

Frasers Property Level 1 Inspection and Testing Report, Stage 4, Mambourin Estate 754-MELGE221991AH

15 June 2020



Trust is the cornerstone of all our projects

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Level 1 Inspection and Testing Report, Stage 4, Mambourin Estate

Prepared for Frasers Property

Prepared by Coffey Services Australia Pty Ltd Level 1, 436 Johnston Street Abbotsford Vic 3067 Australia t: +61 3 9290 7000 f: +61 3 9290 7499 ABN 55 139 460 521

15 June 2020

Our Ref: 754-MELGE221991AH

For and on behalf of Coffey

hur

Stojcevski, Sotir Principal Geotechnical Technician

Quality information

Revision history

Revision	Description	Date	Originator	Reviewer	Signatory
0	Level 1 Report	15 June 2020	Samuel V.	Ganesh M.	Sotir S.

Distribution

Report Status	No. of copies	Format	Distributed to	Date
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1. Introduction

This report presents the results of the Level 1 Inspection and Testing for fill placement within Stage 4 of Mambourin Estate, Wyndham Vale, undertaken by Coffey Services Australia Pty Ltd (Coffey).

The works were commissioned by Kranish Reddy from Frasers Property (Frasers). The project was managed by Spiire Australia Pty Ltd (Spiire).

2. Project Summary

We understand that Frasers require fill placement within Stage 4 of the Mambourin Estate, in the area as shown in Figure 1, to be constructed under Level 1 Inspection and Testing undertaken by a Geotechnical Inspection and Testing Authority (GITA).

Level 1 Inspection and 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 field and laboratory testing in accordance with AS1289 "Methods of Testing Soils for Engineering Purposes."

The Level 1 Inspection for Stage 4 was undertaken by geotechnical professionals from Coffey over a period of 15 months as shown in Table 1. We note that during this period, earthworks were also conducted on Stage 1, 2, 3 and 5, which are reported separately.

Month	Dates
August 2018	24, 30
October 2018	18
November 2018	22, 23, 26, 27, 28, 29, 30
December 2018	03, 04, 05, 06
January 2019	18, 25
February 2019	25, 26
April 2019	03
May 2019	09, 13, 14, 17, 21, 29, 30, 31
June 2019	05, 17, 26
July 2019	08
August 2019	08, 13, 14, 15, 22, 23, 26, 27, 28, 29, 30
September 2019	02, 04, 07, 10, 12, 13, 14, 16, 17, 18, 23, 24
October 2019	10, 11, 14, 15, 22, 24, 26, 28, 29, 30, 31
November 2019	01, 06, 07, 08, 09, 11, 12, 13, 14, 15, 19, 26, 27, 28, 29, 30
December 2019	02, 03, 04, 09
January 2020	20

Table 1: Level 1 GITA - dates on site

The earthworks contractor for the project was Winslow Constructors Pty Ltd (Winslow). Coffey undertook the field density testing and the compaction control testing in their laboratory, as part of the Level 1 Inspection and Testing process.

2.1. Included areas

This report is applicable to material placed by Winslow within Stage 4 of the Mambourin Estate, as shown in Figure 1 and with reference to Section 2.2 (Excluded Areas) of this report. The filling areas encompass two Fill Pads of Stage 4 as shown in Table 2.

Table 2: Fill Pads in Stage 4

Fill Pad	Residential Lot #
Pad 1	#401 - #431, #433 - #437
Pad 2	#432

Note:

 Filling works and supervision of Pad 2 Lot #432 of Stage 4 was completed during the construction of Stage 1, during the construction of Lots #101 - #104 and #139 - #142, also known as the Western Pad. Refer to Coffey report 754-MELGE221991AD for associated testing and filling works details for Lot #432.

2.2. Excluded areas

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. Excluded works comprise road construction, wetlands construction, trench backfill, foot paths, landscaping fill and placement of topsoil.

We note that Spiire (on behalf of Frasers) has engaged Coffey to assess selected sections of road and wetland construction within or adjacent to Stage 4, such as subgrade assessment, CBR values assessments, density testing, material properties testing and other works where geotechnical advice was required. These works are not covered in this report and are reported separately.

3. Specifications / Work Instructions

The specification for the project were in general accordance with the 'Guidelines on earthworks for commercial and residential developments' of AS 3798-2007.

Spiire have provided Coffey with fifteen drawings titled 'Mambourin Estate Stage 4', Construction, under reference 305169R01 to 305169R15. On the Face Sheet under reference 305169R01 (Rev 6) dated 12 September 2018, the following notes were considered and adopted as part of the earthworks specifications:

- Note 8: ALL FILLING ON LOTS AND WITHIN ROAD RESERVES GREATER THAN 200mm IS TO BE UNDERTAKEN USING LEVEL 1 SUPERVISION AND BE COMPLETED IN ACCORDANCE WITH AS 3798-2007. FILL AREAS ARE TO BE STRIPPED OF TOPSOIL, FILLED AND REPLACED WITH TOPSOIL (WHERE REQUIRED) TO OBTAIN THE FINAL LEVELS SHOWN ON THE DRAWINGS.
- Note 10: ALL BATTERS SHALL BE 1 IN 6, UNLESS OTHERWISE SHOWN.
- Note 15: WHERE REQUIRED, ALL EXISTING DAMS, DEPRESSIONS AND DRAINS ARE TO BE BREACHED, DRAINED, DESLUDGED AND SHALL BE EXCAVATED TO A CLEAN FIRM BASE. THE SURFACE SHALL BE INSPECTED, APPROVED AND LEVELED BY THE ENGINEER PRIOR TO COMMENCEMENT OF FILLING. THE FILL SHALL BE APPROVED SELECTED ON SITE MATERIAL OR APPROVED IMPORTED MATERIAL. THE FILL

SHALL BE PLACED UNDER CONTROLLED MOISTURE CONDITIONS IN ACCORDANCE WITH THE SPECIFICATION.

In addition to the above notes, the following items from AS3798-2007 were discussed with Spiire and Winslow prior to the earthworks and adopted as part of the project earthworks specifications:

- All filling in excess of 200mm depth within the building envelope of allotments shall be undertaken to specifications satisfying the requirements of AS 3798-2007 "Guidelines on Earthworks for Commercial and Residential Development";
- All such filling works shall be undertaken with supervision to the standard detailed as "Level 1 Inspection and Testing" in AS 3798-2007, such that the supervisor will issue a notice detailing that the works comply with the specifications and drawings;
- Subgrade to be proof rolled in presence of the Level 1 Inspector prior to placement of an engineered fill;
- Subgrade to be surveyed prior to placement of any fill;
- Material to be used for fill construction shall satisfy the requirements of AS 3798-2007;
- Fill to be compacted in near horizontal layers not exceeding 300mm loose thickness;
- Compaction to achieve a ratio of at least 95% Standard MDD (maximum dry density);
- Moisture content of the fill material is to be within ±3% of the Standard Optimum Moisture Content (SOMC);
- Frequency of testing to be in accordance with Table 8.1 of AS3798-2007;
- Finished fill surface to be surveyed prior to placement of topsoil.
- The fill soils to comply with the 'Suitable Material' in accordance with Section 4.4 of the AS3798-2007, and the following:
 - Maximum particle size of 150mm;
 - Particles over 37.5mm diameter not to exceed 20% of the material;
 - Organic soils, topsoils, silts or soils containing organic matter, wood, plastics, metal or other deleterious materials are not acceptable.

4. Fill Material

Fill used for the construction of Stage 4 comprised from imported sources arranged and approved by the contractor (Winslow) and the project manager (Spiire), as well as locally sourced clay from excavation of wetlands, road boxing and trenching within Mambourin Estate.

Any observed organic or deleterious matter including any oversize particles were removed during the fill placement within the engineered fill platforms. Coffey was not involved in the selection and approval process for the imported fill material.

The fill placed on the residential fill lots generally comprised of high and medium plasticity clay which is considered as 'Suitable Material' in accordance with Section 4.4 of the AS3798-2007.

5. Earthworks

The earthworks for this project included the following:

- Stripping of topsoil,
- Assessment, remediation and proof rolling of subgrade, and;
- Placement and compaction of fill to construct the engineered fill areas.

5.1. Subgrade Assessment

The subgrade for Stage 4 Fill Pads 1 and 2 were assessed progressively throughout the works in three sections as follows:

- The Fill Pad 1 subgrade was assessed on 26 November 2018;
- The Fill Pad 2 subgrade was assessed on 24 and 30 August 2018, as part of Stage 1 works;

Subgrade assessment was conducted following the removal of topsoil, uncontrolled fill and before any fill was placed. In all areas the subgrade comprised natural clay with occasional basalt floaters observed immediately below and at the surface level. A surveyor engaged by Winslow/Spiire undertook a survey of the subgrade levels following Coffey's assessment.

No soft spots or deflections were observed during the subgrade proof rolling.

5.2. Fill Construction

All sourced fill was trucked in, spread with a bulldozer, compactor or grader and compacted with a compactor and/or a pad foot roller. A water cart was present onsite during works for moisture conditioning of the materials.

Prior to placement of the fill, the subgrade was scarified and moisturised to allow better bonding. The fill was then placed in horizontal layers not exceeding 300mm thickness. If any organic matter, oversize particles or unsuitable material was observed, the contractor was advised to remove this from the fill pad. Once the placed fill was approved, the layer was compacted accordingly.

Coffey personnel were on site on a fulltime basis during the placement, compaction and testing of the fill on the dates noted in Table 1 of this report.

Filling works and supervision of Fill Pad 2, Lot #432 of Stage 4, was completed during the construction of Stage 1, Lots #101 - #104 and #139 - #142, also known as the Western Pad. Refer to Coffey report '754-MELGE221991AD' for associated testing and filling works details.

5.3. Survey data and Fill Thickness

Spiire Australia Pty Ltd (Spiire) have provided us with a copy of a survey showing the levels of the stripped and finished surfaces of Precinct 1 of Mambourin estate. Precinct 1 includes Stage 1 to 5 of the project.

These drawings are presented in 2 sheets attached in Appendix B under reference Mambourin Estate Precinct 1, Earthworks Filling Plan, Spot Level Comparison, Sheets 1 and 2, Drawing No. 303540SK05 and 303540SK06, Rev A.

The information from above surveys has been summarised in Table 3.

Fill Pad	Lot Number	Subgrade Level (m)	Finish Level (m)	Fill Thickness (m)	Number of Layers	Average Layer Thickness (m)	Meet Project Requirements
1	415	35.2	36.61	1.41	6	0.24	Yes
1	408	35.2	36.76	1.56	6	0.26	Yes
1	424	35.26	36.83	1.57	6	0.26	Yes
1	403	35.27	36.85	1.58	6	0.26	Yes
1	430	35.28	36.92	1.64	6	0.27	Yes
1	436	35.6	36.8	1.2	6	0.2	Yes
1	433	35.5	36.33	0.83	6	0.14	Yes
2	432(SE)	35.35	36.76	1.41	8	0.18	Yes
2	432(NW)	35.49	36.89	1.4	7	0.2	Yes
2	432(SW)	35.49	36.87	1.38	7	0.2	Yes

Table 3: Fill levels at selected spot locations in Stage 4

Note:

- Filling works and supervision of Pad 2, Lot #432 of Stage 4 was completed during the construction of Stage 1, Lots #101 - #104 and #139 - #142, aka Western Pad. Refer to Coffey report 754-MELGE221991AD for associated testing and filling works details for Lot #432. Coffey has observed up to 8 layers within Lot #432.

Based on the summary shown in Table 3 and the analysed fill layers thicknesses at the selected spot locations are generally compliant with the project specifications.

6. Testing and Results

Field density testing was undertaken progressively during construction on the compacted fill. Testing was undertaken under the frequencies listed below, subject to the area and volume worked on the day of testing:

- 1 test per material type per layer per 2500m² or 1 test per 500m³ distributed reasonably evenly or 3 tests per lot whichever requires the most tests in accordance with Type 1 Earthworks (large scale operations) as defined in Table 8.1 of the AS 3798-2007;
- 1 test per layer per 1,000m² or 1 test per 200m³ distributed reasonably evenly or 1 test per residential lot whichever requires the most tests in accordance with Type 2 Earthworks (small scale operations) as defined in Table 8.1 of the AS 3798-2007;
- 1 test per layer per 500m² or 1 test per 100m³ distributed reasonably evenly or 3 tests per visit
 whichever requires the most tests in accordance with Type 3 Earthworks (concentrated scale operations) as defined in Table 8.1 of the AS 3798-2007;
- 1 test per 2 layers per 50m² distributed reasonably evenly throughout the fill depth –in accordance with Type 4 Earthworks (confined operations) as defined in Table 8.1 of the AS 3798-2007.

The field density testing was conducted by Coffey's personnel on site using a Nuclear Density Gauge in accordance with AS1289.5.8.1 'Determination of field density and field moisture content of a soil using a nuclear surface Moisture – Density Gauge'.

The laboratory testing was performed at Coffey's laboratory. A Hilf Rapid compaction test was performed for each field density test in accordance with AS1289.5.7.1 'Soil compaction and density tests—Compaction control test—Hilf density ratio and Hilf moisture variation (rapid method)'.

The location of the field density tests was determined by use of the GPS on the construction plant operated by the contractor on site. For each of the field density tests, the following items were recorded on the field sheets: test location, layer number, layer thickness, test depth, soil type, time and date of testing.

A total of 48 density tests were performed during the earthworks in the locations as presented in Figures 2 and 3. Of the 48 tests, 4 did not meet the specified criteria. These areas were subsequently re-worked and re-tested. Once re-tested, the 4 test results met the specified dry density ratio criteria of 95% Standard compactive effort and moisture variation of $\pm 3\%$ of the Optimum Moisture Content (OMC).

Due to amendments of Lot configuration and layout by Spiire during and after completion of filing works, test locations within Figure 2 and 3 have been adjusted from original marked locations of preliminary map drawing.

A summary of the test results obtained from the field density testing within Stage 4 are provided in a table presented as Figure 4. The laboratory test reports of the field density tests are presented in Appendix A.

7. Statement of Compliance

Coffey personnel have provided Level 1 inspection and testing services during the construction of the engineered fill areas within Stage 4 of Mambourin Estate as shown in SMS survey drawing in Appendix B. A geotechnical professional from Coffey (Level 1 Inspector) was on site on a full-time basis during the construction of the engineered fill platforms and observed the construction techniques adopted for the dates noted in section 2 of this report.

Based on observations made by Coffey's Level 1 Inspector and the results of field and laboratory tests, Coffey consider that the engineered fill areas within Stage 4 of Mambourin Estate as indicated in the SMS survey drawing in Appendix B, constructed by Winslow to the levels indicated in Section 5.3 of this report, as far as we have been able to reasonably determine, have been placed in general accordance with the intent of the specification.

Figures

Figure 1 – Site Plan indicating Fill Pads and Exclusion Zones Figure 2, 3 – Field Density Tests Locations Figure 4 – Table – Summary of Density Test Results Figure 5, 6, 7, 8, 9 – Construction Photos









FIGURE #4



Project: Client: PM:	ct: Mambourin Estate, STAGE 4 t: Frasers Property Spiire			Project No. Specification:	754-MELC Density R Moisture	E22199 atio ≥ 95 content	1AH 5% of Max within ± 3	C Dry De 3% of ON	nsity //C
Test	Retest of Test	Date	Stage 1 Stage 2 Stage 3	Layer	Lot / Location	HILF Density Ratio	Moisture Variation of OMC	Pass / Fail	
#	#		Stage 4 Stage 5	#	#	%	%		
1 to 159			Т	ests conducted on	other stages			-	
160			Stage 4	1	405	102.0	0.0	Pass	
161		Monday, November 26, 2018	Stage 4	1	420	99.0	1.0	Pass	
162			Stage 4	1	414	103.0	0.5	Pass	
163			Stage 4	2	425	96.5	0.0	Pass	
164		Tuesday, November 27, 2018	Stage 4	2	407	99.5	0.5	Pass	
165			Stage 4	2	418	100.5	-2.0	Pass	
166			Stage 4	3	419	97.5	0.5	Pass	
167		Wednesday, November 28, 2018	Stage 4	3	408	99.0	2.5	Pass	
168			Stage 4	3	425	96.5	0.5	Pass	
169		Thursday, Nevember 20, 2019	Stage 4	4	419	101.5	-2.5	Pass	
170		mursuay, November 29, 2016	Stage 4	4	407	103.5	-2.0	Pass	
171			Stage 4	2	419	106.0	-2.0	Pass	
172		Tuesday, December 4, 2018	Stage 4	3	413	99.5	1.0	Pass	
173			Stage 4	4	414	98.0	1.0	Pass	
174			Stage 4	5	417	103.0	1.0	Pass	
175		Thursday, December 6, 2018.	Stage 4	5	408	100.5	-1.5	Pass	
176			Stage 4	4	426	98.0	-2.0	Pass	
175 to 214			т	ests conducted on	other stages				
215		Monday, February 25, 2019	Stage 4	1	429	103.0	-2.0	Pass	

Test	Retest		Stage 1 Stage 2	Layer	Lot /	HILF Density	Moisture Variation	Pass /	
	Test	Date	Stage 3		Location	Ratio	of OMC	Fail	
#	#		Stage 5	#	#	%	%		
216			Stage 4	2	401	102.5	0.5	Pass	
217		Tuesday, February 26, 2019	Stage 4	3	429	102.5	0.0	Pass	
216 to 262			Т	ests conducted on	other stages		1		I
263			Stage 4	4	429	100.5	2.0	Pass	
264		Tuesday, May 14, 2019	Stage 4	4	427	100.0	2.0	Pass	
265			Stage 4	4	401	100.5	1.0	Pass	
264 to 278			Т	ests conducted on	other stages				
279		Tuesday May 21 2019	Stage 4	5	427	102.0	3.0	Pass	
280		raobady, may 21, 2010	Stage 4	5	429	101.5	3.0	Pass	
279 to 290			т	ests conducted on	other stages				
291			Stage 4	5	416	98.5	2.0	Pass	
292		Wednesday, 29 May, 2010	Stage 4	5	413	99.0	1.0	Pass	
293		Welliesuay, 29 May, 2019	Stage 4	5	410	98.5	2.0	Pass	
294			Stage 4	5	419	98.0	2.5	Pass	
295			Stage 4	5	422	100.0	4.5	Fail	299
296		Monday 17 lune 2019	Stage 4	5	424	100.0	5.0	Fail	300
297		wonday, if ourie 2010	Stage 4	5	406	100.0	5.0	Fail	301
298			Stage 4	5	404	100.0	5.0	Fail	302
299	295		Stage 4	5	422	100.0	2.0	Pass	
300	296	Wednesday 26 lune 2010	Stage 4	5	424	100.5	2.5	Pass	
301	297	weanesaay, 20 June, 2019	Stage 4	5	406	100.5	1.5	Pass	
302	298		Stage 4	5	404	100.0	2.5	Pass	
301 to 316			Т	ests conducted on	other stages				

Test	Retest		Stage 1	Layer	Lot	HILF	Moisture	Pass	
	of		Stage 2		/	Density	Variation	/	
	Test	Date	Stage 3		Location	Ratio	of OMC	Fail	
			Stage 4						
#	#		Stage 5	#	#	%	%		
317			Stage 4	5	401	96.5	-1.0	Pass	
								_	
318			Stage 4	4	413	95.5	0.5	Pass	
		Tuesday, 27 August 2019							
310			Store /	4	409	06.5	0.5	Dass	
515			Oldye 4	4	403	30.5	-0.5	1 035	
320			Stage 4	4	405	98.0	0.0	Pass	
020			etage .		100	00.0	0.0		
321			Stage 4	5	412	107.5	-0.5	Pass	
322		Wednesday, 28 August, 2019	Stage 4	5	408	108.0	-2.5	Pass	
				_				_	
323			Stage 4	5	404	101.0	2.5	Pass	
624			Store 4	6	414	106 5	0.5	Page	
024			Stage 4	0	414	100.5	-0.5	Fass	
625			Stage 4	6	409	98.5	-0.5	Pass	
				-					
					Ì	İ	İ		
626		Wednesday, 04 September, 2019	Stage 4	6	407	104.0	0.0	Pass	
627			Stage 4	6	425	102.0	-0.5	Pass	
			a . 1					_	
628			Stage 4	6	401	98.0	-0.5	Pass	
					I		I		
			Tests	conducted on other	stages				



Construction Photos











revision

 LEVEL 1 GITA PHOTOGRAPHS

 754-MELGE 221991AH
 figure no:
 6

project no:

title:

COTTE A TETRA TECH COMPA

A3

original size

date scale

Note: Plans are not to scale. All locations are approximate only.

a

20/05/2020 NTS

SS

approved

drawn

date

approved

drawn

description

MAMBOURIN ESTATE STAGE 4

project:













revision

754-MELGE 221991AH figure no: 7 LEVEL 1 GITA PHOTOGRAPHS

project no:

title:

A TETRA TECH COMPA

A3

original size

scale date

All locations are approximate only.

Plans are not to scale.

Note:

date

approved

drawn

description

d)

20/05/2020 NTS

approved

drawn

STAGE 4







previously sorted excavated material within Stage 2 for fill Photo 15 - Showing excavator loading dump trucks with placement across western regions of Stage 4.





754-MELGE 221991AH figure no: 8

project no:

A3

original size

scale date

All locations are approximate only.

Plans are not to scale.

Note:

date

approved

drawn

description

drawn



Appendix A - Laboratory Test Certificates



ABN 92 114 364 046 Phone: +61 418 691 682

		Report No: HDR:MELB18W00269			
HILF De	nsitv Ratio	o Repor	t		Issue No: 1
Client:	Coffey Services Aust	tralia Ptv I td (F)	T - Abbotsford)		
	Level 1 436 Johnstor	n Street			
	Abbotsford VIC 306	57			
Principal:	Frasers Property Aus	stralia			Abuda
Project No.:	754-MELB00044AA				Approved Signatory: Stephen Pender
Project Name:	754-MELGE221991/	A - Mambourin	Estate		(Senior Geotechnician) 431
					Date of Issue: 9/06/2020
Sample Deta	ails				
Location:	Mambo	ourin Estate			
Client Request I	D:				
Specification Re	equirements: MINIM	UM HILF DENS	ITY RATIO OF 9	95% of Standa	ard Compaction and Moisture variation to be within
Field Test proce	۵% ۵۲ د. مریده: ۵۳ م		u by client)		
l aboratory Test	nrocedures: AS 120	09.0.0.1 00011 AC 100	0 5 7 1		
Sampling Metho	d' AS128	9 1 2 1 Clause f	S 4 (h)		
Source:		0.1.2.1 010000	()		
Material:	Fill				
Sample Data	а				
Sample ID	4	MELB18S-00953	MELB18S-00954	MELB18S-0095	55
Field Sample ID		00158	00159	00160	
Client Sample II)	160	161	162	
Date Tested		26/11/2018	26/11/2018	26/11/2018	
Time Tested		03:50	04:15	04:35	
LOT Number		405	420	414	
Layer Number		1	1	1	
Stage		4	4	4	
Field and La	aboratory Data				
Depth of Test (n	nm)	275	275	275	
Depth of Layer	(mm)	300	300	300	
Field Moisture C	Content (%)	21.5	24.4	23.2	
Field Moisture C	Content Method	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	
Field Wet Densi	ty (t/m³)	1.96	1.94	1.97	
Field Dry Densit	ty (t/m ³)	1.61	1.56	1.60	
Peak Converted	Wet Density* (t/m ³)	1.91	1.96	1.91	
Optimum Moisti	ure Content (%)	21.5	23.5	23.0	
Compactive Effe	Ort	Standard	Standard	Standard	
Moisture Katio (70) on (%)	100.0	103.5	101.5 0.5 wot	
Hilf Donaity	Datio (%)	102 0		0.5 wel	
legend * adjusted for	Vario (70)	102.0	33.0	103.0	
liegenia adjusted for (oversize material				



ABN 92 114 364 046 Phone: +61 418 691 682

HILF Density Rati	Report NO: HDR:MELB18W00270 Issue No: 1				
Client: Coffey Services Aus Level 1 436 Johnsto Abbotsford VIC 306	Client: Coffey Services Australia Pty Ltd (EXT - Abbotsford) Level 1 436 Johnston Street Abbotsford VIC 3067				
Principal:Frasers Property AuProject No.:754-MELB00044AAProject Name:754-MELGE221991.Lot No.:	stralia AA - Mambourin TRN:	Estate		Approved Signatory: Stephen Pender (Senior Geotechnician) 431 Date of Issue: 9/06/2020	
Sample Details					
Location: Mamb	ourin Estate				
Client Request ID:					
Specification Requirements: MINIM	IUM HILF DENS	ITY RATIO OF	95% of Stan	dard Compaction and Moisture variation to be within	
3% of	OMC(as advised	d by client)			
Field Test procedures: AS 12	89.5.8.1				
Laboratory Test procedures: AS 12	89.2.1.1, AS 128	39.5.7.1			
Sampling Method: AS128	39.1.2.1 Clause 6	6.4 (b)			
Source:					
Material:					
Sample Data					
Sample ID	MELB18S-00956	MELB18S-00957	MELB18S-00	958	
Field Sample ID	00161	00162	00163		
Client Sample ID	163	164	165		
Date Tested	27/11/2018	27/11/2018	27/11/201	8	
Time Tested	03:45	04:15	04:40		
LOT Number	425	407	418		
Layer Number	2	2	2		
Stage	4	4	4		
Field and Laboratory Data					
Depth of Test (mm)	275	275	275		
Depth of Layer (mm)	300	300	300		
Field Moisture Content (%)	16.0	20.1	23.1		
Field Moisture Content Method	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1	1	
Field Wet Density (t/m³)	1.96	1.95	1.95		
Field Dry Density (t/m³)	1.69	1.62	1.58		
Peak Converted Wet Density* (t/m ³)	2.02	1.96	1.94		
Optimum Moisture Content (%)	16.0	19.5	25.0		
Compactive Effort	Standard	Standard	Standard		
Moisture Ratio (%)	99.0	103.5	91.5		
Moisture Variation (%)	0.0	0.5 wet	2.0 dry		
Hilf Density Ratio (%)	96.5	99.5	100.5		
legend * adjusted for oversize material					



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		Report No: HDR:MELB18W00271			
HII F De	nsity Ratio	o Repor	t		Issue No: 1
	Coffee Comisso Aust				
Client:	Level 1 436 Johnstor	ralla Pty Ltd (E2 1 Street	(T - Abbotstora)		
	Abbotsford VIC 306	7			
Bringingly	Freedro Dreporty Aug	strolio			Official and
Project No.:	754-MELB00044AA	stralla			Approved Signatory: Stephen Pender
Project Name:	754-MELGE221991A	A - Mambourin	Estate		(Senior Geotechnician)
Lot No.:		TRN:			Date of Issue: 9/06/2020
Sample Deta	ails				
Location:	Mambo	ourin Estate			
Client Request I	ID:				
Specification Re	equirements: MINIM	UM HILF DENS	ITY RATIO OF 9	95% of Standa	rd Compaction and Moisture variation to be within
	3% of 0	OMC (as advise	d by client)		
Field lest proce	dures: AS 128	39.5.8.1			
Laboratory Test	t procedures: AS 128	39.2.1.1, AS 128	9.5.7.1		
Sampling Metho	od: AS128	9.1.2.1 Clause 6	5.4 (b)		
Source:	-				
Material:	FIII				
Sample Data	a				
Sample ID		MELB18S-00959	MELB18S-00960	MELB18S-0096	1
Field Sample ID		00164	00165	00166	
Client Sample II	ט	166	167	168	
Date Tested		28/11/2018	28/11/2018	28/11/2018	
Time Tested		03:40	04:05	04:20	
LOT Number		419	408	425	
Layer Number		3	3	3	
Stage		4	4	4	
Field and La	aboratory Data				
Depth of Test (n	nm)	275	275	275	
Depth of Layer	(mm)	300	300	300	
Field Moisture C	Content (%)	19.6	19.3	18.3	
Field Moisture C	Content Method	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	
Field Wet Densi	ty (t/m³)	1.96	1.95	1.97	
Field Dry Densit	ty (t/m³)	1.64	1.63	1.66	
Peak Converted	Wet Density* (t/m ³)	2.01	1.96	2.04	
Optimum Moisti	ure Content (%)	19.0	17.0	17.5	
Compactive Effe	ort	Standard	Standard	Standard	
Noisture Katio ((%)	102.0	2.5	103.5	
Hilf Density	Dir (%)	0.5 wei	Z.5 Wel	0.5 wet	
	Talio (70)	31.5	33.0	30.3	
legena adjusted for a					



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	noity Doti		.4		Report	No: HDR:MEL	.B18W00272 Issue No: 1
HILF De	nsity Ratio	o Repor	τ				
Client:	Coffey Services Aust Level 1 436 Johnston Abbotsford VIC 306	tralia Pty Ltd (E) n Street 7	<pre>KT - Abbotsford)</pre>				
Principal: Project No.: Project Name: Lot No.:	Frasers Property Aus 754-MELB00044AA 754-MELGE221991A	stralia \A - Mambourin TRN:	Estate	Approved Signatory: Stephen Pender (Senior Geotechnician) 431			
Sample Deta	ails				K		
Location:	Mamb	ourin Estate					
Client Request I	D:						
Specification Re	auirements: MINIM			95% of Sta	ndard Compaction and	l Moisture variati	ion to be within
	3% of	OMC(as advised	d by client)				
Field Test proce	dures: AS 128	39.5.8.1	,				
Laboratory Test	procedures: AS 128	39.2.1.1, AS 128	39.5.7.1				
Sampling Metho	d: AS128	9.1.2.1 Clause 6	6.4 (b)				
Source:							
Material:							
Sample Data	3						
Sample ID		MELB18S-00962	MELB18S-00963				
Field Sample ID		00167	00168				
Client Sample I)	169	170				
Date Tested		29/11/2018	29/11/2018				
Time Tested		03:45	04:15				
LOT Number		419	407				
Layer Number		4	4				
Stage		4	4				
Field and La	boratory Data						
Depth of Test (n	nm)	275	275				
Depth of Layer (mm)	300	300				
Field Moisture C	Content (%)	25.7	24.4				
Field Moisture C	Content Method	AS 1289.2.1.1	AS 1289.2.1.1				
Field Wet Densi	ty (t/m³)	1.89	1.90				
Field Dry Densit	:y (t/m³)	1.50	1.52				
Peak Converted	Wet Density* (t/m ³)	1.86	1.83				
Optimum Moistu	ure Content (%)	28.0	26.5				
Compactive Effo	ort	Standard	Standard				
Moisture Ratio (%)	91.0	92.5				
Moisture Variati	on (%)	2.5 dry	2.0 dry				
Hilf Density F	Ratio (%)	101.5	103.5				
legend * adjusted for o	oversize material						



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HILF Der	nsity Ratio	Report No: HDR:MELB18W00273 Issue No: 1					
Client: C L A	Coffey Services Aust evel 1 436 Johnstor Abbotsford VIC 306	tralia Pty Ltd (E) n Street 7	(T - Abbotsford)				
Principal: F Project No.: 7 Project Name: 7 Lot No.:	Frasers Property Aus 754-MELB00044AA 754-MELGE221991	stralia \A - Mambourin TRN:	Estate		Approved Signatory: Stephen Pender (Senior Geotechnician) 431 Date of Issue: 9/06/2020		
Sample Detai	ils						
Location:	Mambo	ourin Estate					
Client Request ID	:						
Specification Req	uirements: MINIM	UM HILF DENS	ITY RATIO OF 9	95% of Stan	dard Compaction and Moisture variation to be within		
	3% of (OMC (as advise	d by client)				
Field Test proced	ures: AS 128	39.5.8.1					
Laboratory Test p	procedures: AS 128	39.2.1.1, AS 128	39.5.7.1				
Sampling Method	l: AS128	9.1.2.1 Clause 6	6.4 (b)				
Source:							
Material:							
Sample Data							
Sample ID		MELB18S-00964	MELB18S-00965	MELB18S-00	966		
Field Sample ID		00169	00170	00171			
Client Sample ID		171	172	173			
Date Tested		4/12/2018	4/12/2018	4/12/2018	8		
Time Tested		11:00	01:30	04:15			
LOT Number		415	413	414			
Layer Number		2	3	4			
Stage		4	4	4			
Field and Lab	poratory Data						
Depth of Test (mr	n)	275	275	275			
Depth of Layer (m	าm)	300	300	300			
Field Moisture Co	ontent (%)	16.8	21.7	26.0			
Field Moisture Co	ontent Method	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1	1.1		
Field Wet Density	v (t/m³)	2.01	1.98	1.98			
Field Dry Density	(t/m³)	1.72	1.63	1.57			
Peak Converted V	Net Density* (t/m³)	1.89	1.99	2.02			
Optimum Moistur	re Content (%)	18.5	21.0	25.0			
Compactive Effor	t	Standard	Standard	Standar	d		
Moisture Ratio (%	()	90.0	104.0	103.5			
Moisture Variatio	n (%)	2.0 dry	1.0 wet	1.0 wet	·		
Hilf Density Ra	atio (%)	106.0	99.5	98.0			
legend * adjusted for ov	ersize material						



ABN 92 114 364 046 Phone: +61 418 691 682

					Report No: HDR:MELB18W00274
HII F De	nsity Ratio	o Renor	t		Issue No: 1
Client:	Level 1 436 Johnstor	ralia Pty Ltd (E) Street	(I - Abbotstord)		
	Abbotsford VIC 306	7			
Bringingly	Freedro Dreporty Aug	strolio			Official and
Project No.:	754-MELB00044AA	stralla			Approved Signatory: Stephen Pender
Project Name:	754-MELGE221991A	A - Mambourin	Estate		(Senior Geotechnician)
Lot No.:		TRN:			Date of Issue: 9/06/2020
Sample Deta	ails				
Location:	Mambo	ourin Estate			
Client Request I	D:				
Specification Re	equirements: MINIM	UM HILF DENS	ITY RATIO OF 9	95% of Standa	rd Compaction and Moisture variation to be within
	3% of 0	OMC (as advise	d by client)		
Field lest proce	dures: AS 128	39.5.8.1			
Laboratory Test	procedures: AS 128	39.2.1.1, AS 128	9.5.7.1		
Sampling Metho	od: AS128	9.1.2.1 Clause 6	5.4 (b)		
Source:	-				
Material:	FIII				
Sample Data	a				
Sample ID		MELB18S-00967	MELB18S-00968	MELB18S-00969	9
Field Sample ID		00172	00173	00174	
Client Sample II)	174	175	176	
Date Tested		6/12/2018	6/12/2018	6/12/2018	
Time Tested		11:00	01:35	01:15	
LOT Number		417	408	426	
Layer Number		5	5	4	
Stage		4	4	4	
Field and La	aboratory Data				
Depth of Test (n	nm)	275	275	275	
Depth of Layer	(mm)	300	300	300	
Field Moisture C	Content (%)	13.3	12.5	14.3	
Field Moisture C	Content Method	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	
Field Wet Densi	ty (t/m ³)	1.98	1.98	1.97	
Field Dry Densit	ty (t/m³)	1.75	1.76	1.72	
Peak Converted	Wet Density* (t/m ³)	1.93	1.97	2.01	
Optimum Moisti	ure Content (%)	12.5	14.U	16.U	
Compactive Effe		Standard	Standard	Standard	
Moisture Katio (70) op (9/)	100.5	90.5	0.50 2.0 dm/	
	On (%)	10 wet	1.5 dry		
Inili Delisity i	Valiu (70)	103.0	100.5	30.0	
legenu aujusteu for (



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					Report No: HDR:MELB19W00076	
HILF De	ensity Ratio	o Repor	t		Issue No: 1	
Client:	Coffey Services Aust Level 1 436 Johnston Abbotsford VIC 306	n Street 7	(T - Abbotsford)			
Principal: Project No.: Project Name: Lot No.:	Frasers Property Aus 754-MELB00044AA 754-MELGE221991/	stralia AA - Mambourin TRN :		Approved Signatory: Stephen Pender (Senior Geotechnician) 431 Date of Issue: 23/08/2019		
Sample Deta	ails					
Location:	Mambo	ourin Estate				
Client Request	ID:					
Specification R	equirements: MINIM 3% of	UM HILF DENS OMC (as advise	ITY RATIO OF 9 d by client)	95% of Stand	ard Compaction and Moisture variation to be within	
Field Test proce	edures: AS 128	39.5.8.1	3 ,			
Laboratory Test	t procedures: AS 128	39.5.7.1. AS 128	9.2.1.1			
Sampling Metho	od: AS128	9.1.2.1 Clause 6	6.4 (b)			
Source:						
Material:	Fill					
Sample Data	a					
Sample ID		MELB19S-00304	MELB19S-00305	MELB19S-003	06	
Field Sample ID		00231	00232	00233		
Client Sample II	D	213	214	215		
Date Tested		25/02/2019	25/02/2019	25/02/2019		
Time Tested		03:50	04:15	04:25		
LOT Number		109	104	429		
Layer		3	3	1		
Stage		1	1	4		
Field and La	aboratory Data					
Depth of Test (n	nm)	275	275	275		
Depth of Layer	(mm)	300	300	300		
Field Moisture C	Content (%)	22.0	24.5	22.8		
Field Moisture C	Content Method	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.	1	
Field Wet Densi	ity (t/m³)	1.96	1.96	1.96		
Field Dry Densi	ty (t/m³)	1.60	1.58	1.60		
Peak Converted	Wet Density* (t/m ³)	1.87	1.87	1.90		
Optimum Moist	ure Content (%)	24.5	27.0	24.5		
Compactive Eff	ort	Standard	Standard	Standard		
Moisture Ratio	(%)	90.0 2.5 dm/	91.0	92.5		
Hilf Density	ION (%)	2.5 ary		2.0 ary		
	Tatio (%)	104.5	105.0	103.0		
legend * adjusted for	oversize material					



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			.4		Report No: HDR:MELB19W000	81 o: 1
HILF Dei	nsity Ratio	o Repor	T			
Client:	Coffey Services Aust Level 1 436 Johnstor Abbotsford VIC 306	ralia Pty Ltd (E> n Street 7	(T - Abbotsford)			
Principal: Project No.: Project Name: Lot No.:	Frasers Property Aus 754-MELB00044AA 754-MELGE221991/	stralia \A - Mambourin TRN:	Estate	Approved Signatory: Stephen Pender (Senior Geotechnician) 431 Date of Issue: 23/08/2019		
Sample Deta	ils					
Location:	Mambo	ourin Estate				
Client Request ID):					
Specification Red	quirements: MINIM	UM HILF DENS	ITY RATIO OF 9	5% of Sta	ndard Compaction and Moisture variation to be	
	within	3% of OMC(as a	advised by client))		
Field Test proced	dures: AS 128	39.5.8.1				
Laboratory Test	procedures: AS 128	39.5.7.1, AS 128	89.2.1.1			
Sampling Method	d: AS128	9.1.2.1 Clause 6	6.4 (b)			
Source:						
Material:	Fill					
Sample Data						
Sample ID		MELB19S-00327	MELB19S-00328			
Field Sample ID		00234	00235			
Client Sample ID		216	217			
Date Tested		26/02/2019	26/02/2019			
LOT Number		02:30	03:10			
LOT Number		401	429			
Layer Number		2	3			
Slaye	haratary Data	4	4			
		075	075			
Depth of Test (m	m)	275	275			
Depth of Layer (r	nn)	300	300			
Field Moisture Co	ontent (%)	29.0	JJ.U AS 1280 2 1 1			
Field Wot Donsity	(t/m ³)	1 06	1 06			
Field Dry Density	y (t/m ³)	1.50	1.50			
Peak Converted	Wet Densitv* (t/m³)	1.01	1.10			
Optimum Moistu	re Content (%)	29.0	34.5			
Compactive Effo	rt	Standard	Standard			
Moisture Ratio (%	(6)	101.5	100.5			
Moisture Variatio	, on (%)	0.5 wet	0.0			
Hilf Density R	atio (%)	102.5	102.5			
legend * adjusted for ov	versize material					



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					Report No: HDR:MELB19W00150		
HILF De	nsity Ratio	o Repor	t		Issue No: 1		
Client:	Coffey Services Aust Level 1 436 Johnston Abbotsford VIC 306	tralia Pty Ltd (E) Street	(T - Abbotsford)				
Principal: Project No.: Project Name: Lot No.:	Frasers Property Aus 754-MELB00044AA 754-MELGE221991	stralia \A - Mambourin TRN:	Estate		Approved Signatory: Stephen Pender (Senior Geotechnician) 431 Date of Issue: 11/07/2019		
Sample Deta	ails						
Location:	Mambo	ourin Estate					
Client Request I	D:						
Specification Re	equirements: MINIM Within	UM HILF DENS 3% of OMC (as	ITY RATIO OF 9 advised by clier	95% of Stand nt)	dard Compaction and Moisture variation to be		
Field Test proce	edures: AS 128	39.5.8.1	-				
Laboratory Test	procedures: AS 128	39.5.7.1, AS 128	9.2.1.1				
Sampling Metho	. AS128	9.1.2.1 Clause 6	6.4 (b)				
Source:			()				
Material:	Fill						
Sample Date	2						
Sample ID	a	MEL B198-00555	MEL B195-00556	MEL B195-005	57		
Field Sample ID		00291	00292	00293			
Client Sample II	<u>ר</u>	263	264	265			
Date Tested		14/05/2019	14/05/2019	14/05/2019))		
Time Tested		10:00	11:30	02:30			
LOT Number		429	427	401			
Laver Number		4	4	4			
Stage		4	4	4			
Field and La	boratory Data						
Depth of Test (n	nm)	275	275	275			
Depth of Layer	(mm)	300	300	300			
Field Moisture C	Content (%)	28.8	27.5	29.3			
Field Moisture C	Content Method	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.	1		
Field Wet Densi	ty (t/m³)	1.93	1.93	1.93			
Field Dry Densit	ty (t/m³)	1.50	1.51	1.50			
Peak Converted	Wet Density* (t/m ³)	1.92	1.93	1.92			
Optimum Moist	ure Content (%)	26.5	25.5	28.5			
Compactive Effe	ort	Standard	Standard	Standard			
Moisture Ratio ((%)	108.0	107.5	103.5			
Moisture Variati	on (%)	2.0 wet	2.0 wet	1.0 wet			
HIIT Density H	Katio (%)	100.5	100.0	100.5			
legend * adjusted for o	oversize material						



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		Γ	Report No: HDR:MELB19W00158				
HILF De	ensity Ratio	o Repor	t				
Client:	Coffey Services Aus Level 1 436 Johnston Abbotsford VIC 306	tralia Pty Ltd (E> n Street 37					
Principal: Project No.: Project Name: Lot No.:	Frasers Property Au 754-MELB00044AA 754-MELGE221991/	stralia AA - Mambourin TRN:	Estate		Approved Signatory: Stephen Pender (Senior Geotechnician) 431 Date of Issue: 11/07/2019		
Sample Deta	ails						
Location:	Mamb	ourin Estate					
Client Request	ID:						
Specification R	eauirements: MINIM	UM HILF DENS	ITY RATIO OF 9	95% of Stand	ard Compaction and Moisture variation to be within		
	3% of	OMC (as advise	d by client)				
Field Test proce	edures: AS 128	39.5.8.1					
Laboratory Test	t procedures: AS 128	89.5.7.1, AS 128	39.2.1.1				
Sampling Metho	od: AS128	9.1.2.1 Clause 6	6.4 (b)				
Source:			. ,				
Material:	Fill						
Sample Data	а						
Sample ID	ŭ	MELB19S-00577	MELB19S-00578	MELB19S-0057	79		
Field Sample ID		00306	00307	00308			
Client Sample II	D	278	279	280			
Date Tested		21/05/2019	21/05/2019	21/05/2019			
Time Tested		12:00	01:30	01:55			
LOT Number		101	427	429			
Layer Number		7	5	5			
Stage		1	4	4			
Re-test		Re-test of 272					
Field and La	aboratory Data						
Depth of Test (n	nm)	275	275	275			
Depth of Layer	(mm)	300	300	300			
Field Moisture C	Content (%)	25.8	21.6	37.2			
Field Moisture C	Content Method	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1			
Field Wet Densi	ty (t/m ³)	1.96	1.94	1.94			
Field Dry Densi	ty (t/m²)	1.00	1.00	1.41			
Ontimum Moist	ure Content (%)	1.90	1.90	1.91			
Compactive Eff	ort	Standard	Standard	Standard			
Moisture Ratio	(%)	103.5	114.0	110.5			
Moisture Variati	ion (%)	1.0 wet	3.0 wet	3.0 wet			
Hilf Density F	Ratio (%)	99.0	102.0	101.5			
legend * adjusted for	oversize material						
-					I I I		



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					Report	No: HDR:ME	LB19W00165
HILF De	nsitv Ratio	o Repor	t				Issue No: 1
Client:	Coffey Services Aust Level 1 436 Johnston Abbotsford VIC 306	tralia Pty Ltd (E) n Street 7	(T - Abbotsford)				
Principal: Project No.: Project Name: Lot No.:	Frasers Property Aus 754-MELB00044AA 754-MELGE2219914	stralia \A - Mambourin TRN:	Estate		Approved Signatory: Stephen Pender (Senior Geotechnician) 431 Date of Issue: 11/07/2019		
Sample Deta	ails						
Location:	Mambo	ourin Estate					
Client Request I	D:						
Specification Re	equirements: MINIM	UM HILF DENS	ITY RATIO OF 9	95% of Standar	d Compaction an	d Moisture varia	tion to be within
	3% of	OMC (as advise	d by client)				
Field Test proce	edures: AS 128	39.5.8.1	•				
Laboratory Test	procedures: AS 128	39.5.7.1. AS 128	39.2.1.1				
Sampling Metho	od: AS128	9.1.2.1 Clause 6	6.4 (b)				
Source:							
Material:	Fill						
Sample Data	a						
Sample ID		MELB19S-00604	MELB19S-00605	MELB19S-00606	MELB19S-00607		
Field Sample ID		00319	00320	00321	00322		
Client Sample II)	291	292	293	294		
Date Tested		29/05/2019	29/05/2019	29/05/2019	29/05/2019		
Time Tested		09:15	09:40	02:00	02:30		
LOT Number		416	413	410	419		
Layer Number		5	5	5	5		
Stage		4	4	4	4		
Field and La	aboratory Data						
Depth of Test (n	nm)	275	275	275	275		
Depth of Layer ((mm)	300	300	300	300		
Field Moisture C	Content (%)	24.0	29.9	22.8	29.4		
Field Moisture C	Content Method	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1		
Field Wet Densi	ty (t/m ³)	1.95	1.95	1.94	1.94		
Field Dry Densit	ty (t/m³)	1.57	1.50	1.58	1.50		
Peak Converted	wet Density* (t/m ³)	1.97	1.97	1.97	1.97		
Optimum Moisti	ure Content (%)	ZZ.U	29.0	20.5	27.U		
Compactive Effe		Standard	Standard	Standard	Standard		
Noisture Katlo ((70)	109.0 2.0 wot	103.0	1 10.5	1 10.0 2 5 wot		
Hilf Density	OII (%)						
	Taliu (70)	30.3	33.0	30.9	30.0		
regend " adjusted for o	oversize material						



Coffey Services Australia Pty Ltd 15 Marine Parade Melbourne VIC 3067 ABN 55 139 460 521 Phone: +61 418 691 682

Report No: HDR:MELB19W00171 Issue No: 1 **HILF Density Ratio Report** Client: Coffey Services Australia Pty Ltd (EXT - Abbotsford) Level 1 436 Johnston Street Abbotsford VIC 3067 **Principal:** Frasers Property Australia Project No.: 754-MELB00044AA ved Signatory: Stephen Pender Project Name: 754-MELGE221991AA - Mambourin Estate (Senior Geotechnician) 431 Lot No.: TRN: Date of Issue: 11/07/2019 Sample Details Location: Mambourin Estate Client Request ID: Specification Requirements: MINIMUM HILF DENSITY RATIO OF 95% of Standard Compaction (as advised by client) Field Test procedures: AS 1289.5.8.1 Laboratory Test procedures: AS 1289.5.7.1, AS 1289.2.1.1 Sampling Method: AS1289.1.2.1 Clause 6.4 (b) Source: Material: Fill Sample Data Sample ID MELB19S-00629 MELB19S-00630 MELB19S-00631 MELB19S-00632 Field Sample ID 00341 00342 00343 00344 Client Sample ID 295 296 297 298 Date Tested 17/06/2019 17/06/2019 17/06/2019 17/06/2019 Time Tested 12:30 01:00 02:15 02:40 LOT Number 422 424 406 404 Layer Number 5 5 5 5 Stage 4 4 4 4 Field and Laboratory Data Depth of Test (mm) 275 275 275 275 Depth of Layer (mm) 300 300 300 300 Field Moisture Content (%) 25.4 30.4 31.5 29.4 Field Moisture Content Method AS 1289.2.1.1 AS 1289.2.1.1 AS 1289.2.1.1 AS 1289.2.1.1 Field Wet Density (t/m³) 1.95 1.96 1.95 1.96 Field Dry Density (t/m³) 1.55 1.50 1.48 1.51 Peak Converted Wet Density* (t/m³) 1.95 1.96 1.95 1.96 **Optimum Moisture Content (%)** 25.0 26.5 24.5 21.0 Compactive Effort Standard Standard Standard Standard Moisture Ratio (%) 122.0 121.0 119.0 120.5 Moisture Variation (%) 4.5 wet 5.0 wet 5.0 wet 5.0 wet Hilf Density Ratio (%) 100.0 100.0 100.0 100.0 legend * adjusted for oversize material



Coffey Services Australia Pty Ltd 15 Marine Parade Melbourne VIC 3067

ABN 55 139 460 521 Phone: +61 418 691 682

					Report No: HDR:MELB19W00173		
HILF De	ensity Ratio	o Repor	t				ISSUE NO: 1
Client:	Coffey Services Aust Level 1 436 Johnston Abbotsford VIC 306	tralia Pty Ltd (EX n Street 7	(T - Abbotsford)				
Principal: Project No.: Project Name: Lot No.:	Frasers Property Aus 754-MELB00044AA 754-MELGE221991A	stralia \A - Mambourin TRN:	Estate		Approved Signatory: Stephen Pender (Senior Geotechnician) 431 Date of Issue: 11/07/2019		
Sample Deta	ails						
Location:	Mambo	ourin Estate					
Client Request	ID:						
Specification R	equirements: MINIM	UM HILF DENS	ITY RATIO OF 9	95% of Standar	d Compaction an	d Moisture varia	tion to be within
	3% of	OMC (as advise	d by client)		a compaction an		
Field Test proce	edures: AS 128	39.5.8.1	3 <i>7</i>				
Laboratory Test	t procedures: AS 128	39.5.7.1, AS 128	89.2.1.1				
Sampling Metho	od: AS128	9.1.2.1 Clause 6	6.4 (b)				
Source:							
Material:	Fill						
Sample Data	а						
Sample ID	4	MELB19S-00636	MELB19S-00637	MELB19S-00638	MELB19S-00639		
Field Sample ID)	00345	00346	00347	00348		
Client Sample II	D	299	300	301	302		
Date Tested		26/06/2019	26/06/2019	26/06/2019	26/06/2019		
Time Tested		11:30	12:10	12:35	01:00		
LOT Number		422	424	406	404		
Layer Number		5	5	5	5		
Stage		4	4	4	4		
Re-test		295	296	297	298		
Field and La	aboratory Data						
Depth of Test (n	nm)	175	175	175	175		
Depth of Layer	(mm)	200	200	200	200		
Field Moisture (Content (%)	32.1	32.5	31.7	29.2		
Field Moisture C	Content Method	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1	AS 1289.2.1.1		
Field Wet Densi	ty (t/m ³)	1.94	1.94	1.93	1.94		
Field Dry Densi	ty (t/m²)	1.47	1.46	1.47	1.50		
Peak Converted	wet Density" (t/m°)	1.94	1.92	1.92	1.93		
Compactive Eff	ort	29.0 Standard	Standard	Standard	20.0 Standard		
Moisture Ratio	(%)	108.0	108.0	105.5	109.5		
Moisture Variati	ion (%)	2.0 wet	2.5 wet	1.5 wet	2.5 wet		
Hilf Density F	Ratio (%)	100.0	100.5	100.5	100.0		
legend * adjusted for	oversize material						



Field Density Test Results AS1289.5.7.1

A & Y Associates Pty Ltd 5/16 Network Drive Truganina VIC 3029 PH: 0400 413 531 info@ayassociates.com.au

Client:		Coffey Services	s Australia		Job No:	COF776	
Project:		Mambourin Est	ate - Lot Testing	g		Report:	2
Location:		Mambourin - S	Stage 4 & 5				
Sample No		317	318	319	320		
Date Tested		27/08/2019	27/08/2019	27/08/2019	27/08/2019		
Time Tested		10:00	13:15	13:50	14:55		
Test Location		Stage 4	Stage 4	Stage 4	Stage 4		
		Lot No: 401	Lot No:413	Lot No:409	Lot No:405		
		E	4	4	4		
Level/Layer		075					
Layer Thickness	mm	275	275	275	275		
Test Depth	mm	250	250	250	250		
Field Wet Density	t/m³	1.988	1.976	1.975	1.98		
Field Moisture Content	%	17.6	19.9	19.8	22.3		
Material:		Local Clay Fill	Local Clay Fill	Local Clay Fill	Local Clay Fill		
	I						
Oversize Material	WET, %	0.5	0.7	0.8	0.3		
Sieve Size	mm	19	19	19	19		
Peak Converted Wet Density	t/m ³	2.05	2.05	2.03	2.02		
Optimum Moisture Content	%	18.5	19.5	20	22.5		
	I						
Moisture Ratio	%	95	102	99	99		
Moisture Variation	%	-1.0	0.5	-0.5	0.0		
from OMC		Drier	Wetter	Drier	OMC		
Density Ratio	%	96.5	95.5	96.5	98.0		
	0504 644				To al Cala alian		
Specification:	95% Sta	ty test conducted an	d provided by Coffey	Laboratories Accred	lest Selection:	Coffey's Ref: 754-M	'A FLCF221991
Test Method	AS1289 5.3	8.1. 5.7.1. 2.1.1. 1.1		Laboratories. Accret	Sampling Method:	Sampled	By Client
						\cap	
NATA	NATA Accre	dited Laboratory No. 2	20172	ing	Approved Signatory:	Uh	\sim
	The results	of tests, calibrations a	ind/or measurements	included		D	During
WORLD RECOGNISED	in this docu	ment, are traceable to	Australian / National	Standards	D-1	David	Burns
ACCREDITATION				Date:	23/00	12013	



Field Density Test Results AS1289.5.7.1

A & Y Associates Pty Ltd 5/16 Network Drive Truganina VIC 3029 PH: 0400 413 531 info@ayassociates.com.au

Client:		Coffey Services	s Australia			Job No:	COF776	
Project:		Mambourin Est	ate - Lot Testin	g		Report:	3	
Location:		Mambourin - Stage 4						
						1	1	
Sample No		321	322	323				
Date Tested		28/08/2019	28/08/2019	28/08/2019				
Time Tested		10:30	10:50	11:40				
						1		
Test Location		Stage 4	Stage 4	Stage 4				
		0	U	0				
		Lot No:412	Lot No: 408	Lot No:404				
		5	5	5				
Lever Thickness		275	275	275				
	mm	275	275	275				
Test Depth	mm	200	200	200				
Field Wet Density	U/m	1.915	1.92	1.932				
Field Moisture Content	%	39.3	35.8	34.6				
Material:		Local Clay Fill	Local Clay Fill	Local Clay Fill				
Oversize Meterial		0.0	0.0	0.0				
	VVEI, 70	10	10	10				
Sieve Size	mm	1 70	1 70	1.02				
Peak Converted Wet Density	U/m	1.78	1.78	1.92				
Optimum Moisture Content	%	40	38.5	32				
Moisture Ratio	%	98.5	93	108				
Moisture Variation	%	-0.5	-2.5	2.5				
from OMC		Drier	Drier	Wetter				
Density Ratio	%	107.5	108.0	101.0				
	1					•		
Specification:	95% Std				Test Selection:	Ν	I/A	
Notes:	Field densi	ty test conducted an	d provided by Coffey	Laboratories. Accred	ditation No. #1151	Coffey's Ref: 754-N	IELGE221991	
Test Method	AS1289 5.	8.1, 5.7.1, 2.1.1, 1.1			Sampling Method:	Sampled	l By Client	
						$\hat{\mathbf{O}}$		
NATA	NATA Accre	dited Laboratory No. 2	20172		Approved Signatory:	lh		
	Accreditatio	on for compliance with	ISO/IEC 17025 - Test	ing		07 -		
	The results	of tests, calibrations a	and/or measurements	included		David	Burns	
WORLD RECOGNISED	in this docu	ment, are traceable to	Australian / National	Standards	Date:	30/08	3/2019	



Field Density Test Results AS1289.5.7.1

A & Y Associates Pty Ltd 5/16 Network Drive Truganina VIC 3029 PH: 0400 413 531 info@ayassociates.com.au

Client:		Job No:	COF776				
Project:		Mambourin Est	ate - Lot Testing	g		Report:	4
Location:		Mambourin - S	Stage 4				
			1	1			
Sample No		624	625	626	627	628	
Date Tested		4/09/2019	4/09/2019	4/09/2019	4/09/2019	4/09/2019	
Time Tested		12:05	12:30	12:50	13:10	13:40	
Test Location		Stage 4	Stage 4	Stage 4	Stage 4	Stage 4	
		Lot No:41	Lot No:419	Lot No:407	Lot No:425	Lot No:401	
Level/Layer		6	6	6	6	6	
Layer Thickness	mm	200	200	200	200	200	
Test Depth	mm	175	175	175	175	175	
Field Wet Density	t/m ³	1.956	1.96	1.967	1.959	1.972	
Field Moisture Content	%	23.6	21.5	22.9	24.0	26.8	
Material:		Local Clay Fill	Local Clay Fill	Local Clay Fill	Local Clay Fill	Local Clay Fill	
Oversize Material	WET, %	0.0	0.0	0.0	0.0	0.0	
Sieve Size	mm	19	19	19	19	19	
Peak Converted Wet Density	t/m ³	1.84	1.99	1.89	1.92	2.01	
Optimum Moisture Content	%	24	22	23	24.5	27.5	
Moisture Ratio	%	98.5	97.5	99.5	98	97.5	
Moisture Variation	%	-0.5	-0.5	0.0	-0.5	-0.5	
from OMC		Drier	Drier	OMC	Drier	Drier	
Density Ratio	%	106.5	98.5	104.0	102.0	98.0	
Specification:	95% Std				Test Selection:	N	/Α
Notes:	Field densi	ty test conducted ar	d provided by Coffey	Laboratories. Accred	ditation No. #1151	Coffey's Ref: 754-MI	ELGE221991
Test Method	AS1289 5.	8.1, 5.7.1, 2.1.1, 1.1	1		Sampling Method:	Sampled	By Client
NATA	NATA Accredited Laboratory No. 20 Accreditation for compliance with I				Approved Signatory:	A	
WORLD RECOGNISED	in this docu	ment, are traceable to	o Australian / National	Date:	9/09/	2019	

Appendix B – Stage 4 Drawings

TATE STAGE 4	DESCRIPTION	WATER MAIN, VALVE AND HYDRANT	WATER REFYCLED	UNDERGROUND ELECTRICITY	OVERHEAD ELECTRICITY & POLE	TELSTRA & SERVICE PIT	OPTIC FIBRE
IAMBOURIN ES				MENTS ARE SHOWN ON THE FACE PLANS THEY ARE TO BE	CK OF REBE, EXCEPT WHERE A RADIUS HAS BEEN LINUKE DIDES ARE TO ARDRAUCH BAS BEEN	VOID TO THE AT A THE A DETAIL AND A TO A THE AT A THE AT A THE AT A THE AT A THE AT A THE AT A THE AT A THE AT	TATEO IN CENTRE OF ALL DIMENTS INN ESC OTHERMORE

PROPOSED

EXISTING

ø

GENERAL NOTES

ALL LEVELS ARE TO AUSTRALIAN HEIGHT DATUM AND ALL COORDINATES ARE TO MAP GRID OF AUSTRALIA (MGA) ZONE 55.

20. WHERE CLAVED PIPE ALLGAMENTS ARE SHOWN ON THE FACE PLANS THEY ARE TO BE LADD PARALLED TO THE SLACK REBE, REVER WHERE A RADIUS HAS BEEN SECREFALLY NONNARTED CLANEED PIPES ARE TO BE APPROVED BY COUNCL, AND IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS.

21 WATER TAPPINGS TO BE LOCATED IN CENTRE OF ALLOTMENTS UNLESS OTHERWISE SHOWN

- ALL EXISTING SURFACE LEVELS SHOWN ON THE ENGINEERING DRAMINGS HAVE BEEN INFERSIOLATED FORD ANDIGIAL TERRAM MODEL THESE LEVELS HAVE BEEN USED AS THE BASIS FOR ALL BRANKERING DESIGN AND DETERMINATION OF OUANTITES AND ARE ACCURATE TO WITHIN ± 0.05m
- 23 PAVENNI DEPINS MAY BE MODIFED AS DIRECTED BY THE SUPERNITINDENT SARAPENT 108 EXCD OUT TO MINIMUM DEPIN DEMOTED, INSECTED AND JF SUBGRAPENT INDESTION, FURTHER TESTING CARPED OUT TO DETERMINE FINAL PAVENENT DEPTIN 22. TELSTRA IS TO BE NOTIFIED 7 DAYS PRIOR TO PLACEMENT OF CONCRETE WORKS ALL WORKS TO BE CARREED OUT MACCORDANCE WITH AS272-1992 GENERAL CONTONS FOR FONDARCT. THE ROLD SUBMANGE STREETER ATION, APPROVED RETROPOLITAR PLANNER, AUTORITY ON HONGPALITY SECTERATION FON ADARDAD DARANNER, WERK ROLDE AND TO THE STREETER CONTON SUBMAD DARANNER WERK ROLDE AND TO THE STREETER CONTON FOR SUBMAD DARANNER AND THE MANUERAL INVOLVED
 - RDAD CHAINAGES REFER TO ROAD CENTRELINES. CHAINAGES FOR INTERSECTIONS AND CUL-DE-SACS REFER TO THE LIP OF KERB
- THE LOCATION OF EXISTING SERVICES SHOLLO BE DETERMINED BY THE CONTRACTOR PRODO TOCOMEND ANY XEXANTON BY CONTACTION ALL LOCAL SERVICE ALTHORITES ANY XEXIMING SERVICES SHOMM ON THESE DAAMINGS ARE DIFFRED AS A GUIDE ONLY AND ARE NOT GUARANTEED AS CORRECT

WHEN PAVENIE EXCAVATION IS IN ROCK, ALL LOSE MATERAL INCLUDING ROCKS AND CLAYT MUST BE REPOVED THE SUB-GRADE MUST THEN BE REGULATED WITH COUNCIL PAPPROVED MATERIAL.

26. ALL VEHICLE CROSSINGS ARE IN ACCORDANCE WITH COUNCIL STANDARD DRAWINGS

27 UNEMARKING AND SIGNAGE TO BE INSTALLED IN ACCORDANCE WITH AS 1742-1 AND AS 1742-5 UNLESS MOTEO DIFERNISE. SIGNAR ET OB EN ASTLED IN ACCORDANCE WITH METROPOLITAN PLANNIKG AUTHORITY STANDARDS.

WHERE PAVEMENT IS CONSTRUCTED ON FILLING, FILL NATERIAL IS TO BE APPROVED BY THE SUPERNITENDENT AND COUNCIL, FILLING TO BE CONSTRUCTED IN LAYERS 150mm THICK WITH COMPACTION ACHIEVING 55% AUSTRALIAN STANDARD DENSITY.

24.

- WHERE REQURED ANY BUILDINGS. TROUGHS, FEMCES AND OTHER STRUCTURES ON SITE TO BR REMOVED SORRCITED BY THE ENGINEER THE COST OF REMOVAL IS TO BE MICLUDED IN THE OVERALL ERATHMORKS FIGURE UNLESS A SPECIFIC ITEM FOR REMOVAL IS DROTED IN THE SCHEDULE.
 - ALL EXCAVATED ROCK AND SURPLUS SPOIL TO BE REMOVED AND DISPOSED OFF SITE UNLESS NOTED OTHERWISE.

STORMWATER DRAINAGE PIT NUMBER

168.90 -- 169.00 -

PAVEMENT SAWCUT LINE RIDGE / CHANGE OF GRADE LINE SURFACE CONTOUR MINOR SURFACE CONTOUR MAJOR

CONCRETE VEHICLE CROSSING

GAS & WATER CONDUITS

123.45 T124.80

SURFACE LEVEL BATTER LEVEL (TOP / TOE) EARTHWORKS GRADE

LOCALITY PLAN MAP: NOT TO SCALE MAP: 200 ETO SCALE

A LEAD AND A LEAD AND

WORKS SITE OF

SIGN AND POST LIGHT & POLE (BY OTHERS) STREET SIGN

MANENT SURVEY MARK

EMPORARY BENCH MARK

DLLARD

OAD CHAINAGES

REVISION

SHEET No.

DESCRIPTION

DRAWING SCHEDULE

DRAWING 305169R03 305169R02 305169R04 305169R06 305169R07 305169R09 305169R10

305169R01

 ALL PITS / MANHOLES IN CONCRETED AREAS TO BE CONSTRUCTED IN ACCORDANCE WITH WCC DETAIL SD2-5. 35 ALL MATURESTRIPS, FROM BACK OF KERB TO EXISTING EDGE OF PATH OR PROPERTY BOUNDARY ARE TO BE FLICED TO A CLAN, TONY CONTINN, TOP PARSED ISJOHN LOARY TOP SOLI FREE DE CLUPPS, SODS AND CLAY LUPPED AND HYDROSEDED.

THE CONTRACTOR IS REQUIRED TO OBTAM A "PERMIT TO WORK FROM MELBOURK MATERS TO SUBJECLIAR TEREFER AT THE PRE-COMPEKTEMANT METING. THE CONTRACTOR IS REQUIRED TO ENSURE THAT THE "PERMIT TO WORK" IS KEPT UP TO DATE FOR THE DURATION OF THE CONTRACT.

FACE SHEET

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DT CHAINAGE

TOUT POINT

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COURCL 5 TOBINA FER DRAIN & PT SOBINA FER DRAINAGE PROFERTY NULFIS COUNCL 5 TOBINA FER PT IS HOUSE DRAIN AND FLUGHER HOUSE DRAIN MARTER PHAS MIT MUC STOBINA FER PHAS MIT MUC STOBINA FER PHAS

Wyndham

•

•••••••

BRANCH SEWER & MANHOLE SEWER & MANHOLE SEWER RISING MAIN CENTRAL INVERT

OVERHEAD TELSTRA GAS MAIN

- 28 ALL TEMPORARY WARNING SIGNS USED DURING CONSTRUCTION SHALL BE SUPPLIED AND MAINTAINED IN ACCORDANCE WITH AS 1742-3 29 TACTILE GROUND SURFACE INDICATORS ARE TO BE INSTALLED IN ACCORDANCE WITH THE DISABILITY DISCRIMINATION ACT AND RELEVANT COUNCIL STANDARD DRAWINGS 30 CONTRACTOR TO PROVIDE AN ENVIRONMENTAL MANAGEMENT PLAN INCLUDING SILT AND SEDIMENT INJURGE PROSECTION ETC. SEPP TO BE APPROVED BY COUNCLI PRIOR TO THE COMMENDERENT OF WORKS. ALL FLLIMG ON LOT'S AND WITHIN ROAD RESERVES GREATER THAN 200mm IS TO BE UNDETATAREN USMOLEVEL I SUPPRISON AND AND COMPETED IN A CORDANCE WITH AS 1998-2007. FLL AREAS ARE TO BE STAPPED OF TOPSOL, FLLED AND REPLACED WITH TOPSOL WHERE REQUEND TO OBTAIN IF FMALLEVELS STORM WITH FOR AMMGS
 - FILLING MATERIAL IS TO BE IN ACCORDANCE WITH THE SPECIFICATION, AS 3798-2007 & TO THE SATISFACTION OF COUNCIL AND THE SUPERIMTENDENT.
 - 10. ALL BATTERS SHALL BE 1 IN 6, UNLESS OTHERWISE SHOWN.

31 ALL TREES AND SHRUBS ARE TO BE RETAINED UNLESS OTHERWISE SHOWN IF ROAD AND DRAWARED GNSTROLING MECESSIAT INEE THER REPOVAL, WAITEN PERMISSION MUST BE OBTAINED FROM THE SUPERMICHOUNT.

32. TREES NOT SPECIFIED FOR REMOVAL ARE TO BE PROTECTED WITH APPROPRIATE EXCLUSION FENCING PRIOR TO COMMENCEMENT OF ANY WORKS.

- NO FILL OR STOCKPILING OF MATERIAL IS TO BE PLACED OM ANY RESERVE FOR PUBLIC OPEN SPACE UNLESS OTHERWISE DIRECTED OR APPROVED BY THE SUPERNITENDENT.
- TBM-S TO BE RE-ESTABLISHED BY THE LICENSED SURVEYOR IF FOUND TO BE MISSING AT THE COMPRIMENT OF CONSTRUCTION THE CONTRACTOR WILL BE RESPONSIBLE FOR CARE AND MANTEMARE OF TIB M-S THEREAFTER 2
- AT LEAST 3 DAYS PRIOR TO COMMERCING WORK ON EXCAVATIONS IN EXCESS OF 150m DEFE. A ADDIVED PRIOR TO COMMERCING IND MORKARET INE CONTRACTORS 10 COMPLY WITH WORKSAFET. THE PANES TIRRENTESS FREQUENTION 1992. THE MARES ACT 1958 AND OCCUPATIONAL HEALTH AND SAFETY ACT 1963. 2004.
 - ALL SERVICE TERMINE'S UNDER DRIVE MAY'S, FOOTPATHS, AND PARKING BAY'S TO BE BACKFILLED WITH CLASS S CRUGHED DOCK SERVICE TERMINE'S LESS THAN TSIGnam BEHIND KERB AND CHAMBEL OR PAYED TRAFFIC AREAS ARE ALSO TO BE BACKFILLED WITH COMPACTED CLASS Z FROMED ROCK
- where Reunite 1, LESTING LANS PRESSIONS AND ADDRESS AFE TO RECOVER ADDRESS AND STATE TO A LEASTING LANS PRESSIONS AND STALL BE RECAVARITED TA A LEASTING LANS LEASTING ADDRESS AND STALL BE RECAVARITED TO A LEASTING LANS LEASTING ADDRESS AND STALL BE RECAVARITED TO A LEASTING LANS LEASTING ADDRESS AND STALL BE RECAVARITED TO A LEASTING ADDRESS AND STALL BE RECAVARITED TA A LEASTING ADDRESS AND STALL BE RECAVARITED TA A LEASTING ADDRESS AND STALL BE RECAVARITED TA A LEASTING ADDRESS AND STALL BE RECAVARITED TA A LEASTING ADDRESS AND STALL BE RECAVARITED TA A LEASTING ADDRESS AND STALL BE RECAVARITED TA A LEASTING ADDRESS AND STALL BE RECAVARITED TA A LEASTING ADDRESS AND STALL BE RECAVARITED TA A LEASTING ADDRESS AND STALL BE RECAVARITED TA A LEASTING ADDRESS AND STALL BE RECEVED ADDRESS AND
 - NO BLASTING TO BE CARRIED OUT WITHIN THE MUNICIPALITY WITHOUT OBTAINING COUNCLES PERMISSION
- 1
- GAS AND WATER CONDUTS ARE TO BE , B50mm CLASS 12 P.V.C SINGLE SERVICE B100mm CLASS 12 P.V.C DUAL SERVICE (DRINKING AND NON DRINKING WATER)

 - WITH THE FOLLOWING MINIMUM COVER TO FINISHED SURFACE LEVELS. ROAD PAVEMENT 0.80m VERGE, FOOTPATHS 0.45m
 - 11
- ALL SERVICE CONDUIT TRENCHES UNDER ROAD PAVEMENTS TO BE BACKFILLED IN ACCORDANCE WITH RELEVANT MUNICIPALITY OR ROAD AUTHORITY SPECIFICATION.
- AG/SUBSOIL DRAIN TO BE LAID BEHIND KERB WHERE REQUIRED IN ACCORDANCE WITH THE METROPOLITAN PLANNING AUTHORITY STANDARD DRAWINGS AND CONNECTED TO UNDERGROUND DRAINAGE. ₽
- CENTRELINES OF ALL EASEMENT DRAINS ARE OFFSET 10m OR 2.2m (WHERE OUTSIDE OF SEWER) FROM THE PROPERTY LINE UNLESS SHOWN OTHERWISE.
- SERVICE OFFSETS AND LOCATION TABLE

SIGNAGE AND LINEMARKING PLAN

305169R14 305169R15

305169R13

PAVEMENT & TYPICAL DETAILS RAISED PAVEMENT DETAILS

PIT SCHEDULE

	POTABL	E WATER	RECYCLE	ED WATER	Ø	S		ELECTI	RICITY		TELE	COM
ROAD NAME	-			TTOTO TO		arres of	PC	E	n/G C	ABLE		ATOTA
	SIDE	ULLSEI	SIUC	OFSEI	SIDE	ULTSEI	SIDE	OFFSET	SIDE	OFFSET	SIUC	ULTSEI
MERULA DRIVE	z	2.95	z	250	z	2.10	s	0.80*	s	2.60	s	1.725
STEM CLOSE	M	2.95	M	250	M	2.10	w	0.80*	w	2.60	w	1.725
BLACKFOREST ROAD CH -26.94 T0 214.18	s	2.90	s	2.10	s	1.30	s	0.80*	z	2.60	z	1.725
BLACKFOREST ROAD CH 214.18 TO 306.74	s	5.95*	s	675*	s	7.55*	s	0.80*	z	2.60	z	1.725

SIEM CLUSE	M	2.30	M	1007	A	2.10	u	0.80	u
BLACKFOREST ROAD CH -26.94 T0 214.18	s	2.90	s	210	s	1.30	s	0.80*	z
BLACKFOREST ROAD CH 214,18 TO 306.74	s	5.95*	s	675*	s	7.55*	s	0.80*	z
			100000						
TELSTRA AND ELECTRICITY CABLES ARE TO BE CONSTRUCTE	DINA COMM	ON TRENCH IN	ACCORDANC	E WITH BLECTH	BOILY AUTH	CONTY STAND	MRD DRAWI	N08.	

L GAS AND WATER MAINS ARE TO BE CONSTRUCTED IN A COMMON TREACH L EDBOTTES OFFSET FROM BACK OF MERE. L LIOHT POLES DMIPHSIONED TO CONTRE OF POLE.



11/04/19 29/03/19

WT WT WT

3 INDEX UPDATED OFFSETS UPDATED & SHEETS R01/R02/R06/R07/R08//R13 AMENDED





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CONSTRUCTION 305169R01

FRASER PROPERTY AUSTRALIA WYNDHAM CITY COUNCIL

Checked J. KOEHLER

Date 12/09/18

MAMBOURIN ESTATE STAGE 4 FACE SHEET





WARNING





100000

(H1<u>16.57 (L178</u>)7P (H116.57 (H20.06 (A2)

CH116.57 (L/R)TP CH116.57 CH20.06

XCAVATION GREATER THAN 0.20m

CROSS SECTIONS - BLACK FOREST ROAD SHEET 2 OF 2 & MERULA DRIVE

DRAINAGE LONG SECTION - SHEET 1 OF 3 DRAINAGE LONG SECTION - SHEET 2 OF 3 DRAINAGE LONG SECTION - SHEET 3 OF 3

INTERSECTION DETAILS

305169R08

305169R11 305169R12

LONGITUDINAL SECTION - MERULA DRIVE & STEM CLOSE CROSS SECTIONS - BLACK FOREST ROAD SHEET 1 OF 2

CROSS SECTIONS - STEM CLOSE

305169R05

ALL STORMWATER DRAWS ARE TO BE CLASS 2 ACL OR RIGD F RC PPES WITH ADCOL FLXBLE COLLARS UWELSS NOTED DIREWARS ALL PRES. UP TO AND MCUUDA TSYMM DA ARE TO BE RUBER RAMG JONITED WITEL OXEMAC F LUSH JONITS WITH EXTERNAL BANDS CAN ONLY PE USED ON PMPE SIZES OVER TSYMM DIA.

37 CURVED PIPE ALIGNMENTS TO BE ACHIVED USING SPLAY PIPES INSTALLED AS PER MANUFACTURES SPECIFICATION RADIUS AND SPLAY LENGTHS PROVIDED FOR ORDERING PURPOSES

LONGITUDINAL SECTION - BLACKFOREST ROAD

DETAIL PLAN

IMIT OF WORKS

ATTER

ILLING GREATER THAN 0.30m

F124.68

,**CH**C

<u>D</u>CC

SRASSED MAINTENANCE ACCESS TRACK

RETAINING WALL - TIMBER RETAINING WALL - CONCRETE RETAINING WALL - ROCK/STONE

ARKING BAY/PAVED AREA

ROCK BEACHING

FILL EXTENTS

GRAVEL MAINTENANCE ACCESS TRACK

FENCE - TREE PROTECTION







SUARD RAIL

E.S

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