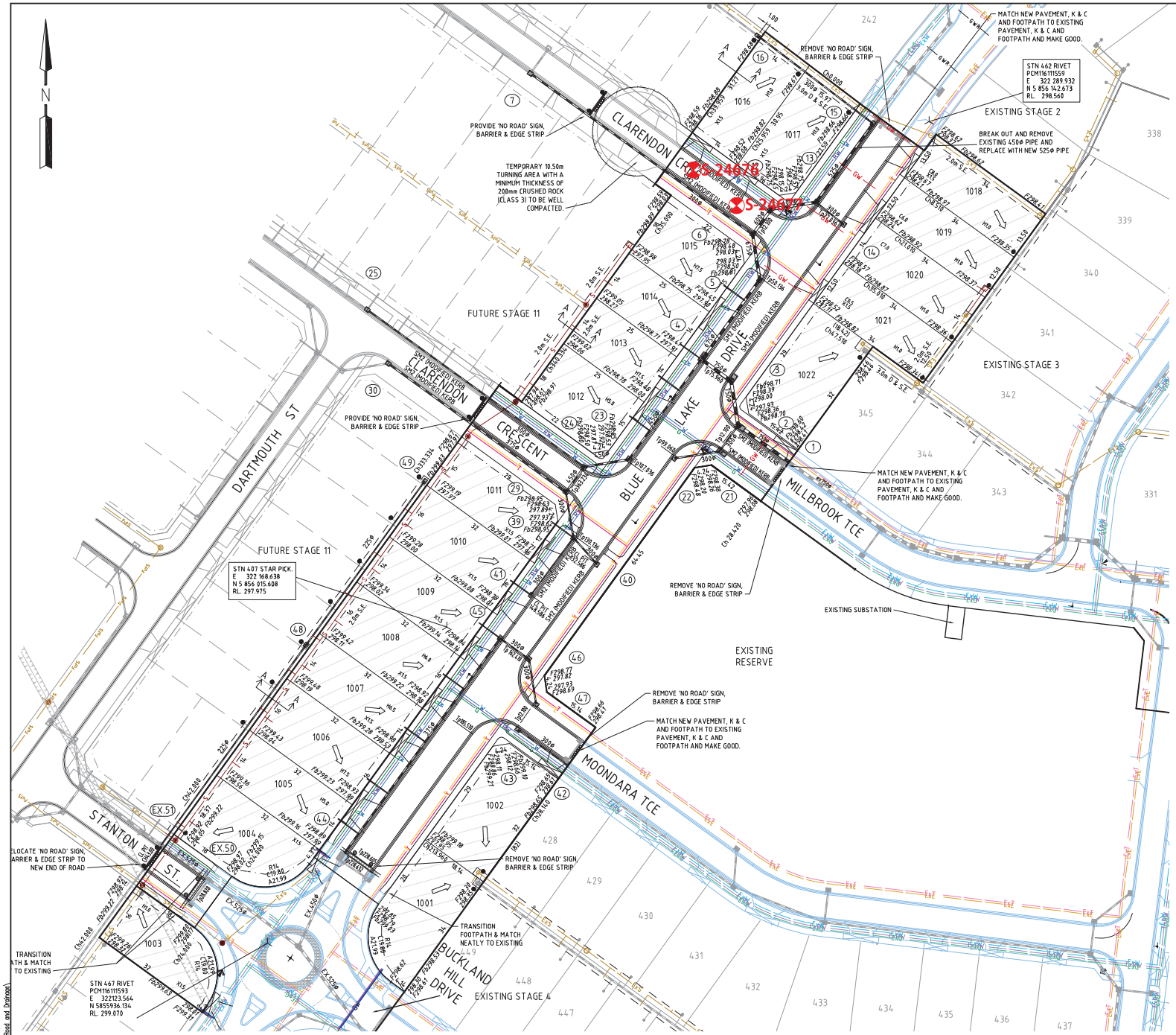
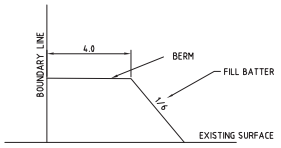
APPROVED SIGNATORY

Anthony Green - Technician
NATA Accreditation Number
18877





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

LEGEND

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- FILL IN EXCESS OF 200mm
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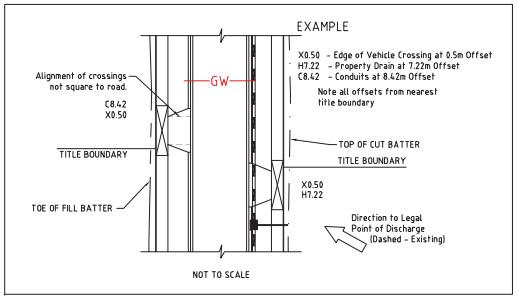

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DRAIN, PROPERTY INLET & PIT
EX DRAIN & PIT
HOUSE DRAIN
SEWER AND MAINTENANCE HOLE
EX SEWER AND MAINTENANCE HOLE
WATER MAIN
EX WATER MAIN, VALVE & HYDRANT
GAS MAIN
EX GAS MAIN, VALVE
TELSTRA SERVICES & PITS
EX TELSTRA SERVICES & PITS

LEGEND

RECYCLED WATER
EX RECYCLED WATER
ELECTRICAL U.G. SERVICES
EX ELECTRICAL U.G. SERVICES
ELECTRICAL SERVICE & PIT
EX ELECTRICAL ASSETS
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DRAWN BY	NJR	DESIGNED BY	JB
MELWAY	250, E12	CHECKED BY	
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MITCHELL SHIRE COUNCIL
WALLARA WATERS ESTATE
STAGE 10
LAYOUT PLAN

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

H:\20569\Stage_10\CAD\DWG Set\Road and Drainage\

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

Hilf Density Ratio Report

Client :	**Fortunato Group**	Report Number:	**CS-629 - 3/1**
Address :	**38A Merri Concourse, Campbellfield, VIC, 3061**	Report Date :	**9/12/2016**
Project Name :	**Wallara Waters Stage 11**	Order Number :	
Project Number :	**CS-629**	Test Method :	**AS1289.5.7.1**
Location:	**Wallan**	**Page 1 of 3**	

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/m³) :				
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/m³) :	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/m³) :	1.99	2.06	1.99	2.06
Hilf Density Ratio (%) :	**95.0**	**89.0**	**89.5**	**90.5**
Minimum Specification :	98% Standard	98% Standard	98% Standard	98% Standard
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

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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 :	**Fortunato Group**	Report Number:	**CS-629 - 3/1**
Address :	**38A Merri Concourse, Campbellfield, VIC, 3061**	Report Date :	**9/12/2016**
Project Name :	**Wallara Waters Stage 11**	Order Number :	
Project Number :	**CS-629**	Test Method :	**AS1289.5.7.1**
Location:	**Wallan**	**Page 2 of 3**	

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/m³) :				
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/m³) :	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/m³) :	1.99	1.98	1.96	1.96
Hilf Density Ratio (%) :	**90.0**	**90.5**	**94.0**	**91.0**
Minimum Specification :	98% Standard	98% Standard	98% Standard	98% Standard
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

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

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 :	**Fortunato Group**	Report Number:	**CS-629 - 3/1**
Address :	**38A Merri Concourse, Campbellfield, VIC, 3061**	Report Date :	**9/12/2016**
Project Name :	**Wallara Waters Stage 11**	Order Number :	
Project Number :	**CS-629**	Test Method :	**AS1289.5.7.1**
Location:	**Wallan**	**Page 3 of 3**	

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/m³) :				
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/m³) :	1.88			
Optimum Moisture Content (%) :	24.9			
Moisture Variation :	-5.5			
Peak Converted Wet Density (t/m³) :	1.98			
Hilf Density Ratio (%) :	**95.0**			
Minimum Specification :	98% Standard			
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

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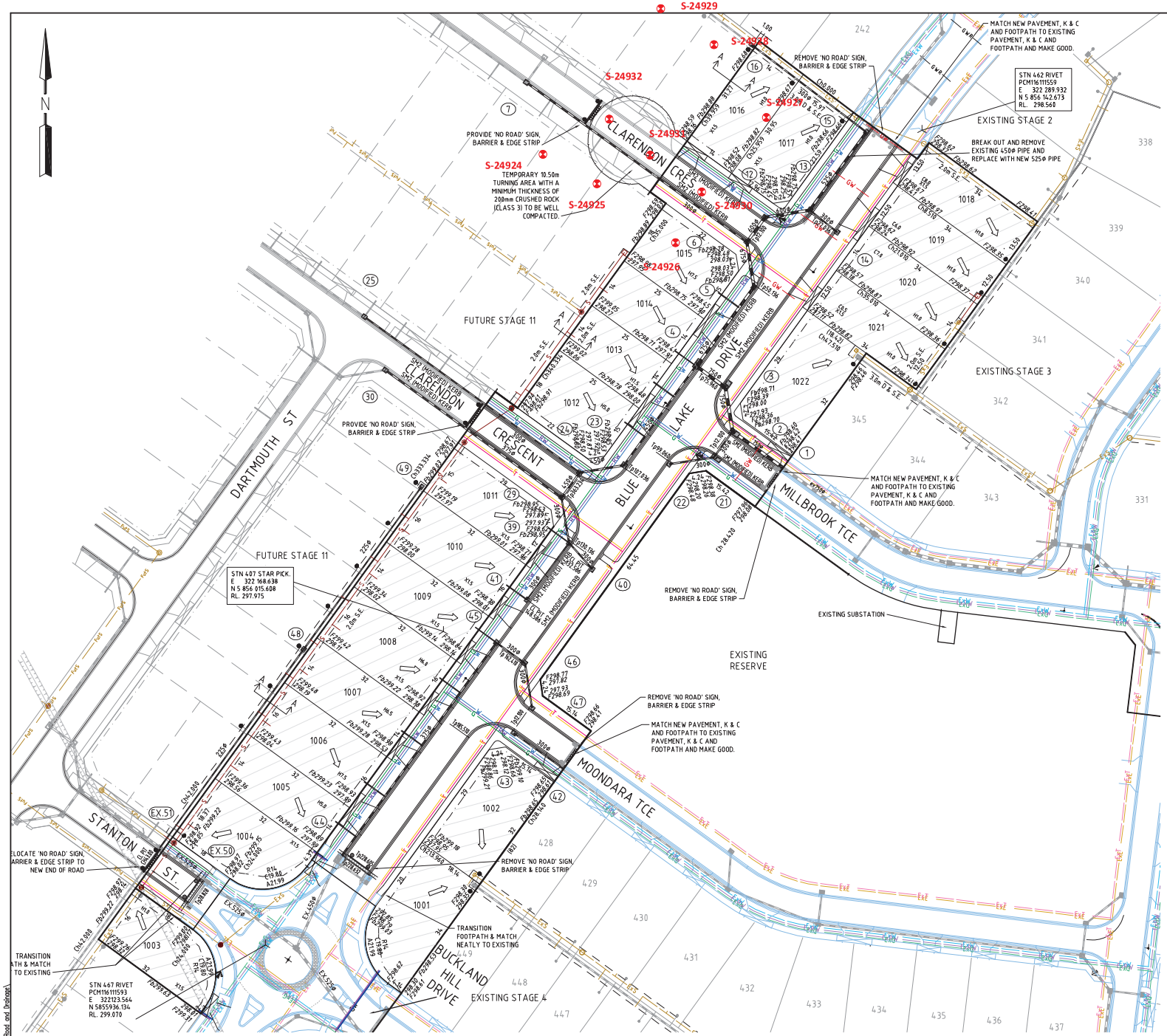

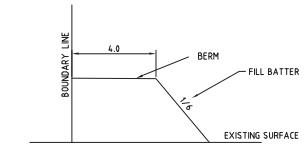

SECTION A-A

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

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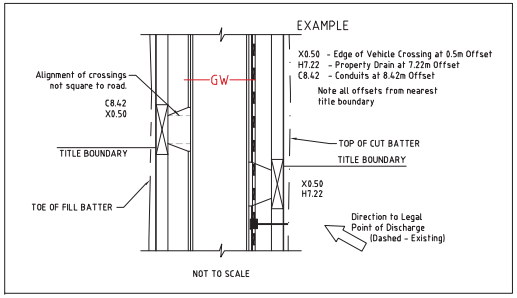

WARNING

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Scale 1:500 @ A1

CONSTRUCTION PLAN

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VERSION	REMARKS		
F	PLAN REVISED	18.08.16	
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

H:\20569\Stage_10\CAD\DWG Set\Road and Drainage\

LEGEND

- DRAIN, PROPERTY INLET & PIT
- EX DRAIN & PIT
- HOUSE DRAIN
- SEWER AND MAINTENANCE HOLE
- EX SEWER AND MAINTENANCE HOLE
- WATER MAIN
- EX WATER MAIN, VALVE & HYDRANT
- GAS MAIN
- EX GAS MAIN, VALVE
- TELSTRA SERVICES & PITS
- EX TELSTRA SERVICES & PITS
- RECYCLED WATER
- EX RECYCLED WATER
- ELECTRICAL U.G. SERVICES
- EX ELECTRICAL U.G. SERVICES
- ELECTRICAL SERVICE & PIT
- EX ELECTRICAL ASSETS
- EX ELECTRICAL OVERHEADS
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- TOP OF BATTER
- TOE OF BATTER
- FINISHED SURFACE AFTER CUTTING OR FILLING
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- DRAINAGE PIT No.
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- EX FENCE
- EX WALL OR BUILDING

DRAWN BY	NJR	DESIGNED BY	JB
MELWAY	250, E12	CHECKED BY	
DATUM	AHD	AUTHORISED BY	SR

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WALLARA WATERS ESTATE STAGE 10

LAYOUT PLAN

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

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

Hilf Density Ratio Report

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

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/m³) :				
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/m³) :	1.80	1.91		
Optimum Moisture Content (%) :	29.4	23.6		
Moisture Variation :	-8.0	-7.5		
Peak Converted Wet Density (t/m³) :	2.05	2.07		
Hilf Density Ratio (%) :	**87.5**	**89.0**		
Minimum Specification :	95% Standard	95% Standard		
Moisture Specification :				
Site Selection :	Random	Random		
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

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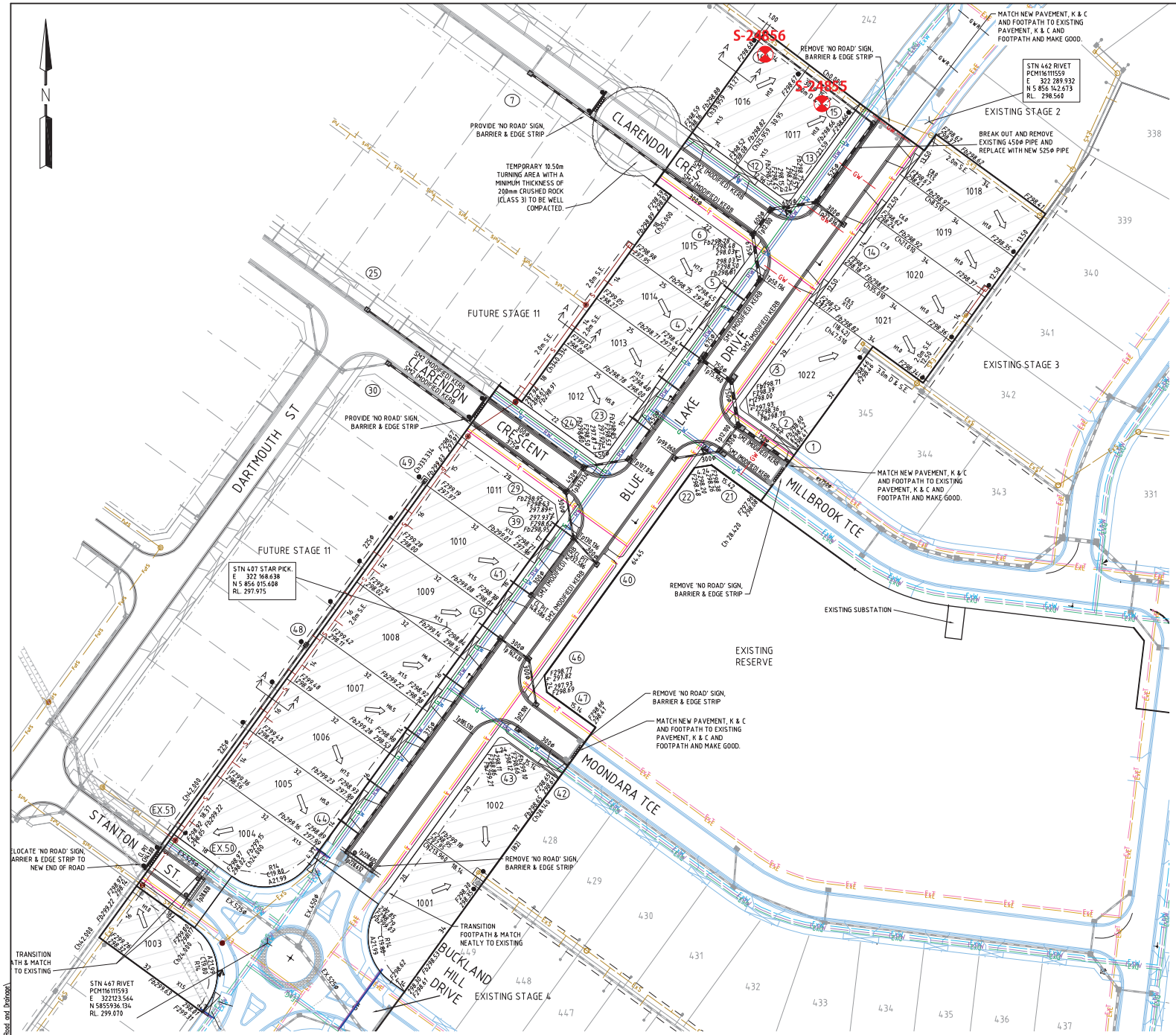
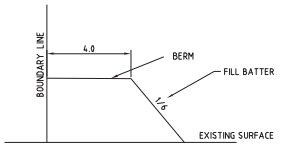
APPROVED SIGNATORY

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

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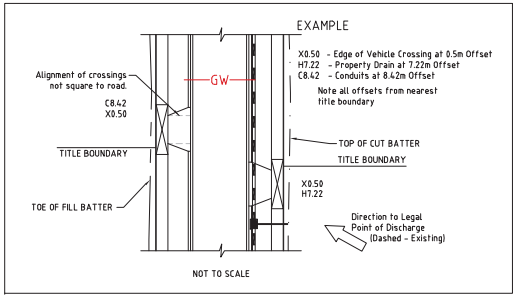

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CONSTRUCTION PLAN

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LEGEND

- DRAIN, PROPERTY INLET & PIT
- EX DRAIN & PIT
- HOUSE DRAIN
- SEWER AND MAINTENANCE HOLE
- EX SEWER AND MAINTENANCE HOLE
- WATER MAIN
- EX WATER MAIN, VALVE & HYDRANT
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- EX GAS MAIN, VALVE
- TELSTRA SERVICES & PITS
- EX TELSTRA SERVICES & PITS
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DRAWN BY	NJR	DESIGNED BY	JB
MELWAY	250, E12	CHECKED BY	
DATUM	AHD	AUTHORISED BY	SR

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WALLARA WATERS ESTATE
STAGE 10
LAYOUT PLAN

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

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

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/m³) :				
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/m³) :	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/m³) :	2.01	2.02	2.00	2.03
Hilf Density Ratio (%) :	**89.0**	**91.5**	**91.5**	**92.5**
Minimum Specification :	95% Standard	95% Standard	95% Standard	95% Standard
Moisture Specification :				
Site Selection :	Random	Random	Random	Random
Soil Description :				
Remarks :	-			

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APPROVED SIGNATORY

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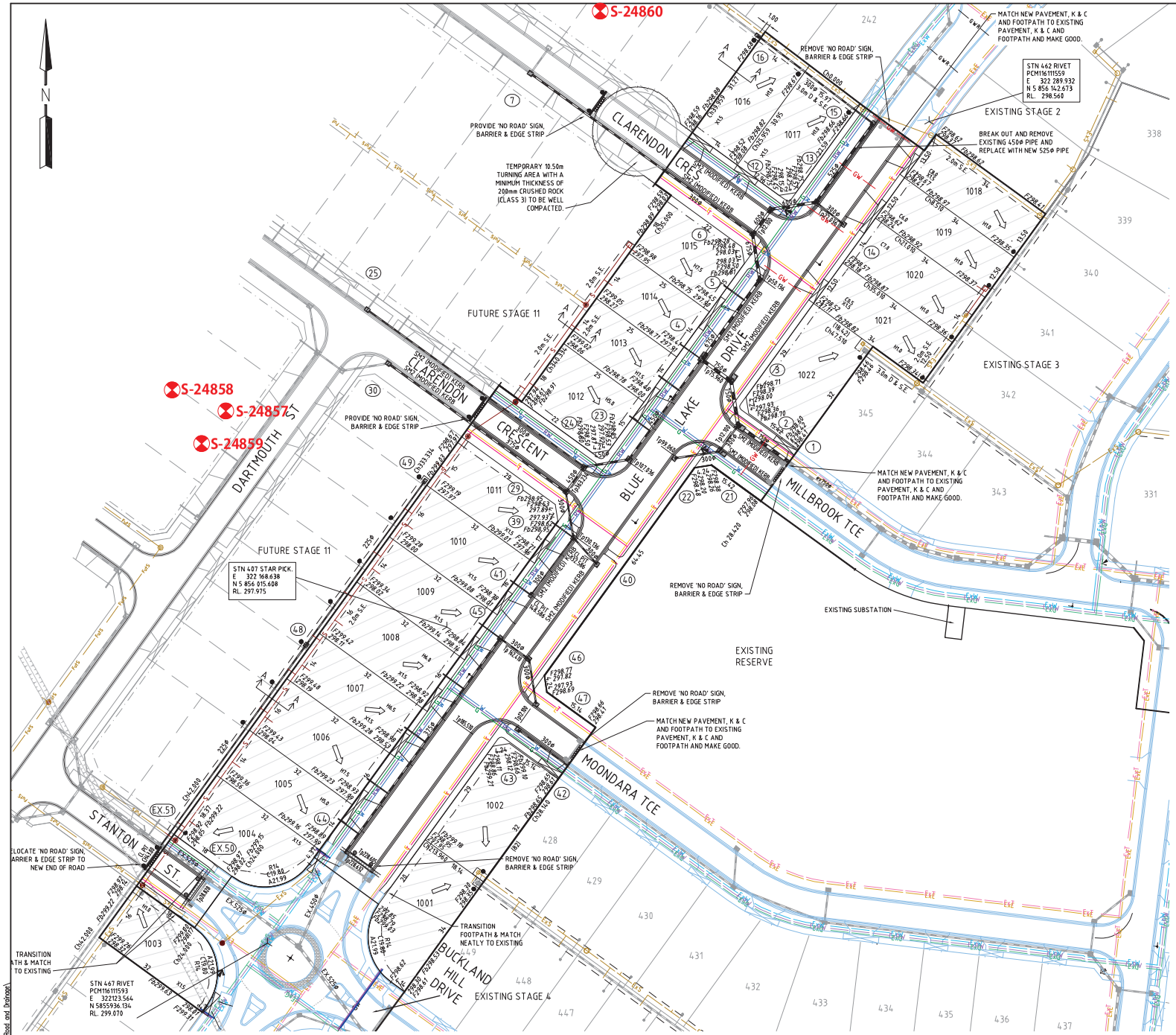

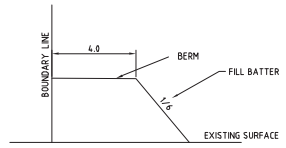

SECTION A-A

BERM DETAIL (AS REQUIRED)

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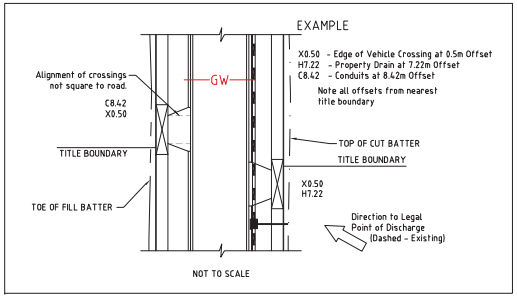

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B	REVISED STAGE LAYOUT	15.01.16	PC

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LEGEND

- DRAIN, PROPERTY INLET & PIT
- EX DRAIN & PIT
- HOUSE DRAIN
- SEWER AND MAINTENANCE HOLE
- EX SEWER AND MAINTENANCE HOLE
- WATER MAIN
- EX WATER MAIN, VALVE & HYDRANT
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DRAWN BY	NJR	DESIGNED BY	JB
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WALLARA WATERS ESTATE STAGE 10

LAYOUT PLAN

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

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

Hilf Density Ratio Report

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

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/m³) :				
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/m³) :	1.94			
Optimum Moisture Content (%) :	23.2			
Moisture Variation :	3.0			
Peak Converted Wet Density (t/m³) :	1.91			
Hilf Density Ratio (%) :	**101.5**			
Minimum Specification :	95% Standard			
Moisture Specification :				
Site Selection :	Random			
Soil Description :				
Remarks :	-			

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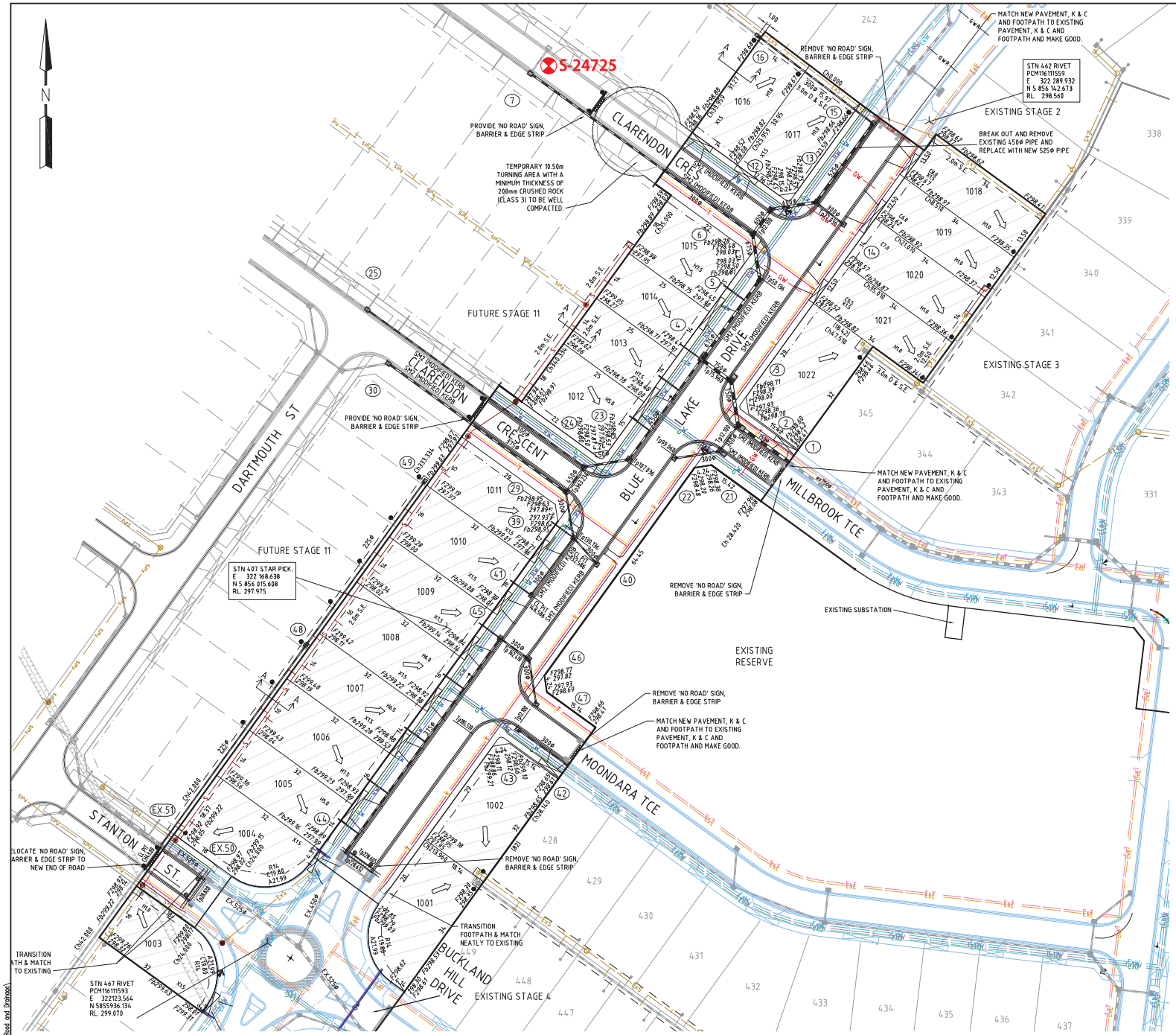
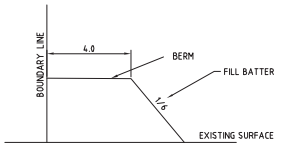
NATA Accreditation Number
18877





SECTION A-A

BERM DETAIL (AS REQUIRED)

N.T.S.

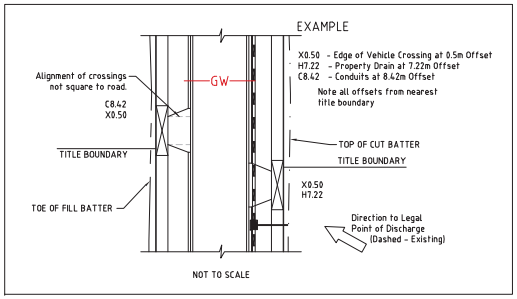
LEGEND

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

THIS PLAN SHOWS APPROXIMATE EXTENTS OF CUT AND FILL TO BE UNDERTAKEN DURING CONSTRUCTION OF THE WORKS BASED 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 0.15m.



WARNING

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0 5 10 20
Scale 1:500 @ A1

CONSTRUCTION PLAN

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VERSION	REMARKS		
F	PLAN REVISED	18.08.16	
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

- DRAIN, PROPERTY INLET & PIT
- EX DRAIN & PIT
- HOUSE DRAIN
- SEWER AND MAINTENANCE HOLE
- EX SEWER AND MAINTENANCE HOLE
- WATER MAIN
- EX WATER MAIN, VALVE & HYDRANT
- GAS MAIN
- EX GAS MAIN, VALVE
- TELSTRA SERVICES & PITS
- EX TELSTRA SERVICES & PITS
- RECYCLED WATER
- EX RECYCLED WATER
- ELECTRICAL U.G. SERVICES
- EX ELECTRICAL U.G. SERVICES
- ELECTRICAL SERVICE & PIT
- EX ELECTRICAL ASSETS
- EX ELECTRICAL OVERHEADS
- GAS & WATER CONDUITS
- TOP OF BATTER
- TOE OF BATTER
- F FINISHED SURFACE AFTER CUTTING OR FILLING
- Fb TOP OF PROPOSED BATTER
- P PROPOSED PAVEMENT OR FOOTPATH SURFACE
- IL EXISTING OR PROPOSED INVERT LEVEL OF PIPE OR OPEN DRAIN
- TP TANGENT POINT
- CH CHAINAGE
- PSM
- STREET SIGN
- DRAINAGE PIT No.
- TBM
- EX FENCE
- EX WALL OR BUILDING

DRAWN BY	NJR	DESIGNED BY	JB
MELWAY	250, E12	CHECKED BY	
DATUM	AHD	AUTHORISED BY	SR

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WALLARA WATERS ESTATE

STAGE 10

LAYOUT PLAN

DRAWING No.	VERSION
10R2	F

REFERENCE 20569E/10

SHEET 2 OF 12

H:\20569\Stage_10\CAD\DWG Set\Road and Drainage\

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

Hilf Density Ratio Report

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

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/m³) :				
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/m³) :	1.96	1.92		
Optimum Moisture Content (%) :	19.8	31.4		
Moisture Variation :	2.5	-1.0		
Peak Converted Wet Density (t/m³) :	1.96	1.96		
Hilf Density Ratio (%) :	**100.0**	**98.0**		
Minimum Specification :	95% Standard	95% Standard		
Moisture Specification :				
Site Selection :	Random	Random		
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

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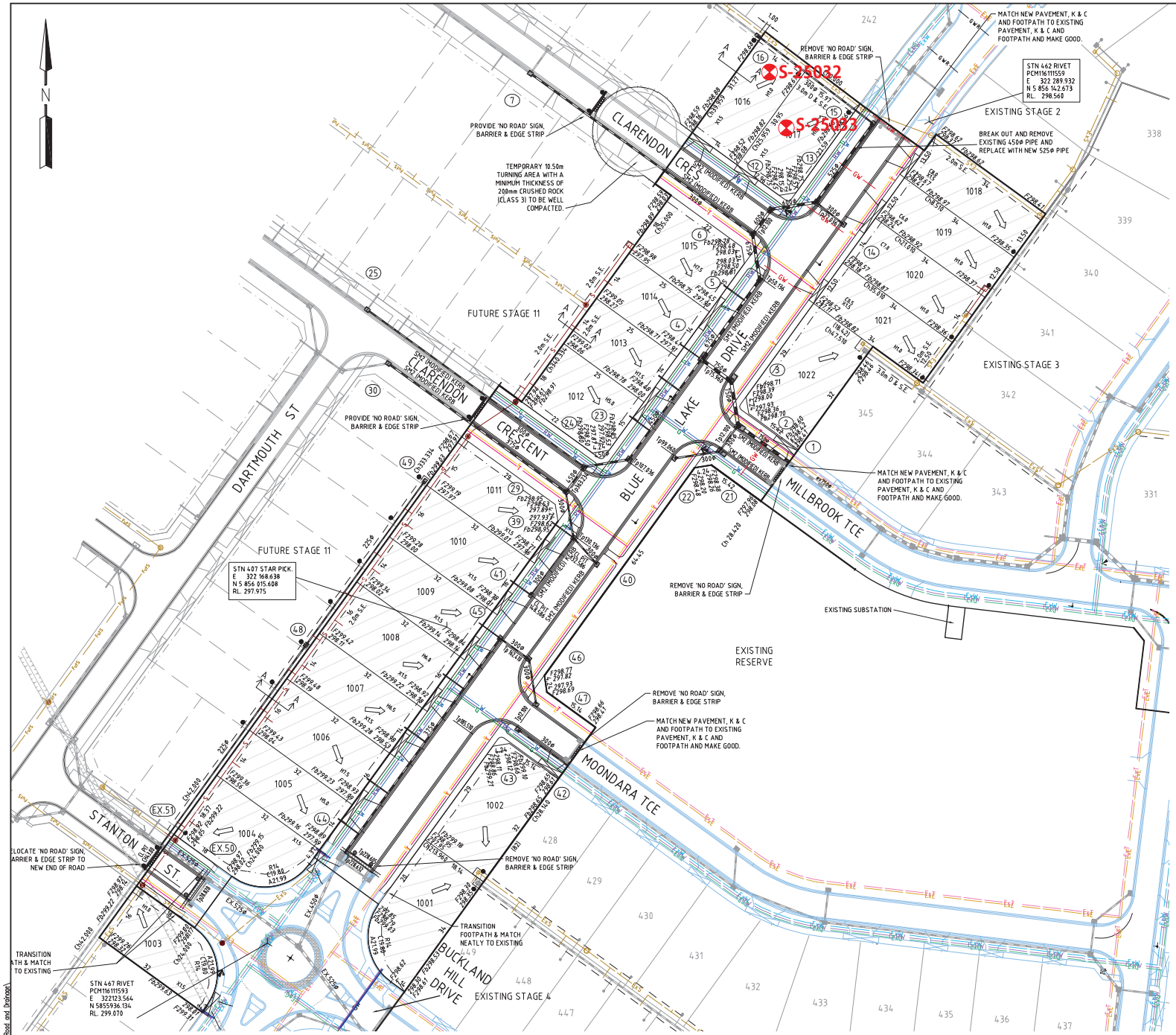
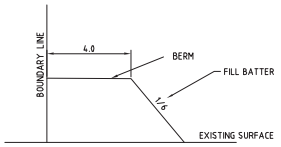
APPROVED SIGNATORY

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
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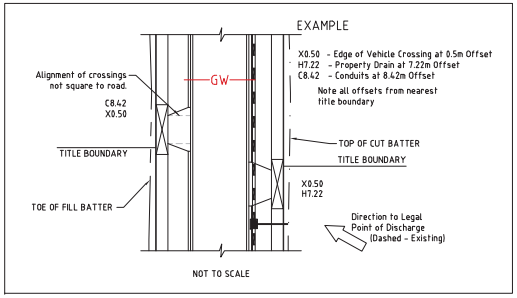

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Scale 1:500 @ A1

CONSTRUCTION PLAN

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VERSION	REMARKS		
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H:\20569\Stage_10\CAD\DWG Set\Road and Drainage\

LEGEND

- DRAIN, PROPERTY INLET & PIT
- EX DRAIN & PIT
- HOUSE DRAIN
- SEWER AND MAINTENANCE HOLE
- EX SEWER AND MAINTENANCE HOLE
- WATER MAIN
- EX WATER MAIN, VALVE & HYDRANT
- GAS MAIN
- EX GAS MAIN, VALVE
- TELSTRA SERVICES & PITS
- EX TELSTRA SERVICES & PITS
- RECYCLED WATER
- EX RECYCLED WATER
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- EX ELECTRICAL U.G. SERVICES
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DRAWN BY	NJR	DESIGNED BY	JB
MELWAY	250, E12	CHECKED BY	
DATUM	AHD	AUTHORISED BY	SR

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WALLARA WATERS ESTATE STAGE 10

LAYOUT PLAN

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

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

Hilf Density Ratio Report

Client :	**Fortunato Group**	Report Number:	**CS-629 - 4/1**
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**	**Page 1 of 1**	

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/m³) :				
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/m³) :	1.96	1.87		
Optimum Moisture Content (%) :	18.3	27.4		
Moisture Variation :	-1.0	-2.5		
Peak Converted Wet Density (t/m³) :	1.99	2.02		
Hilf Density Ratio (%) :	**98.0**	**93.0**		
Minimum Specification :	95% Standard	95% Standard		
Moisture Specification :				
Site Selection :	Random	Random		
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

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APPROVED SIGNATORY

Anthony Green - Technician
NATA Accreditation Number
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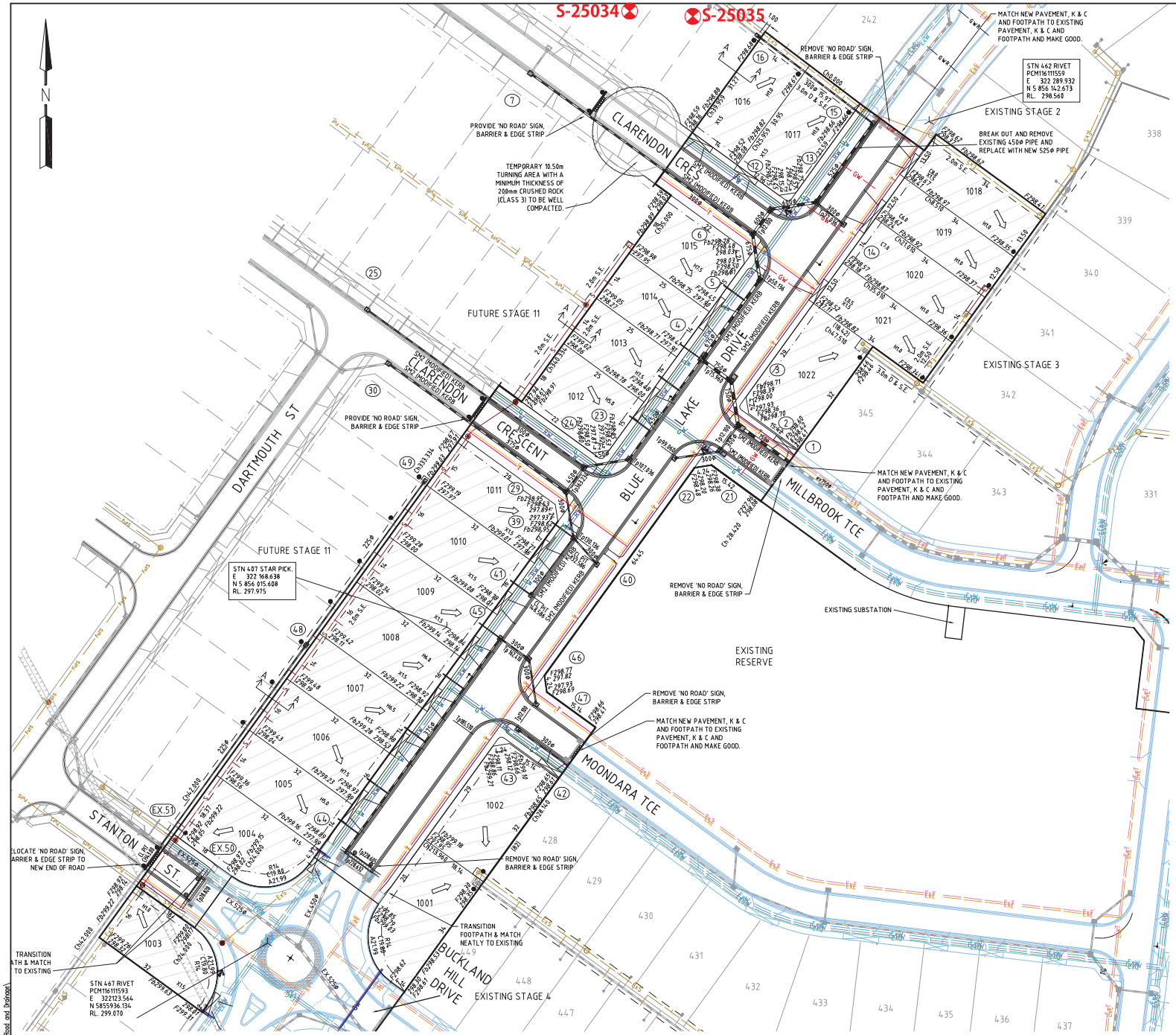

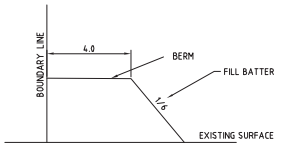

SECTION A-A

BERM DETAIL (AS REQUIRED)

N.T.S.

LEGEND

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- FILL IN EXCESS OF 200mm
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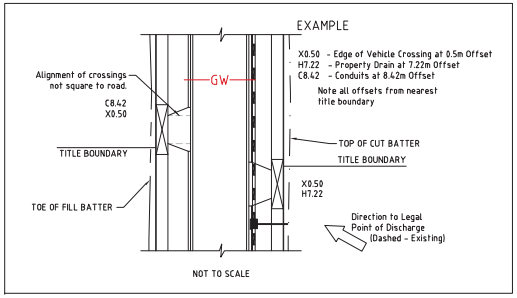

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0 5 10 20
Scale 1:500 @ A1

CONSTRUCTION PLAN

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B	REVISED STAGE LAYOUT	15.01.16	PC

H:\20569\Stage_10\CAD\DWG Set\Road and Drainage\

LEGEND

- DRAIN, PROPERTY INLET & PIT
- EX DRAIN & PIT
- HOUSE DRAIN
- SEWER AND MAINTENANCE HOLE
- EX SEWER AND MAINTENANCE HOLE
- WATER MAIN
- EX WATER MAIN, VALVE & HYDRANT
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- EX GAS MAIN, VALVE
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DRAWN BY	NJR	DESIGNED BY	JB
MELWAY	250, E12	CHECKED BY	
DATUM	AHD	AUTHORISED BY	SR

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WALLARA WATERS ESTATE

STAGE 10

LAYOUT PLAN

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

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

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**	**Page 1 of 1**	

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/m³) :				
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/m³) :	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/m³) :	2.00	1.93	1.94	
Hilf Density Ratio (%) :	**97.5**	**100.5**	**99.5**	
Minimum Specification :	95% Standard	95% Standard	95% Standard	
Moisture Specification :				
Site Selection :	Random	Random	Random	
Soil Description :				
Remarks :	-			

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APPROVED SIGNATORY

Anthony Green - Technician
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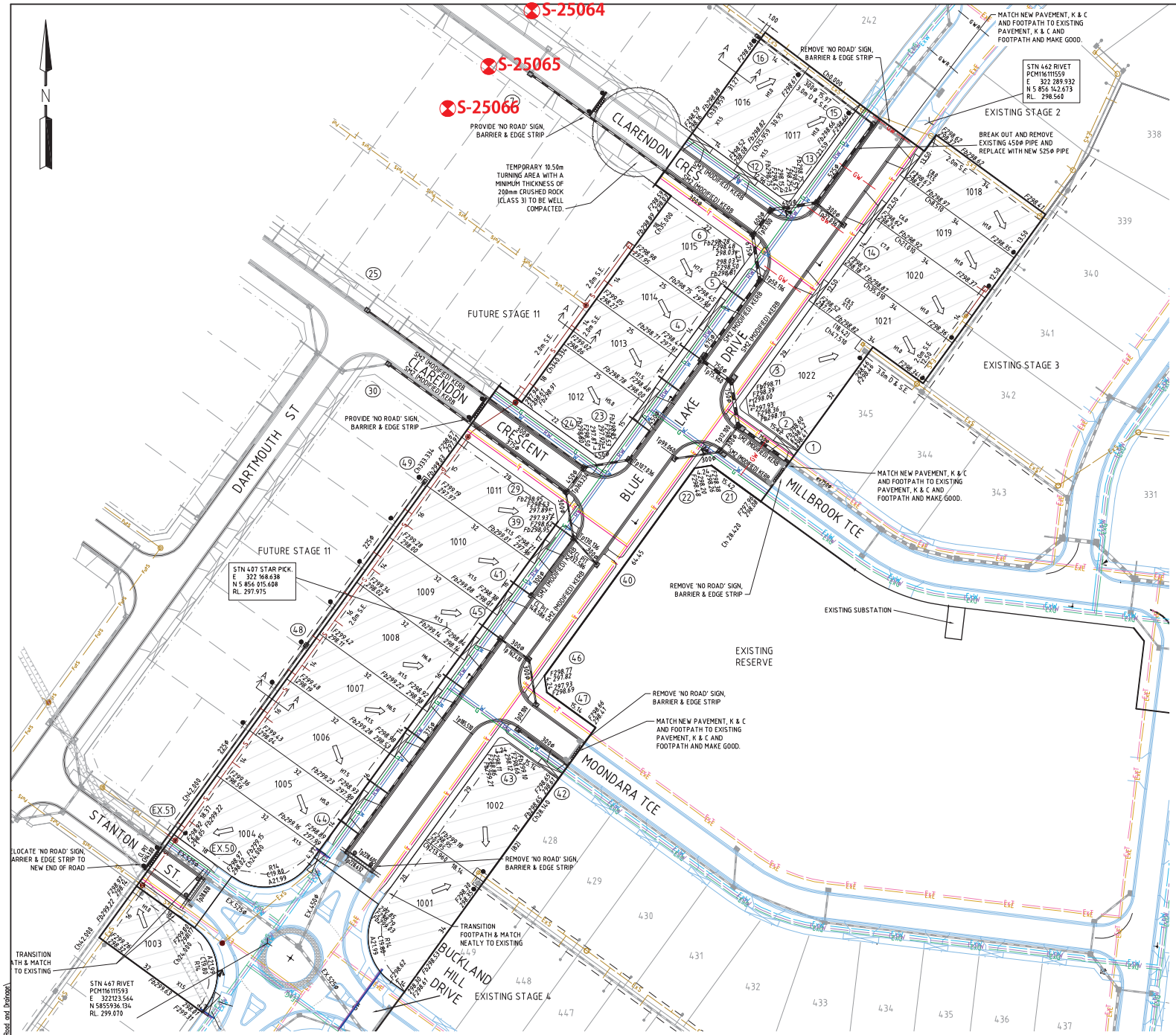

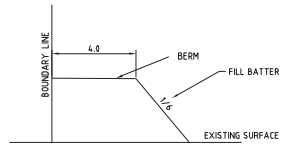

SECTION A-A

BERM DETAIL (AS REQUIRED)

N.T.S.

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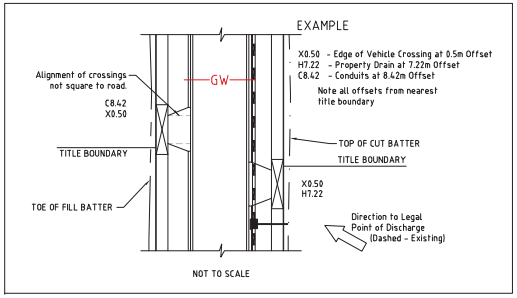

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B	REVISED STAGE LAYOUT	15.01.16	PC

DRAIN, PROPERTY INLET & PIT; EX DRAIN & PIT; HOUSE DRAIN; SEWER AND MAINTENANCE HOLE; EX SEWER AND MAINTENANCE HOLE; WATER MAIN; EX WATER MAIN, VALVE & HYDRANT; GAS MAIN; EX GAS MAIN, VALVE; TELSTRA SERVICES & PITS; EX TELSTRA SERVICES & PITS

LEGEND

RECYCLED WATER; EX RECYCLED WATER; ELECTRICAL U.G. SERVICES; EX ELECTRICAL U.G. SERVICES; ELECTRICAL SERVICE & PIT; EX ELECTRICAL ASSETS; EX ELECTRICAL OVERHEADS; GAS & WATER CONDUITS; TOP OF BATTER; TOE OF BATTER

F FINISHED SURFACE AFTER CUTTING OR FILLING; Fb TOP OF PROPOSED BATTER; P PROPOSED PAVEMENT OR FOOTPATH SURFACE; IL EXISTING OR PROPOSED INVERT LEVEL OF PIPE OR OPEN DRAIN; TP TANGENT POINT; CH CHAINAGE; PSM; STREET SIGN; DRAINAGE PIT No.; TBM; EX FENCE; EX WALL OR BUILDING

DRAWN BY	NJR	DESIGNED BY	JB
MELWAY	250, E12	CHECKED BY	
DATUM	AHD	AUTHORISED BY	SR

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WALLARA WATERS ESTATE STAGE 10

LAYOUT PLAN

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

H:\20569\Stage_10\CAD\DWG Set\Road and Drainage\

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

Hilf Density Ratio Report

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

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/m³) :				
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/m³) :	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/m³) :	1.95	1.91	1.93	
Hilf Density Ratio (%) :	**98.5**	**97.0**	**100.0**	
Minimum Specification :	95% Standard	95% Standard	95% Standard	
Moisture Specification :				
Site Selection :	Random	Random	Random	
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

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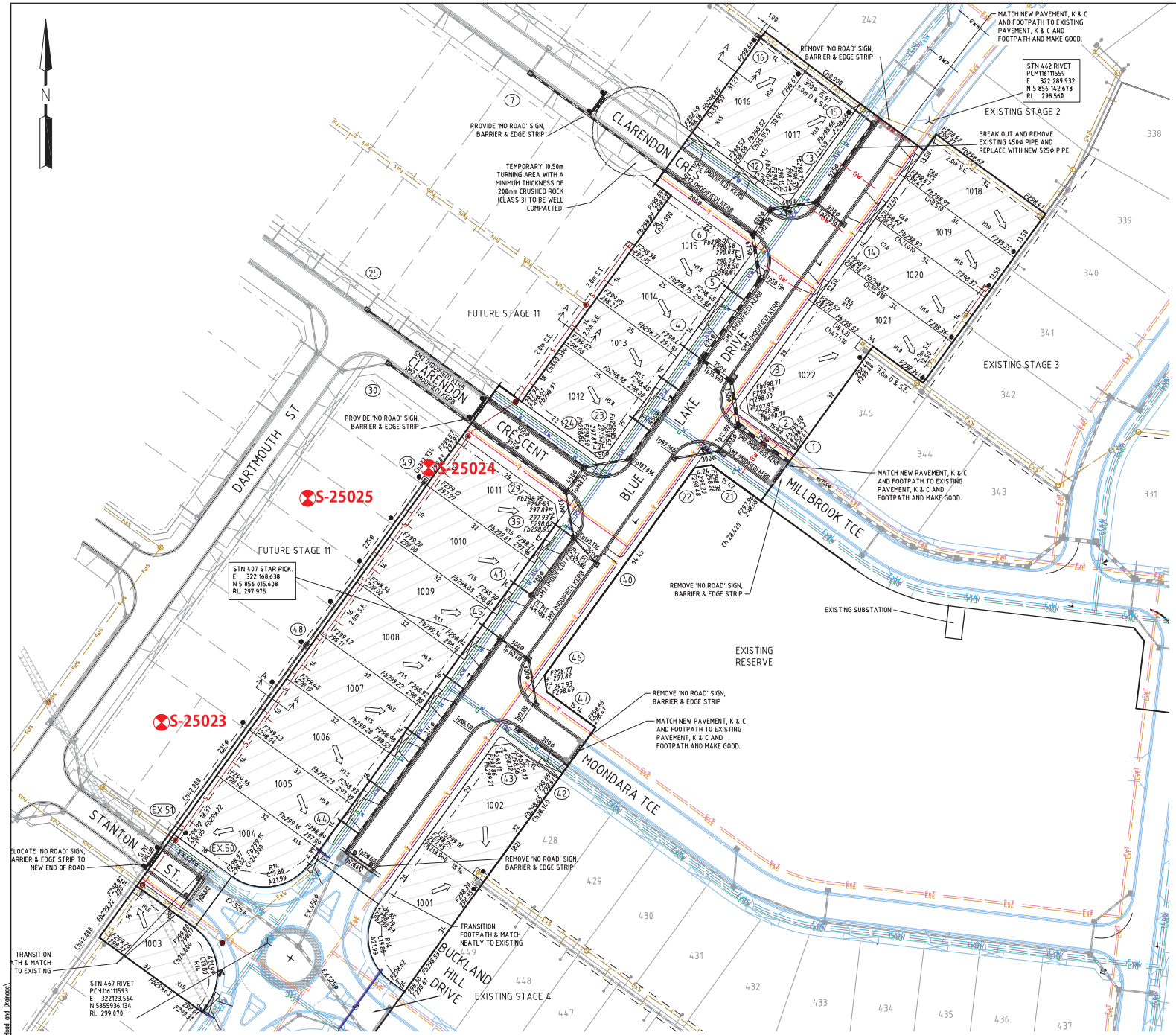
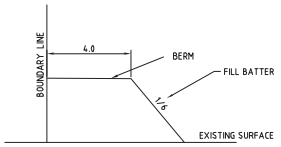
APPROVED SIGNATORY

Anthony Green - Technician
NATA Accreditation Number
18877





SECTION A-A

BERM DETAIL (AS REQUIRED)

N.T.S.

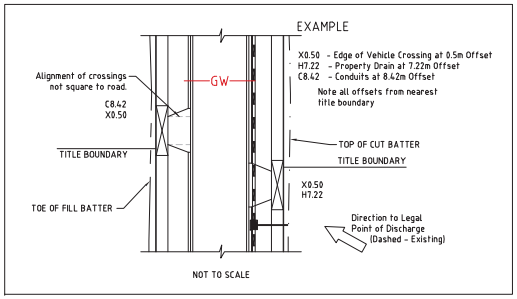
LEGEND

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

THIS PLAN SHOWS APPROXIMATE EXTENTS OF CUT AND FILL TO BE UNDERTAKEN DURING CONSTRUCTION OF THE WORKS BASED 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 0.15m.



WARNING

BEWARE OF UNDERGROUND SERVICES

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0 5 10 20
Scale 1:500 @ A1

CONSTRUCTION PLAN

THIS DRAWING IS NOT TO BE COPIED OR SCALED

VERSION	REMARKS		
F	PLAN REVISED	18.08.16	
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

H:\20569\Stage_10\CAD\DWG Set\Road and Drainage\

DRAIN, PROPERTY INLET & PIT
EX DRAIN & PIT
HOUSE DRAIN
SEWER AND MAINTENANCE HOLE
EX SEWER AND MAINTENANCE HOLE
WATER MAIN
EX WATER MAIN, VALVE & HYDRANT
GAS MAIN
EX GAS MAIN, VALVE
TELSTRA SERVICES & PITS
EX TELSTRA SERVICES & PITS

LEGEND

RECYCLED WATER
EX RECYCLED WATER
ELECTRICAL U.G. SERVICES
EX ELECTRICAL U.G. SERVICES
ELECTRICAL SERVICE & PIT
EX ELECTRICAL ASSETS
EX ELECTRICAL OVERHEADS
GAS & WATER CONDUITS
TOP OF BATTER
TOE OF BATTER

F FINISHED SURFACE AFTER CUTTING OR FILLING
Fb TOP OF PROPOSED BATTER
P PROPOSED PAVEMENT OR FOOTPATH SURFACE
IL EXISTING OR PROPOSED INVERT LEVEL OF PIPE OR OPEN DRAIN
TP TANGENT POINT
CH CHAINAGE
PSM
STREET SIGN
DRAINAGE PIT No.
TBM
EX FENCE
EX WALL OR BUILDING

DRAWN BY	NJR	DESIGNED BY	JB
MELWAY	250, E12	CHECKED BY	
DATUM	AHD	AUTHORISED BY	SR

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MITCHELL SHIRE COUNCIL

WALLARA WATERS ESTATE
STAGE 10
LAYOUT PLAN

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

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

Hilf Density Ratio Report

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

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/m³) :				
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/m³) :	1.90			
Optimum Moisture Content (%) :	33.6			
Moisture Variation :	-1.5			
Peak Converted Wet Density (t/m³) :	1.91			
Hilf Density Ratio (%) :	**99.5**			
Minimum Specification :	95% Standard			
Moisture Specification :				
Site Selection :	Random			
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

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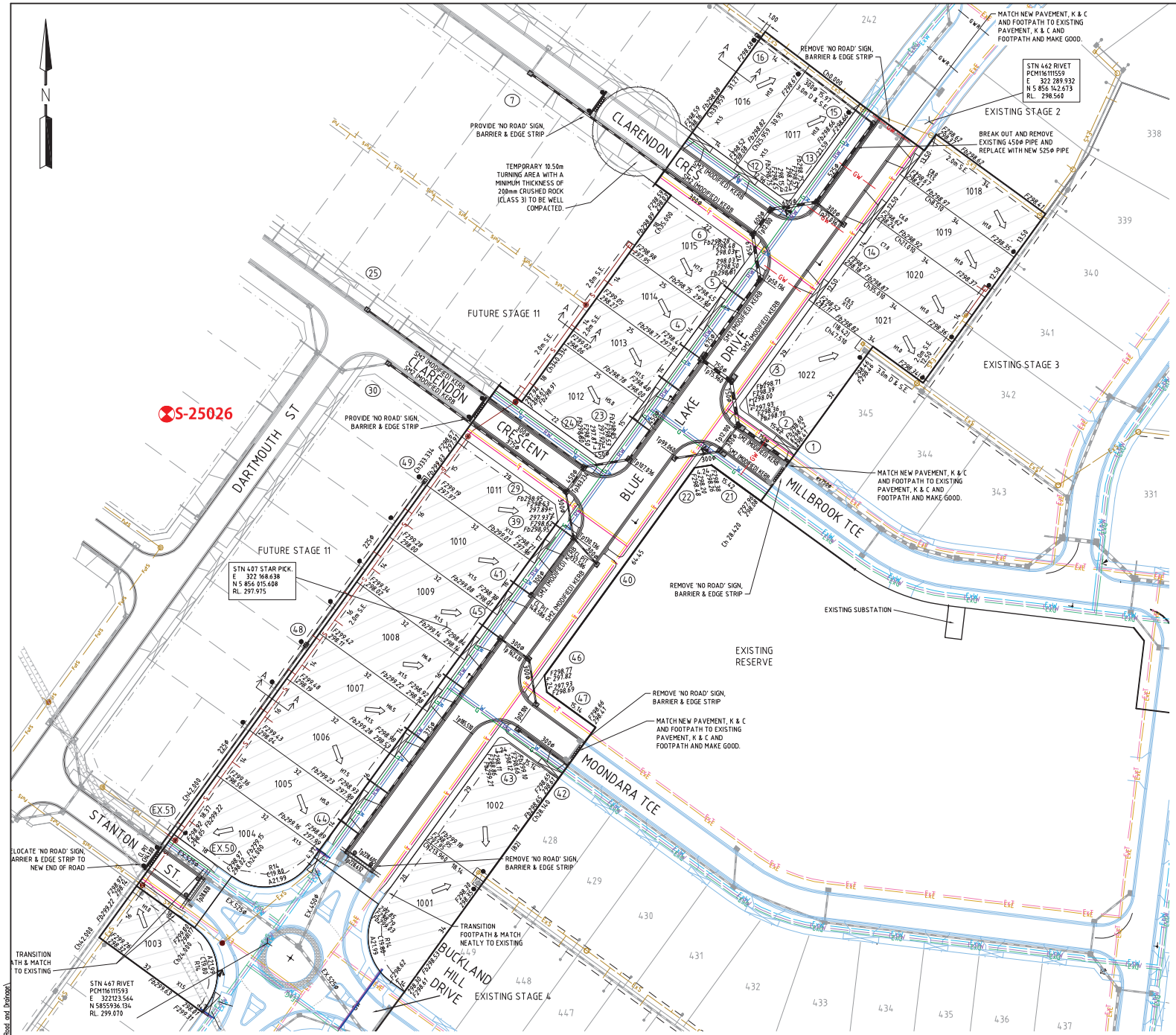
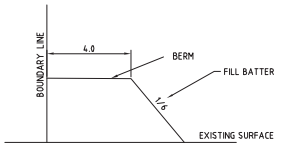
APPROVED SIGNATORY

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

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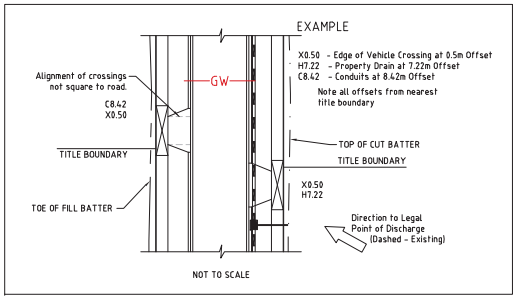

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0 5 10 20
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CONSTRUCTION PLAN

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H:\20569\Stage 10\CAD\DWG Set\Road and Drainage\

DRAIN, PROPERTY INLET & PIT
EX DRAIN & PIT
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SEWER AND MAINTENANCE HOLE
EX SEWER AND MAINTENANCE HOLE
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EX WATER MAIN, VALVE & HYDRANT
GAS MAIN
EX GAS MAIN, VALVE
TELSTRA SERVICES & PITS
EX TELSTRA SERVICES & PITS

LEGEND

RECYCLED WATER
EX RECYCLED WATER
ELECTRICAL U.G. SERVICES
EX ELECTRICAL U.G. SERVICES
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DRAWN BY	NJR	DESIGNED BY	JB
MELWAY	250, E12	CHECKED BY	
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WALLARA WATERS ESTATE
STAGE 10
LAYOUT PLAN

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

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

Hilf Density Ratio Report

Client :	**Fortunato Group**	Report Number:	**CS-629 - 10/1**
Address :	**38A Merri Concourse, Campbellfield, VIC, 3061**	Report Date :	**18/01/2017**
Project Name :	**Wallara Waters Stage 11**	Order Number :	
Project Number :	**CS-629**	Test Method :	**AS1289.5.7.1**
Location:	**Wallan**	**Page 1 of 1**	

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/m³) :				
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/m³) :	1.85	1.84		
Optimum Moisture Content (%) :	21.6	29.9		
Moisture Variation :	2.5	0.5		
Peak Converted Wet Density (t/m³) :	1.90	1.91		
Hilf Density Ratio (%) :	**97.5**	**96.0**		
Minimum Specification :	95% Standard	95% Standard		
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

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

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/m³) :				
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/m³) :	1.99			
Optimum Moisture Content (%) :	20.6			
Moisture Variation :	1.5			
Peak Converted Wet Density (t/m³) :	2.04			
Hilf Density Ratio (%) :	**97.0**			
Minimum Specification :	95% Standard			
Moisture Specification :				
Site Selection :	Random			
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

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APPROVED SIGNATORY

Anthony Green - Technician
NATA Accreditation Number
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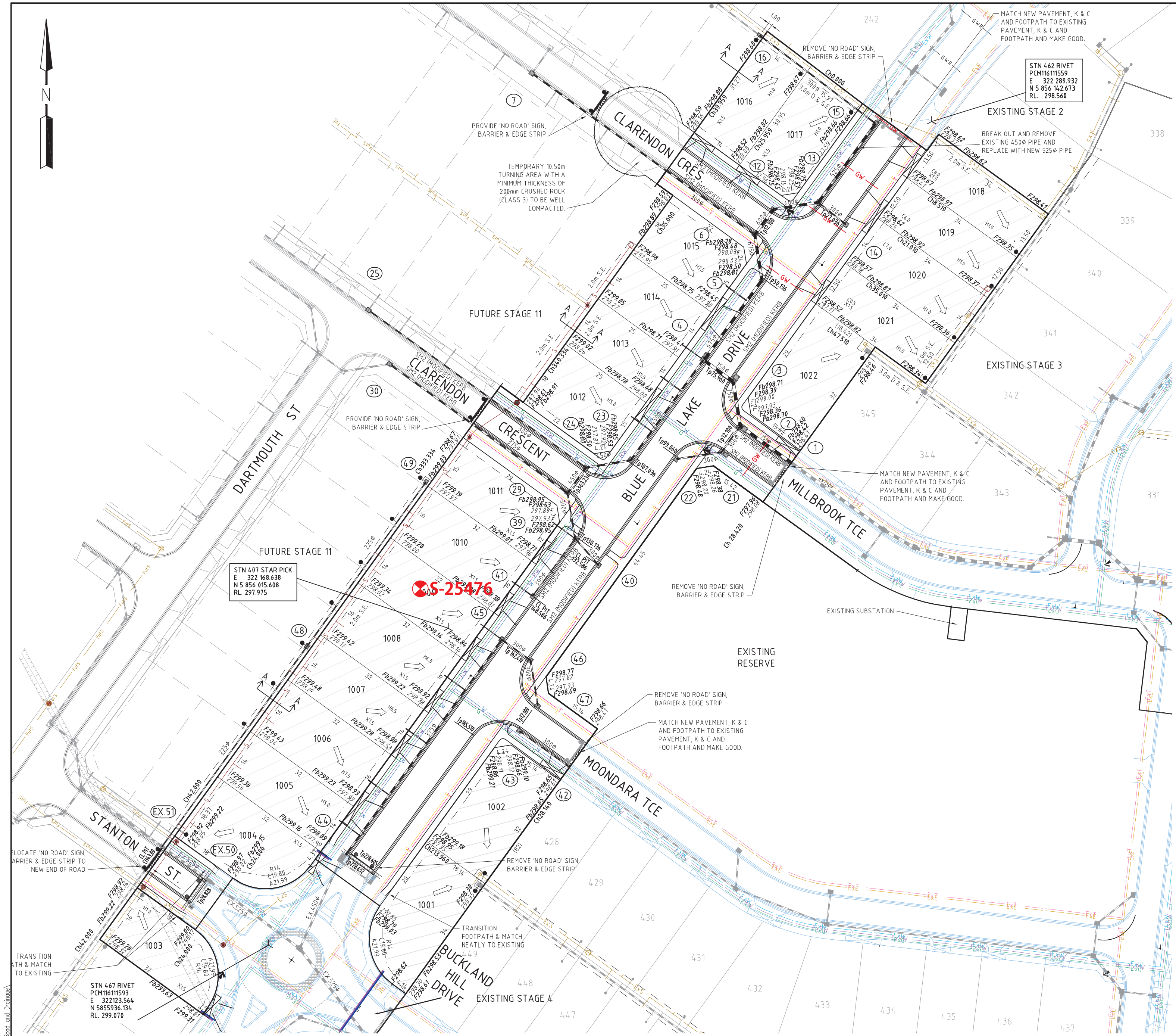

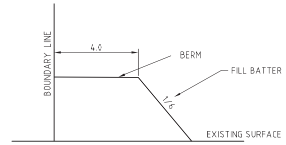

SECTION A-A
BERM DETAIL (AS REQUIRED)
N.T.S.

LEGEND

TREES TO BE RETAINED

TREES TO BE REMOVED

FILL IN EXCESS OF 200mm

CUT IN EXCESS OF 200mm

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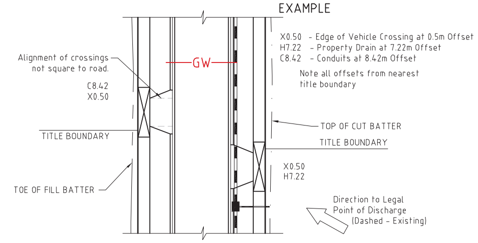
EXAMPLE



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B	REVISED STAGE LAYOUT	15.01.16	PC

LEGEND

DRAIN, PROPERTY INLET & PIT
EX DRAIN & PIT
HOUSE DRAIN
SEWER AND MAINTENANCE HOLE
EX SEWER AND MAINTENANCE HOLE
WATER MAIN
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DRAWN BY	NJR	DESIGNED BY	JB
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MITCHELL SHIRE COUNCIL
WALLARA WATERS ESTATE
STAGE 10
LAYOUT PLAN

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

H:\20569\Stage 10\CAD\DWG Set\Road and Drainage\

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

Hilf Density Ratio Report

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

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/m³) :				
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/m³) :	2.02	1.97		
Optimum Moisture Content (%) :	19.8	19.1		
Moisture Variation :	1.5	2.0		
Peak Converted Wet Density (t/m³) :	2.06	2.05		
Hilf Density Ratio (%) :	**98.0**	**96.0**		
Minimum Specification :	95% Standard	95% Standard		
Moisture Specification :				
Site Selection :	Random	Random		
Soil Description :				
Remarks :	-			

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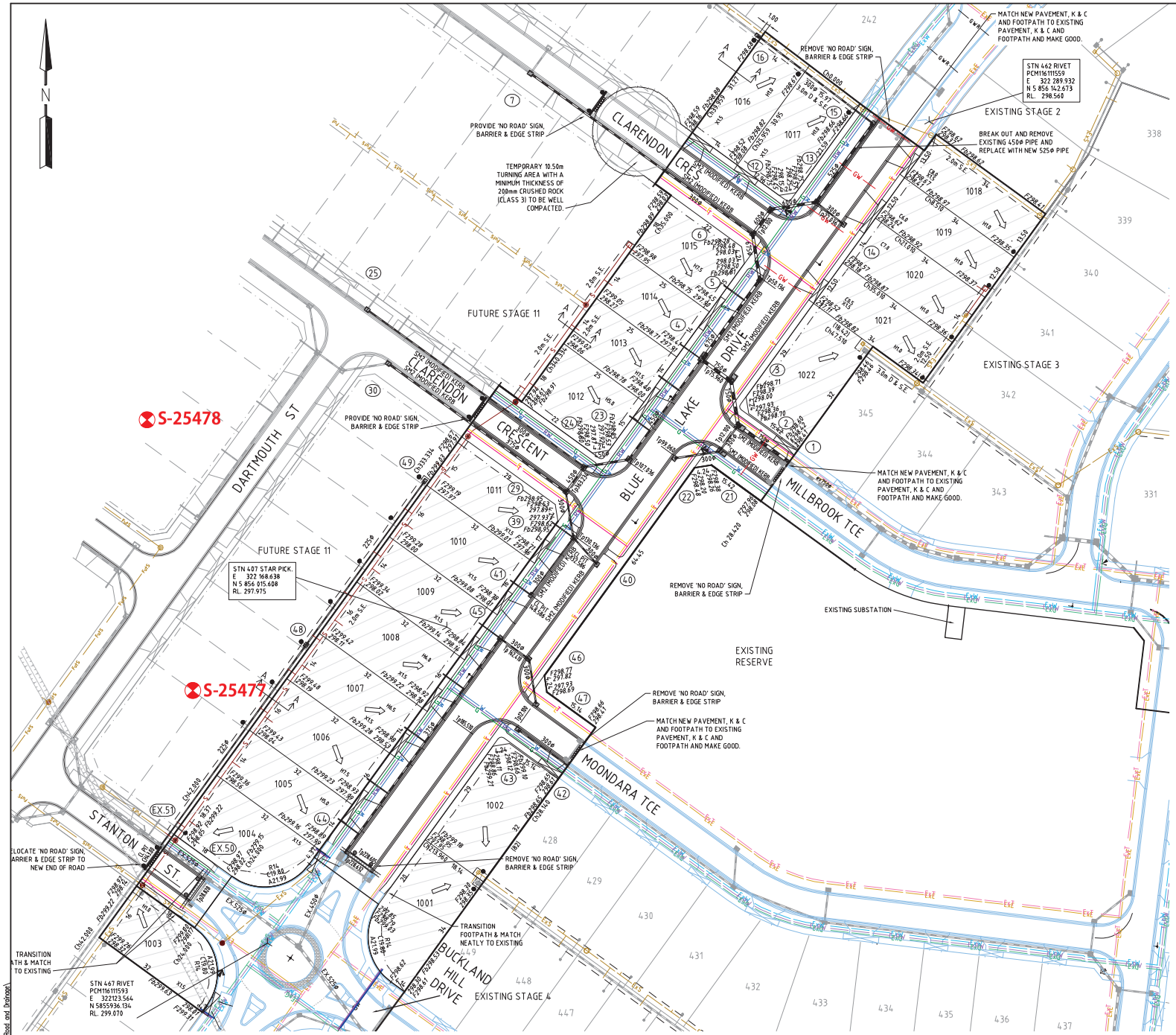

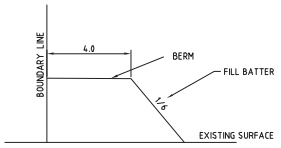

SECTION A-A

BERM DETAIL (AS REQUIRED)

N.T.S.

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- TREES TO BE RETAINED
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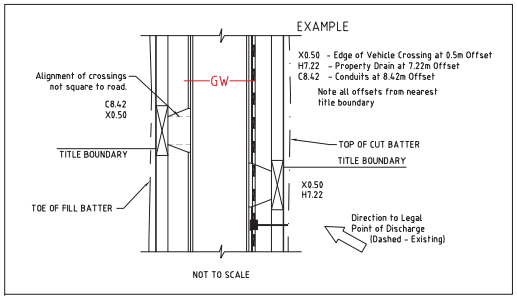

WARNING

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0 5 10 20
Scale 1:500 @ A1

CONSTRUCTION PLAN

THIS DRAWING IS NOT TO BE COPIED OR SCALED

VERSION	REMARKS		
F	PLAN REVISED	18.08.16	
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

H:\20569\Stage_10\CAD\DWG Set\Road and Drainage\

LEGEND

- DRAIN, PROPERTY INLET & PIT
- EX DRAIN & PIT
- HOUSE DRAIN
- SEWER AND MAINTENANCE HOLE
- EX SEWER AND MAINTENANCE HOLE
- WATER MAIN
- EX WATER MAIN, VALVE & HYDRANT
- GAS MAIN
- EX GAS MAIN, VALVE
- TELSTRA SERVICES & PITS
- EX TELSTRA SERVICES & PITS
- RECYCLED WATER
- EX RECYCLED WATER
- ELECTRICAL U.G. SERVICES
- EX ELECTRICAL U.G. SERVICES
- ELECTRICAL SERVICE & PIT
- EX ELECTRICAL ASSETS
- EX ELECTRICAL OVERHEADS
- GAS & WATER CONDUITS
- TOP OF BATTER
- TOE OF BATTER
- FINISHED SURFACE AFTER CUTTING OR FILLING
- TOP OF PROPOSED BATTER
- PROPOSED PAVEMENT OR FOOTPATH SURFACE
- EXISTING OR PROPOSED INVERT LEVEL OF PIPE OR OPEN DRAIN
- TANGENT POINT
- CHAINAGE
- PSM
- STREET SIGN
- DRAINAGE PIT No.
- TBM
- EX FENCE
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DRAWN BY	NJR	DESIGNED BY	JB
MELWAY	250, E12	CHECKED BY	
DATUM	AHD	AUTHORISED BY	SR

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MITCHELL SHIRE COUNCIL

WALLARA WATERS ESTATE STAGE 10

LAYOUT PLAN

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

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

Hilf Density Ratio Report

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

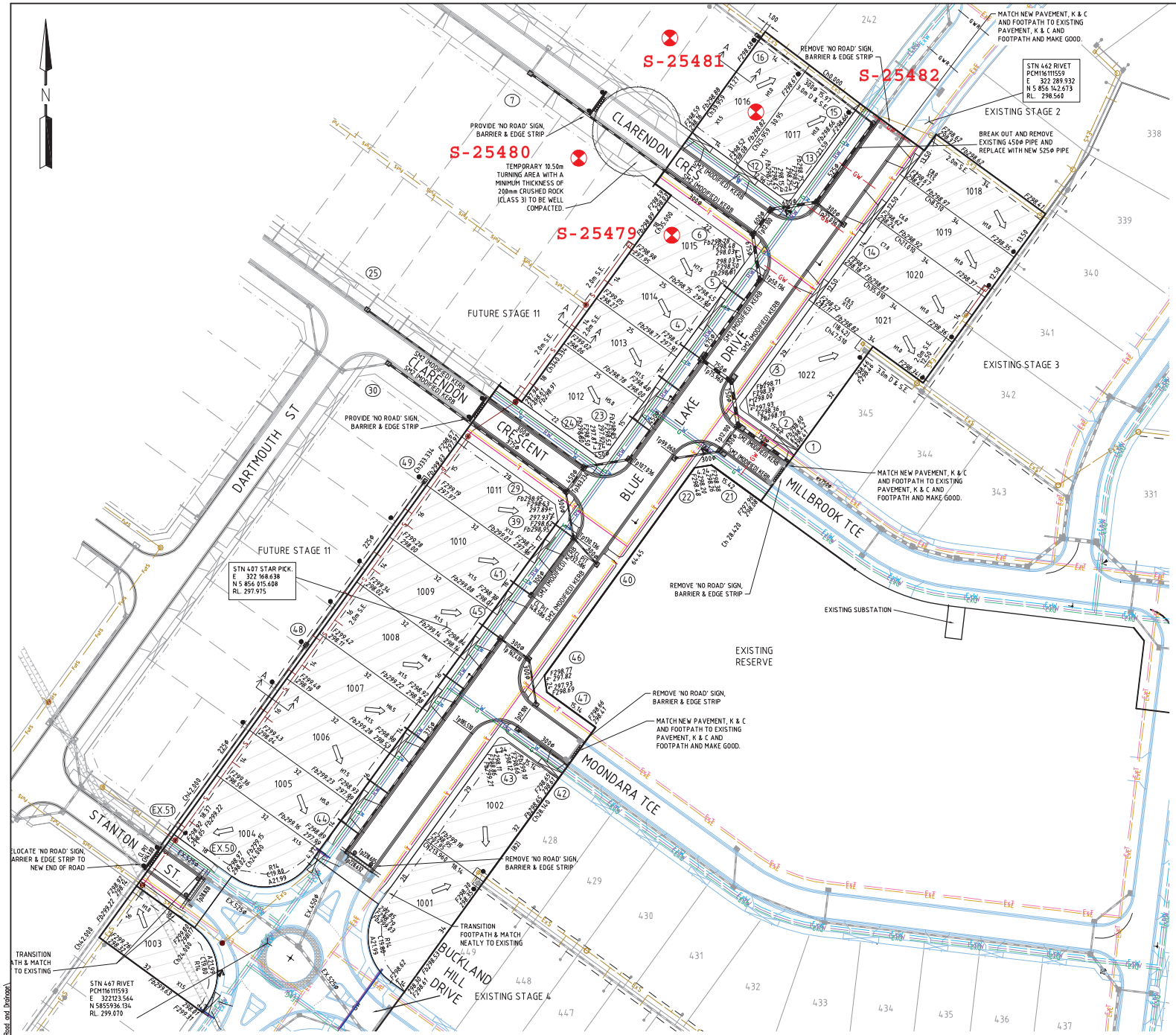
Sample Number :	S-25479	S-25480	S-25481	S-25482
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)
Date Sampled :	17/01/2017	17/01/2017	17/01/2017	17/01/2017
Date Tested :	17/01/2017	17/01/2017	17/01/2017	17/01/2017
Material Type :	Clay	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/m³) :				
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/m³) :	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/m³) :	1.96	2.04	2.03	2.02
Hilf Density Ratio (%) :	**97.0**	**97.0**	**97.5**	**97.5**
Minimum Specification :	95% Standard	95% Standard	95% Standard	95% Standard
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

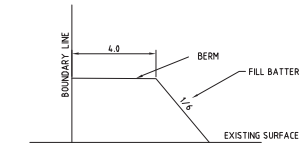
NATA
WORLD RECOGNISED ACCREDITATION

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

APPROVED SIGNATORY

Daniel Pearce - Laboratory Manager
NATA Accreditation Number
18877





SECTION A-A

BERM DETAIL (AS REQUIRED)

N.T.S.

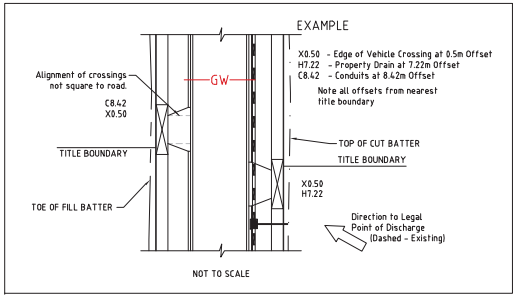
LEGEND

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

THIS PLAN SHOWS APPROXIMATE EXTENTS OF CUT AND FILL TO BE UNDERTAKEN DURING CONSTRUCTION OF THE WORKS BASED 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 0.15m.



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Scale 1:500 @ A1

CONSTRUCTION PLAN

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VERSION	REMARKS		
F	PLAN REVISED	18.08.16	
E	CONSTRUCTION ISSUE	20.05.16	NJR
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B	REVISED STAGE LAYOUT	15.01.16	PC

H:\20569\Stage_10\CAD\DWG Set\Road and Drainage\

LEGEND

- DRAIN, PROPERTY INLET & PIT
- EX DRAIN & PIT
- HOUSE DRAIN
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- EX SEWER AND MAINTENANCE HOLE
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WALLARA WATERS ESTATE

STAGE 10

LAYOUT PLAN

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

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

Hilf Density Ratio Report

Client :	**Fortunato Group**	Report Number:	**CS-598 - 16/1**
Address :	**38A Merri Concourse, Campbellfield, VIC, 3061**	Report Date :	**24/01/2017**
Project Name :	**Wallara Waters Stage 10**	Order Number :	
Project Number :	**CS-598**	Test Method :	**AS1289.5.7.1**
Location:	**Wallan**	**Page 1 of 1**	

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/m³) :				
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/m³) :	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/m³) :	1.89	1.88	1.91	
Hilf Density Ratio (%) :	**98.0**	**100.5**	**103.0**	
Minimum Specification :	95% Standard	95% Standard	95% Standard	
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	Proof roll conducted on test area. No deflection sited.			

NATA
WORLD RECOGNISED ACCREDITATION

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APPROVED SIGNATORY

Daniel Pearce - Laboratory Manager
NATA Accreditation Number
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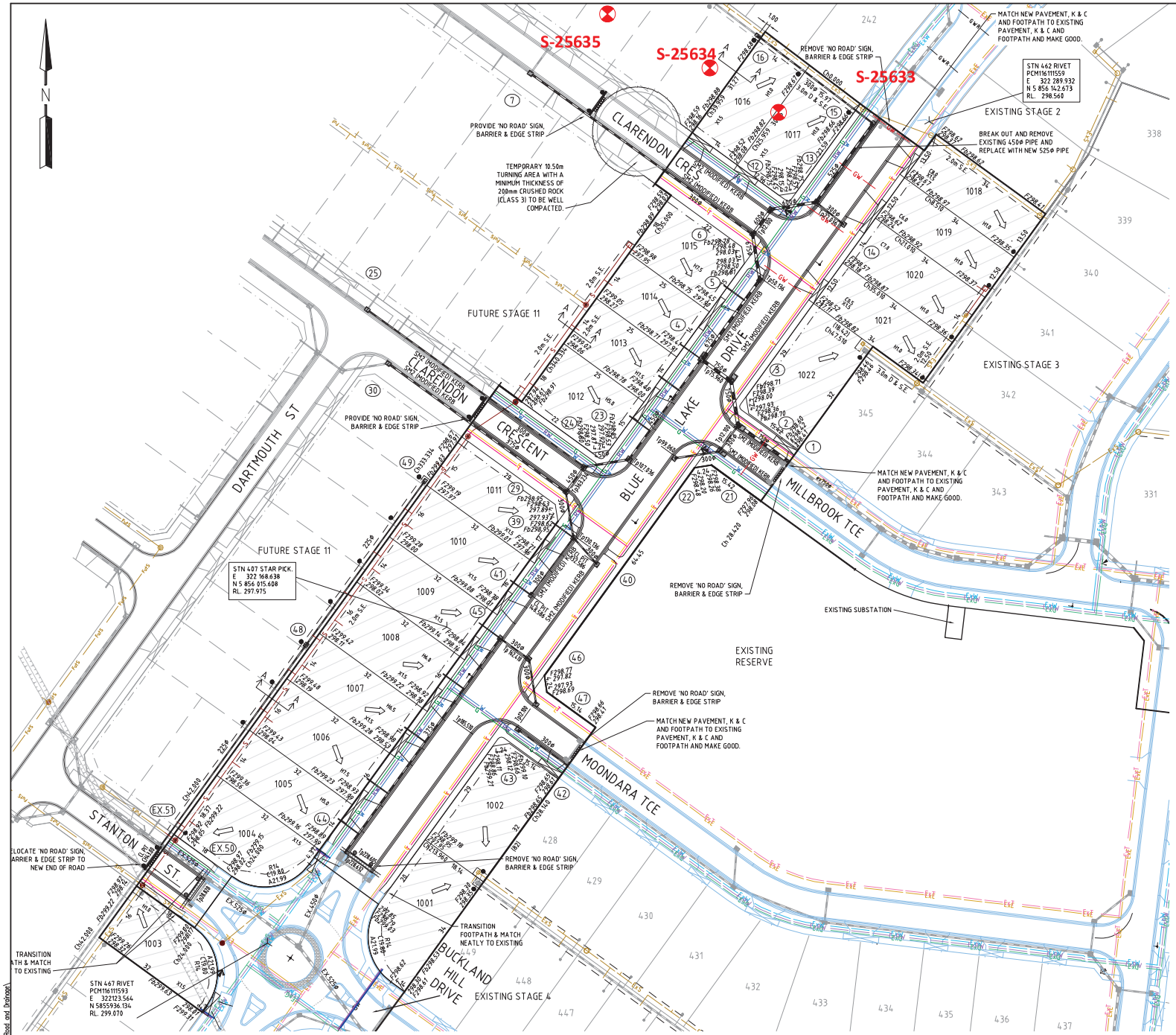

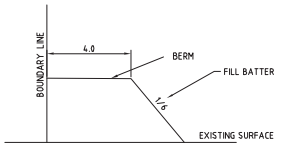

SECTION A-A

BERM DETAIL (AS REQUIRED)

N.T.S.

LEGEND

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- TREES TO BE REMOVED
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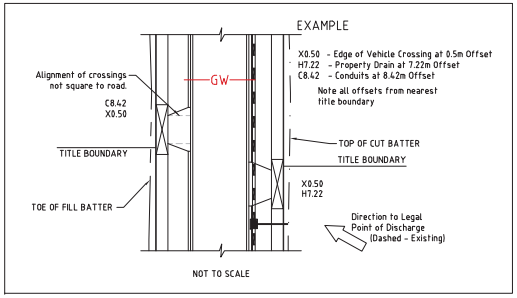

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B	REVISED STAGE LAYOUT	15.01.16	PC

H:\20569\Stage 10\CAD\DWG Set\Road and Drainage\

LEGEND

DRAIN, PROPERTY INLET & PIT; EX DRAIN & PIT; HOUSE DRAIN; SEWER AND MAINTENANCE HOLE; EX SEWER AND MAINTENANCE HOLE; WATER MAIN; EX WATER MAIN, VALVE & HYDRANT; GAS MAIN; EX GAS MAIN, VALVE; TELSTRA SERVICES & PITS; EX TELSTRA SERVICES & PITS

RECYCLED WATER; EX RECYCLED WATER; ELECTRICAL U.G. SERVICES; EX ELECTRICAL U.G. SERVICES; ELECTRICAL SERVICE & PIT; EX ELECTRICAL ASSETS; EX ELECTRICAL OVERHEADS; GAS & WATER CONDUITS; TOP OF BATTER; TOE OF BATTER

F FINISHED SURFACE AFTER CUTTING OR FILLING; Fb TOP OF PROPOSED BATTER; P PROPOSED PAVEMENT OR FOOTPATH SURFACE; IL EXISTING OR PROPOSED INVERT LEVEL OF PIPE OR OPEN DRAIN; TP TANGENT POINT; CH CHAINAGE; PSM; STREET SIGN; DRAINAGE PIT No.; TBM; EX FENCE; EX WALL OR BUILDING

DRAWN BY	NJR	DESIGNED BY	JB
MELWAY	250, E12	CHECKED BY	
DATUM	AHD	AUTHORISED BY	SR

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WALLARA WATERS ESTATE STAGE 10

LAYOUT PLAN

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

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

Hilf Density Ratio Report

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

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/m³) :				
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/m³) :	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/m³) :	1.96	1.96	1.94	1.89
Hilf Density Ratio (%) :	**98.5**	**100.0**	**100.5**	**102.5**
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.			

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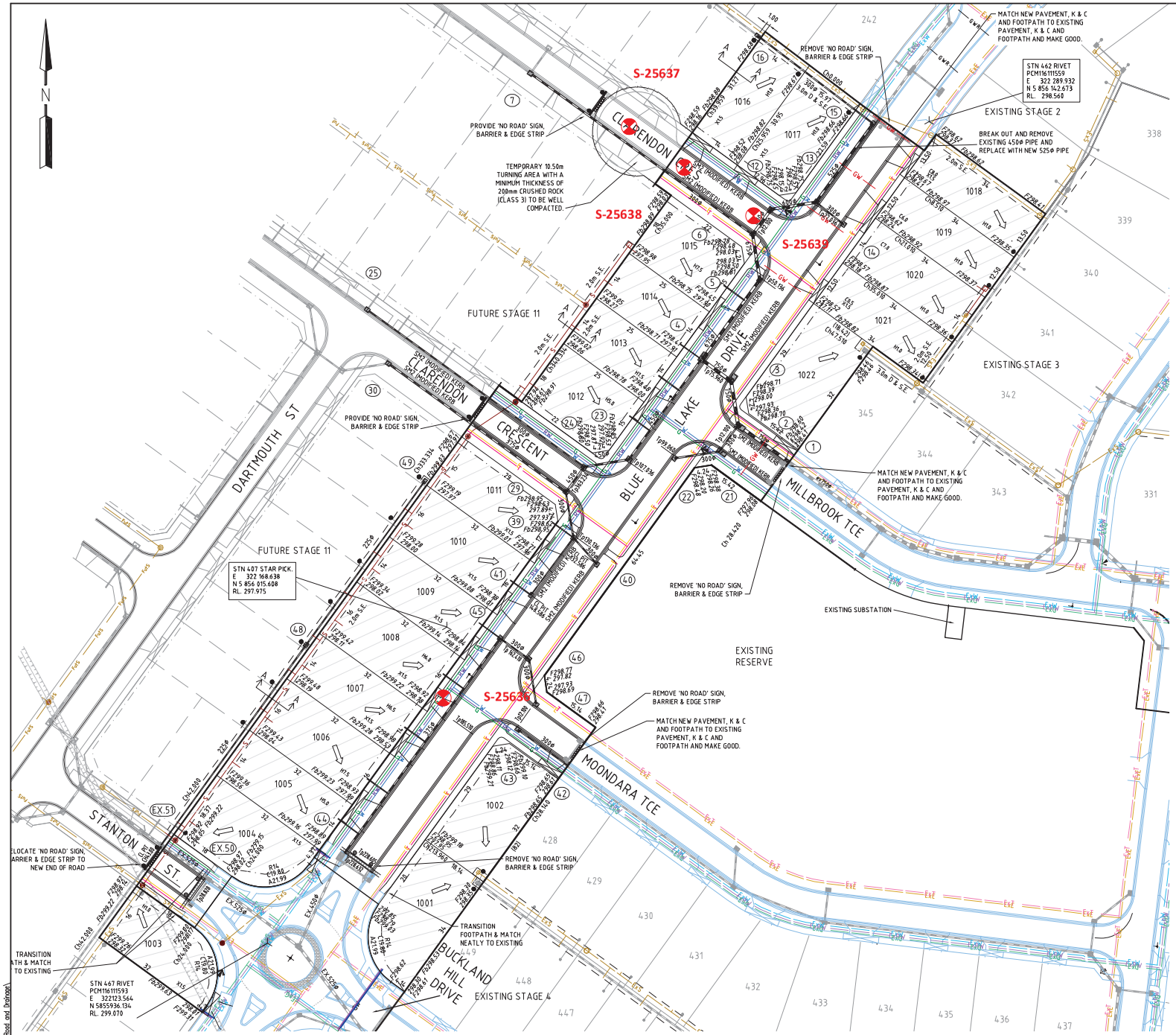

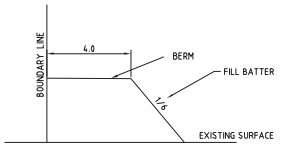

SECTION A-A
BERM DETAIL (AS REQUIRED)
N.T.S.

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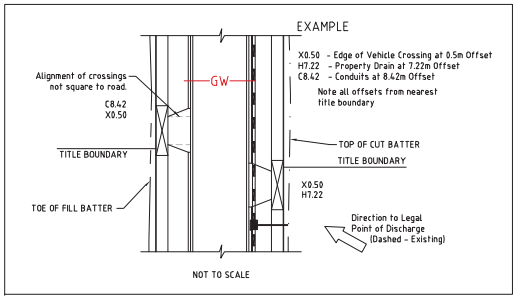

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- DRAIN, PROPERTY INLET & PIT
- EX DRAIN & PIT
- HOUSE DRAIN
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- EX SEWER AND MAINTENANCE HOLE
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MITCHELL SHIRE COUNCIL
WALLARA WATERS ESTATE
STAGE 10
LAYOUT PLAN

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10R2	F
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Project Number :	**CS-629**	Test Method :	**AS1289.5.7.1**
Location:	**Wallan**	**Page 1 of 1**	

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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/m³) :				
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/m³) :	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/m³) :	1.97	2.01	1.92	
Hilf Density Ratio (%) :	**97.5**	**104.0**	**98.0**	
Minimum Specification :	95% Standard	95% Standard	95% Standard	
Moisture Specification :				
Site Selection :	Random	Random	Random	
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

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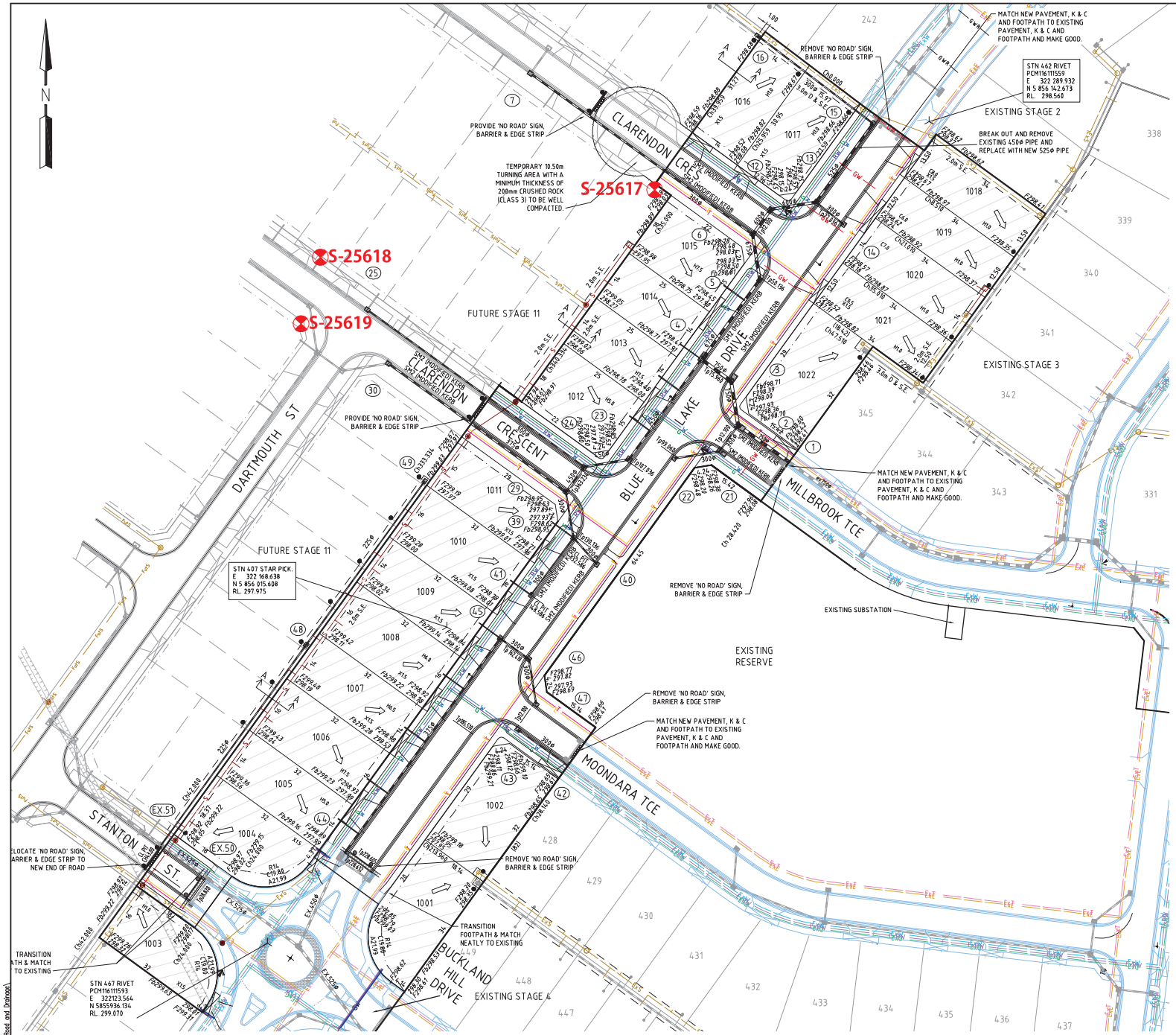
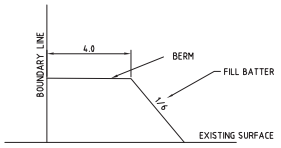
APPROVED SIGNATORY

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

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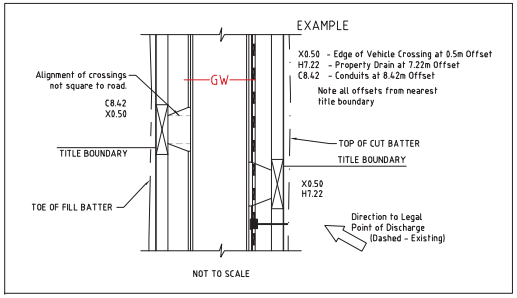
THE DEPTH OF TOP DRESSING FILL MAY VARY BY UP TO 0.15m.



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0 5 10 20
Scale 1:500 @ A1

CONSTRUCTION PLAN

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VERSION	REMARKS		
F	PLAN REVISED	18.08.16	
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

H:\20569\Stage_10\CAD\DWG Set\Road and Drainage\

LEGEND

- DRAIN, PROPERTY INLET & PIT
- EX DRAIN & PIT
- HOUSE DRAIN
- SEWER AND MAINTENANCE HOLE
- EX SEWER AND MAINTENANCE HOLE
- WATER MAIN
- EX WATER MAIN, VALVE & HYDRANT
- GAS MAIN
- EX GAS MAIN, VALVE
- TELSTRA SERVICES & PITS
- EX TELSTRA SERVICES & PITS
- RECYCLED WATER
- EX RECYCLED WATER
- ELECTRICAL U.G. SERVICES
- EX ELECTRICAL U.G. SERVICES
- ELECTRICAL SERVICE & PIT
- EX ELECTRICAL ASSETS
- EX ELECTRICAL OVERHEADS
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- TOP OF BATTER
- TOE OF BATTER
- FINISHED SURFACE AFTER CUTTING OR FILLING
- TOP OF PROPOSED BATTER
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- CHAINAGE
- PSM
- STREET SIGN
- DRAINAGE PIT No.
- TBM
- EX FENCE
- EX WALL OR BUILDING

DRAWN BY	NJR	DESIGNED BY	JB
MELWAY	250, E12	CHECKED BY	
DATUM	AHD	AUTHORISED BY	SR

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WALLARA WATERS ESTATE STAGE 10

LAYOUT PLAN

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

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

Hilf Density Ratio Report

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

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 :	Insitu & 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/m³) :				
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/m³) :	1.94			
Optimum Moisture Content (%) :	18.8			
Moisture Variation :	0.5			
Peak Converted Wet Density (t/m³) :	2.03			
Hilf Density Ratio (%) :	**96.0**			
Minimum Specification :	95% Standard			
Moisture Specification :				
Site Selection :	Random			
Soil Description :				
Remarks :	-			

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WORLD RECOGNISED ACCREDITATION

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APPROVED SIGNATORY

Anthony Green - Technician
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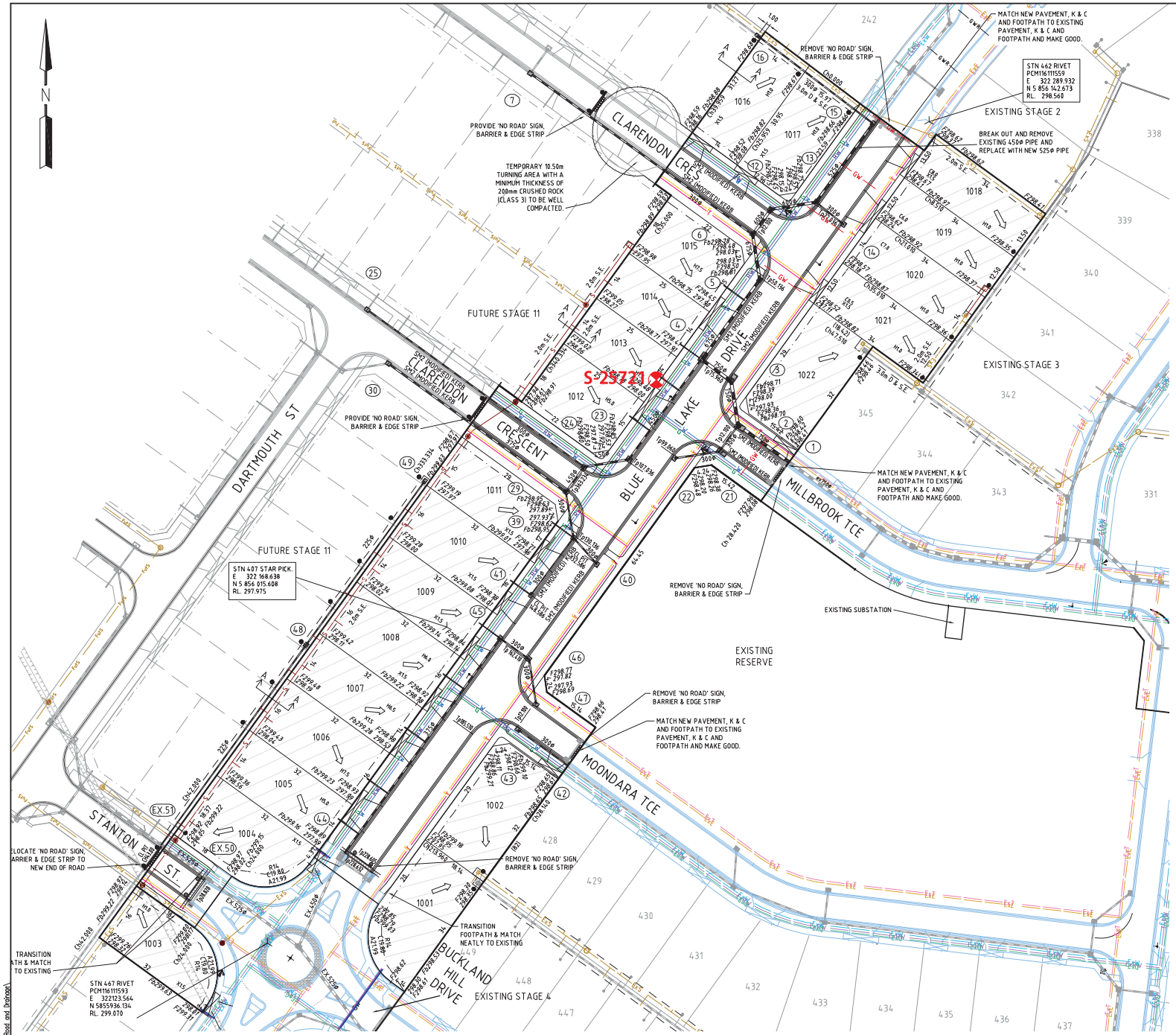

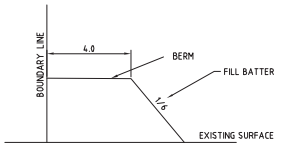

SECTION A-A

BERM DETAIL (AS REQUIRED)

N.T.S.

LEGEND

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- FILL IN EXCESS OF 200mm
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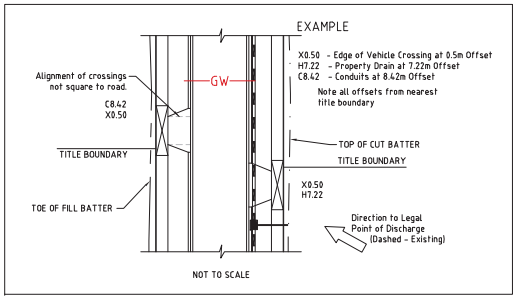

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H:\20569\Stage_10\CAD\DWG Set\Road and Drainage\

LEGEND

- DRAIN, PROPERTY INLET & PIT
- EX DRAIN & PIT
- HOUSE DRAIN
- SEWER AND MAINTENANCE HOLE
- EX SEWER AND MAINTENANCE HOLE
- WATER MAIN
- EX WATER MAIN, VALVE & HYDRANT
- GAS MAIN
- EX GAS MAIN, VALVE
- TELSTRA SERVICES & PITS
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DRAWN BY	NJR	DESIGNED BY	JB
MELWAY	250, E12	CHECKED BY	
DATUM	AHD	AUTHORISED BY	SR

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WALLARA WATERS ESTATE STAGE 10

LAYOUT PLAN

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

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

Hilf Density Ratio Report

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

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/m³) :				
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/m³) :	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/m³) :	2.13	2.12	2.07	
Hilf Density Ratio (%) :	**97.5**	**95.0**	**96.0**	
Minimum Specification :	95% Standard	95% Standard	95% Standard	
Moisture Specification :				
Site Selection :	Random	Random	Random	
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

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APPROVED SIGNATORY

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NATA Accreditation Number
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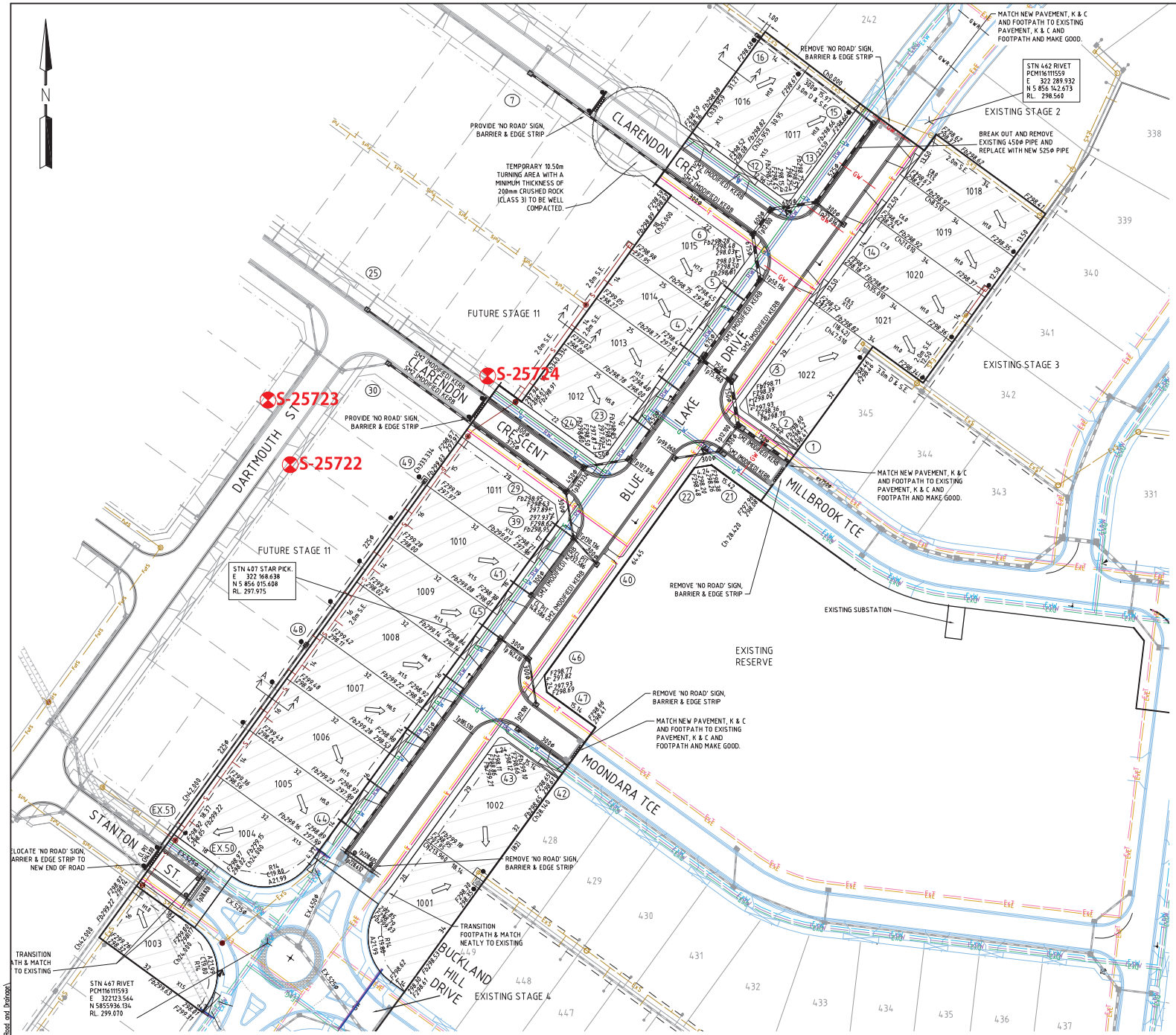

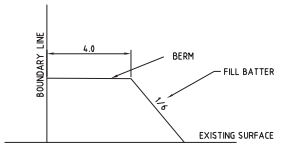

SECTION A-A

BERM DETAIL (AS REQUIRED)

N.T.S.

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- TREES TO BE RETAINED
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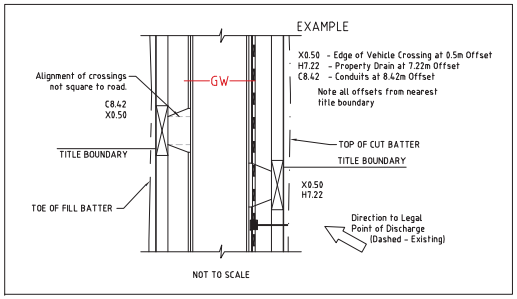

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Scale 1:500 @ A1

CONSTRUCTION PLAN

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LEGEND

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- EX DRAIN & PIT
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DRAWN BY	NJR	DESIGNED BY	JB
MELWAY	250, E12	CHECKED BY	
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WALLARA WATERS ESTATE STAGE 10

LAYOUT PLAN

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

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

Hilf Density Ratio Report

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

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/m³) :				
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/m³) :	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/m³) :	2.01	2.03	2.01	
Hilf Density Ratio (%) :	**96.0**	**99.5**	**94.5**	
Minimum Specification :	95% Standard	95% Standard	95% Standard	
Moisture Specification :				
Site Selection :	Random	Random	Random	
Soil Description :				
Remarks :	-			

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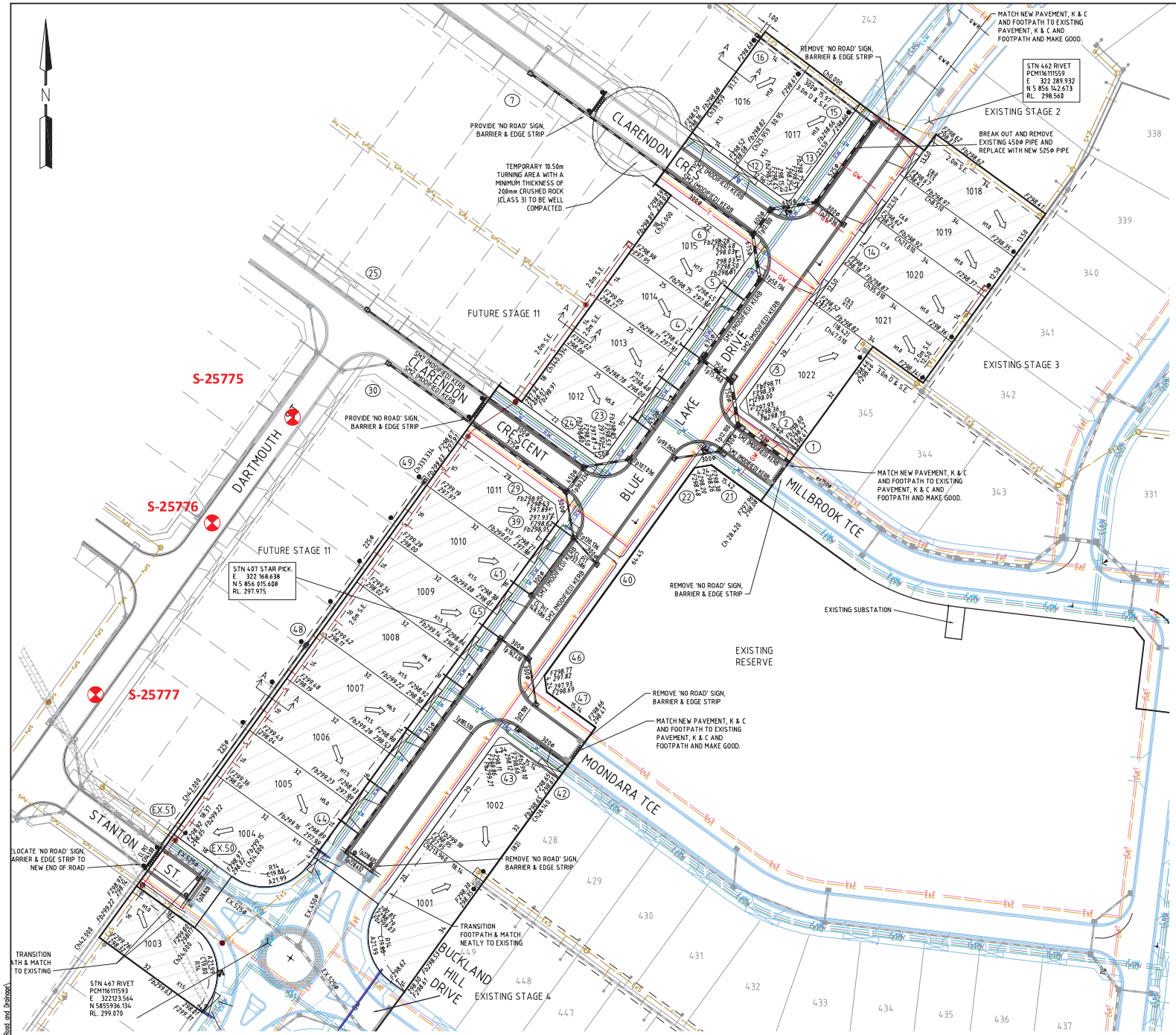

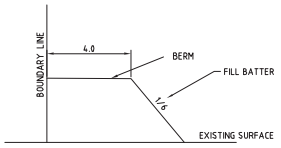

SECTION A-A

BERM DETAIL (AS REQUIRED)

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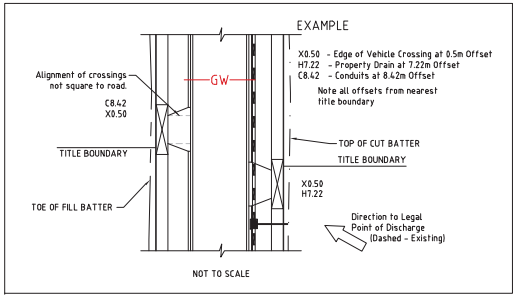

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H:\20569\Stage_10\CAD\DWG Set\Road and Drainage\

DRAIN, PROPERTY INLET & PIT
EX DRAIN & PIT
HOUSE DRAIN
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WATER MAIN
EX WATER MAIN, VALVE & HYDRANT
GAS MAIN
EX GAS MAIN, VALVE
TELSTRA SERVICES & PITS
EX TELSTRA SERVICES & PITS

LEGEND

RECYCLED WATER
EX RECYCLED WATER
ELECTRICAL U.G. SERVICES
EX ELECTRICAL U.G. SERVICES
ELECTRICAL SERVICE & PIT
EX ELECTRICAL ASSETS
EX ELECTRICAL OVERHEADS
GAS & WATER CONDUITS
TOP OF BATTER
TOE OF BATTER

F FINISHED SURFACE AFTER CUTTING OR FILLING
Fb TOP OF PROPOSED BATTER
P PROPOSED PAVEMENT OR FOOTPATH SURFACE
IL EXISTING OR PROPOSED INVERT LEVEL OF PIPE OR OPEN DRAIN
TP TANGENT POINT
CH CHAINAGE
PSM
STREET SIGN
DRAINAGE PIT No.
TBM
EX FENCE
EX WALL OR BUILDING

DRAWN BY	NJR	DESIGNED BY	JB
MELWAY	250, E12	CHECKED BY	
DATUM	AHD	AUTHORISED BY	SR

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WALLARA WATERS ESTATE STAGE 10

LAYOUT PLAN

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

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

Hilf Density Ratio Report

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

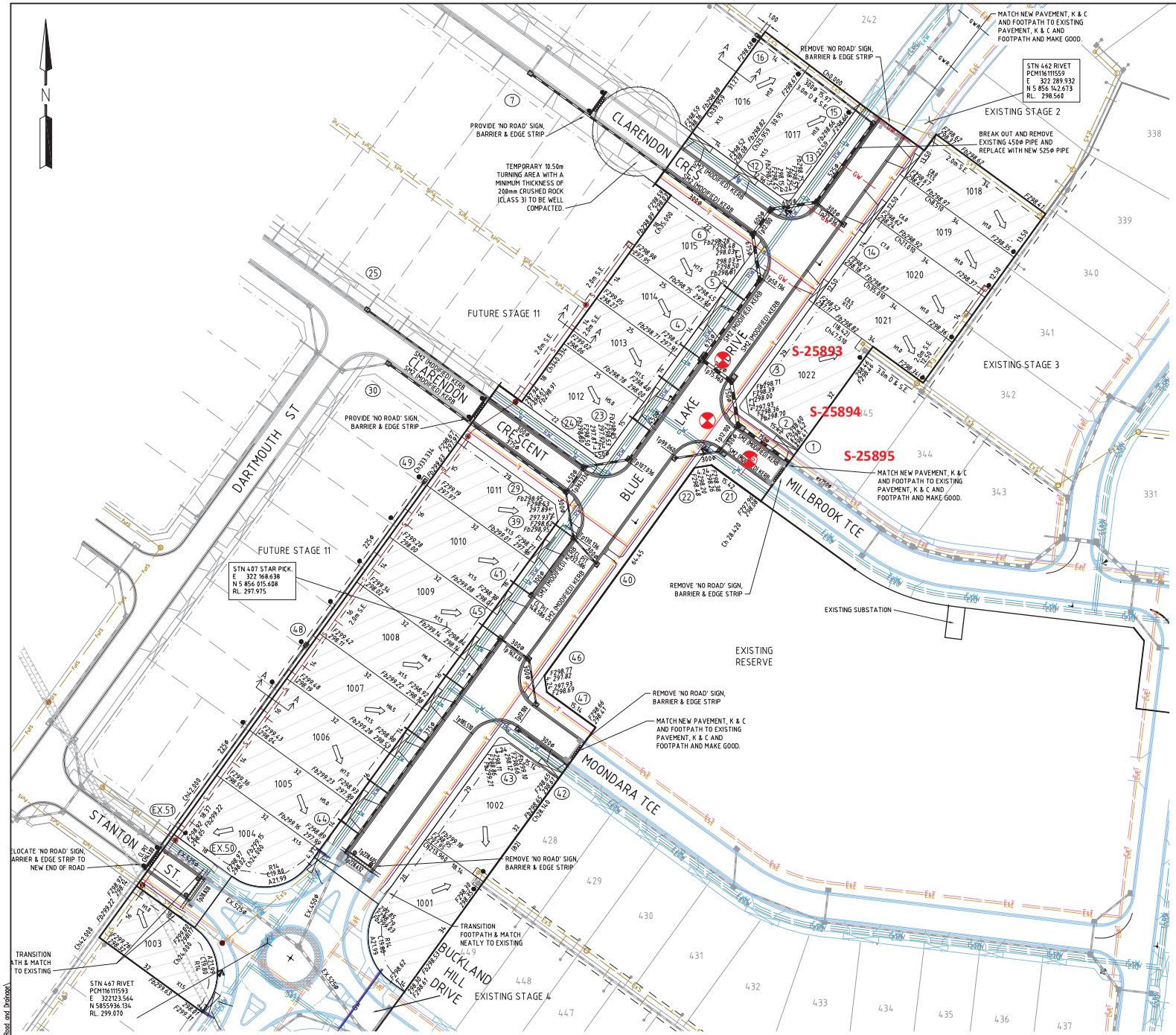
Sample Number :	S-25893	S-25894	S-25895	
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	
Date Sampled :	1/02/2017	1/02/2017	1/02/2017	
Date Tested :	1/02/2017	1/02/2017	1/02/2017	
Material Type :	Clay	Clay	Clay	
Material Source :	Insitu	Insitu	Insitu	
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/m³) :				
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/m³) :	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/m³) :	2.02	2.06	2.07	
Hilf Density Ratio (%) :	**94.5**	**98.5**	**93.0**	
Minimum Specification :	95% Standard	95% Standard	95% Standard	
Moisture Specification :				
Site Selection :	Random	Random	Random	
Soil Description :				
Remarks :	-			

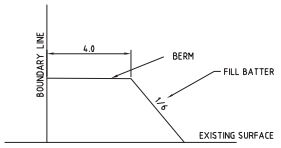
NATA
WORLD RECOGNISED ACCREDITATION

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.

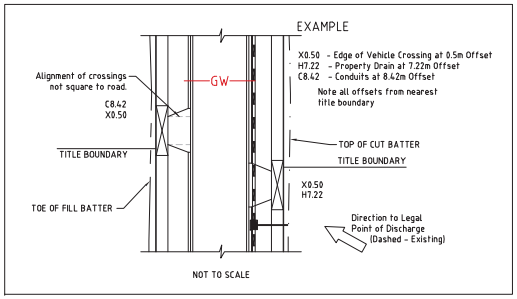
LEGEND

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

THIS PLAN SHOWS APPROXIMATE EXTENTS OF CUT AND FILL TO BE UNDERTAKEN DURING CONSTRUCTION OF THE WORKS BASED 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 0.15m.



WARNING

BEWARE OF UNDERGROUND SERVICES

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0 5 10 20
Scale 1:500 @ A1

CONSTRUCTION PLAN

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VERSION	REMARKS		
F	PLAN REVISED	18.08.16	
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

H:\20569\Stage 10\CAD\DWG Set\Road and Drainage\

LEGEND

- DRAIN, PROPERTY INLET & PIT
- EX DRAIN & PIT
- HOUSE DRAIN
- SEWER AND MAINTENANCE HOLE
- EX SEWER AND MAINTENANCE HOLE
- WATER MAIN
- EX WATER MAIN, VALVE & HYDRANT
- GAS MAIN
- EX GAS MAIN, VALVE
- TELSTRA SERVICES & PITS
- EX TELSTRA SERVICES & PITS
- RECYCLED WATER
- EX RECYCLED WATER
- ELECTRICAL U.G. SERVICES
- EX ELECTRICAL U.G. SERVICES
- ELECTRICAL SERVICE & PIT
- EX ELECTRICAL ASSETS
- EX ELECTRICAL OVERHEADS
- GAS & WATER CONDUITS
- TOP OF BATTER
- TOE OF BATTER
- FINISHED SURFACE AFTER CUTTING OR FILLING
- TOP OF PROPOSED BATTER
- PROPOSED PAVEMENT OR FOOTPATH SURFACE
- EXISTING OR PROPOSED INVERT LEVEL OF PIPE OR OPEN DRAIN
- TANGENT POINT
- CHAINAGE
- PSM
- STREET SIGN
- DRAINAGE PIT No.
- TBM
- EX FENCE
- EX WALL OR BUILDING

DRAWN BY	NJR	DESIGNED BY	JB
MELWAY	250, E12	CHECKED BY	
DATUM	AHD	AUTHORISED BY	SR

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WALLARA WATERS ESTATE STAGE 10

LAYOUT PLAN

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

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

Hilf Density Ratio Report

Client :	**Fortunato Group**	Report Number:	**CS-598 - 19/1**
Address :	**38A Merri Concourse, Campbellfield, VIC, 3061**	Report Date :	**12/02/2017**
Project Name :	**Wallara Waters Stage 10**	Order Number :	
Project Number :	**CS-598**	Test Method :	**AS1289.5.7.1**
Location:	**Wallan**	**Page 1 of 1**	

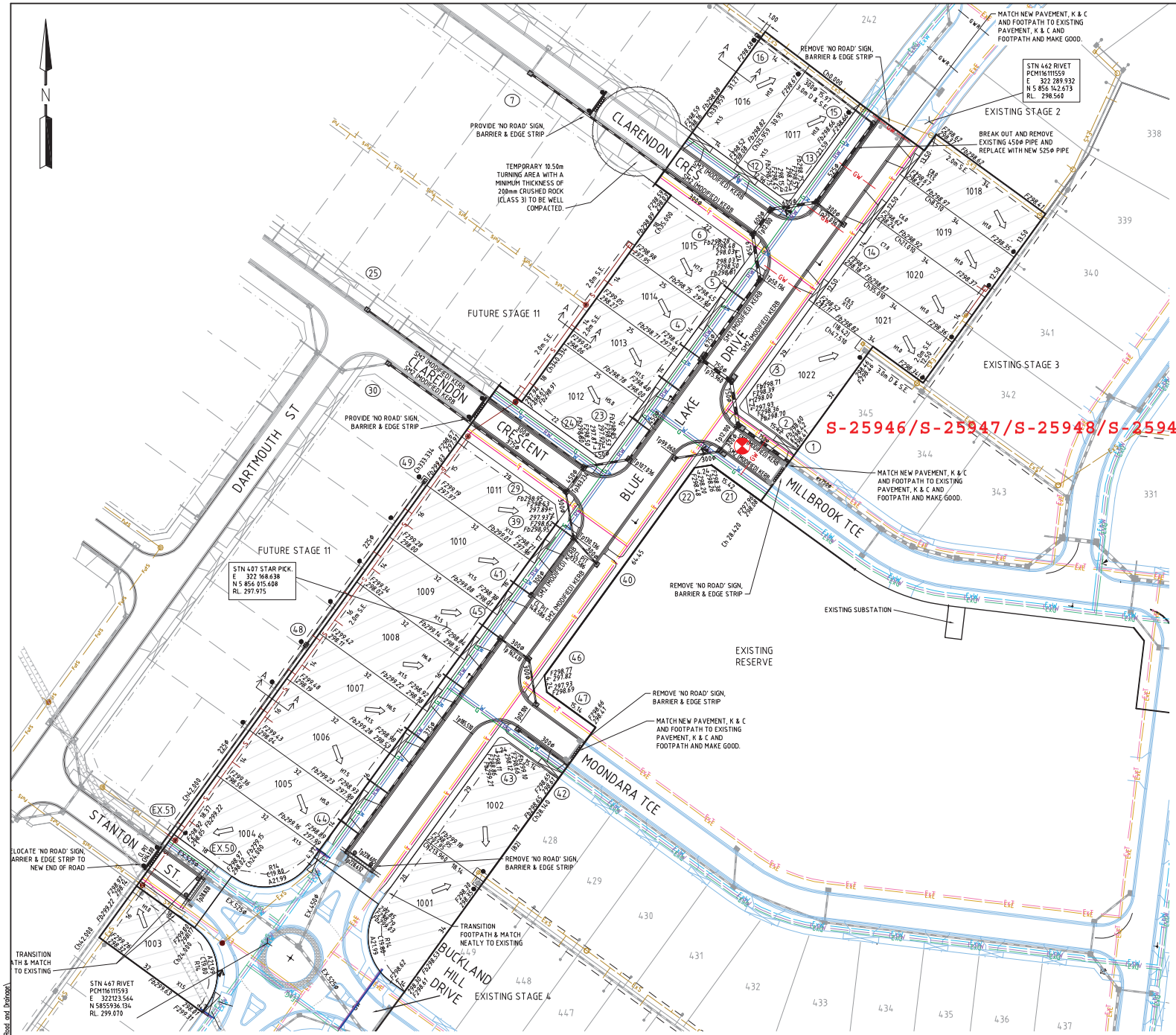
Sample Number :	S-25946	S-25947	S-25948	S-25949
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)
Date Sampled :	1/02/2017	1/02/2017	1/02/2017	1/02/2017
Date Tested :	1/02/2017	1/02/2017	1/02/2017	1/02/2017
Material Type :	Clay	Clay	Clay	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/m³) :				
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/m³) :	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/m³) :	2.05	1.94	2.06	1.97
Hilf Density Ratio (%) :	**96.0**	**95.5**	**99.0**	**97.5**
Minimum Specification :	95% Standard	95% Standard	95% Standard	95% Standard
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

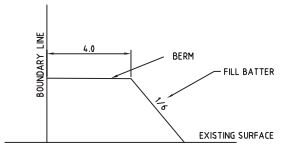
NATA
WORLD RECOGNISED ACCREDITATION

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

APPROVED SIGNATORY

Daniel Pearce - Laboratory Manager
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
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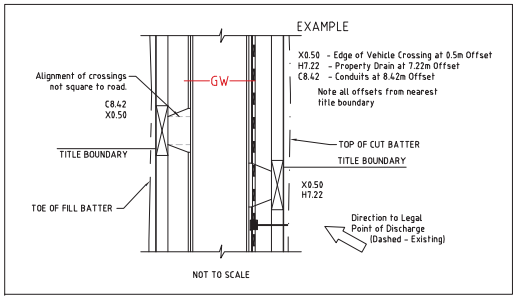

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CONSTRUCTION PLAN

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C	LOT 1003 & 1004 VEHICLE CROSSINGS REVISED	20.01.16	PC
B	REVISED STAGE LAYOUT	15.01.16	PC

LEGEND

DRAIN, PROPERTY INLET & PIT; EX DRAIN & PIT; HOUSE DRAIN; SEWER AND MAINTENANCE HOLE; EX SEWER AND MAINTENANCE HOLE; WATER MAIN; EX WATER MAIN, VALVE & HYDRANT; GAS MAIN; EX GAS MAIN, VALVE; TELSTRA SERVICES & PITS; EX TELSTRA SERVICES & PITS

RECYCLED WATER; EX RECYCLED WATER; ELECTRICAL U.G. SERVICES; EX ELECTRICAL U.G. SERVICES; ELECTRICAL SERVICE & PIT; EX ELECTRICAL ASSETS; EX ELECTRICAL OVERHEADS; GAS & WATER CONDUITS; TOP OF BATTER; TOE OF BATTER

F FINISHED SURFACE AFTER CUTTING OR FILLING; Fb TOP OF PROPOSED BATTER; P PROPOSED PAVEMENT OR FOOTPATH SURFACE; IL EXISTING OR PROPOSED INVERT LEVEL OF PIPE OR OPEN DRAIN; TP TANGENT POINT; CH CHAINAGE; PSM; STREET SIGN; DRAINAGE PIT No.; TBM; EX FENCE; EX WALL OR BUILDING

DRAWN BY	NJR	DESIGNED BY	JB
MELWAY	250, E12	CHECKED BY	
DATUM	AHD	AUTHORISED BY	SR

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WALLARA WATERS ESTATE

STAGE 10

LAYOUT PLAN

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

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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-598 - 20/1**
Address :	**38A Merri Concourse, Campbellfield, VIC, 3061**	Report Date :	**12/02/2017**
Project Name :	**Wallara Waters Stage 10**	Order Number :	
Project Number :	**CS-598**	Test Method :	**AS1289.5.7.1**
Location:	**Wallan**	**Page 1 of 2**	

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/m³) :				
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/m³) :	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/m³) :	2.06	2.01	2.06	2.05
Hilf Density Ratio (%) :	**97.0**	**98.0**	**98.0**	**99.0**
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

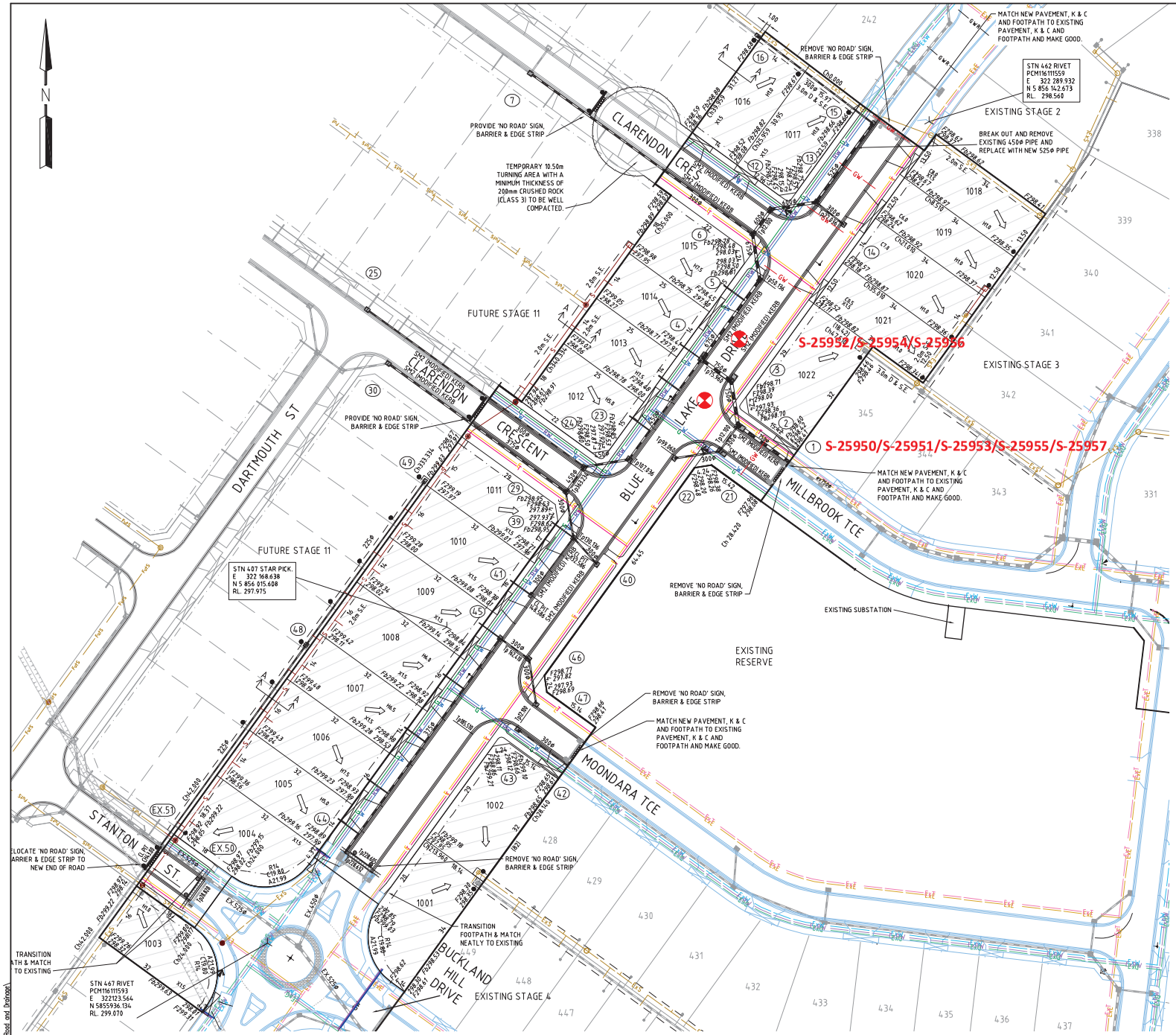
Hilf Density Ratio Report

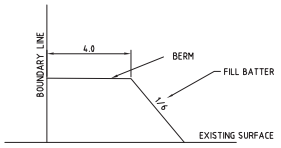
Client :	**Fortunato Group**	Report Number:	**CS-598 - 20/1**
Address :	**38A Merri Concourse, Campbellfield, VIC, 3061**	Report Date :	**12/02/2017**
Project Name :	**Wallara Waters Stage 10**	Order Number :	
Project Number :	**CS-598**	Test Method :	**AS1289.5.7.1**
Location:	**Wallan**	**Page 2 of 2**	

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/m³) :				
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/m³) :	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/m³) :	2.04	2.07	2.08	2.03
Hilf Density Ratio (%) :	**97.0**	**96.5**	**99.5**	**99.0**
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





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

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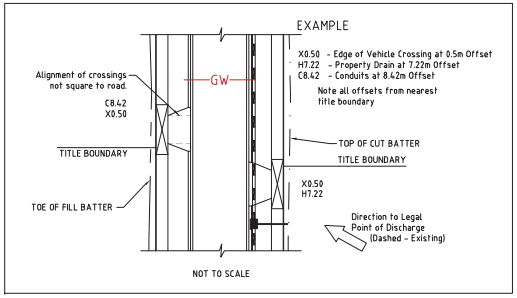

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0 5 10 20
Scale 1:500 @ A1

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B	REVISED STAGE LAYOUT	15.01.16	PC

H:\20569\Stage 10\CAD\DWG Set\Road and Drainage\

LEGEND

- DRAIN, PROPERTY INLET & PIT
- EX DRAIN & PIT
- HOUSE DRAIN
- SEWER AND MAINTENANCE HOLE
- EX SEWER AND MAINTENANCE HOLE
- WATER MAIN
- EX WATER MAIN, VALVE & HYDRANT
- GAS MAIN
- EX GAS MAIN, VALVE
- TELSTRA SERVICES & PITS
- EX TELSTRA SERVICES & PITS
- RECYCLED WATER
- EX RECYCLED WATER
- ELECTRICAL U.G. SERVICES
- EX ELECTRICAL U.G. SERVICES
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- EX ELECTRICAL ASSETS
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- TOP OF BATTER
- TOE OF BATTER
- FINISHED SURFACE AFTER CUTTING OR FILLING
- TOP OF PROPOSED BATTER
- PROPOSED PAVEMENT OR FOOTPATH SURFACE
- EXISTING OR PROPOSED INVERT LEVEL OF PIPE OR OPEN DRAIN
- TANGENT POINT
- CHAINAGE
- PSM
- STREET SIGN
- DRAINAGE PIT No.
- TBM
- EX FENCE
- EX WALL OR BUILDING

DRAWN BY	NJR	DESIGNED BY	JB
MELWAY	250, E12	CHECKED BY	
DATUM	AHD	AUTHORISED BY	SR

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MITCHELL SHIRE COUNCIL
WALLARA WATERS ESTATE
STAGE 10
LAYOUT PLAN

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

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

Hilf Density Ratio Report

Client :	**Fortunato Group**	Report Number:	**CS-598 - 19/1**
Address :	**38A Merri Concourse, Campbellfield, VIC, 3061**	Report Date :	**12/02/2017**
Project Name :	**Wallara Waters Stage 10**	Order Number :	
Project Number :	**CS-598**	Test Method :	**AS1289.5.7.1**
Location:	**Wallan**	**Page 1 of 1**	

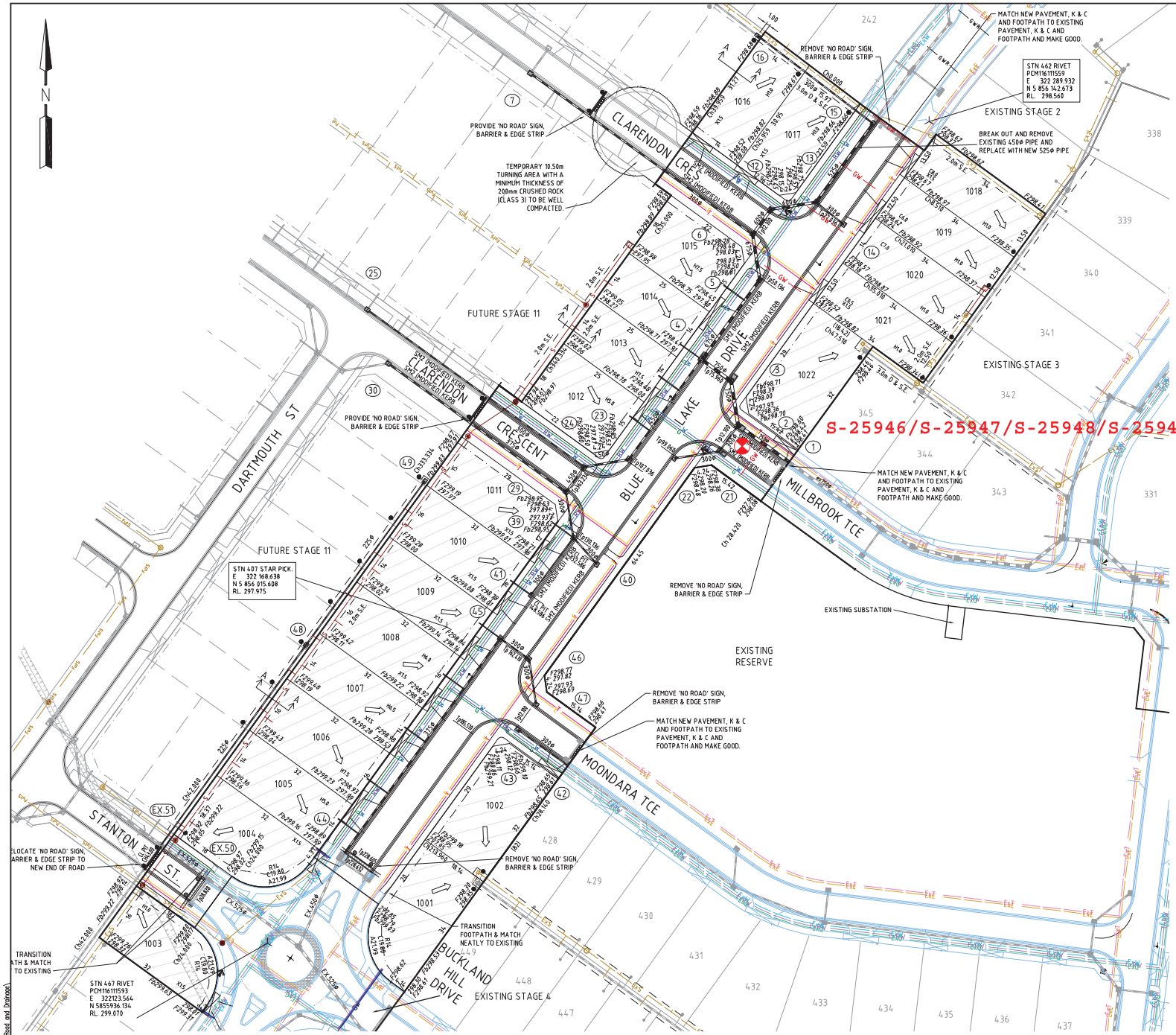
Sample Number :	S-25946	S-25947	S-25948	S-25949
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)
Date Sampled :	1/02/2017	1/02/2017	1/02/2017	1/02/2017
Date Tested :	1/02/2017	1/02/2017	1/02/2017	1/02/2017
Material Type :	Clay	Clay	Clay	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/m³) :				
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/m³) :	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/m³) :	2.05	1.94	2.06	1.97
Hilf Density Ratio (%) :	**96.0**	**95.5**	**99.0**	**97.5**
Minimum Specification :	95% Standard	95% Standard	95% Standard	95% Standard
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

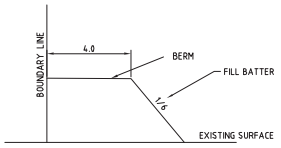
NATA
WORLD RECOGNISED ACCREDITATION

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

APPROVED SIGNATORY

Daniel Pearce - Laboratory Manager
NATA Accreditation Number
18877





SECTION A-A

BERM DETAIL (AS REQUIRED)

N.T.S.

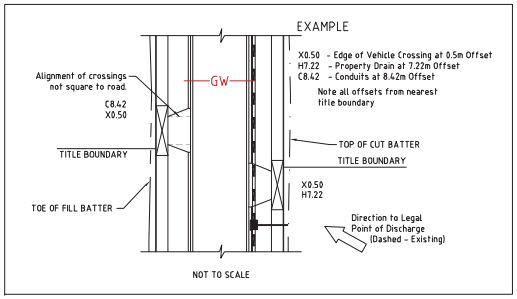
LEGEND

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

THIS PLAN SHOWS APPROXIMATE EXTENTS OF CUT AND FILL TO BE UNDERTAKEN DURING CONSTRUCTION OF THE WORKS BASED 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 0.15m.



WARNING

BEWARE OF UNDERGROUND SERVICES

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0 5 10 20
Scale 1:500 @ A1

CONSTRUCTION PLAN

VERSION	REMARKS		
F	PLAN REVISED	18.08.16	
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

DRAIN, PROPERTY INLET & PIT; EX DRAIN & PIT; HOUSE DRAIN; SEWER AND MAINTENANCE HOLE; EX SEWER AND MAINTENANCE HOLE; WATER MAIN; EX WATER MAIN, VALVE & HYDRANT; GAS MAIN; EX GAS MAIN, VALVE; TELSTRA SERVICES & PITS; EX TELSTRA SERVICES & PITS

RECYCLED WATER; EX RECYCLED WATER; ELECTRICAL U.G. SERVICES; EX ELECTRICAL U.G. SERVICES; ELECTRICAL SERVICE & PIT; EX ELECTRICAL ASSETS; EX ELECTRICAL OVERHEADS; GAS & WATER CONDUITS; TOP OF BATTER; TOE OF BATTER

F FINISHED SURFACE AFTER CUTTING OR FILLING; Fb TOP OF PROPOSED BATTER; P PROPOSED PAVEMENT OR FOOTPATH SURFACE; IL EXISTING OR PROPOSED INVERT LEVEL OF PIPE OR OPEN DRAIN; TP TANGENT POINT; CH CHAINAGE; PSM; STREET SIGN; DRAINAGE PIT No.; TBM; EX FENCE; EX WALL OR BUILDING

DRAWN BY	NJR	DESIGNED BY	JB
MELWAY	250, E12	CHECKED BY	
DATUM	AHD	AUTHORISED BY	SR

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MITCHELL SHIRE COUNCIL

WALLARA WATERS ESTATE

STAGE 10

LAYOUT PLAN

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

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H:\20569\Stage_10\CAD\DWG Set\Road and Drainage\

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

Hilf Density Ratio Report

Client :	**Fortunato Group**	Report Number:	**CS-598 - 21/1**
Address :	**38A Merri Concourse, Campbellfield, VIC, 3061**	Report Date :	**12/02/2017**
Project Name :	**Wallara Waters Stage 10**	Order Number :	
Project Number :	**CS-598**	Test Method :	**AS1289.5.7.1**
Location:	**Wallan**	**Page 1 of 1**	

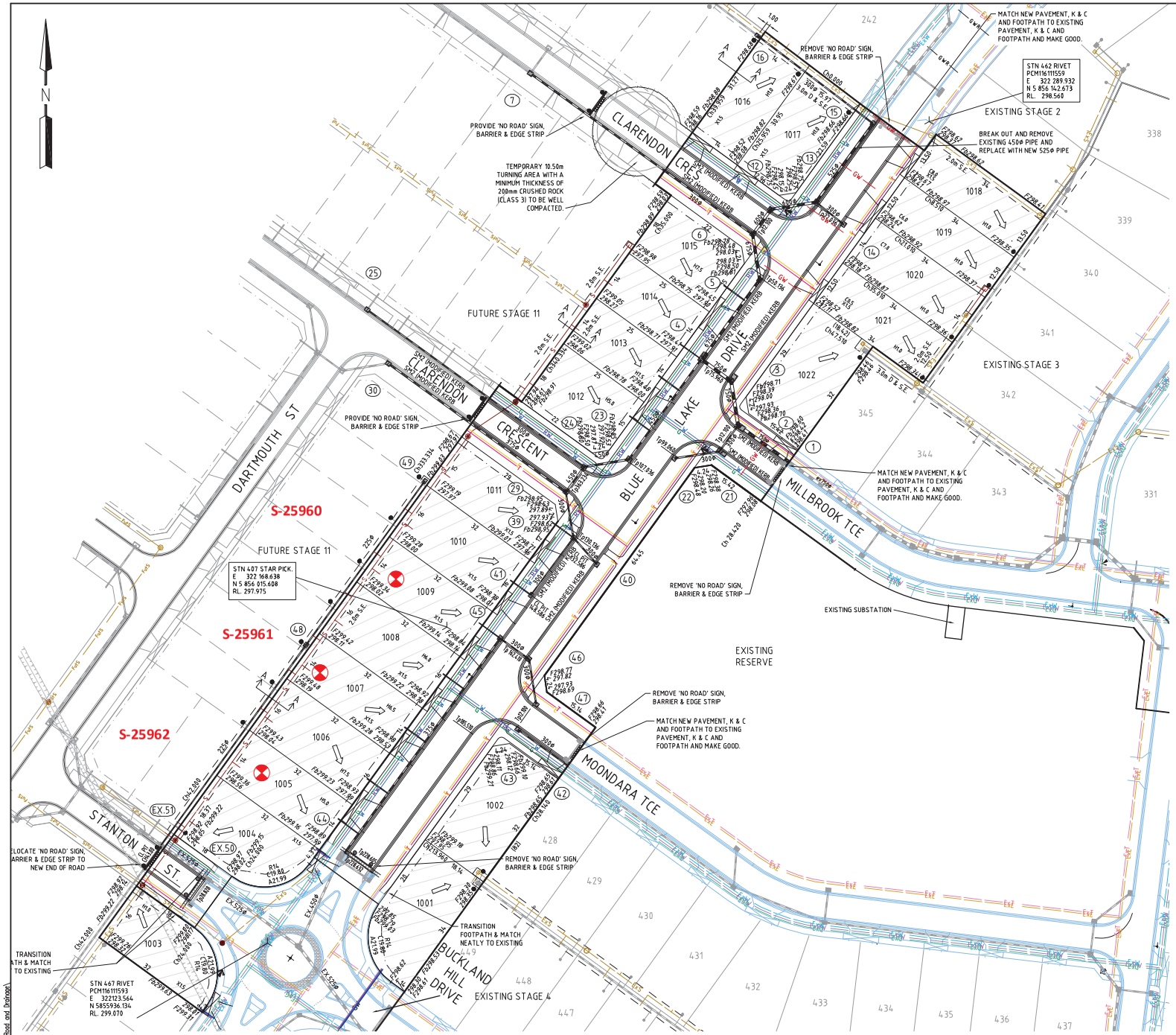
Sample Number :	S-25960	S-25961	S-25962	
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	
Date Sampled :	7/02/2017	7/02/2017	7/02/2017	
Date Tested :	7/02/2017	7/02/2017	7/02/2017	
Material Type :	Clay	Clay	Clay	
Material Source :	Imported	Imported	Imported	
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/m³) :				
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/m³) :	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/m³) :	1.95	1.97	1.97	
Hilf Density Ratio (%) :	**96.5**	**98.0**	**96.5**	
Minimum Specification :	95% Standard	95% Standard	95% Standard	
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

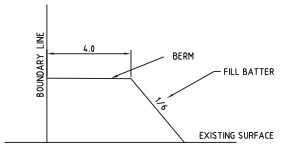
NATA
WORLD RECOGNISED ACCREDITATION

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

APPROVED SIGNATORY

Daniel Pearce - Laboratory Manager
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

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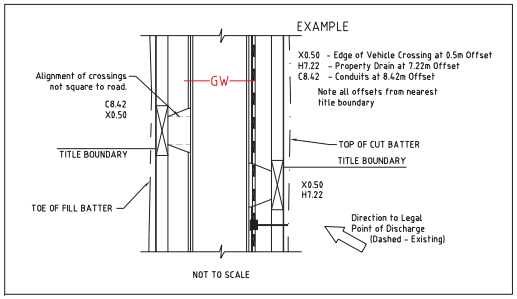

WARNING

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Scale 1:500 @ A1

CONSTRUCTION PLAN

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VERSION	REMARKS		
F	PLAN REVISED	18.08.16	
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

H:\20569\Stage_10\CAD\DWG Set\Road and Drainage\

DRAIN, PROPERTY INLET & PIT
EX DRAIN & PIT
HOUSE DRAIN
SEWER AND MAINTENANCE HOLE
EX SEWER AND MAINTENANCE HOLE
WATER MAIN
EX WATER MAIN, VALVE & HYDRANT
GAS MAIN
EX GAS MAIN, VALVE
TELSTRA SERVICES & PITS
EX TELSTRA SERVICES & PITS

LEGEND

RECYCLED WATER
EX RECYCLED WATER
ELECTRICAL U.G. SERVICES
EX ELECTRICAL U.G. SERVICES
ELECTRICAL SERVICE & PIT
EX ELECTRICAL ASSETS
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TOP OF BATTER
TOE OF BATTER

F FINISHED SURFACE AFTER CUTTING OR FILLING
Fb TOP OF PROPOSED BATTER
P PROPOSED PAVEMENT OR FOOTPATH SURFACE
IL EXISTING OR PROPOSED INVERT LEVEL OF PIPE OR OPEN DRAIN
TP TANGENT POINT
CH CHAINAGE
PSM
STREET SIGN
DRAINAGE PIT No.
TBM
EX FENCE
EX WALL OR BUILDING

DRAWN BY	NJR	DESIGNED BY	JB
MELWAY	250, E12	CHECKED BY	
DATUM	AHD	AUTHORISED BY	SR

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WALLARA WATERS ESTATE STAGE 10

LAYOUT PLAN

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

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

Hilf Density Ratio Report

Client :	**Fortunato Group**	Report Number:	**CS-598 - 22/1**
Address :	**38A Merri Concourse, Campbellfield, VIC, 3061**	Report Date :	**12/02/2017**
Project Name :	**Wallara Waters Stage 10**	Order Number :	
Project Number :	**CS-598**	Test Method :	**AS1289.5.7.1**
Location:	**Wallan**	**Page 1 of 1**	

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/m³) :				
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/m³) :	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/m³) :	2.03	2.05	2.05	
Hilf Density Ratio (%) :	**97.5**	**98.5**	**99.0**	
Minimum Specification :	95% Standard	95% Standard	95% Standard	
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

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APPROVED SIGNATORY

Daniel Pearce - Laboratory Manager
NATA Accreditation Number
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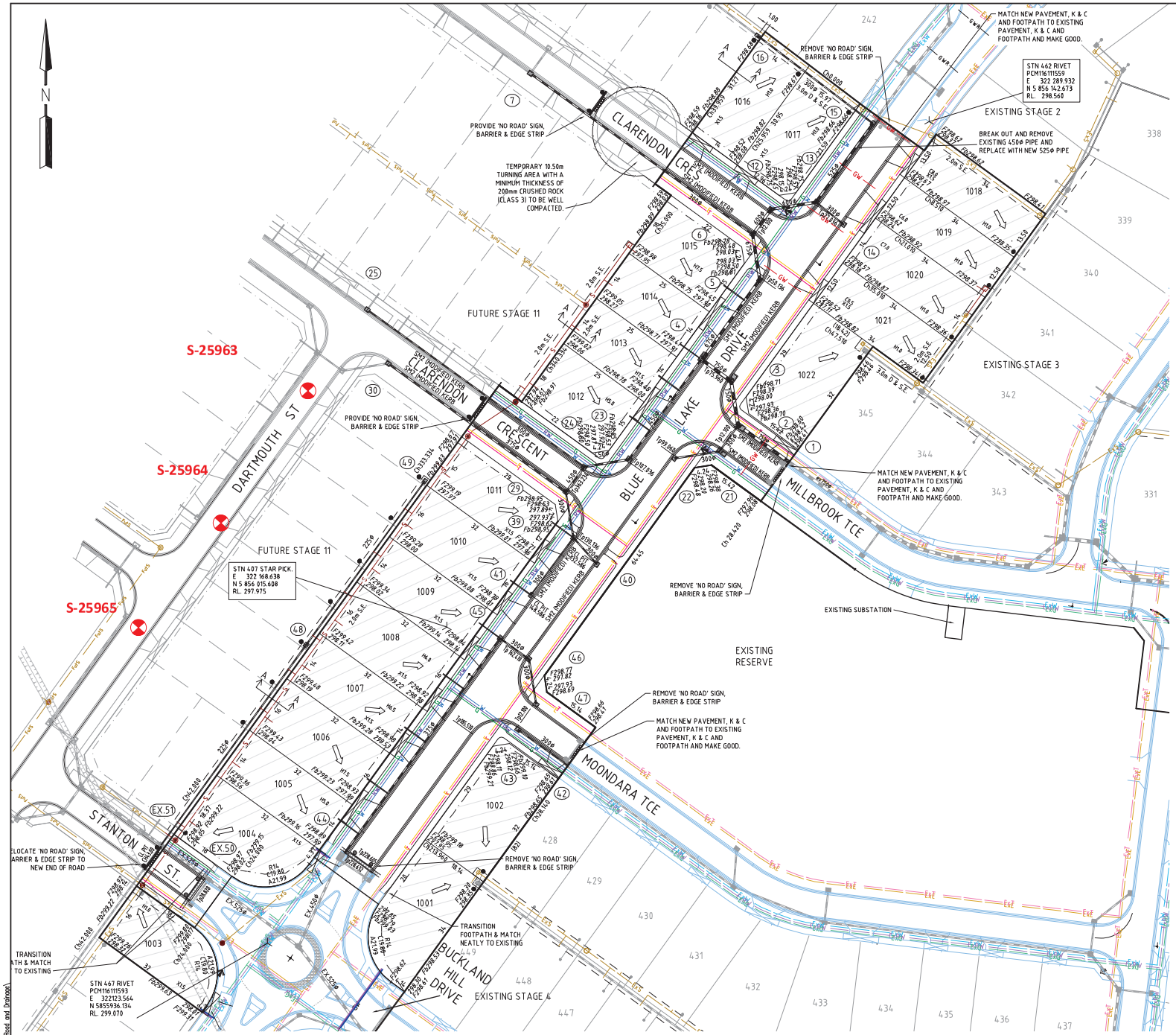

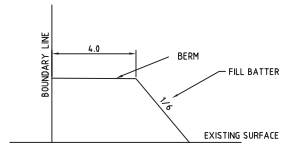

SECTION A-A

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

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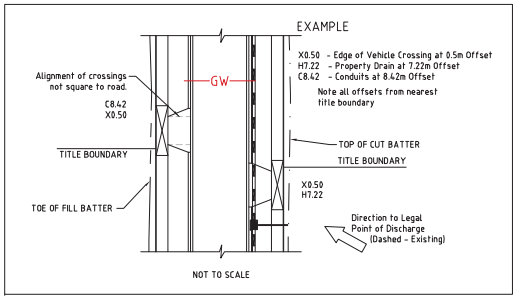

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CONSTRUCTION PLAN

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VERSION	REMARKS		
F	PLAN REVISED	18.08.16	
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

- DRAIN, PROPERTY INLET & PIT
- EX DRAIN & PIT
- HOUSE DRAIN
- SEWER AND MAINTENANCE HOLE
- EX SEWER AND MAINTENANCE HOLE
- WATER MAIN
- EX WATER MAIN, VALVE & HYDRANT
- GAS MAIN
- EX GAS MAIN, VALVE
- TELSTRA SERVICES & PITS
- EX TELSTRA SERVICES & PITS
- RECYCLED WATER
- EX RECYCLED WATER
- ELECTRICAL U.G. SERVICES
- EX ELECTRICAL U.G. SERVICES
- ELECTRICAL SERVICE & PIT
- EX ELECTRICAL ASSETS
- EX ELECTRICAL OVERHEADS
- GAS & WATER CONDUITS
- TOP OF BATTER
- TOE OF BATTER
- FINISHED SURFACE AFTER CUTTING OR FILLING
- TOP OF PROPOSED BATTER
- PROPOSED PAVEMENT OR FOOTPATH SURFACE
- EXISTING OR PROPOSED INVERT LEVEL OF PIPE OR OPEN DRAIN
- TANGENT POINT
- CHAINAGE
- PSM
- STREET SIGN
- DRAINAGE PIT No.
- TBM
- EX FENCE
- EX WALL OR BUILDING

DRAWN BY	NJR	DESIGNED BY	JB
MELWAY	250, E12	CHECKED BY	
DATUM	AHD	AUTHORISED BY	SR

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WALLARA WATERS ESTATE STAGE 10

LAYOUT PLAN

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

H:\20569\Stage_10\CAD\DWG Set\Road and Drainage\

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

Hilf Density Ratio Report

Client :	**Fortunato Group**	Report Number:	**CS-629 - 20/1**
Address :	**38A Merri Concourse, Campbellfield, VIC, 3061**	Report Date :	**16/03/2017**
Project Name :	**Wallara Waters Stage 11**	Order Number :	
Project Number :	**CS-629**	Test Method :	**AS1289.5.7.1**
Location:	**Wallan**	**Page 1 of 2**	

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/m³) :				
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/m³) :	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/m³) :	2.05	2.06	2.03	2.08
Hilf Density Ratio (%) :	**96.5**	**96.0**	**96.0**	**95.5**
Minimum Specification :	95% Standard	95% Standard	95% Standard	95% Standard
Moisture Specification :				
Site Selection :	Random	Random	Random	Random
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

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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 :	**Fortunato Group**	Report Number:	**CS-629 - 20/1**
Address :	**38A Merri Concourse, Campbellfield, VIC, 3061**	Report Date :	**16/03/2017**
Project Name :	**Wallara Waters Stage 11**	Order Number :	
Project Number :	**CS-629**	Test Method :	**AS1289.5.7.1**
Location:	**Wallan**	**Page 2 of 2**	

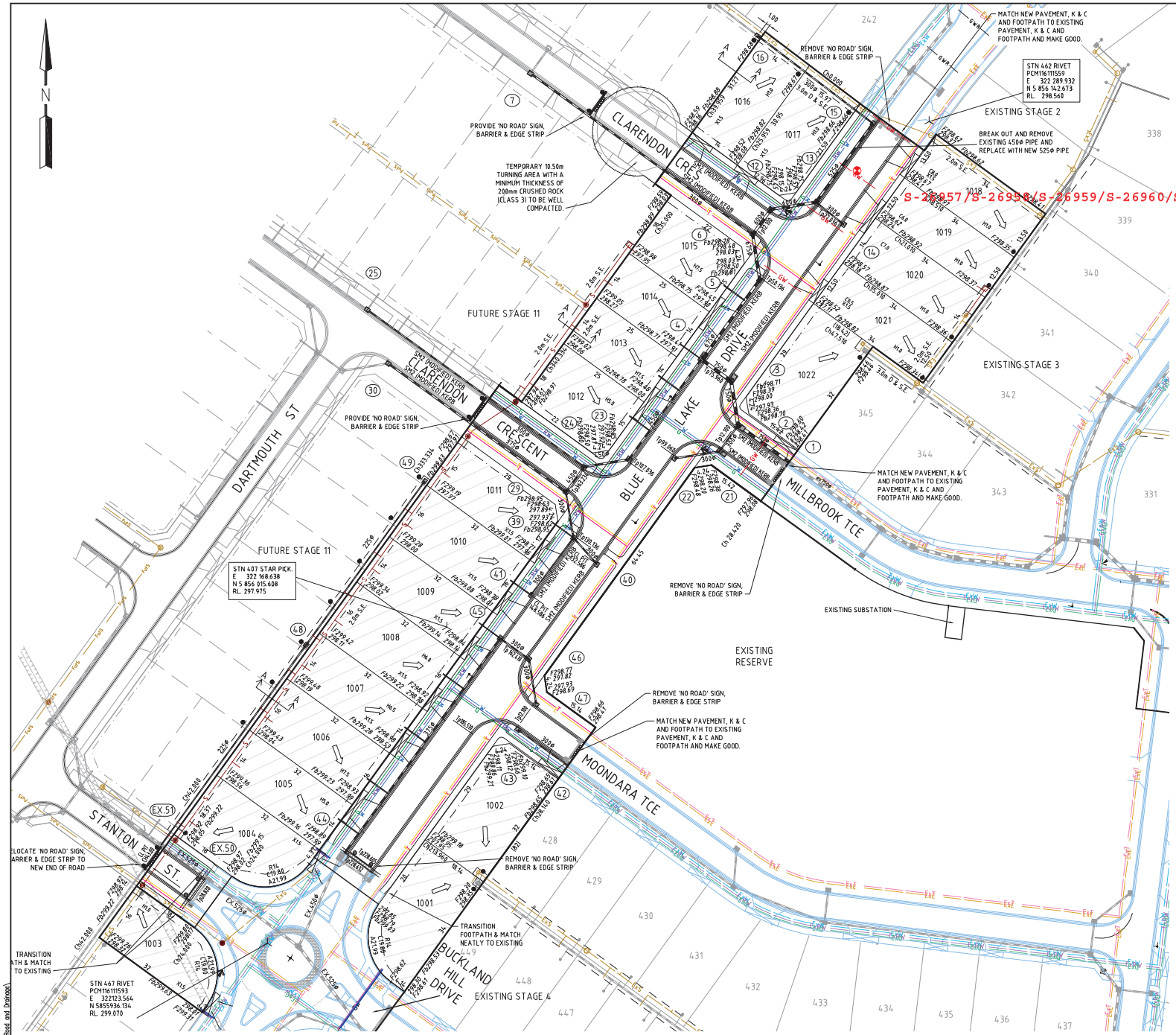
Sample Number :	S-26961			
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)			
Date Sampled :	13/02/2017			
Date Tested :	13/02/2017			
Material Type :	Clay			
Material Source :	Insitu + Imported			
Lot Number :				
Sample Location :	Swale Drain Subgrade L5 Refer to site plan			
Test Depth (mm) :	175			
Layer Depth (mm) :	200			
Maximum Size (mm) :	19			
Oversize Wet (%) :	0			
Oversize Dry (%) :				
Oversize Density (t/m³) :				
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/m³) :	1.97			
Optimum Moisture Content (%) :	21.0			
Moisture Variation :	0.0			
Peak Converted Wet Density (t/m³) :	2.06			
Hilf Density Ratio (%) :	**96.0**			
Minimum Specification :	95% Standard			
Moisture Specification :				
Site Selection :	Random			
Soil Description :				
Remarks :	-			

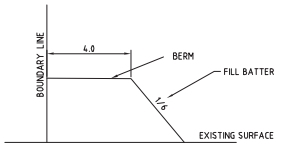
NATA
WORLD RECOGNISED ACCREDITATION

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

APPROVED SIGNATORY

Daniel Pearce - Laboratory Manager
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 EXTENTS OF CUT AND FILL TO BE UNDERTAKEN DURING CONSTRUCTION OF THE WORKS BASED ON THE EXISTING SITE SURFACE LEVELS AND PROPOSED FINISHED DESIGN LEVELS SHOWN.

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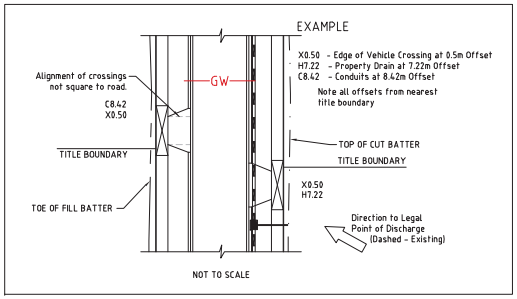

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0 5 10 20
Scale 1:500 @ A1

CONSTRUCTION PLAN

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VERSION	REMARKS		
F	PLAN REVISED	18.08.16	
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

H:\20569\Stage_10\CAD\DWG Set\Road and Drainage\

LEGEND

- DRAIN, PROPERTY INLET & PIT
- EX DRAIN & PIT
- HOUSE DRAIN
- SEWER AND MAINTENANCE HOLE
- EX SEWER AND MAINTENANCE HOLE
- WATER MAIN
- EX WATER MAIN, VALVE & HYDRANT
- GAS MAIN
- EX GAS MAIN, VALVE
- TELSTRA SERVICES & PITS
- EX TELSTRA SERVICES & PITS
- RECYCLED WATER
- EX RECYCLED WATER
- ELECTRICAL U.G. SERVICES
- EX ELECTRICAL U.G. SERVICES
- ELECTRICAL SERVICE & PIT
- EX ELECTRICAL ASSETS
- EX ELECTRICAL OVERHEADS
- GAS & WATER CONDUITS
- TOP OF BATTER
- TOE OF BATTER
- F FINISHED SURFACE AFTER CUTTING OR FILLING
- Fb TOP OF PROPOSED BATTER
- P PROPOSED PAVEMENT OR FOOTPATH SURFACE
- IL EXISTING OR PROPOSED INVERT LEVEL OF PIPE OR OPEN DRAIN
- TP TANGENT POINT
- CH CHAINAGE
- PSM
- STREET SIGN
- DRAINAGE PIT No.
- TBM
- EX FENCE
- EX WALL OR BUILDING

DRAWN BY	NJR	DESIGNED BY	JB
MELWAY	250, E12	CHECKED BY	
DATUM	AHD	AUTHORISED BY	SR

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WALLARA WATERS ESTATE STAGE 10

LAYOUT PLAN

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

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

Hilf Density Ratio Report

Client :	**Fortunato Group**	Report Number:	**CS-598 - 23/1**
Address :	**38A Merri Concourse, Campbellfield, VIC, 3061**	Report Date :	**10/03/2017**
Project Name :	**Wallara Waters Stage 10**	Order Number :	
Project Number :	**CS-598**	Test Method :	**AS1289.5.7.1**
Location:	**Wallan**	**Page 1 of 2**	

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/m³) :				
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/m³) :	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/m³) :	1.99	2.00	1.98	2.00
Hilf Density Ratio (%) :	**99.0**	**99.0**	**101.5**	**99.0**
Minimum Specification :	95% Standard	95% Standard	95% Standard	95% Standard
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

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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 :	**Fortunato Group**	Report Number:	**CS-598 - 23/1**
Address :	**38A Merri Concourse, Campbellfield, VIC, 3061**	Report Date :	**10/03/2017**
Project Name :	**Wallara Waters Stage 10**	Order Number :	
Project Number :	**CS-598**	Test Method :	**AS1289.5.7.1**
Location:	**Wallan**	**Page 2 of 2**	

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/m³) :				
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/m³) :	1.87			
Optimum Moisture Content (%) :	28.3			
Moisture Variation :	-2.5			
Peak Converted Wet Density (t/m³) :	1.90			
Hilf Density Ratio (%) :	**98.5**			
Minimum Specification :	95% Standard			
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

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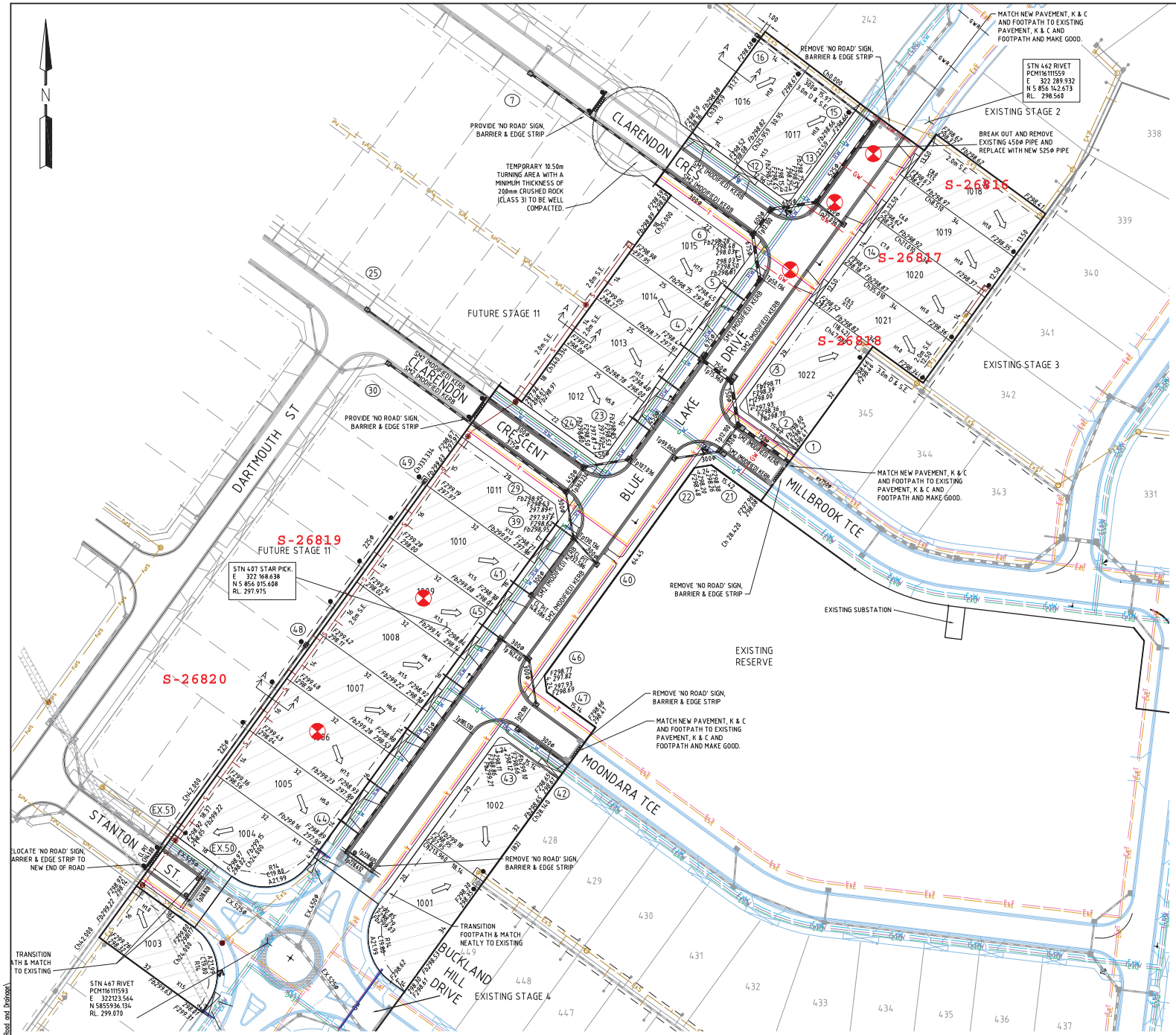

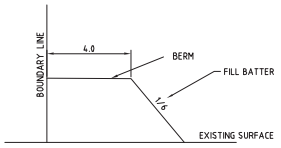

SECTION A-A
BERM DETAIL (AS REQUIRED)
N.T.S.

LEGEND

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

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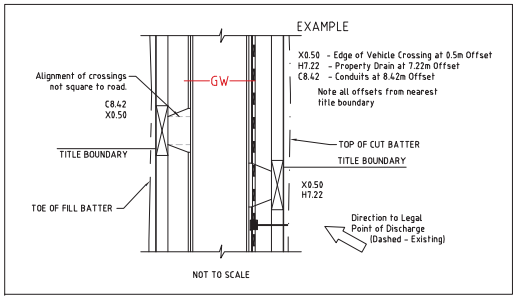

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Scale 1:500 @ A1

CONSTRUCTION PLAN

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B	REVISED STAGE LAYOUT	15.01.16	PC

LEGEND

- DRAIN, PROPERTY INLET & PIT
- EX DRAIN & PIT
- HOUSE DRAIN
- SEWER AND MAINTENANCE HOLE
- EX SEWER AND MAINTENANCE HOLE
- WATER MAIN
- EX WATER MAIN, VALVE & HYDRANT
- GAS MAIN
- EX GAS MAIN, VALVE
- TELSTRA SERVICES & PITS
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- RECYCLED WATER
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DRAWN BY	NJR	DESIGNED BY	JB
MELWAY	250, E12	CHECKED BY	
DATUM	AHD	AUTHORISED BY	SR

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WALLARA WATERS ESTATE
STAGE 10
LAYOUT PLAN

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

H:\20569\Stage_10\CAD\DWG Set\Road and Drainage\

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

Hilf Density Ratio Report

Client :	**Fortunato Group**	Report Number:	**CS-598 - 24/1**
Address :	**38A Merri Concourse, Campbellfield, VIC, 3061**	Report Date :	**10/03/2017**
Project Name :	**Wallara Waters Stage 10**	Order Number :	
Project Number :	**CS-598**	Test Method :	**AS1289.5.7.1**
Location:	**Wallan**	**Page 1 of 1**	

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/m³) :				
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/m³) :	2.02	2.04		
Optimum Moisture Content (%) :	22.4	22.6		
Moisture Variation :	2.5	2.5		
Peak Converted Wet Density (t/m³) :	1.99	1.99		
Hilf Density Ratio (%) :	**101.5**	**102.0**		
Minimum Specification :	95% Standard	95% Standard		
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

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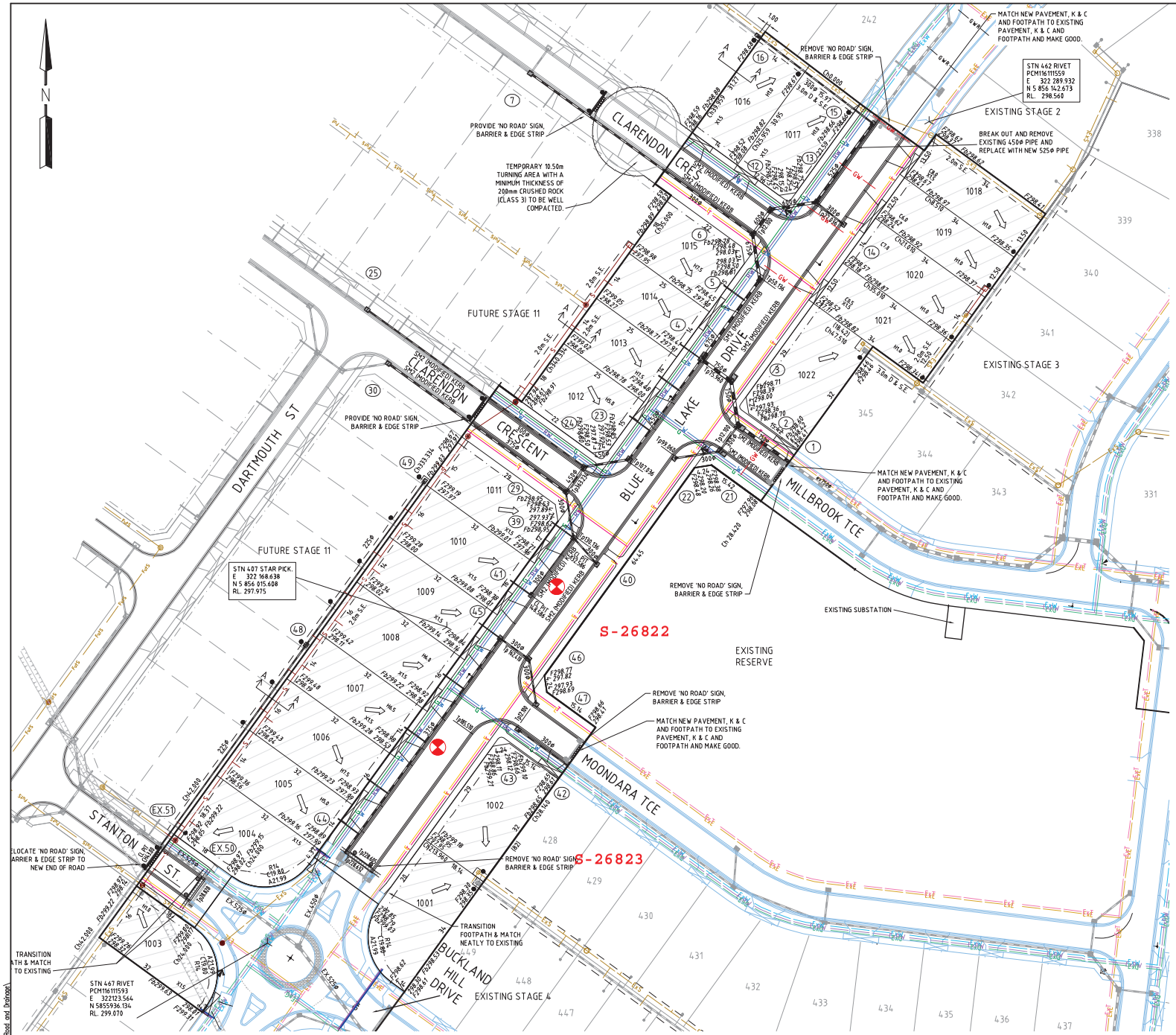

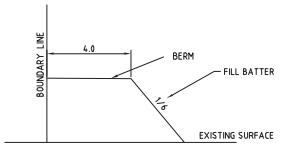

SECTION A-A

BERM DETAIL (AS REQUIRED)

N.T.S.

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- FILL IN EXCESS OF 200mm
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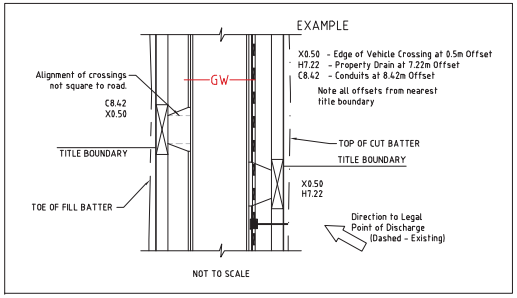

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B	REVISED STAGE LAYOUT	15.01.16	PC

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LEGEND

- DRAIN, PROPERTY INLET & PIT
- EX DRAIN & PIT
- HOUSE DRAIN
- SEWER AND MAINTENANCE HOLE
- EX SEWER AND MAINTENANCE HOLE
- WATER MAIN
- EX WATER MAIN, VALVE & HYDRANT
- GAS MAIN
- EX GAS MAIN, VALVE
- TELSTRA SERVICES & PITS
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DRAWN BY	NJR	DESIGNED BY	JB
MELWAY	250, E12	CHECKED BY	
DATUM	AHD	AUTHORISED BY	SR

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WALLARA WATERS ESTATE STAGE 10

LAYOUT PLAN

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

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

Hilf Density Ratio Report

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

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 Cresent (South) Subgrade Refer to site plan	Clarendon Cresent (South) Subgrade Refer to site plan	Clarendon Cresent (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/m³) :				
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/m³) :	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/m³) :	1.89	1.89	1.96	
Hilf Density Ratio (%) :	**108.0**	**106.0**	**105.5**	
Minimum Specification :	100% Standard	100% Standard	100% Standard	
Moisture Specification :				
Site Selection :	Random	Random	Random	
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

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APPROVED SIGNATORY

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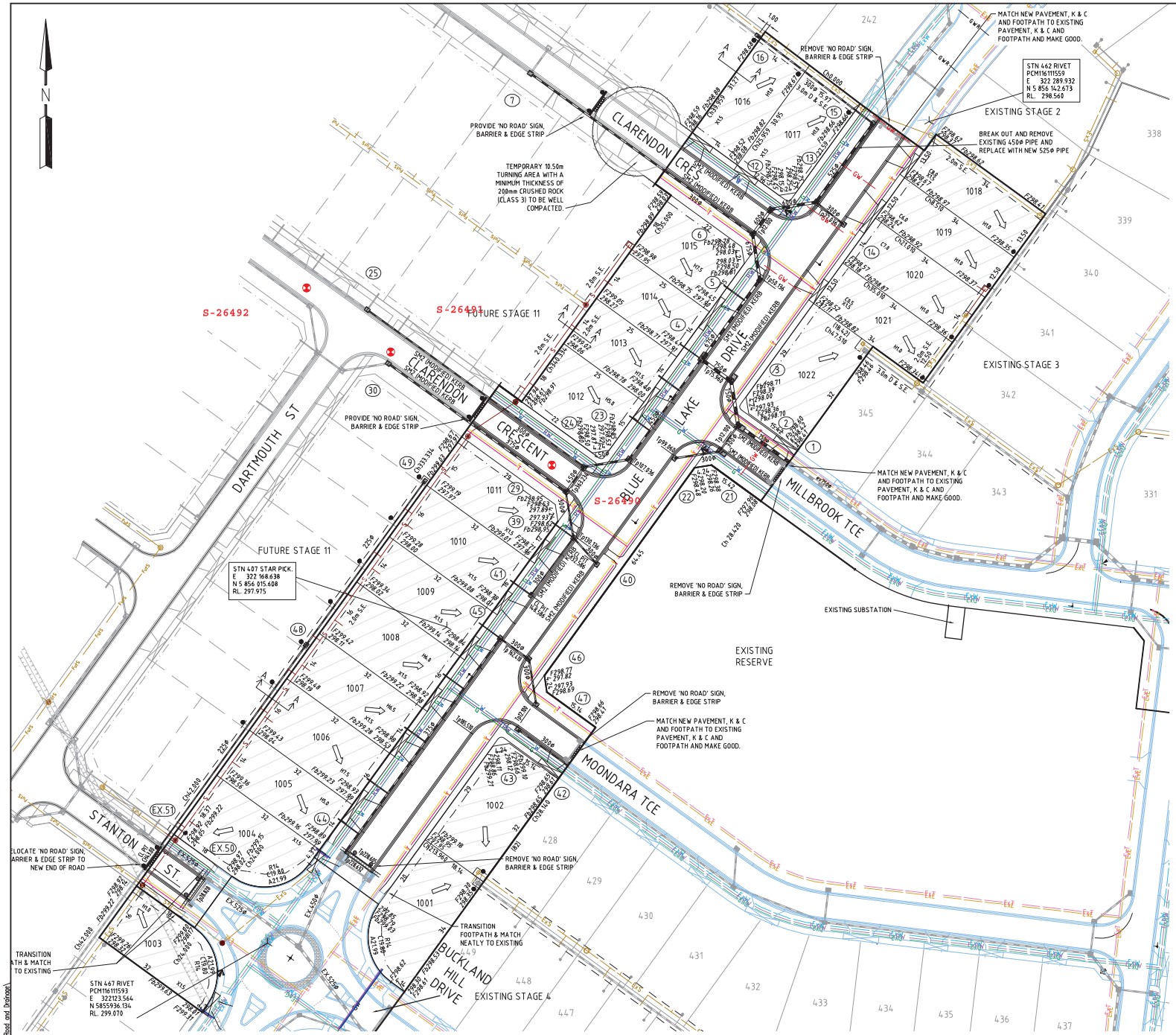

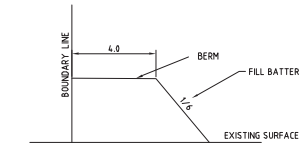

SECTION A-A

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 EXTENTS OF CUT AND FILL TO BE UNDERTAKEN DURING CONSTRUCTION OF THE WORKS BASED ON THE EXISTING SITE SURFACE LEVELS AND PROPOSED FINISHED DESIGN LEVELS SHOWN.

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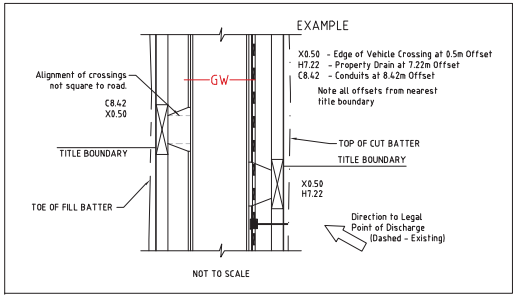
THE DEPTH OF TOP DRESSING FILL MAY VARY BY UP TO 0.15m.



WARNING

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0 5 10 20
Scale 1:500 @ A1

CONSTRUCTION PLAN

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VERSION	REMARKS		
F	PLAN REVISED	18.08.16	
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

H:\20569\Stage_10\CAD\DWG Set\Road and Drainage\

LEGEND

- DRAIN, PROPERTY INLET & PIT
- EX DRAIN & PIT
- HOUSE DRAIN
- SEWER AND MAINTENANCE HOLE
- EX SEWER AND MAINTENANCE HOLE
- WATER MAIN
- EX WATER MAIN, VALVE & HYDRANT
- GAS MAIN
- EX GAS MAIN, VALVE
- TELSTRA SERVICES & PITS
- EX TELSTRA SERVICES & PITS
- RECYCLED WATER
- EX RECYCLED WATER
- ELECTRICAL U.G. SERVICES
- EX ELECTRICAL U.G. SERVICES
- ELECTRICAL SERVICE & PIT
- EX ELECTRICAL ASSETS
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- FINISHED SURFACE AFTER CUTTING OR FILLING
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DRAWN BY	NJR	DESIGNED BY	JB
MELWAY	250, E12	CHECKED BY	
DATUM	AHD	AUTHORISED BY	SR

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WALLARA WATERS ESTATE STAGE 10

LAYOUT PLAN

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

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

Hilf Density Ratio Report

Client :	**Fortunato Group**	Report Number:	**CS-629 - 17/1**
Address :	**38A Merri Concourse, Campbellfield, VIC, 3061**	Report Date :	**10/03/2017**
Project Name :	**Wallara Waters Stage 11**	Order Number :	
Project Number :	**CS-629**	Test Method :	**AS1289.5.7.1**
Location:	**Wallan**	**Page 1 of 1**	

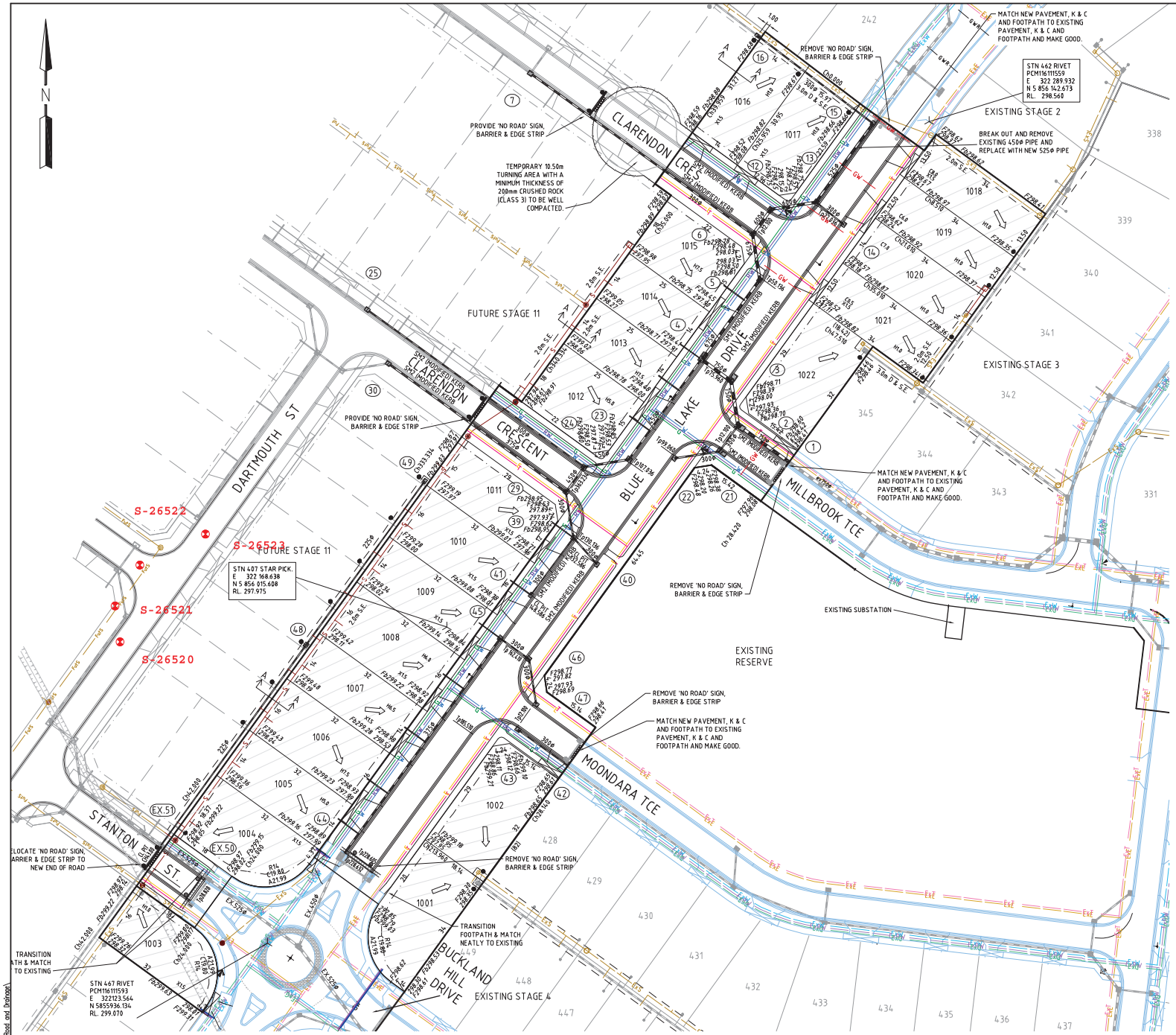
Sample Number :	S-26520	S-26521	S-26522	S-26523
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)
Date Sampled :	17/02/2017	17/02/2017	17/02/2017	17/02/2017
Date Tested :	17/02/2017	17/02/2017	17/02/2017	17/02/2017
Material Type :	Clay	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/m³) :				
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/m³) :	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/m³) :	2.02	2.06	2.08	2.02
Hilf Density Ratio (%) :	**101.5**	**99.5**	**99.5**	**99.5**
Minimum Specification :	95% Standard	95% Standard	95% Standard	95% Standard
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

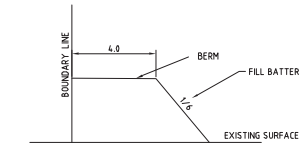
NATA
WORLD RECOGNISED ACCREDITATION

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

APPROVED SIGNATORY

Daniel Pearce - Laboratory Manager
NATA Accreditation Number
18877





SECTION A-A

BERM DETAIL (AS REQUIRED)

N.T.S.

LEGEND

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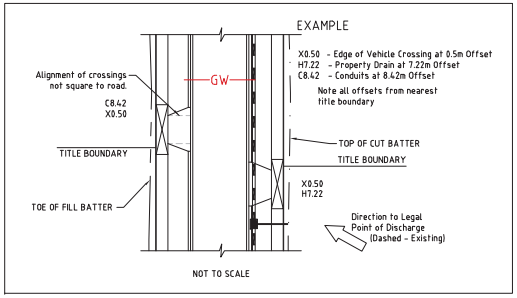

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Scale 1:500 @ A1

CONSTRUCTION PLAN

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VERSION	REMARKS		
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LEGEND

- DRAIN, PROPERTY INLET & PIT
- EX DRAIN & PIT
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- EX SEWER AND MAINTENANCE HOLE
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- CH CHAINAGE
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WALLARA WATERS ESTATE STAGE 10

LAYOUT PLAN

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

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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 - 23/1**
Address :	**38A Merri Concourse, Campbellfield, VIC, 3061**	Report Date :	**29/03/2017**
Project Name :	**Wallara Waters Stage 11**	Order Number :	
Project Number :	**CS-629**	Test Method :	**AS1289.5.7.1**
Location:	**Wallan**	**Page 1 of 1**	

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/m³) :	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/m³) :	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/m³) :	2.03	2.00	1.87	
Hilf Density Ratio (%) :	**100.5**	**103.5**	**98.5**	
Minimum Specification :	98% Standard	98% Standard	98% Standard	
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

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APPROVED SIGNATORY

Daniel Pearce - Laboratory Manager
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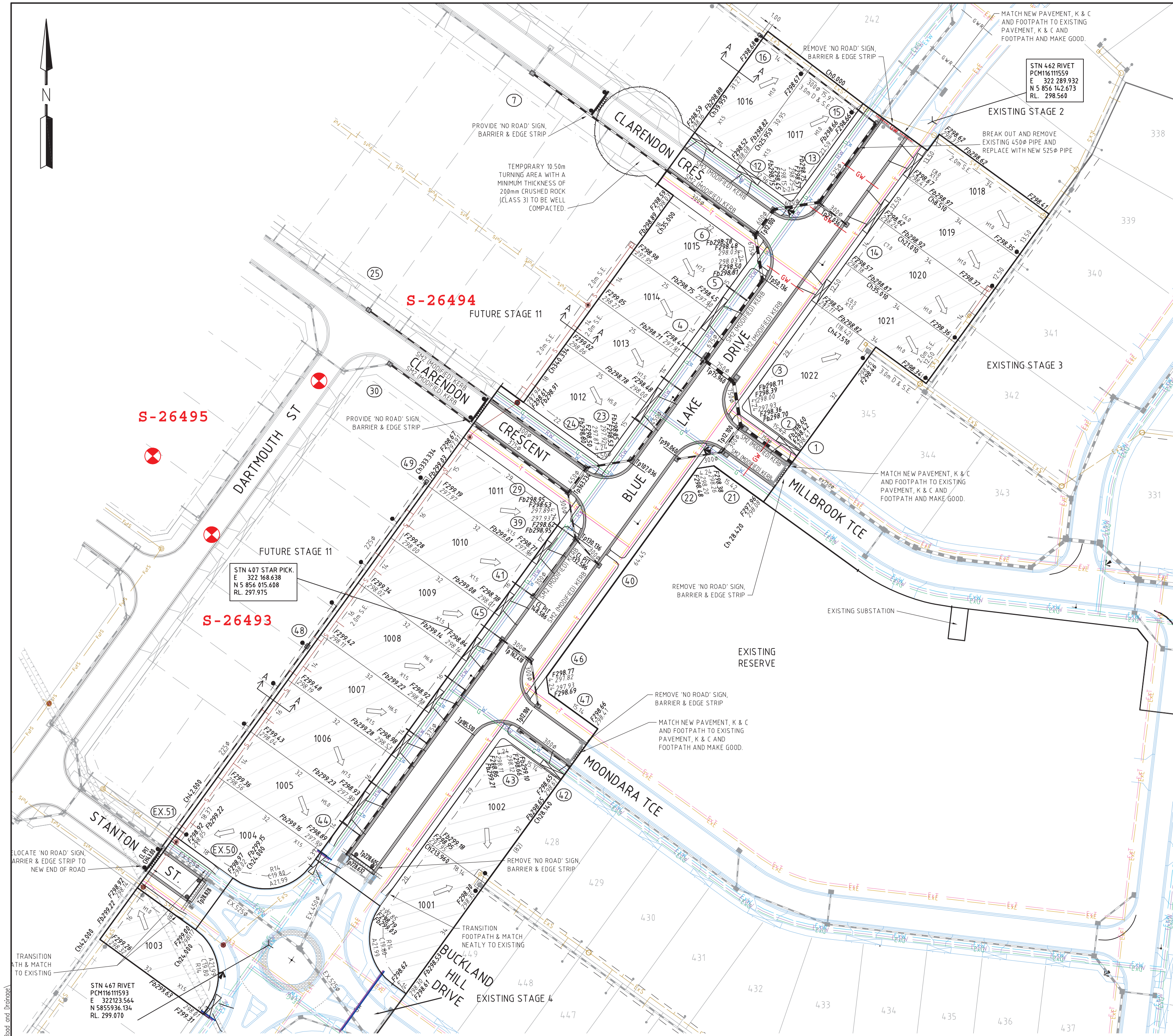

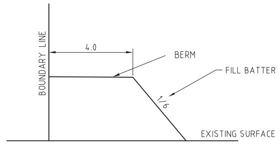

SECTION A–A
BERM DETAIL (AS REQUIRED)
N.T.S.

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- TREES TO BE REMOVED
- FILL IN EXCESS OF 200mm
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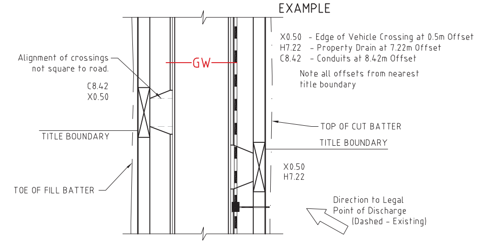
EXAMPLE



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LEGEND

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- EX DRAIN & PIT
- HOUSE DRAIN
- S — SEWER AND MAINTENANCE HOLE
- ExS — EX SEWER AND MAINTENANCE HOLE
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- ExW F.H. — EX WATER MAIN, VALVE & HYDRANT
- G — GAS MAIN
- ExG — EX GAS MAIN, VALVE
- T — TELSTRA SERVICES & PITS
- ExT — EX TELSTRA SERVICES & PITS
- RW — RECYCLED WATER
- ExRW — EX RECYCLED WATER
- E — ELECTRICAL U.G. SERVICES
- ExE — EX ELECTRICAL U.G. SERVICES
- E — ELECTRICAL SERVICE & PIT
- LIGHT POLE PIT — EX ELECTRICAL ASSETS
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DRAWN BY	NJR	DESIGNED BY	JB
MELWAY	250, E12	CHECKED BY	
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WALLARA WATERS ESTATE
STAGE 10
LAYOUT PLAN

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

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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 - 19/1**
Address :	**38A Merri Concourse, Campbellfield, VIC, 3061**	Report Date :	**10/03/2017**
Project Name :	**Wallara Waters Stage 11**	Order Number :	
Project Number :	**CS-629**	Test Method :	**AS1289.5.7.1**
Location:	**Wallan**	**Page 1 of 1**	

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/m³) :				
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/m³) :	2.07			
Optimum Moisture Content (%) :	16.9			
Moisture Variation :	2.5			
Peak Converted Wet Density (t/m³) :	2.05			
Hilf Density Ratio (%) :	**101.0**			
Minimum Specification :	95% Standard			
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

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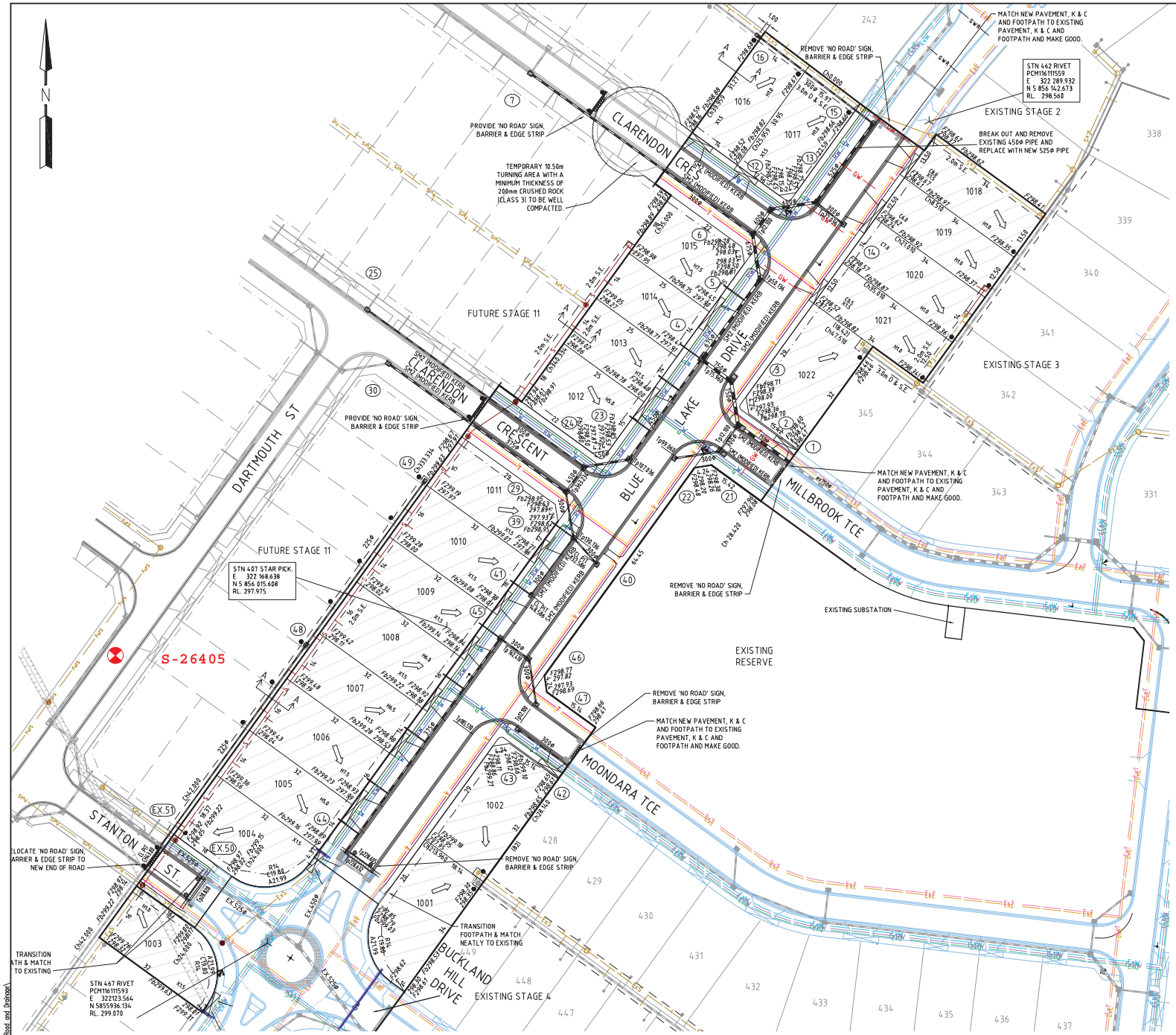

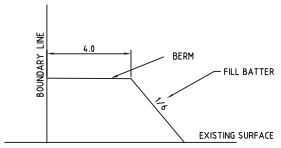

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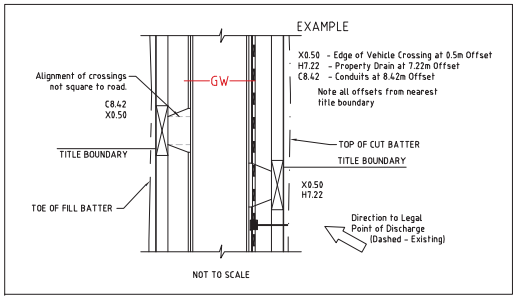

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H:\20569\Stage 10\CAD\DWG Set\Road and Drainage\

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- EX SEWER AND MAINTENANCE HOLE
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DRAWN BY	NJR	DESIGNED BY	JB
MELWAY	250, E12	CHECKED BY	
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WALLARA WATERS ESTATE STAGE 10

LAYOUT PLAN

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

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

Hilf Density Ratio Report

Client :	**Fortunato Group**	Report Number:	**CS-629 - 24/1**
Address :	**38A Merri Concourse, Campbellfield, VIC, 3061**	Report Date :	**29/03/2017**
Project Name :	**Wallara Waters Stage 11**	Order Number :	
Project Number :	**CS-629**	Test Method :	**AS1289.5.7.1**
Location:	**Wallan**	**Page 1 of 1**	

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/m³) :				
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/m³) :	1.98			
Optimum Moisture Content (%) :	27.4			
Moisture Variation :	2.5			
Peak Converted Wet Density (t/m³) :	1.95			
Hilf Density Ratio (%) :	**101.5**			
Minimum Specification :	98% Standard			
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

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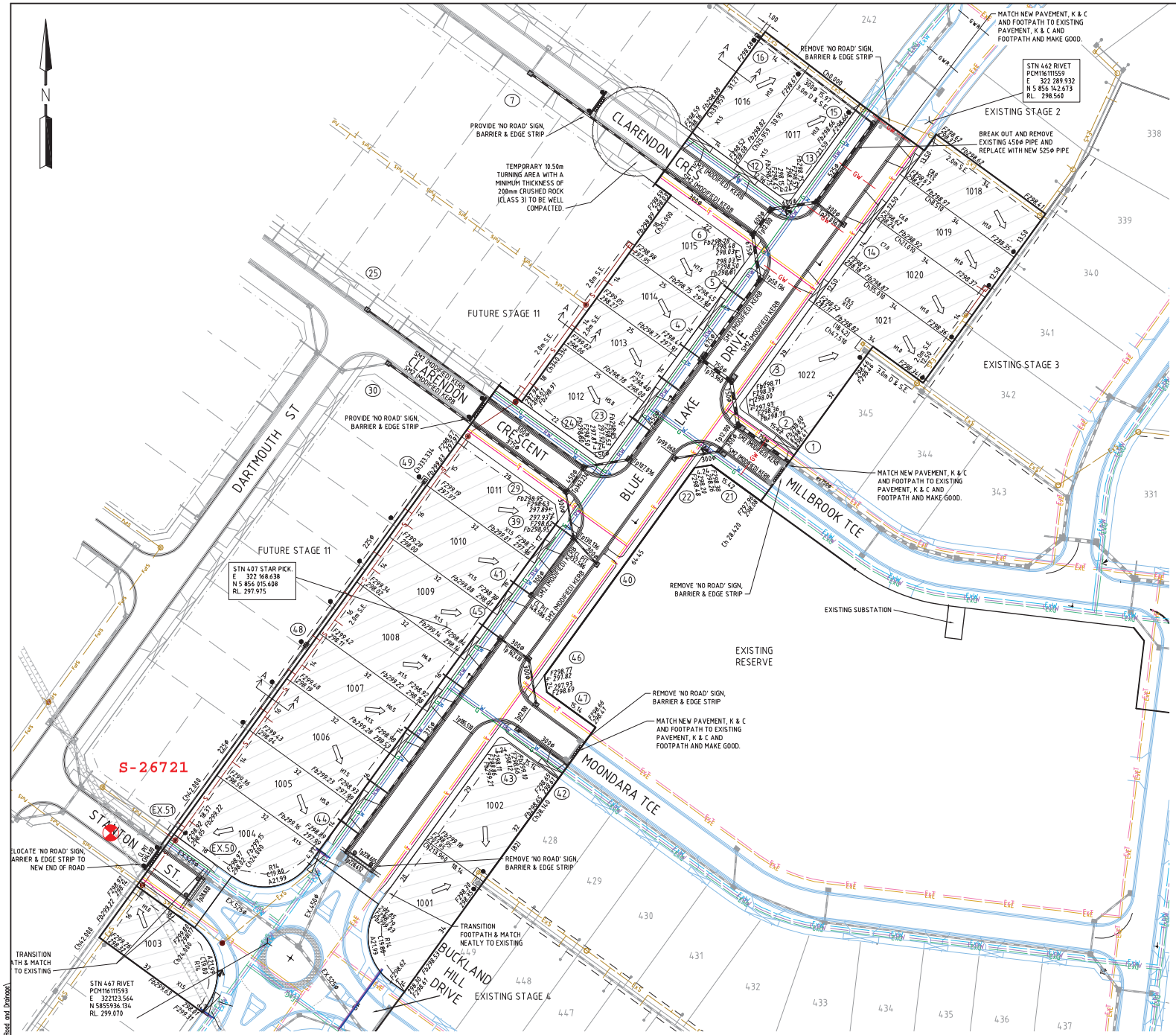
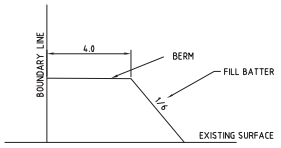
APPROVED SIGNATORY

Daniel Pearce - Laboratory Manager
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

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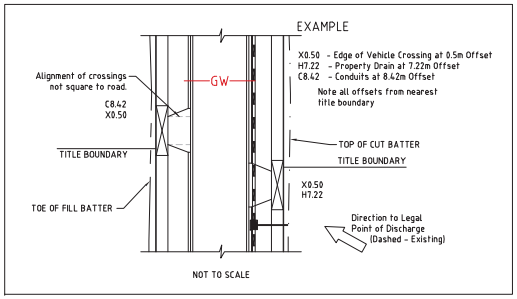
THE EXTENT OF FILL SHOWN IS BASED ON DESIGN AND MAY BE SUBJECT TO CHANGE DURING CONSTRUCTION.

THE DEPTH OF TOP DRESSING FILL MAY VARY BY UP TO 0.15m.



WARNING

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Scale 1:500 @ A1

CONSTRUCTION PLAN

VERSION	REMARKS		
F	PLAN REVISED	18.08.16	
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

H:\20569\Stage 10\CAD\DWG Set\Road and Drainage\

LEGEND

- DRAIN, PROPERTY INLET & PIT
- EX DRAIN & PIT
- HOUSE DRAIN
- SEWER AND MAINTENANCE HOLE
- EX SEWER AND MAINTENANCE HOLE
- WATER MAIN
- EX WATER MAIN, VALVE & HYDRANT
- GAS MAIN
- EX GAS MAIN, VALVE
- TELSTRA SERVICES & PITS
- EX TELSTRA SERVICES & PITS
- RECYCLED WATER
- EX RECYCLED WATER
- ELECTRICAL U.G. SERVICES
- EX ELECTRICAL U.G. SERVICES
- ELECTRICAL SERVICE & PIT
- EX ELECTRICAL ASSETS
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- TOP OF BATTER
- TOE OF BATTER
- FINISHED SURFACE AFTER CUTTING OR FILLING
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- EXISTING OR PROPOSED INVERT LEVEL OF PIPE OR OPEN DRAIN
- TANGENT POINT
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- DRAINAGE PIT No.
- TBM
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DRAWN BY	NJR	DESIGNED BY	JB
MELWAY	250, E12	CHECKED BY	
DATUM	AHD	AUTHORISED BY	SR

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WALLARA WATERS ESTATE STAGE 10

LAYOUT PLAN

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

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

Hilf Density Ratio Report

Client :	**Fortunato Group**	Report Number:	**CS-629 - 25/1**
Address :	**38A Merri Concourse, Campbellfield, VIC, 3061**	Report Date :	**29/03/2017**
Project Name :	**Wallara Waters Stage 11**	Order Number :	
Project Number :	**CS-629**	Test Method :	**AS1289.5.7.1**
Location:	**Wallan**	**Page 1 of 1**	

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/m³) :				
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/m³) :	2.03	1.91		
Optimum Moisture Content (%) :	27.1	27.2		
Moisture Variation :	2.0	3.0		
Peak Converted Wet Density (t/m³) :	2.03	1.93		
Hilf Density Ratio (%) :	**100.0**	**99.5**		
Minimum Specification :	98% Standard	98% Standard		
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

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APPROVED SIGNATORY

Daniel Pearce - Laboratory Manager
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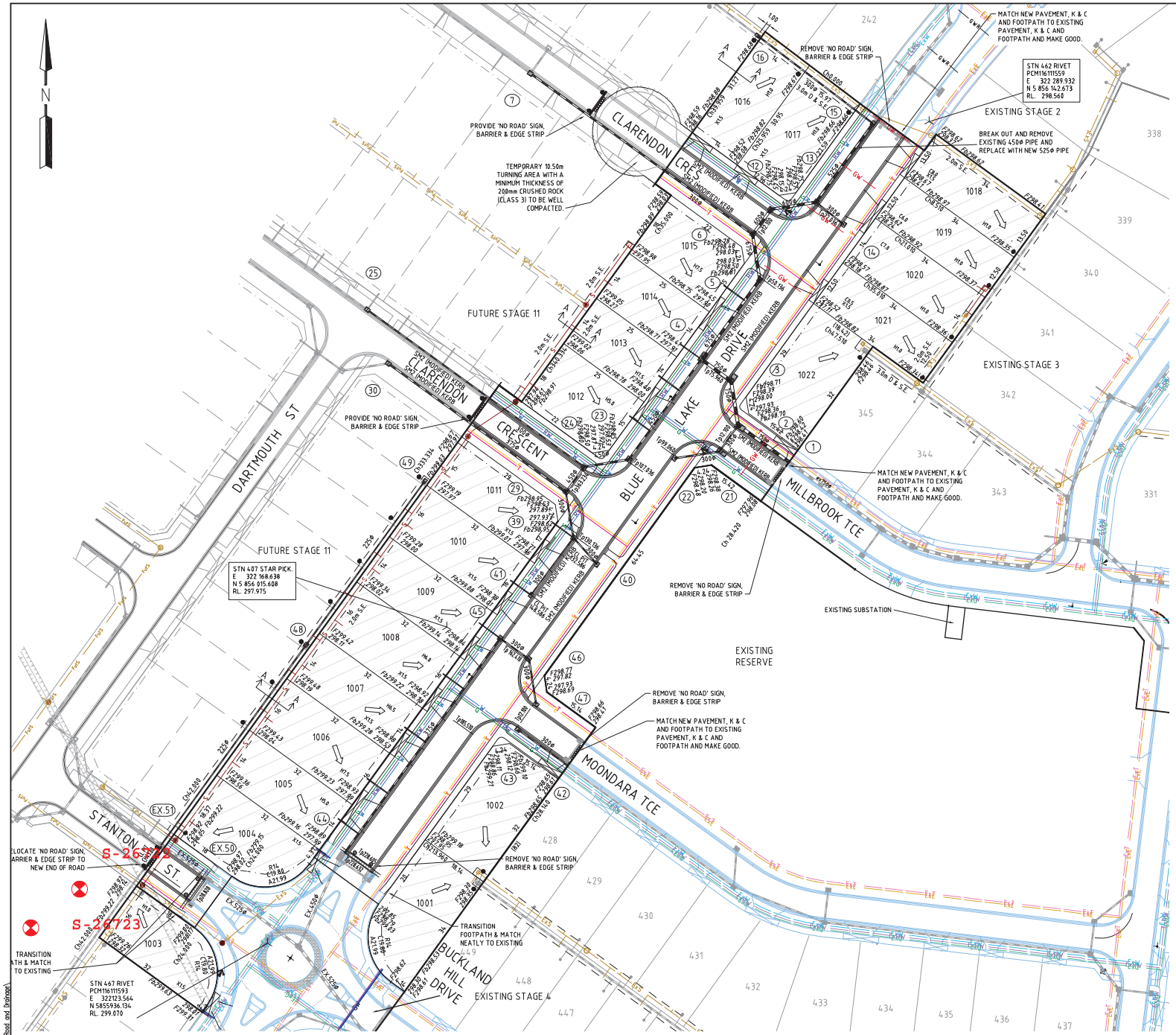

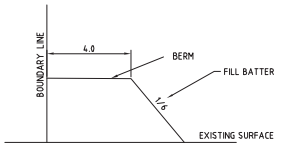

SECTION A-A

BERM DETAIL (AS REQUIRED)

N.T.S.

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- FILL IN EXCESS OF 200mm
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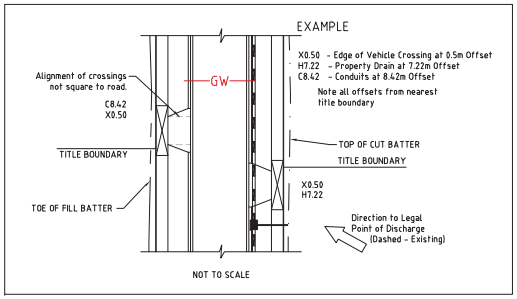

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CONSTRUCTION PLAN

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LEGEND

- DRAIN, PROPERTY INLET & PIT
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- HOUSE DRAIN
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DRAWN BY	NJR	DESIGNED BY	JB
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WALLARA WATERS ESTATE

STAGE 10

LAYOUT PLAN

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

H:\20569\Stage_10\CAD\DWG Set\Road and Drainage\

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

Hilf Density Ratio Report

Client :	**Fortunato Group**	Report Number:	**CS-629 - 26/1**
Address :	**38A Merri Concourse, Campbellfield, VIC, 3061**	Report Date :	**29/03/2017**
Project Name :	**Wallara Waters Stage 11**	Order Number :	
Project Number :	**CS-629**	Test Method :	**AS1289.5.7.1**
Location:	**Wallan**	**Page 1 of 1**	

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/m³) :				
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/m³) :	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/m³) :	1.89	1.99	2.01	
Hilf Density Ratio (%) :	**99.5**	**99.0**	**99.0**	
Minimum Specification :	98% Standard	98% Standard	98% Standard	
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

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APPROVED SIGNATORY

Daniel Pearce - Laboratory Manager
NATA Accreditation Number
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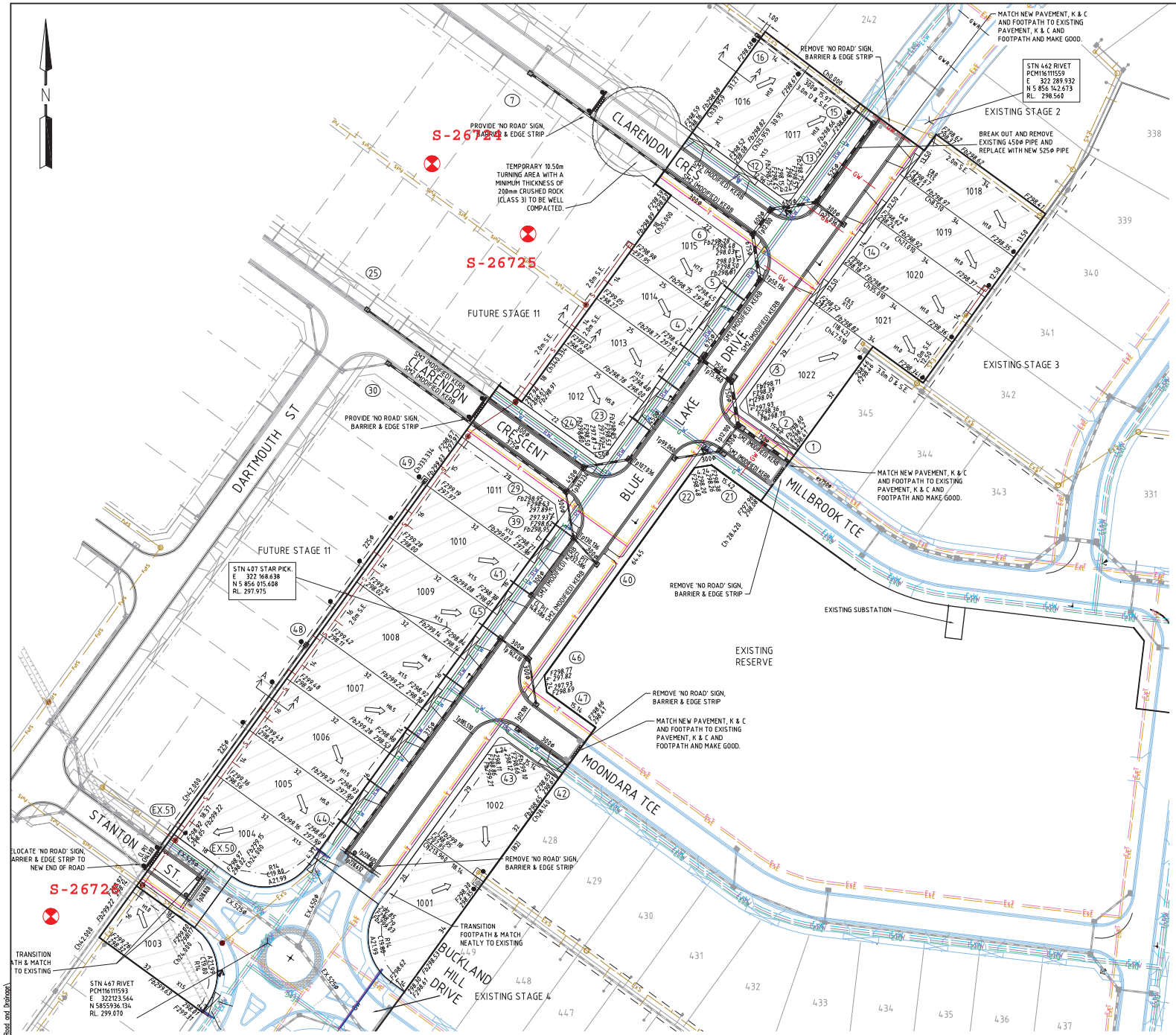

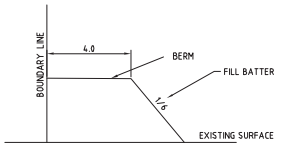

SECTION A-A

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

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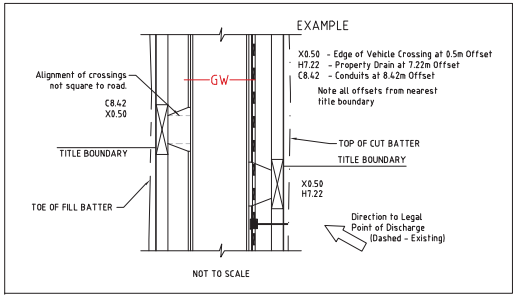

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Scale 1:500 @ A1

CONSTRUCTION PLAN

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DRAIN, PROPERTY INLET & PIT
EX DRAIN & PIT
HOUSE DRAIN
SEWER AND MAINTENANCE HOLE
EX SEWER AND MAINTENANCE HOLE
WATER MAIN
EX WATER MAIN, VALVE & HYDRANT
GAS MAIN
EX GAS MAIN, VALVE
TELSTRA SERVICES & PITS
EX TELSTRA SERVICES & PITS

LEGEND

RECYCLED WATER
EX RECYCLED WATER
ELECTRICAL U.G. SERVICES
EX ELECTRICAL U.G. SERVICES
ELECTRICAL SERVICE & PIT
EX ELECTRICAL ASSETS
EX ELECTRICAL OVERHEADS
GAS & WATER CONDUITS
TOP OF BATTER
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F FINISHED SURFACE AFTER CUTTING OR FILLING
Fb TOP OF PROPOSED BATTER
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TP TANGENT POINT
CH CHAINAGE
PSM
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DRAWN BY	NJR	DESIGNED BY	JB
MELWAY	250, E12	CHECKED BY	
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WALLARA WATERS ESTATE STAGE 10

LAYOUT PLAN

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

H:\20569\Stage_10\CAD\DWG Set\Road and Drainage\

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

Hilf Density Ratio Report

Client :	**Fortunato Group**	Report Number:	**CS-629 - 27/1**
Address :	**38A Merri Concourse, Campbellfield, VIC, 3061**	Report Date :	**29/03/2017**
Project Name :	**Wallara Waters Stage 11**	Order Number :	
Project Number :	**CS-629**	Test Method :	**AS1289.5.7.1**
Location:	**Wallan**	**Page 1 of 1**	

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/m³) :				
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/m³) :	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/m³) :	1.86	1.92	1.90	
Hilf Density Ratio (%) :	**96.0**	**98.0**	**95.5**	
Minimum Specification :	98% Standard	98% Standard	98% Standard	
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

NATA
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APPROVED SIGNATORY

Daniel Pearce - Laboratory Manager
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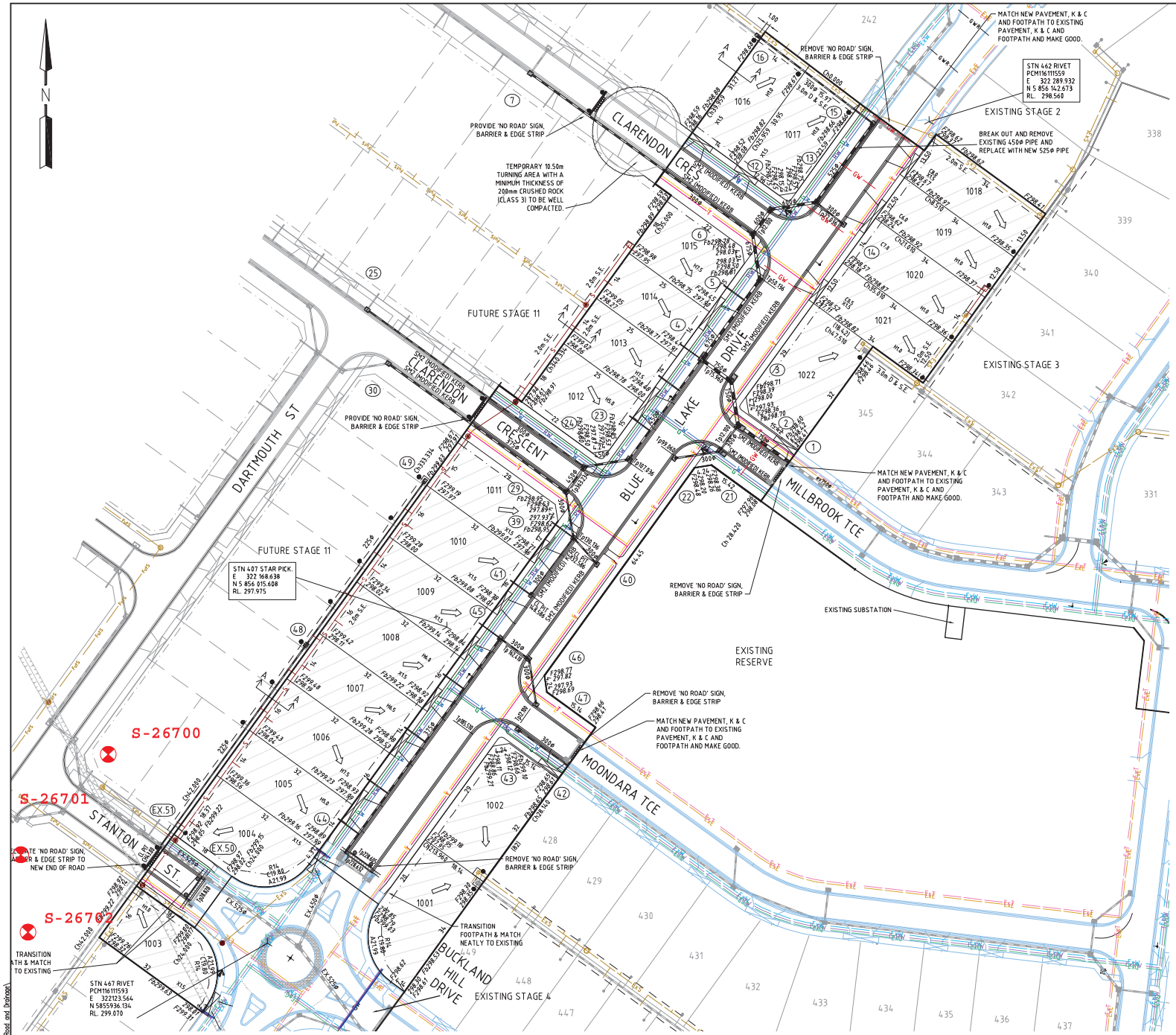

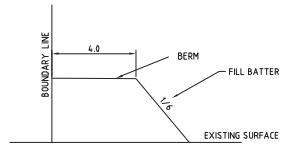

SECTION A-A

BERM DETAIL (AS REQUIRED)

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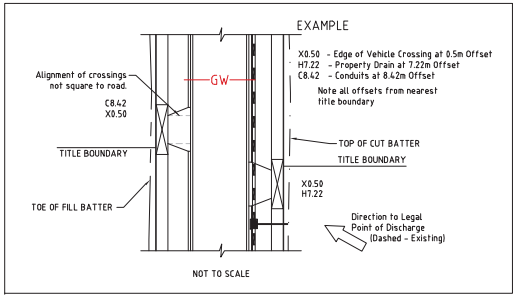

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LEGEND

- DRAIN, PROPERTY INLET & PIT
- EX DRAIN & PIT
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DRAWN BY	NJR	DESIGNED BY	JB
MELWAY	250, E12	CHECKED BY	
DATUM	AHD	AUTHORISED BY	SR

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WALLARA WATERS ESTATE STAGE 10

LAYOUT PLAN

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

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

Hilf Density Ratio Report

Client :	**Fortunato Group**	Report Number:	**CS-598 - 25/1**
Address :	**38A Merri Concourse, Campbellfield, VIC, 3061**	Report Date :	**29/03/2017**
Project Name :	**Wallara Waters Stage 10**	Order Number :	
Project Number :	**CS-598**	Test Method :	**AS1289.5.7.1**
Location:	**Wallan**	**Page 1 of 1**	

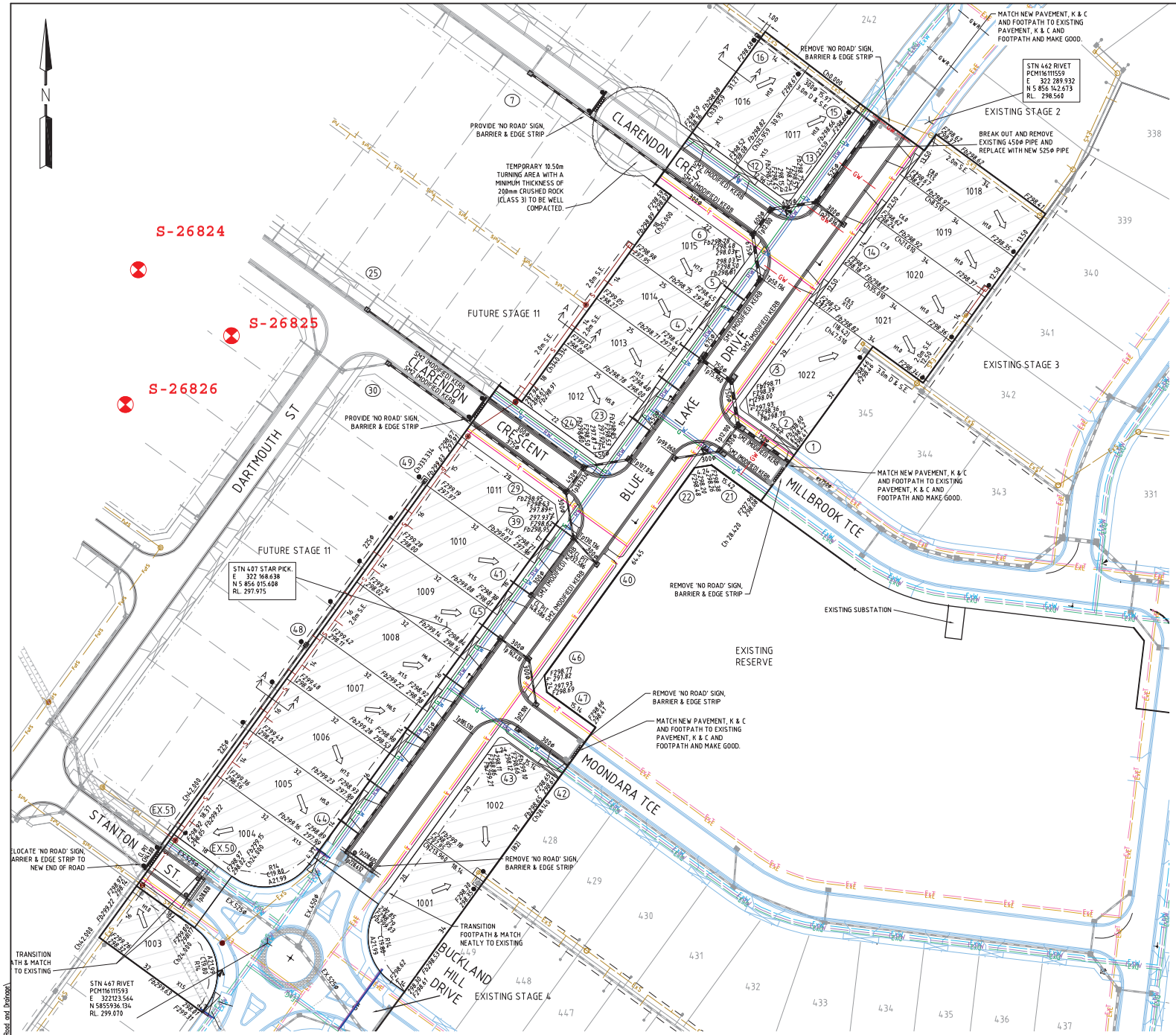
Sample Number :	S-26824	S-26825	S-26826	
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	AS1289.1.2.1 6.4(b)	
Date Sampled :	3/03/2017	3/03/2017	3/03/2017	
Date Tested :	3/03/2017	3/03/2017	3/03/2017	
Material Type :	Clay	Clay	Clay	
Material Source :	Imported	Imported	Imported	
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/m³) :				
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/m³) :	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/m³) :	1.99	1.96	1.97	
Hilf Density Ratio (%) :	**99.0**	**97.0**	**97.0**	
Minimum Specification :	95% Standard	95% Standard	95% Standard	
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

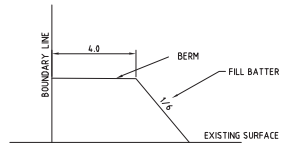
NATA
WORLD RECOGNISED ACCREDITATION

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

APPROVED SIGNATORY

Daniel Pearce - Laboratory Manager
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 EXTENTS OF CUT AND FILL TO BE UNDERTAKEN DURING CONSTRUCTION OF THE WORKS BASED ON THE EXISTING SITE SURFACE LEVELS AND PROPOSED FINISHED DESIGN LEVELS SHOWN.

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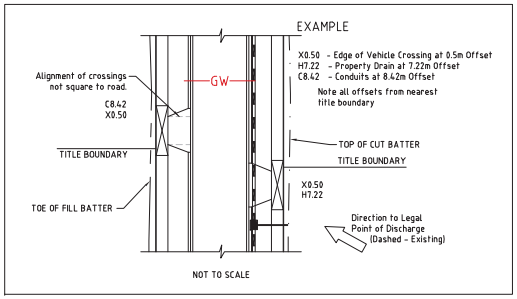

WARNING

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0 5 10 20
Scale 1:500 @ A1

CONSTRUCTION PLAN

THIS DRAWING IS NOT TO BE COPIED OR SCALED

VERSION	REMARKS		
F	PLAN REVISED	18.08.16	
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

H:\20569\Stage 10\CAD\DWG Set\Road and Drainage\

LEGEND

- DRAIN, PROPERTY INLET & PIT
- EX DRAIN & PIT
- HOUSE DRAIN
- SEWER AND MAINTENANCE HOLE
- EX SEWER AND MAINTENANCE HOLE
- WATER MAIN
- EX WATER MAIN, VALVE & HYDRANT
- GAS MAIN
- EX GAS MAIN, VALVE
- TELSTRA SERVICES & PITS
- EX TELSTRA SERVICES & PITS
- RECYCLED WATER
- EX RECYCLED WATER
- ELECTRICAL U.G. SERVICES
- EX ELECTRICAL U.G. SERVICES
- ELECTRICAL SERVICE & PIT
- EX ELECTRICAL ASSETS
- EX ELECTRICAL OVERHEADS
- GAS & WATER CONDUITS
- TOP OF BATTER
- TOE OF BATTER
- F FINISHED SURFACE AFTER CUTTING OR FILLING
- Fb TOP OF PROPOSED BATTER
- P PROPOSED PAVEMENT OR FOOTPATH SURFACE
- IL EXISTING OR PROPOSED INVERT LEVEL OF PIPE OR OPEN DRAIN
- TP TANGENT POINT
- CH CHAINAGE
- PSM
- STREET SIGN
- DRAINAGE PIT No.
- TBM
- EX FENCE
- EX WALL OR BUILDING

DRAWN BY	NJR	DESIGNED BY	JB
MELWAY	250, E12	CHECKED BY	
DATUM	AHD	AUTHORISED BY	SR

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WALLARA WATERS ESTATE STAGE 10

LAYOUT PLAN

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

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

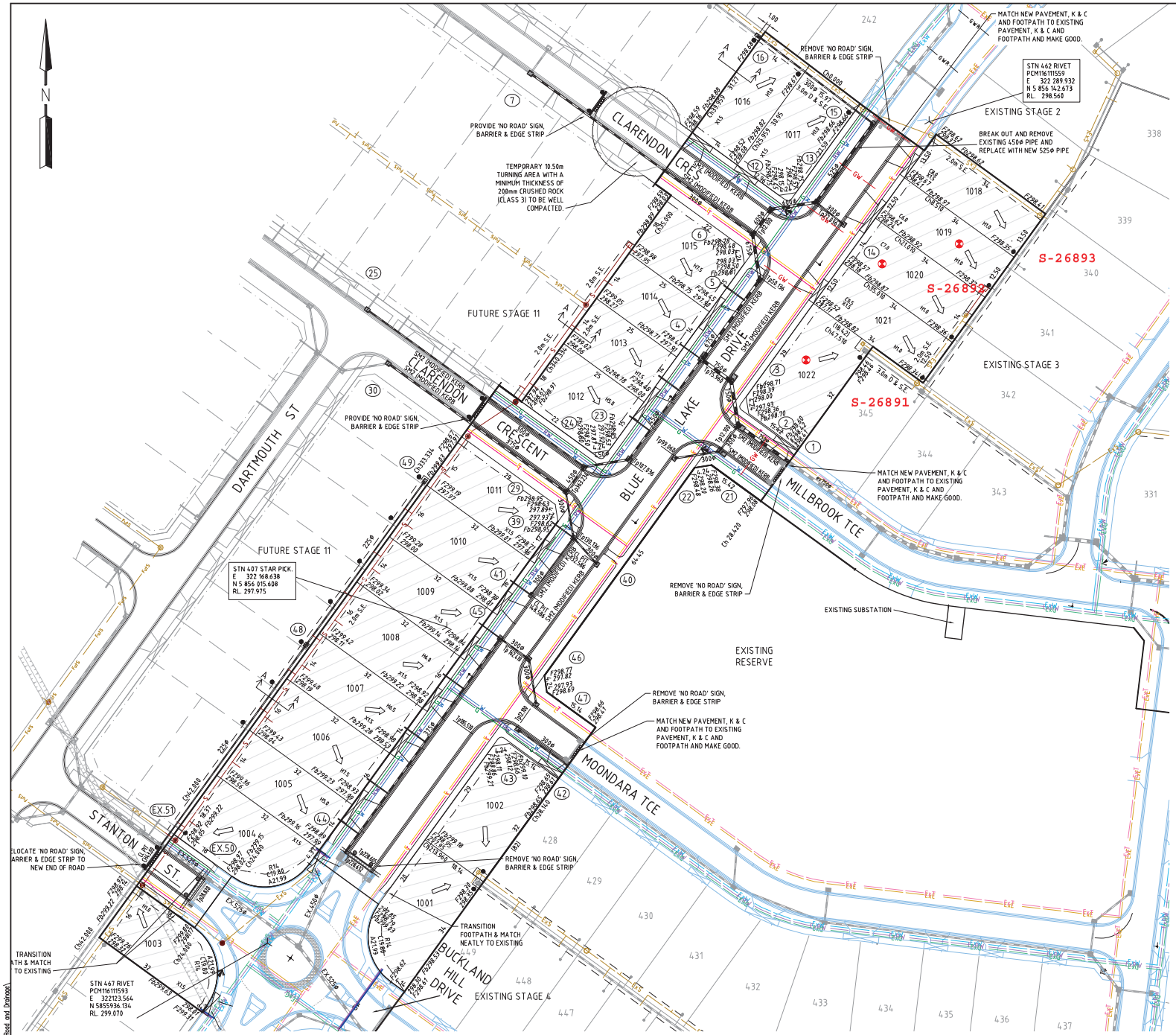
Hilf Density Ratio Report

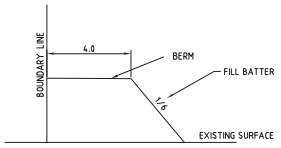
Client :	**Fortunato Group**	Report Number:	**CS-629 - 21/1**
Address :	**38A Merri Concourse, Campbellfield, VIC, 3061**	Report Date :	**16/03/2017**
Project Name :	**Wallara Waters Stage 11**	Order Number :	
Project Number :	**CS-629**	Test Method :	**AS1289.5.7.1**
Location:	**Wallan**	**Page 1 of 1**	

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/m³) :				
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/m³) :	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/m³) :	2.02	2.07	2.02	
Hilf Density Ratio (%) :	**95.5**	**95.0**	**96.0**	
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





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

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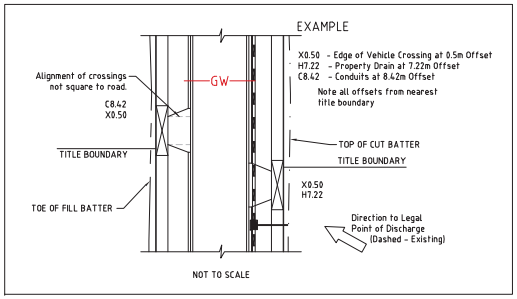

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Scale 1:500 @ A1

CONSTRUCTION PLAN

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DRAIN, PROPERTY INLET & PIT
EX DRAIN & PIT
HOUSE DRAIN
SEWER AND MAINTENANCE HOLE
EX SEWER AND MAINTENANCE HOLE
WATER MAIN
EX WATER MAIN, VALVE & HYDRANT
GAS MAIN
EX GAS MAIN, VALVE
TELSTRA SERVICES & PITS
EX TELSTRA SERVICES & PITS

LEGEND

RECYCLED WATER
EX RECYCLED WATER
ELECTRICAL U.G. SERVICES
EX ELECTRICAL U.G. SERVICES
ELECTRICAL SERVICE & PIT
EX ELECTRICAL ASSETS
EX ELECTRICAL OVERHEADS
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TOP OF BATTER
TOE OF BATTER

F FINISHED SURFACE AFTER CUTTING OR FILLING
Fb TOP OF PROPOSED BATTER
P PROPOSED PAVEMENT OR FOOTPATH SURFACE
IL EXISTING OR PROPOSED INVERT LEVEL OF PIPE OR OPEN DRAIN
TP TANGENT POINT
CH CHAINAGE
PSM
STREET SIGN
DRAINAGE PIT No.
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EX FENCE
EX WALL OR BUILDING

DRAWN BY	NJR	DESIGNED BY	JB
MELWAY	250, E12	CHECKED BY	
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WALLARA WATERS ESTATE STAGE 10

LAYOUT PLAN

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

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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 - 22/1**
Address :	**38A Merri Concourse, Campbellfield, VIC, 3061**	Report Date :	**16/03/2017**
Project Name :	**Wallara Waters Stage 11**	Order Number :	
Project Number :	**CS-629**	Test Method :	**AS1289.5.7.1**
Location:	**Wallan**	**Page 1 of 1**	

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/m³) :				
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/m³) :	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/m³) :	2.02	1.99	2.14	
Hilf Density Ratio (%) :	**95.5**	**96.0**	**95.5**	
Minimum Specification :	95% Standard	95% Standard	95% Standard	
Moisture Specification :				
Site Selection :	Random	Random	Random	
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

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APPROVED SIGNATORY

Daniel Pearce - Laboratory Manager
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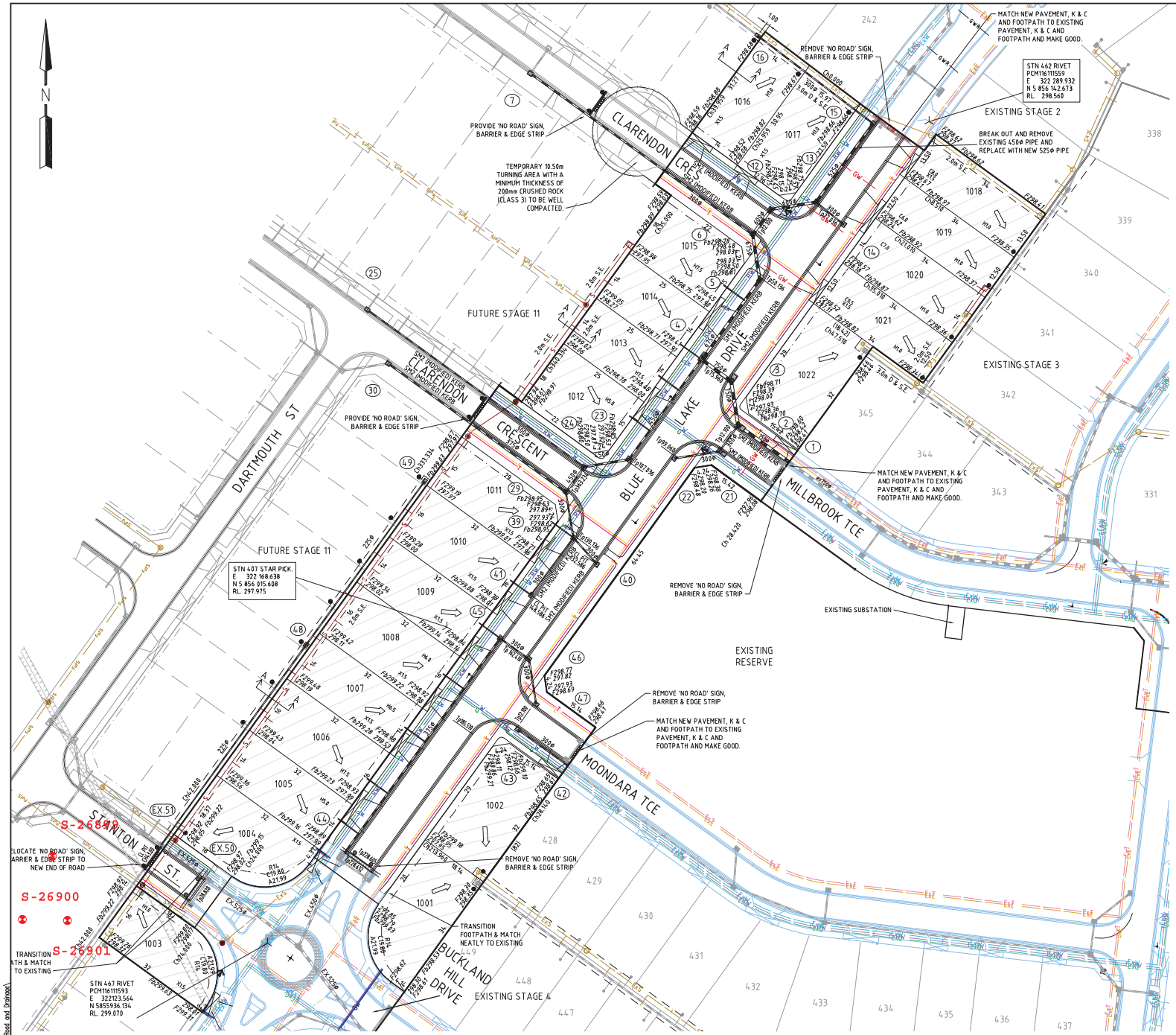

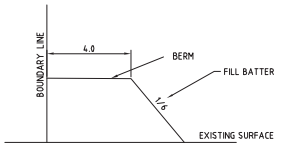

SECTION A-A

BERM DETAIL (AS REQUIRED)

N.T.S.

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- FILL IN EXCESS OF 200mm
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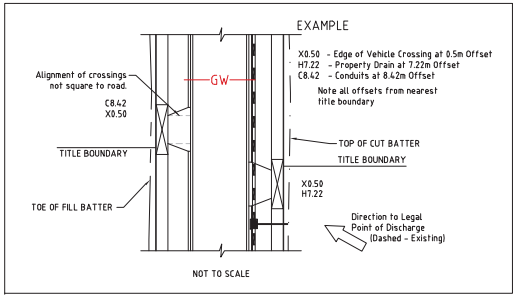

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B	REVISED STAGE LAYOUT	15.01.16	PC

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LEGEND

- DRAIN, PROPERTY INLET & PIT
- EX DRAIN & PIT
- HOUSE DRAIN
- SEWER AND MAINTENANCE HOLE
- EX SEWER AND MAINTENANCE HOLE
- WATER MAIN
- EX WATER MAIN, VALVE & HYDRANT
- GAS MAIN
- EX GAS MAIN, VALVE
- TELSTRA SERVICES & PITS
- EX TELSTRA SERVICES & PITS
- RECYCLED WATER
- EX RECYCLED WATER
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- TOP OF BATTER
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- EX FENCE
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DRAWN BY	NJR	DESIGNED BY	JB
MELWAY	250, E12	CHECKED BY	
DATUM	AHD	AUTHORISED BY	SR

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WALLARA WATERS ESTATE STAGE 10

LAYOUT PLAN

DRAWING No.	VERSION
10R2	F

REFERENCE 20569E/10

SHEET 2 OF 12

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

Hilf Density Ratio Report

Client :	**Fortunato Group**	Report Number:	**CS-598 - 25/1**
Address :	**38A Merri Concourse, Campbellfield, VIC, 3061**	Report Date :	**29/03/2017**
Project Name :	**Wallara Waters Stage 10**	Order Number :	
Project Number :	**CS-598**	Test Method :	**AS1289.5.7.1**
Location:	**Wallan**	**Page 1 of 1**	

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/m³) :				
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/m³) :	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/m³) :	1.99	1.96	1.97	
Hilf Density Ratio (%) :	**99.0**	**97.0**	**97.0**	
Minimum Specification :	95% Standard	95% Standard	95% Standard	
Moisture Specification :				
Site Selection :				
Soil Description :				
Remarks :	-			

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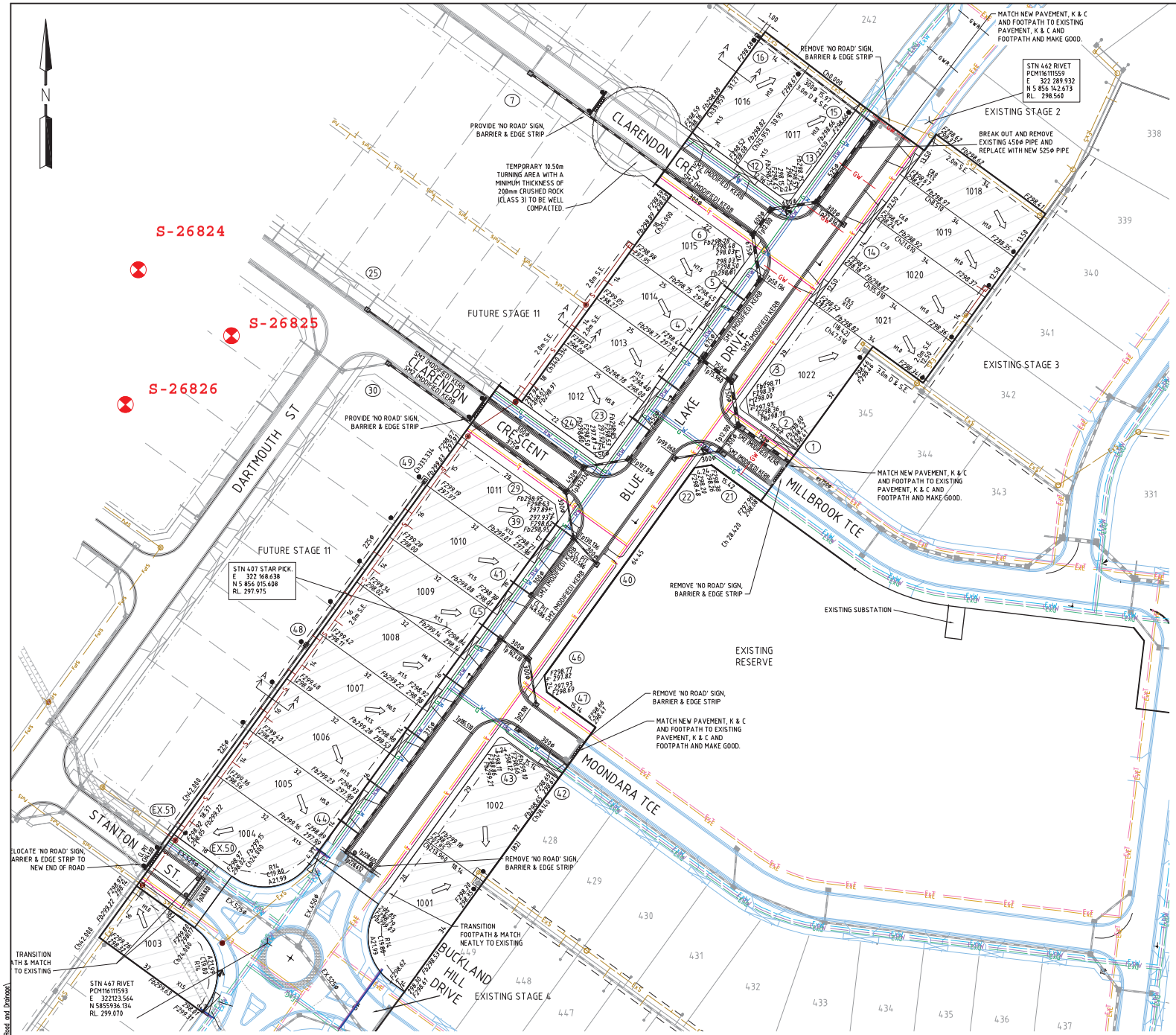

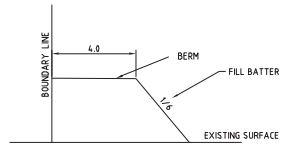

SECTION A-A

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 EXTENTS OF CUT AND FILL TO BE UNDERTAKEN DURING CONSTRUCTION OF THE WORKS BASED ON THE EXISTING SITE SURFACE LEVELS AND PROPOSED FINISHED DESIGN LEVELS SHOWN.

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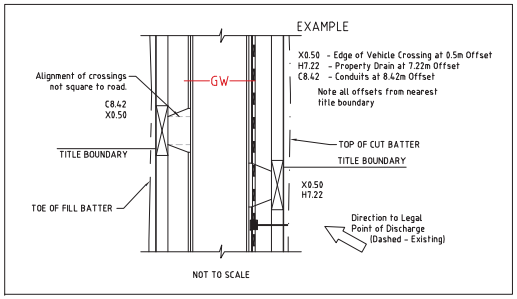

WARNING

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0 5 10 20
Scale 1:500 @ A1

CONSTRUCTION PLAN

THIS DRAWING IS NOT TO BE COPIED OR SCALED

VERSION	REMARKS		
F	PLAN REVISED	18.08.16	
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

H:\20569\Stage 10\CAD\DWG Set\Road and Drainage\

LEGEND

- DRAIN, PROPERTY INLET & PIT
- EX DRAIN & PIT
- HOUSE DRAIN
- SEWER AND MAINTENANCE HOLE
- EX SEWER AND MAINTENANCE HOLE
- WATER MAIN
- EX WATER MAIN, VALVE & HYDRANT
- GAS MAIN
- EX GAS MAIN, VALVE
- TELSTRA SERVICES & PITS
- EX TELSTRA SERVICES & PITS
- RECYCLED WATER
- EX RECYCLED WATER
- ELECTRICAL U.G. SERVICES
- EX ELECTRICAL U.G. SERVICES
- ELECTRICAL SERVICE & PIT
- EX ELECTRICAL ASSETS
- EX ELECTRICAL OVERHEADS
- GAS & WATER CONDUITS
- TOP OF BATTER
- TOE OF BATTER
- F FINISHED SURFACE AFTER CUTTING OR FILLING
- Fb TOP OF PROPOSED BATTER
- P PROPOSED PAVEMENT OR FOOTPATH SURFACE
- IL EXISTING OR PROPOSED INVERT LEVEL OF PIPE OR OPEN DRAIN
- TP TANGENT POINT
- CH CHAINAGE
- PSM
- STREET SIGN
- DRAINAGE PIT No.
- TBM
- EX FENCE
- EX WALL OR BUILDING

DRAWN BY	NJR	DESIGNED BY	JB
MELWAY	250, E12	CHECKED BY	
DATUM	AHD	AUTHORISED BY	SR

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MITCHELL SHIRE COUNCIL

WALLARA WATERS ESTATE STAGE 10

LAYOUT PLAN

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

PEARCE GEOTECH PTY LTD

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

Hilf Density Ratio Report

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

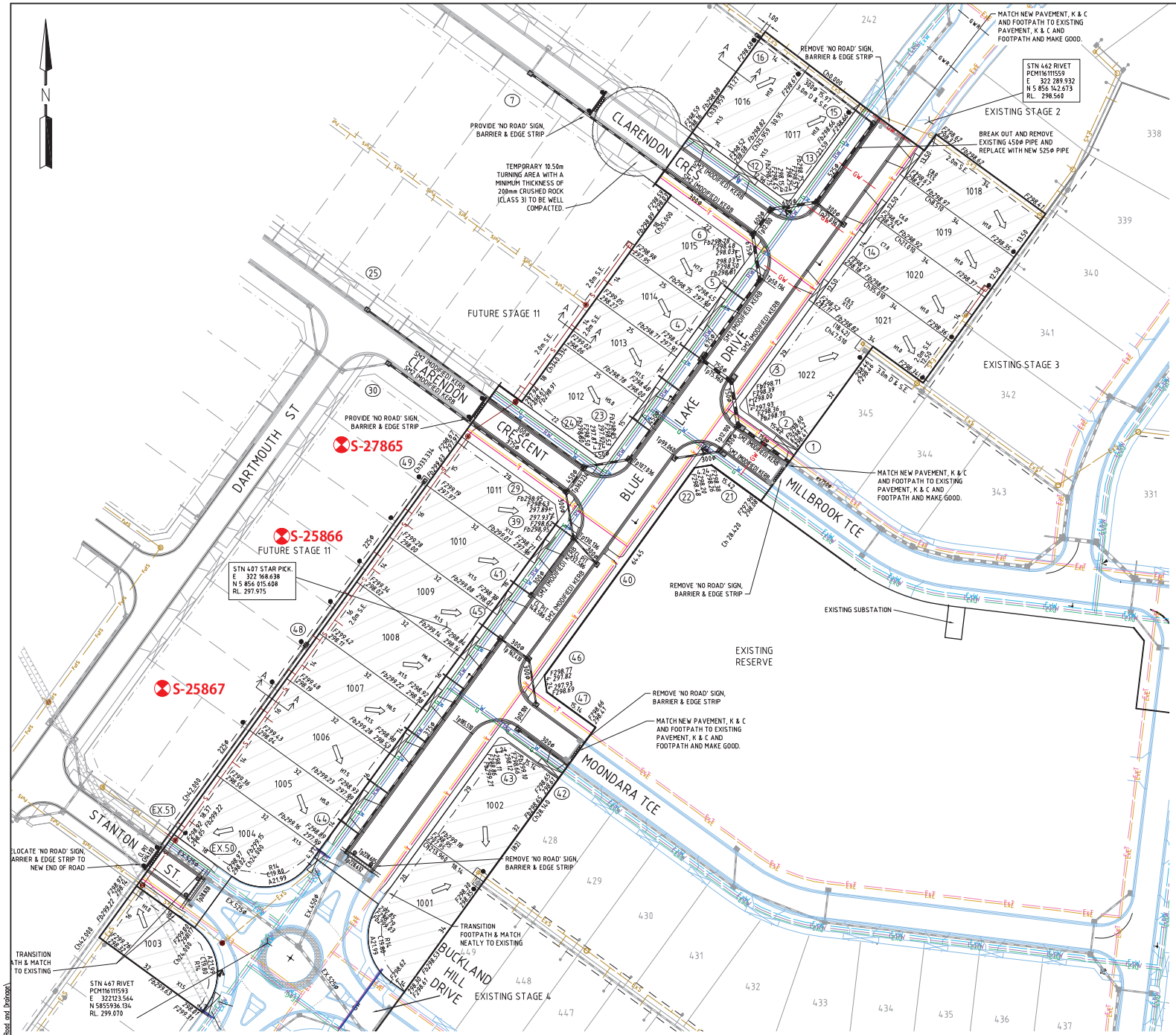
Sample Number :	S-27865	S-27866	S-27867	
Test Number :				
Sampling Method :	AS 1141.3.1	AS 1141.3.1	AS 1141.3.1	
Date Sampled :	16/03/2017	16/03/2017	16/03/2017	
Date Tested :	16/03/2017	16/03/2017	16/03/2017	
Material Type :	Clay	Clay	Clay	
Material Source :	Insitu	Insitu	Insitu	
Lot Number :				
Sample 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/m³) :				
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/m³) :	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/m³) :	1.97	1.96	1.97	
Hilf Density Ratio (%) :	**99.0**	**98.0**	**98.0**	
Minimum Specification :	95% Standard	95% Standard	95% Standard	
Moisture Specification :				
Site Selection :	Random	Random	Random	
Soil Description :				
Remarks :	-			

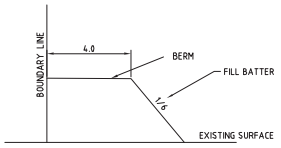
NATA
WORLD RECOGNISED ACCREDITATION

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
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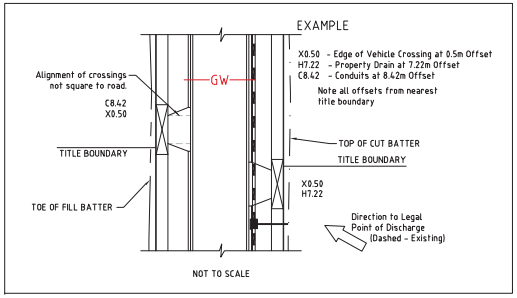

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Scale 1:500 @ A1

CONSTRUCTION PLAN

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DRAIN, PROPERTY INLET & PIT
EX DRAIN & PIT
HOUSE DRAIN
SEWER AND MAINTENANCE HOLE
EX SEWER AND MAINTENANCE HOLE
WATER MAIN
EX WATER MAIN, VALVE & HYDRANT
GAS MAIN
EX GAS MAIN, VALVE
TELSTRA SERVICES & PITS
EX TELSTRA SERVICES & PITS

LEGEND

RECYCLED WATER
EX RECYCLED WATER
ELECTRICAL U.G. SERVICES
EX ELECTRICAL U.G. SERVICES
ELECTRICAL SERVICE & PIT
EX ELECTRICAL ASSETS
EX ELECTRICAL OVERHEADS
GAS & WATER CONDUITS
TOP OF BATTER
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DRAWN BY	NJR	DESIGNED BY	JB
MELWAY	250, E12	CHECKED BY	
DATUM	AHD	AUTHORISED BY	SR

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WALLARA WATERS ESTATE STAGE 10

LAYOUT PLAN

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

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

Hilf Density Ratio Report

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

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/m³) :				
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/m³) :	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/m³) :	2.03	2.00	2.00	
Hilf Density Ratio (%) :	**99.0**	**98.0**	**97.5**	
Minimum Specification :	95% Standard	95% Standard	95% Standard	
Moisture Specification :				
Site Selection :	Random	Random	Random	
Soil Description :				
Remarks :	-			

NATA
WORLD RECOGNISED ACCREDITATION

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APPROVED SIGNATORY

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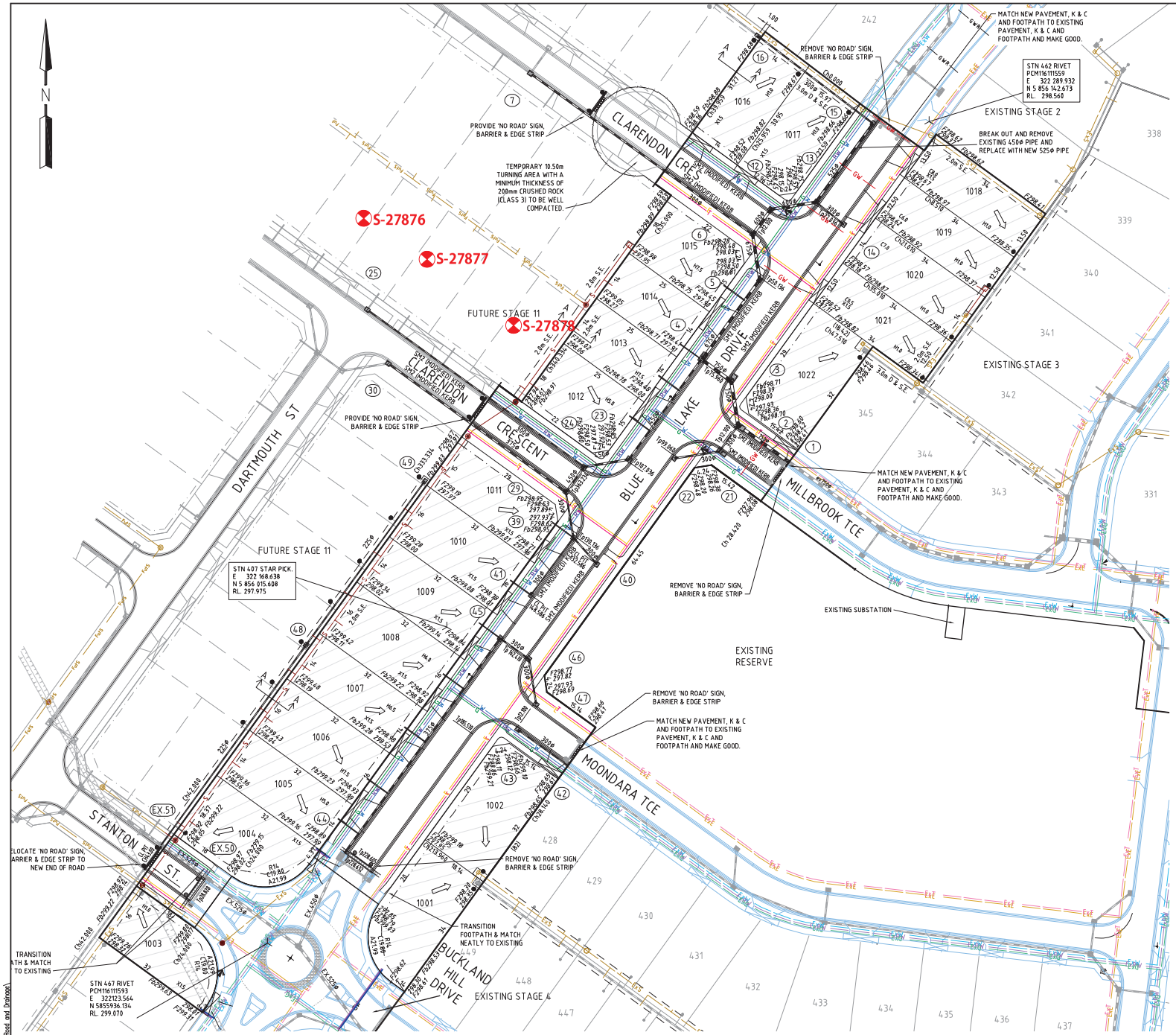

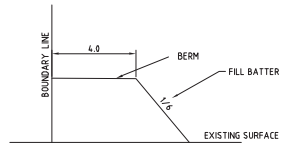

SECTION A-A

BERM DETAIL (AS REQUIRED)

N.T.S.

LEGEND

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- FILL IN EXCESS OF 200mm
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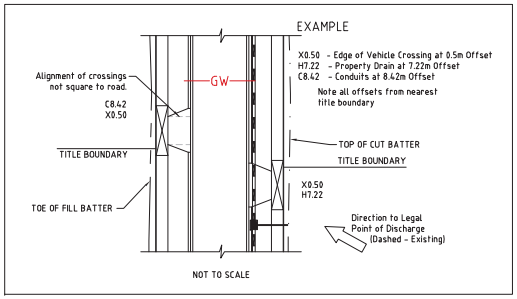

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CONSTRUCTION PLAN

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B	REVISED STAGE LAYOUT	15.01.16	PC

H:\20569\Stage_10\CAD\DWG Set\Road and Drainage\

LEGEND

- DRAIN, PROPERTY INLET & PIT
- EX DRAIN & PIT
- HOUSE DRAIN
- SEWER AND MAINTENANCE HOLE
- EX SEWER AND MAINTENANCE HOLE
- WATER MAIN
- EX WATER MAIN, VALVE & HYDRANT
- GAS MAIN
- EX GAS MAIN, VALVE
- TELSTRA SERVICES & PITS
- EX TELSTRA SERVICES & PITS
- RECYCLED WATER
- EX RECYCLED WATER
- ELECTRICAL U.G. SERVICES
- EX ELECTRICAL U.G. SERVICES
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DRAWN BY	NJR	DESIGNED BY	JB
MELWAY	250, E12	CHECKED BY	
DATUM	AHD	AUTHORISED BY	SR

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WALLARA WATERS ESTATE STAGE 10

LAYOUT PLAN

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

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

Hilf Density Ratio Report

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

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/m³) :				
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/m³) :	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/m³) :	1.97	1.96	1.98	
Hilf Density Ratio (%) :	**105.0**	**106.5**	**103.0**	
Minimum Specification :	95% Standard	95% Standard	95% Standard	
Moisture Specification :				
Site Selection :	Random	Random	Random	
Soil Description :				
Remarks :	-			

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WORLD RECOGNISED ACCREDITATION

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APPROVED SIGNATORY

Anthony Green - Technician
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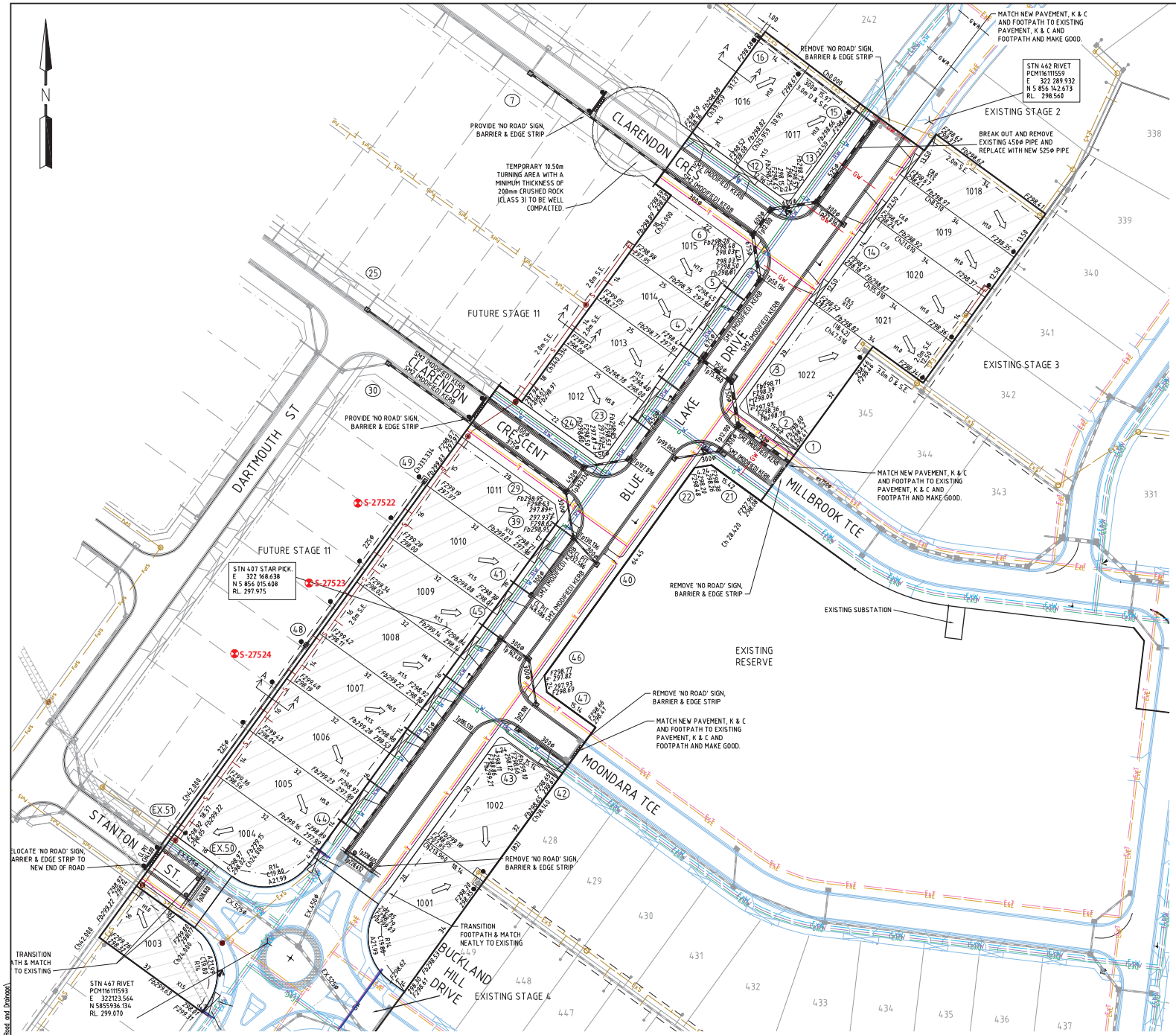

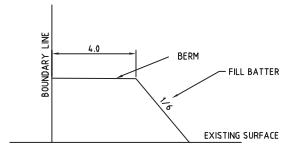

SECTION A-A

BERM DETAIL (AS REQUIRED)

N.T.S.

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TREES TO BE RETAINED

TREES TO BE REMOVED

FILL IN EXCESS OF 200mm

CUT IN EXCESS OF 200mm

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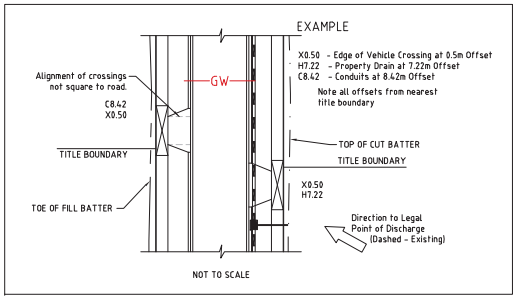

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H:\20569\Stage_10\CAD\DWG Set\Road and Drainage\

DRAIN, PROPERTY INLET & PIT
EX DRAIN & PIT
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EX WATER MAIN, VALVE & HYDRANT
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EX GAS MAIN, VALVE
TELSTRA SERVICES & PITS
EX TELSTRA SERVICES & PITS

LEGEND

RECYCLED WATER
EX RECYCLED WATER
ELECTRICAL U.G. SERVICES
EX ELECTRICAL U.G. SERVICES
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TOP OF BATTER
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DRAWN BY	NJR	DESIGNED BY	JB
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WALLARA WATERS ESTATE
STAGE 10
LAYOUT PLAN

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

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

Hilf Density Ratio Report

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

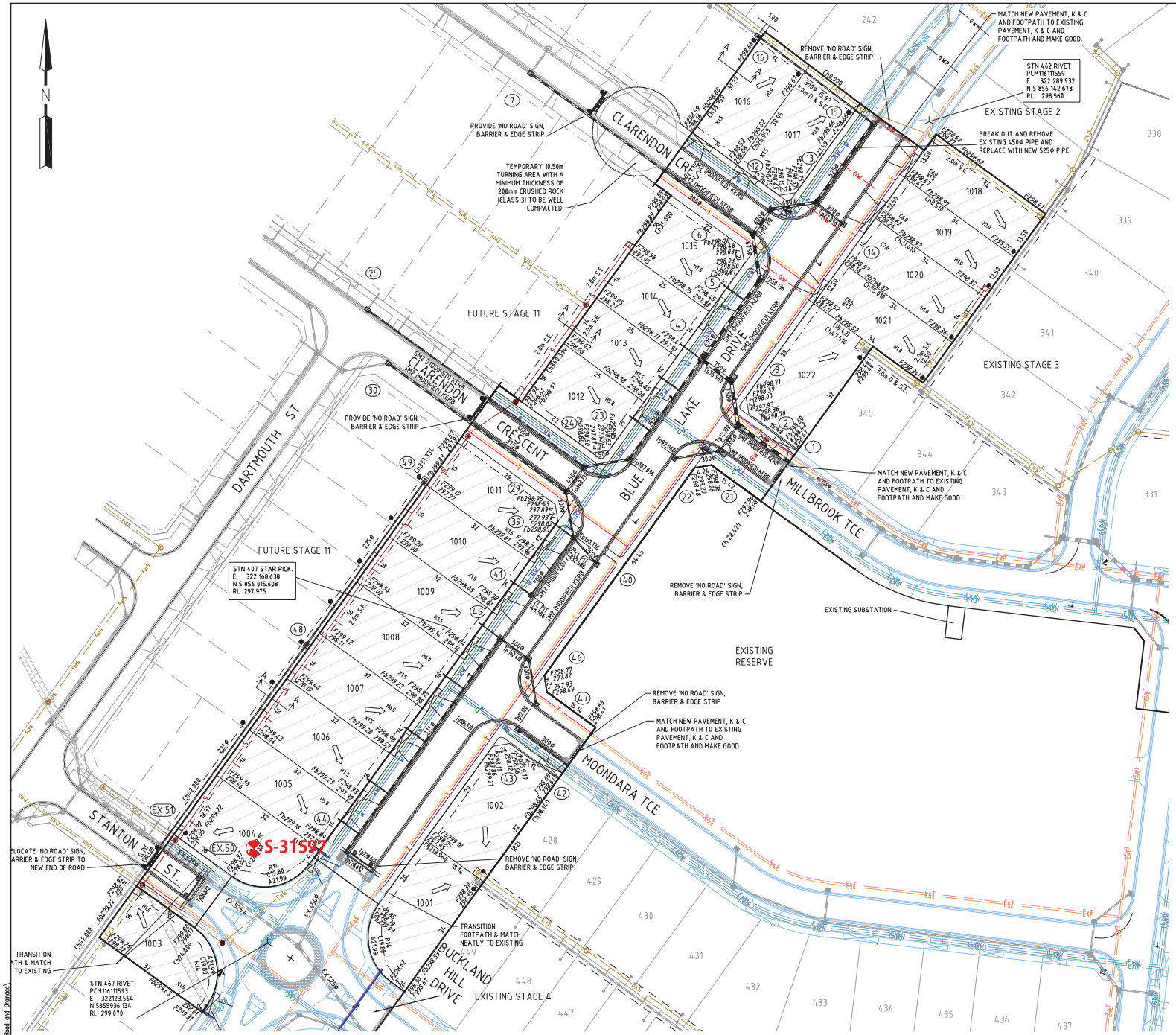
Sample Number :	S-31597			
Test Number :				
Sampling Method :	AS1289.1.2.1 6.4(b)			
Date Sampled :	16/08/2017			
Date Tested :	16/08/2017			
Material Type :	Clay			
Material Source :	Insitu			
Lot Number :				
Sample Location :	Allotment Fill Refer to Plan			
Test Depth (mm) :	175			
Layer Depth (mm) :	200			
Maximum Size (mm) :	19			
Oversize Wet (%) :	0			
Oversize Dry (%) :				
Oversize Density (t/m³) :				
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/m³) :	2.10			
Optimum Moisture Content (%) :	17.2			
Moisture Variation :	0.0			
Peak Converted Wet Density (t/m³) :	2.06			
Hilf Density Ratio (%) :	**102.5**			
Minimum Specification :	95% Standard			
Moisture Specification :				
Site Selection :	Random			
Soil Description :				
Remarks :	-			

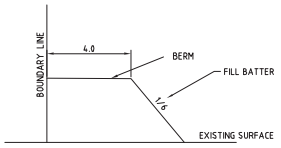
NATA
WORLD RECOGNISED ACCREDITATION

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.

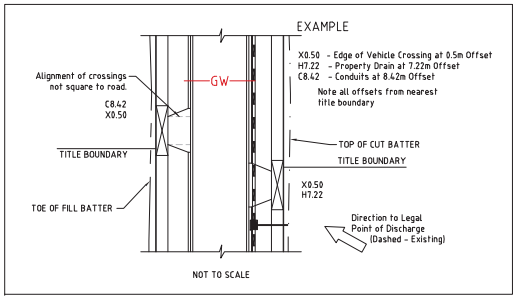
LEGEND

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

THIS PLAN SHOWS APPROXIMATE EXTENTS OF CUT AND FILL TO BE UNDERTAKEN DURING CONSTRUCTION OF THE WORKS BASED 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 0.15m.



WARNING

BEWARE OF UNDERGROUND SERVICES

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

0 5 10 20
Scale 1:500 @ A1

CONSTRUCTION PLAN

THIS DRAWING IS NOT TO BE COPIED OR SCALED

VERSION	REMARKS		
F	PLAN REVISED	18.08.16	
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

H:\20569\Stage_10\CAD\DWG Set\Road and Drainage\

DRAIN, PROPERTY INLET & PIT
EX DRAIN & PIT
HOUSE DRAIN
SEWER AND MAINTENANCE HOLE
EX SEWER AND MAINTENANCE HOLE
WATER MAIN
EX WATER MAIN, VALVE & HYDRANT
GAS MAIN
EX GAS MAIN, VALVE
TELSTRA SERVICES & PITS
EX TELSTRA SERVICES & PITS

LEGEND

RECYCLED WATER
EX RECYCLED WATER
ELECTRICAL U.G. SERVICES
EX ELECTRICAL U.G. SERVICES
ELECTRICAL SERVICE & PIT
EX ELECTRICAL ASSETS
EX ELECTRICAL OVERHEADS
GAS & WATER CONDUITS
TOP OF BATTER
TOE OF BATTER

F FINISHED SURFACE AFTER CUTTING OR FILLING
Fb TOP OF PROPOSED BATTER
P PROPOSED PAVEMENT OR FOOTPATH SURFACE
IL EXISTING OR PROPOSED INVERT LEVEL OF PIPE OR OPEN DRAIN
TP TANGENT POINT
CH CHAINAGE
PSM
STREET SIGN
DRAINAGE PIT No.
TBM
EX FENCE
EX WALL OR BUILDING

DRAWN BY	NJR	DESIGNED BY	JB
MELWAY	250, E12	CHECKED BY	
DATUM	AHD	AUTHORISED BY	SR

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MITCHELL SHIRE COUNCIL

WALLARA WATERS ESTATE STAGE 10

LAYOUT PLAN

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