



21st May 2018

Ref No: 341_SEE Civil_Level 1

REPORT ON LEVEL 1

EARTHWORKS INSPECTION AND TESTING



PROJECT: **FLAGSTONE CITY STAGE 1K**

CONTRACTOR: **SEE CIVIL PTY LTD**

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1 INTRODUCTION

1.0 GENERAL

Australian Soil and Concrete Testing was commissioned by SEE Civil Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with Clause 8.2 of AS 3798-2007 *'Guidelines on Earthworks for Commercial and Residential Developments'*.

The fill placed on the development between 13/02/18 and 22/02/18 as detailed in this report is considered to be controlled Fill as defined in AS2870 – 2011 *'Residential Slabs & Footings'*.

1.1 SITE DESCRIPTION

The site is located at the Flagstone City Residential Estate off Flagstonian Drive in Queensland. The Stage 1K site is a 31 lot residential subdivision.



LOCALITY PLAN
NOT TO SCALE

Drawing showing the Site Location.

2 WORKS AND SPECIFICATIONS

The earthworks generally comprised of Level 1 filling placed across the site. Filling was conducted by using site won materials. The fill materials were placed in layers not exceeding 200mm and moisture conditioned as required. Pad foot rollers were then utilized to compact the fill until the required density specifications were achieved.

Filling was carried out in accordance with AS3798-2007 '*Guidelines on Earthworks for Commercial and Residential Developments*' and with the project specification prepared for the project.

The specification requirements were that all fill was to be placed and compacted in layers to a density ratio of not less than 95% of the maximum dry density as determined by AS1289.5.4.1 (Standard Compaction).

We have included in Appendix A drawings showing the extent of filling carried out at the site covered by this report.

3 PREVIOUS EARTHWORKS

Earthworks have previously been carried out at the site by others. The earthworks were carried out between the 22nd of August 2017 and the 8th of February 2018. The Level 1 inspection and testing services were carried out by Morrison Geotechnic on the previous filling and is detailed in the Morrison Geotechnic report, **Reference No: 12990** dated **20th February 2018**.

4 FILL FOUNDATION

The stripped surfaces of proposed fill areas were inspected and proof rolled prior to placement of fill. In general, the proof rolling was carried out with the equipment used to compact the fill and water truck. Compliance of the fill foundation and approval to commence filling was on the basis of:

- adequate removal of topsoil and organics
- adequate removal of soft compressible soils
- soundness (minimum deflection) under proof rolling

5 COMPLIANCE TESTING

Test locations were randomly selected by the Geotechnical Testing Authority (GTA) Australian Soil and Concrete Testing. Compaction control tests were carried out at regular intervals throughout the placement of fill in accordance with the minimum test frequency recommendations included in the specifications. The table below summarises the test results. The test locations were not professionally surveyed and should be considered approximate.

All field density tests carried out on the structural fill meet the minimum specification requirements of 95% Standard Compaction (AS 1289 5.8.1, 5.1.1, 5.7.1 & 2.1.1).

SUMMARY OF FIELD DENSITY TEST RESULTS

Sample No	Date of Test	Description			Level	Density Ratio
11454	13/02/2018	Lot 329	E:33625.2	N:73287.1	RL:68.8	97.5%
11455	13/02/2018	Lots 318-321	E:33728.8	N:73361.2	RL:63.6	99.0%
11456	13/02/2018	Lots 318-321	E:33741.6	N:73358.6	RL:63.2	97.5%
11457	13/02/2018	Lots 318-321	E:33740.1	N:73384.3	RL:62.8	100.0%
11458	13/02/2018	Lots 318-321	E:33718.8	N:73376.5	RL:62.3	99.0%
11459	13/02/2018	Lots 553-556	E:33729.8	N:73422.0	RL:61.5	95.0%
11460	13/02/2018	Lots 553-556	E:33720.8	N:73437.2	RL:60.7	95.0%
11516	15/02/2018	Level 1 Fill	E:33652.1	N:73431.9	RL: 57.0	98.5%
11517	15/02/2018	Level 1 Fill	E:33648.2	N:73417.9	RL: 58.1	97.0%
11518	15/02/2018	Level 1 Fill	E:33638.2	N:73404.5	RL: 58.9	100.5%
11519	15/02/2018	Level 1 Fill	E:33648.6	N:73424.4	RL: 57.1	100.5%
11520	15/02/2018	Wentworth Dr	CH:68	+1.0	0.5m BSG	101.5%
11521	15/02/2018	Wentworth Dr	CH:162	-1.5	0.25 BSG	99.5%
11581	16/02/2018	Level 1 Fill	E:33655.3	N:73440.0	RL: 57.3	97.5%
11582	16/02/2018	Level 1 Fill	E:33635.1	N:73404.4	RL: 60.5	99.0%
11583	16/02/2018	Level 1 Fill	E:33666.8	N:73459.1	RL: 57.2	96.5%
11584	16/02/2018	Level 1 Fill	E:33643.2	N:73396.9	RL: 61.1	97.5%
11585	17/02/2018	Level 1 Fill	E:33623.4	N:73383.8	RL: 63.1	99.5%
11586	17/02/2018	Level 1 Fill	E:33650.4	N:73412.3	RL: 60.8	101.0%
11587	17/02/2018	Level 1 Fill	E:33665.5	N:73460.1	RL: 58.4	101.5%
11615	19/02/2018	Level 1 Fill	E:33618.2	N:73360.4	RL: 67.0	96.5%
11717	21/02/2018	Level 1 Fill	E:33593.9	N:73380.1	RL:65.1	96.0%
11718	21/02/2018	Level 1 Fill	E:33598.6	N:73376.4	RL:65.6	102.5%
11735	22/02/2018	Level 1 Fill	E:33721.6	N:73345.0	RL:63.2	96.5%

No. of Tests: 24 Mean: 98.5 %

6 CONCLUSION

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction, as far as we have been able to determine, the structural fill placed between the 13/02/18 and 22/02/18 is considered to have been carried out in general accordance with AS 3798-2007 '*Guidelines on Earthworks for Commercial and Residential Developments*'.

7 LIMITATIONS

Unless otherwise stated in this report, this report does not include: Backfill behind retaining structures, Backfill to service trenches, Road Pavements, Any Topsoil placed on the site, Slope Stability or Site Drainage.

We have included in Appendix A, a drawing showing the surveyed levels at the site prior to any filling covered by this report, all existing fill on the site below these levels is not covered by this report.

Please do not hesitate to contact me if you have any queries.

Yours faithfully

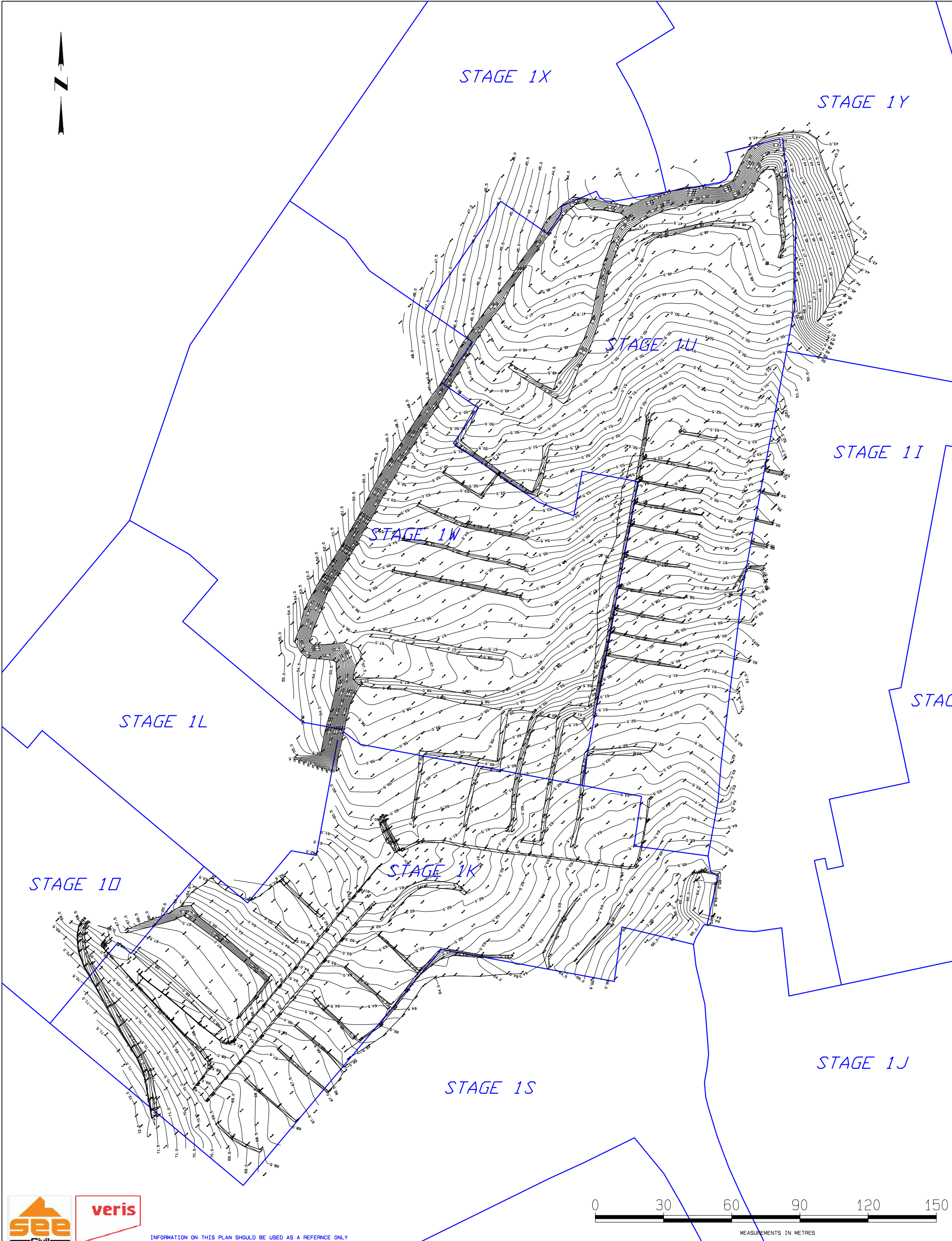


Jason Mckenna
Laboratory Manager

ASCT Brisbane South

Appendix A

Contour Map of Handover Surface & Cut Fill Drawings



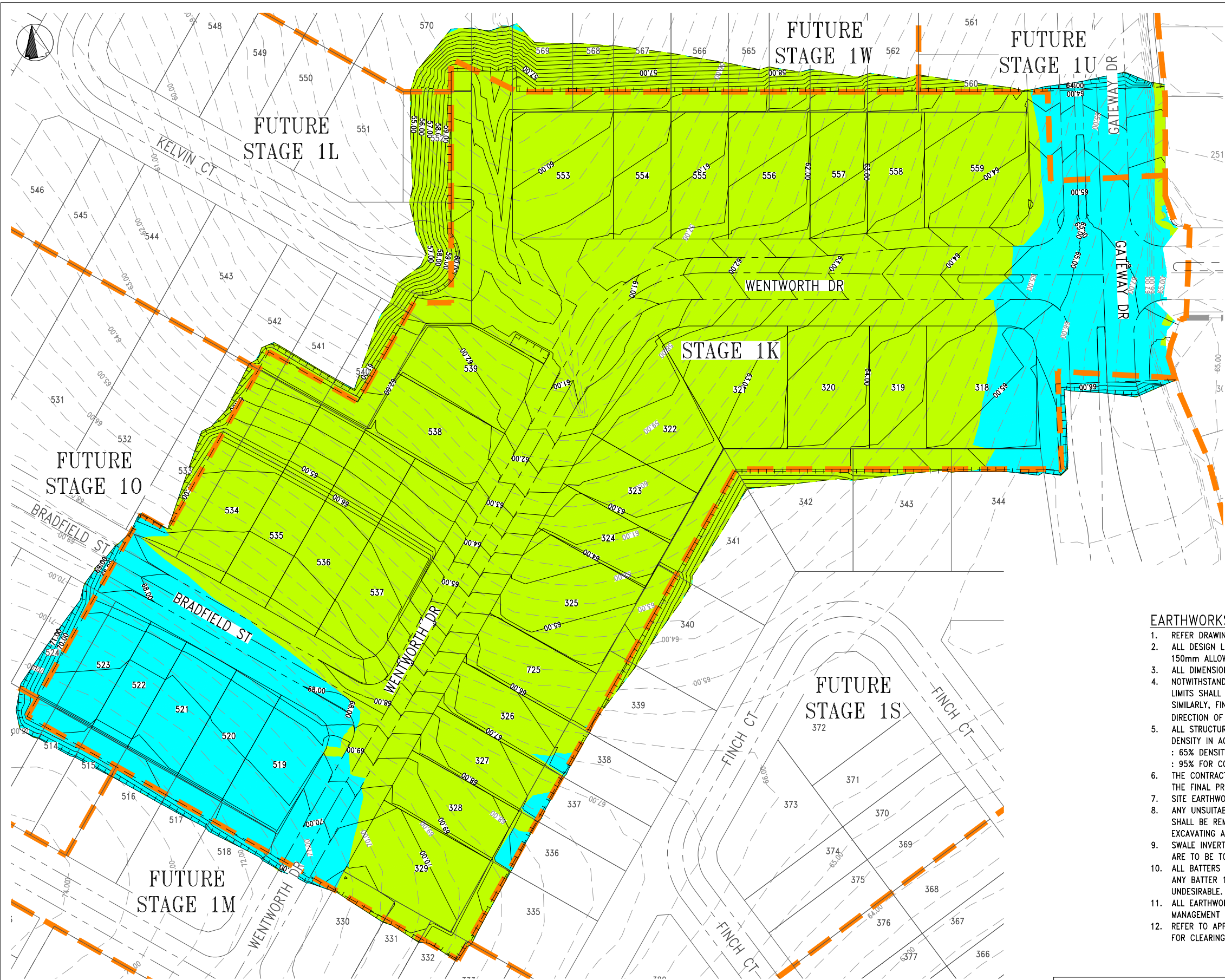
INFORMATION ON THIS PLAN SHOULD BE USED AS A REFERENCE ONLY

INSTRUMENT SERIAL NO.		Trimble S8 Robotic Total Station - 98111912		Trimble R10 RTK GNSS - 5443481374	
CALIBRATION EXP.		28th October 2018		N/A	
00	MN	27/02/18	ISSUED FOR REVIEW		MN D - -
REV	BY	DATE	REVISION RECORD		DRW SVY ASST CHK

Project Title:		Flagstone 1K 1U	
Scale	1:1500	Contours	0.5M
Sheet Size	A3	Sheet	1 of 1

Drawing Set:	SURVEY
Drawing Title:	Contour Map of HandOver Surface
Datum:	Local Site

Plotted	27/2/2018
Date of Survey	06/02/18
Drawing Number:	001
1K 1U Contour Map_00	



LEGEND

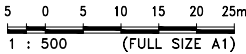
- NOMINAL KERB LINE
- EXISTING KERB LINE
- TOP OF BATTER
- TOE OF BATTER
- 12.0 FINISHED SURFACE CONTOURS
- 12.0 EXISTING SURFACE CONTOURS
- FILL AREAS
- CUT AREAS
- STAGE BDY

- EARTHWORKS NOTES**
- REFER DRAWING 001 FOR GENERAL NOTES.
 - ALL DESIGN LEVELS AND CONTOURS SHOWN ARE FINISHED SURFACE LEVELS AND INCLUDE A 150mm ALLOWANCE FOR TOPSOIL.
 - ALL DIMENSIONS ON THE JOB ARE IN METRES UNLESS SHOWN OTHERWISE.
 - NOTWITHSTANDING THE LIMITS OF CUTTING AND FILLING SHOWN ON THE DRAWINGS, THE ACTUAL LIMITS SHALL BE DETERMINED ON SITE BY THE SUPERINTENDENT DURING CONSTRUCTION. SIMILARLY, FINISHED SURFACE CONTOURS FOR ALLOTMENTS MAY BE ADJUSTED BY A WRITTEN DIRECTION OF THE SUPERINTENDENT DURING CONSTRUCTION (REFER JOB SPECIFICATION).
 - ALL STRUCTURAL FILL MATERIAL PLACED SHALL BE COMPACTED TO THE FOLLOWING MINIMUM DENSITY IN ACCORDANCE WITH THE PROJECT SPECIFICATION
 - : 65% DENSITY INDEX FOR NON-COHESIVE MATERIAL
 - : 95% FOR COHESIVE MATERIALS
 - THE CONTRACTOR IS TO ENSURE THAT NO PONDING OCCURS DURING CONSTRUCTION AND IN THE FINAL PROFILE.
 - SITE EARTHWORKS SHALL GENERALLY BE CARRIED OUT IN ACCORDANCE WITH AS 3798-2007.
 - ANY UNSUITABLE MATERIAL ENCOUNTERED DURING EARTHWORKS AS DEFINED IN AS 3798-2007 SHALL BE REMOVED & REPLACED. THE SUPERINTENDENT SHALL BE NOTIFIED PRIOR TO EXCAVATING ANY UNSUITABLE MATERIAL.
 - SWALE INVERTS SHALL BE GRADED TO DRAIN FREELY TO ASSOCIATED FIELD INLETS, ALL SWALES ARE TO BE TOPSOILED AND TURFED
 - ALL BATTERS BETWEEN 1:4 & 1:6 ARE TO BE FULLY TURFED TO PREVENT SCOUR & EROSION. ANY BATTER 1:4 & 1:3 TO BE HEAVILY LANDSCAPED & ANY BATTERS STEEPER THEN 1:3 ARE UNDESIRABLE.
 - ALL EARTHWORKS DRAWINGS ARE TO BE READ IN CONJUNCTION WITH APPROVED VEGETATION MANAGEMENT PLANS AND APPROVALS.
 - REFER TO APPROVED VEGETATION MANAGEMENT PLANS PREPARED BY SAUNDERS HAVILL GROUP, FOR CLEARING STAGES AND PROCESS.

FIRE ANT NOTE:
UNDER QUEENSLAND LEGISLATION, FIRE ANTS ARE A NOTIFIABLE PEST AND SUSPECTED SIGHTING MUST BE REPORTED TO BIOSECURITY QUEENSLAND. MOVEMENT OF FIRE ANTS IS PROHIBITED UNLESS APPROVED OTHERWISE BY THE DEPARTMENT OF PRIMARY INDUSTRIES. THE CONTRACTOR SHALL ACQUIRE THE NECESSARY PERMITS TO COMPLETE THE WORKS.

LOCAL AUTHORITY: ECONOMIC DEVELOPMENT QUEENSLAND
EDQ FILE REF NO: DEV2012/402
RP DESCRIPTION: LOT 908 RP819216
PARISH/COUNTY: MACLEAN/UNDULLAH
ORIGIN: PM107142 (RL39.078)
HORIZONTAL DATUM: MGA

REV	DESCRIPTION	BY	APP	DATE
A	ORIGINAL ISSUE	LH	JH	31.08.17
B	ISSUED FOR TENDER	LH	JH	21.09.17
C	NOTES AMENDED	LH	JH	30.11.17
D	ROAD NAMES UPDATED	LH	JH	19.01.18



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RPEQ 5023
Approved by, for and on behalf of Bradlees

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QUALITY ASSURED COMPANY
AS/NZS ISO 9001:2008
REG. NO. 233

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Bradlees
Part of the Melinhardt Group

CLIENT
PEET FLAGSTONE CITY PTY. LTD.
TITLE
EARTHWORKS CUT/FILL PLAN

PROJECT
FLAGSTONE CITY - STAGE 1K
ECONOMIC DEVELOPMENT QUEENSLAND
ISSUED FOR CONSTRUCTION
DESIGNED NM
DRAWN LH
APPROVED JH
DATE 31.08.17
SCALE @ A1 1:500
SHEET 1 OF 1
PROJECT No 118227
DRAWING No C1-S1K-CIL-110
REV D

Jan 19, 2018 - 11:22am K:\Projects\118227 - Flagstone Stage 1K\Cad\C1-S1K-CIL-110\CUTFILL.dwg

Appendix B

Test Reports

**ASCT Brisbane South**PO Box 1232 Park Ridge QLD 4125
4/31 Tradelink Road Hillcrest Q 4118**Telephone:** 0437 776 582**E-Mail:** brisbane.south@asct.com.au**Mobile:** 0437 776 582**A.B.N.** 73 193 500 470**Compaction Control Test Report (Nuclear Gauge & MDD)**

Page: 1 of 2

Client: See Civil Pty Ltd
Client Address: 24A Ozone Street, Tweed Heads, NSW, 2486
Project: Flagstone Stage 1K
Component: Lot 329
Lot Number: -Report No: 1
Report Date: 19/02/2018
Project No: 341
Test Request: -
ITP/PCP: N/A**Sample Information & Location**

Sample Number:		11454	11455	11456	11457	11458
Field Test Number:		11454	11455	11456	11457	11458
Date - Field Tested:		13/02/2018	13/02/2018	13/02/2018	13/02/2018	13/02/2018
Time - Field Tested:		8:05	8:10	8:15	8:25	8:30
Material Source / Type:		Onsite - General Fill				
Remarks / Notes:						
Control Line:		-	-	-	-	-
Location/Chainage/Easting:	(m)	E:33625.2	E:33728.8	E:33741.6	E:33740.1	E:33718.8
Position/Offset/Northing:	(m)	N:73287.1	N:73361.2	N:73358.6	N:73384.3	N:73376.5
Level/Layer/R.L.		RL:68.8	RL:63.6	RL:63.2	RL:62.8	RL:62.3
Layer Depth:	(mm)	-	-	-	-	-
Depth Tested:	(mm)	150	150	150	150	150

Field & Laboratory Results

Field Wet Density:	(t/m ³)	2.18	2.20	2.17	2.21	2.20
Field Dry Density:	(t/m ³)	2.05	2.06	2.01	2.04	2.04
Retained Oversize (Wet basis):	(%)	18% on 37.5mm	11% on 37.5mm	7% on 37.5mm	1% on 37.5mm	8% on 37.5mm
Retained Oversize (Dry basis):	(%)	18% on 37.5mm	12% on 37.5mm	8% on 37.5mm	1% on 37.5mm	9% on 37.5mm
Moisture Content Method - AS1289:		.2.1.1 - Oven	.2.1.1 - Oven	.2.1.1 - Oven	.2.1.1 - Oven	.2.1.1 - Oven
Field Moisture Content:	(%)	6.0	7.0	8.0	8.0	8.0
Adjusted Lab OMC:	(%)	8.0	8.5	9.0	10.0	9.0
Fraction Tested:		Passing 37.5mm	Passing 37.5mm	Passing 37.5mm	Passing 37.5mm	Passing 37.5mm
Lab Maximum Dry Density (MDD):	(t/m ³)	2.03	2.03	2.03	2.03	2.02
Adjusted Lab MDD:	(t/m ³)	2.11	2.08	2.06	2.04	2.06
Report & Date of Lab Reference Density Test:		-				

Relative Compaction & Moisture

Moisture Ratio	(%)	78.0	80.0	87.0	82.5	88.5
Moisture Variation	(%)	1.5 Dry of OMC	1.5 Dry of OMC	1.0 Dry of OMC	2.0 Dry of OMC	1.0 Dry of OMC
Density Ratio	(%)	97.5	99.0	97.5	100.0	99.0

Characteristic Values of the Lot.

CV calculations derived from Austroads NTR-09 publication

Specified Moisture Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)	-	-	-	-	-	-
Maximum (%)	-	-	-	-	-	-
Specified Density Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)	95	96.6	7	97.57	1.97	0.484
Maximum (%)	-	-	-	-	-	-

Test Methods Used.

AS 1289 1.2.1 6.4(b) (Disturbed Sampling), AS1289.1.1 (Prep), AS1289.5.8.1 (Nuclear Gauge, Direct Transmission), AS1289.5.4.1 (Dry Density Ratio, Moisture Variation & Ratio), AS1289.5.1.1 (MDD Standard Effort)

Remarks Regarding the Lot.

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Accredited for compliance with ISO/IEC 17025 - Testing. The results of the tests included in this document are traceable to Australian/national standards.

NATA Accreditation number: 19902

Approved By:

A. Lenkeit
Approved Signatory

Workbook: WB100, Rev 3 - 4/10/2017


ASCT Brisbane South

PO Box 1232 Park Ridge QLD 4125

4/31 Tradelink Road Hillcrest Q 4118

Telephone: 0437 776 582

E-Mail: brisbane.south@asct.com.au

Mobile: 0437 776 582

A.B.N. 73 193 500 470

Compaction Control Test Report (Nuclear Gauge & MDD)

Page: 2 of 2

Client: See Civil Pty Ltd
 Client Address: 24A Ozone Street, Tweed Heads, NSW, 2486
 Project: Flagstone Stage 1K
 Component: Lot 329
 Lot Number: -

Report No: 1
 Report Date: 19/02/2018
 Project No: 341
 Test Request: -
 ITP/PCP: N/A

Sample Information & Location

Sample Number:	11459	11460	-	-	-
Field Test Number:	11459	11460	-	-	-
Date - Field Tested:	13/02/2018	13/02/2018	-	-	-
Time - Field Tested:	13:00	13:10	-	-	-
Material Source / Type:	Onsite - General Fill				
Remarks / Notes:					
Control Line:	-	-	-	-	-
Location/Chainage/Easting: (m)	E:33729.8	E:33720.8	-	-	-
Position/Offset/Northing: (m)	N:73422.0	N:73437.2	-	-	-
Level/Layer/R.L.	RL:61.5	RL:60.7	-	-	-
Layer Depth: (mm)	-	-	-	-	-
Depth Tested: (mm)	150	150	-	-	-

Field & Laboratory Results

Field Wet Density: (t/m ³)	1.98	1.99	-	-	-
Field Dry Density: (t/m ³)	1.81	1.80	-	-	-
Retained Oversize (Wet basis): (%)	2% on 37.5mm	2% on 37.5mm	-	-	-
Retained Oversize (Dry basis): (%)	2% on 37.5mm	2% on 37.5mm	-	-	-
Moisture Content Method - AS1289:	.2.1.1 - Oven	.2.1.1 - Oven	-	-	-
Field Moisture Content: (%)	10.0	10.5	-	-	-
Adjusted Lab OMC: (%)	11.5	11.0	-	-	-
Fraction Tested:	Passing 37.5mm	Passing 37.5mm	-	-	-
Lab Maximum Dry Density (MDD): (t/m ³)	1.89	1.88	-	-	-
Adjusted Lab MDD: (t/m ³)	1.90	1.90	-	-	-
Report & Date of Lab Reference Density Test:	-				

Relative Compaction & Moisture

Moisture Ratio (%)	84.5	96.5	-	-	-
Moisture Variation (%)	2.0 Dry of OMC	0.5 Dry of OMC	-	-	-
Density Ratio (%)	95.0	95.0	-	-	-

Characteristic Values of the Lot.

CV calculations derived from Austroads NTR-09 publication

Specified Moisture		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)	-	-	-	-	-	-
Maximum (%)	-	-	-	-	-	-
Specified Compaction		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)	95	96.6	7	97.57	1.97	0.484
Maximum (%)	-	-	-	-	-	-

Test Methods Used.

AS 1289 1.2.1 6.4(b) (Disturbed Sampling), AS1289.1.1 (Prep), AS1289.5.8.1 (Nuclear Gauge, Direct Transmission), AS1289.5.4.1 (Dry Density Ratio, Moisture Variation & Ratio), AS1289.5.1.1 (MDD Standard Effort)

Remarks Regarding the Lot.


Accredited for compliance with ISO/IEC 17025 - Testing. The results of the tests included in this document are traceable to Australian/national standards.

NATA Accreditation number: 19902

Approved By:

 A. Lenkeit
 Approved Signatory

Workbook: WB100, Rev 3 - 4/10/2017

**ASCT Brisbane South**PO Box 1232 Park Ridge QLD 4125
4/31 Tradelink Road Hillcrest Q 4118**Telephone:** 0437 776 582**E-Mail:** brisbane.south@asct.com.au**Mobile:** 0437 776 582**A.B.N.** 73 193 500 470**Compaction Control Test Report (Nuclear Gauge & Hilf)**

Page: 1 of 2

Client: See Civil Pty Ltd
Client Address: 24A Ozone Street, Tweed Heads, NSW, 2486
Project: Flagstone Stage 1K
Component: Level 1 Fill - Stage 1K
Lot Number: -Report No: 2
Report Date: 20/02/2018
Project No: 341
Test Request: -
ITP/PCP: N/A**Sample Information & Location**

Sample Number:	11516	11517	11518	11519	11520
Field Test Number:	11516	11517	11518	11519	11520
Date - Field Tested:	15/02/2018	15/02/2018	15/02/2018	15/02/2018	15/02/2018
Time - Field Tested:	14:00	14:10	10:00	10:05	8:05
Material Source / Type:	Onsite - General Fill				
Remarks / Notes:					
Control Line:	-	-	-	-	Wentworth Drive
Location/Chainage/Easting: (m)	E:33652.1	E:33648.2	E:33638.2	E:33648.6	CH:68
Position/Offset/Northing: (m)	N:73431.9	N:73417.9	N:73404.5	N:73424.4	+1.0
Level/Layer/R.L.	RL: 57.0	RL: 58.1	RL: 58.9	RL: 57.1	0.5m below Subgrade
Layer Depth: (mm)	-	-	-	-	-
Depth Tested: (mm)	150	150	150	150	150

Field & Laboratory Results

Field Wet Density: (t/m ³)	2.13	2.01	2.08	2.08	2.26
Field Dry Density: (t/m ³)	1.95	1.82	1.90	1.89	2.05
Retained Oversize (Wet basis): (%)	2% on 37.5mm	1% on 37.5mm	3% on 37.5mm	2% on 37.5mm	14% on 37.5mm
Material Description:	-	-	-	-	-
Moisture Content Method:	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven
Field Moisture Content: (%)	9.5	10.5	9.5	10.0	10.0
Adjusted Lab OMC: (%)	11.8	12.6	10.9	11.5	11.9
Fraction Tested:	Passing 37.5mm	Passing 37.5mm	Passing 37.5mm	Passing 37.5mm	Passing 37.5mm
Lab Max Converted Wet Density: (t/m ³)	2.16	2.07	2.06	2.06	2.20
Adjusted Lab Max CWD: (t/m ³)	2.16	2.07	2.07	2.07	2.23
Compactive Effort:	Standard	Standard	Standard	Standard	Standard

Relative Compaction & Moisture

Moisture Variation (%)	2.0% Drier than OMC	2.0% Drier than OMC	1% Drier than OMC	1.5% Drier than OMC	1.5% Drier than OMC
Moisture Ratio (%)	81.5	84.0	89.0	85.5	85.0
Density Ratio (%)	98.5	97.0	100.5	100.5	101.5

Specified Density Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)	95	98.8	6	99.58	1.57	0.523
Maximum (%)		-	-	-	-	-
Specified Moisture Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)		-	-	-	-	-
Maximum (%)		-	-	-	-	-

Test Methods Used.

AS1289.1.1 (Prep), AS1289.5.4.1 - (Dry Density Ratio, Moisture Variation & Ratio), AS1289.5.7.1 - (Hilf Density/Moisture Ratio (Rapid Method)), AS1289.5.8.1 (Nuclear Gauge, Direct Transmission), AS1289.1.4.2 (Selection of Test Site - Stratified Random), AS 1289 1.2.1 6.4(b), CV calculations derived from Austroads NTR-09 publication

Remarks Regarding the Lot.

Accredited for compliance with ISO/IEC 17025 - Testing. The results of the tests included in this document are traceable to Australian/national standards.

NATA Accreditation number: 19902

Approved By:

A. Lenkeit
Approved Signatory

Workbook: WB101, Rev 2 - 20/09/2017



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A.B.N. 73 193 500 470

Compaction Control Test Report (Nuclear Gauge & Hilf)

Page: 2 of 2

Client: See Civil Pty Ltd
 Client Address: 24A Ozone Street, Tweed Heads, NSW, 2486
 Project: Flagstone Stage 1K
 Component: Level 1 Fill - Stage 1K
 Lot Number: -

Report No: 2
 Report Date: 20/02/2018
 Project No: 341
 Test Request: -
 ITP/PCP: N/A

Sample Information & Location

Sample Number:	11521	-	-	-	-
Field Test Number:	11521	-	-	-	-
Date - Field Tested:	15/02/2018	-	-	-	-
Time - Field Tested:	8:10	-	-	-	-
Material Source / Type:	Onsite - General Fill				
Remarks / Notes:					
Control Line:	Wentworth Drive	-	-	-	-
Location/Chainage/Easting: (m)	CH:162	-	-	-	-
Position/Offset/Northing: (m)	-1.5	-	-	-	-
Level/Layer/R.L.	0.25 below Subgrade	-	-	-	-
Layer Depth: (mm)	-	-	-	-	-
Depth Tested: (mm)	150	-	-	-	-

Field & Laboratory Results

Field Wet Density: (t/m ³)	2.06	-	-	-	-
Field Dry Density: (t/m ³)	1.89	-	-	-	-
Retained Oversize (Wet basis): (%)	1% on 37.5mm	-	-	-	-
Material Description:	-	-	-	-	-
Moisture Content Method:	AS1289.2.1.1 - Oven	-	-	-	-
Field Moisture Content: (%)	9.0	-	-	-	-
Adjusted Lab OMC: (%)	11.0	-	-	-	-
Fraction Tested:	Passing 37.5mm	-	-	-	-
Lab Max Converted Wet Density: (t/m ³)	2.07	-	-	-	-
Adjusted Lab Max CWD: (t/m ³)	2.07	-	-	-	-
Compactive Effort:	Standard	-	-	-	-

Relative Compaction & Moisture

Moisture Variation (%)	2% Dryer than OMC	-	-	-	-
Moisture Ratio (%)	82.0	-	-	-	-
Density Ratio (%)	99.5	-	-	-	-

Specified Density Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)	95	98.8	6	99.58	1.57	0.523
Maximum (%)		-	-	-	-	-
Specified Moisture Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)		-	-	-	-	-
Maximum (%)		-	-	-	-	-

Test Methods Used.

AS1289.1.1 (Prep), AS1289.5.4.1 - (Dry Density Ratio, Moisture Variation & Ratio), AS1289.5.7.1 - (Hilf Density/Moisture Ratio (Rapid Method)), AS1289.5.8.1 (Nuclear Gauge, Direct Transmission), AS1289.1.4.2 (Selection of Test Site - Stratified Random), AS 1289 1.2.1 6.4(b), CV calculations derived from Austroads NTR-09 publication

Remarks Regarding the Lot.



Accredited for compliance with ISO/IEC 17025 - Testing. The results of the tests included in this document are traceable to Australian/national standards.

NATA Accreditation number: 19902

**ASCT Brisbane South**PO Box 1232 Park Ridge QLD 4125
4/31 Tradelink Road Hillcrest Q 4118**Telephone:** 0437 776 582**E-Mail:** brisbane.south@asct.com.au**Mobile:** 0437 776 582**A.B.N.** 73 193 500 470**Compaction Control Test Report (Nuclear Gauge & Hilf)**

Page: 1 of 1

Client: See Civil Pty Ltd
Client Address: 24A Ozone Street, Tweed Heads, NSW, 2486
Project: Flagstone Stage 1K
Component: Level 1 - Stage 1K
Lot Number: -Report No: 4
Report Date: 21/02/2018
Project No: 341
Test Request: -
ITP/PCP: N/A**Sample Information & Location**

Sample Number:	11581	11582	11583	11584	-
Field Test Number:	11581	11582	11583	11584	-
Date - Field Tested:	16/02/2018	16/02/2018	16/02/2018	16/02/2018	-
Time - Field Tested:	10:30	10:35	10:45	10:50	-
Material Source / Type:	Onsite - General Fill				
Remarks / Notes:					
Control Line:	Western edge of boundary	Western edge of boundary	Western edge of boundary	Western edge of boundary	
Location/Chainage/Easting: (m)	E: 33655.3	E: 33635.1	E: 33666.8	E: 33643.2	-
Position/Offset/Northing: (m)	N: 73440.0	N: 73404.4	N: 73459.1	N: 73396.9	-
Level/Layer/R.L.	RL: 57.3	RL: 60.5	RL: 57.2	RL: 61.1	-
Layer Depth: (mm)	-	-	-	-	-
Depth Tested: (mm)	150	150	150	150	-

Field & Laboratory Results

Field Wet Density: (t/m ³)	2.03	2.04	2.12	2.14	-
Field Dry Density: (t/m ³)	1.84	1.83	1.93	1.94	-
Retained Oversize (Wet basis): (%)	7% on 19.0mm	5% on 19.0mm	2% on 19.0mm	2% on 19.0mm	-
Material Description:	-	-	-	-	-
Moisture Content Method:	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	-
Field Moisture Content: (%)	10.0	11.0	10.0	10.5	-
Adjusted Lab OMC: (%)	9.4	13.2	11.8	12.3	-
Fraction Tested:	Passing 19.0mm	Passing 19.0mm	Passing 19.0mm	Passing 19.0mm	-
Lab Max Converted Wet Density: (t/m ³)	2.06	2.04	2.20	2.20	-
Adjusted Lab Max CWD: (t/m ³)	2.08	2.05	2.20	2.20	-
Compactive Effort:	Standard	Standard	Standard	Standard	-

Relative Compaction & Moisture

Moisture Variation (%)	0.5% Wetter than OMC	2.0% Drier than OMC	2% Drier than OMC	2% Drier than OMC	-
Moisture Ratio (%)	108.0	84.0	84.0	84.0	-
Density Ratio (%)	97.5	99.0	96.5	97.5	-

Specified Density Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)	95	97.0	4	97.68	1.12	0.640
Maximum (%)		-	-	-	-	-
Specified Moisture Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)		-	-	-	-	-
Maximum (%)		-	-	-	-	-

Test Methods Used.

AS1289.1.1 (Prep), AS1289.5.4.1 - (Dry Density Ratio, Moisture Variation & Ratio), AS1289.5.7.1 - (Hilf Density/Moisture Ratio (Rapid Method)), AS1289.5.8.1 (Nuclear Gauge, Direct Transmission), AS1289.1.4.2 (Selection of Test Site - Stratified Random), AS 1289 1.2.1 6.4(b), CV calculations derived from Austroads NTR-09 publication

Remarks Regarding the Lot.

Accredited for compliance with ISO/IEC 17025 - Testing. The results of the tests included in this document are traceable to Australian/national standards.

NATA Accreditation number: 19902

Approved By:

A. Lenkeit
Approved Signatory

Workbook: WB101, Rev 2 - 20/09/2017



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Compaction Control Test Report (Nuclear Gauge & Hilf)

Page: 1 of 1

Client:	See Civil Pty Ltd	Report No:	5
Client Address:	24A Ozone Street, Tweed Heads, NSW, 2486	Report Date:	22/02/2018
Project:	Flagstone Stage 1K	Project No:	341
Component:	Level 1 - Stage 1K	Test Request:	-
Lot Number:	-	ITP/PCP:	N/A

Sample Information & Location

Sample Number:		11585	11586	11587	-	-
Field Test Number:		11585	11586	11587	-	-
Date - Field Tested:		17/02/2018	17/02/2018	17/02/2018	-	-
Time - Field Tested:		9:00	9:10	9:30	-	-
Material Source / Type:		Onsite - General Fill				
Remarks / Notes:						
Control Line:		Western edge of boundary	Western edge of boundary	Western edge of boundary		
Location/Chainage/Easting:	(m)	E: 33623.4	E: 33650.4	E: 33665.5	-	-
Position/Offset/Northing:	(m)	N: 73383.8	N: 73412.3	N: 73460.1	-	-
Level/Layer/R.L.		RL: 63.1	RL: 60.8	RL: 58.4	-	-
Layer Depth:	(mm)	-	-	-	-	-
Depth Tested:	(mm)	150	150	150	-	-

Field & Laboratory Results

Field Wet Density:	(t/m ³)	2.14	2.18	2.21	-	-
Field Dry Density:	(t/m ³)	1.95	1.95	1.98	-	-
Retained Oversize (Wet basis):	(%)	2% on 37.5mm	3% on 37.5mm	3% on 37.5mm	-	-
Material Description:		Sandy Gravelly Clay	Sandy Gravelly Clay	Sandy Gravelly Clay	-	-
Moisture Content Method:		AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	-	-
Field Moisture Content:	(%)	10.0	12.0	11.0	-	-
Adjusted Lab OMC:	(%)	10.5	11.2	11.8	-	-
Fraction Tested:		Passing 37.5mm	Passing 37.5mm	Passing 37.5mm	-	-
Lab Max Converted Wet Density:	(t/m ³)	2.15	2.15	2.16	-	-
Adjusted Lab Max CWD:	(t/m ³)	2.16	2.15	2.17	-	-
Compactive Effort:		Standard	Standard	Standard	-	-

Relative Compaction & Moisture

Moisture Variation	(%)	0.5% Drier than OMC	0.5% Wetter than OMC	0.5% Drier than OMC	-	-
Moisture Ratio	(%)	96.0	106.0	95.5	-	-
Density Ratio	(%)	99.5	101.0	101.5	-	-

Specified Density Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)	95	99.9	3	100.77	1.21	0.739
Maximum (%)		-	-	-	-	-
Specified Moisture Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)		-	-	-	-	-
Maximum (%)		-	-	-	-	-

Test Methods Used.

AS1289.1.1 (Prep), AS1289.5.4.1 - (Dry Density Ratio, Moisture Variation & Ratio), AS1289.5.7.1 - (Hilf Density/Moisture Ratio (Rapid Method)), AS1289.5.8.1 (Nuclear Gauge, Direct Transmission), AS1289.1.4.2 (Selection of Test Site - Stratified Random), AS 1289 1.2.1 6.4(b), CV calculations derived from Austroads NTR-09 publication

Remarks Regarding the Lot.



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NATA Accreditation number: 19902

Approved By:

A. Lenkeit
 Approved Signatory

Workbook: WB101, Rev 2 - 20/09/2017



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Compaction Control Test Report (Nuclear Gauge & Hilf)

Page: 1 of 1

Client:	See Civil Pty Ltd	Report No:	10
Client Address:	24A Ozone Street, Tweed Heads, NSW, 2486	Report Date:	23/02/2018
Project:	Flagstone Stage 1K	Project No:	341
Component:	Stage 1K - Level 1	Test Request:	-
Lot Number:	-	ITP/PCP:	N/A

Sample Information & Location

Sample Number:		11615	-	-	-	-
Field Test Number:		11615	-	-	-	-
Date - Field Tested:		19/02/2018	-	-	-	-
Time - Field Tested:		10:00	-	-	-	-
Material Source / Type:		Onsite - General Fill				
Remarks / Notes:						
Control Line:		-				
Location/Chainage/Easting:	(m)	N:73360.4	-	-	-	-
Position/Offset/Northing:	(m)	E: 33618.2	-	-	-	-
Level/Layer/R.L.		RL: 67.0	-	-	-	-
Layer Depth:	(mm)	-	-	-	-	-
Depth Tested:	(mm)	150	-	-	-	-

Field & Laboratory Results

Field Wet Density:	(t/m ³)	2.14	-	-	-	-
Field Dry Density:	(t/m ³)	1.92	-	-	-	-
Retained Oversize (Wet basis):	(%)	12% on 19.0mm	-	-	-	-
Material Description:		-	-	-	-	-
Moisture Content Method:		AS1289.2.1.1 - Oven	-	-	-	-
Field Moisture Content:	(%)	11.0	-	-	-	-
Adjusted Lab OMC:	(%)	11.7	-	-	-	-
Fraction Tested:		Passing 19.0mm	-	-	-	-
Lab Max Converted Wet Density:	(t/m ³)	2.18	-	-	-	-
Adjusted Lab Max CWD:	(t/m ³)	2.21	-	-	-	-
Compactive Effort:		Standard	-	-	-	-

Relative Compaction & Moisture

Moisture Variation	(%)	0.5% Drier than OMC	-	-	-	-
Moisture Ratio	(%)	96.0	-	-	-	-
Density Ratio	(%)	96.5	-	-	-	-

Specified Density Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)		-	-	-	-	-
Maximum (%)		-	-	-	-	-
Specified Moisture Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)		-	-	-	-	-
Maximum (%)		-	-	-	-	-

Test Methods Used.

AS1289.1.1 (Prep), AS1289.5.4.1 - (Dry Density Ratio, Moisture Variation & Ratio), AS1289.5.7.1 - (Hilf Density/Moisture Ratio (Rapid Method)), AS1289.5.8.1 (Nuclear Gauge, Direct Transmission), AS1289.1.4.2 (Selection of Test Site - Stratified Random), AS 1289 1.2.1 6.4(b), CV calculations derived from Austroads NTR-09 publication

Remarks Regarding the Lot.



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Compaction Control Test Report (Nuclear Gauge & Hilf)

Page: 1 of 1

Client:	See Civil Pty Ltd	Report No:	13
Client Address:	24A Ozone Street, Tweed Heads, NSW, 2486	Report Date:	28/02/2018
Project:	Flagstone Stage 1K	Project No:	341
Component:	Level 1 - Lot Fill	Test Request:	-
Lot Number:	-	ITP/PCP:	N/A

Sample Information & Location

Sample Number:		11717	11718	-	-	-
Field Test Number:		11717	11718	-	-	-
Date - Field Tested:		21/02/2018	21/02/2018	-	-	-
Time - Field Tested:		-	-	-	-	-
Material Source / Type:	Onsite - General Fill					
Remarks / Notes:						
Control Line:		-	-			
Location/Chainage/Easting:	(m)	E:33593.9	E:33598.6	-	-	-
Position/Offset/Northing:	(m)	N: 73380.1	N: 73376.4	-	-	-
Level/Layer/R.L.		RL:65.1	RL:65.6	-	-	-
Layer Depth:	(mm)	150	150	-	-	-
Depth Tested:	(mm)	150	150	-	-	-

Field & Laboratory Results

Field Wet Density:	(t/m ³)	1.95	2.06	-	-	-
Field Dry Density:	(t/m ³)	1.76	1.85	-	-	-
Retained Oversize (Wet basis):	(%)	3% on 37.5mm	1% on 37.5mm	-	-	-
Material Description:		-	-	-	-	-
Moisture Content Method:		AS1289.2.1.1 - Oven	AS1289.2.1.1 - Oven	-	-	-
Field Moisture Content:	(%)	11.0	11.5	-	-	-
Adjusted Lab OMC:	(%)	12.3	13.6	-	-	-
Fraction Tested:		Passing 37.5mm	Passing 37.5mm	-	-	-
Lab Max Converted Wet Density:	(t/m ³)	2.02	2.01	-	-	-
Adjusted Lab Max CWD:	(t/m ³)	2.03	2.01	-	-	-
Compactive Effort:		Standard	Standard	-	-	-

Relative Compaction & Moisture

Moisture Variation	(%)	1.5% Dryer than OMC	2.0% Dryer than OMC	-	-	-
Moisture Ratio	(%)	87.5	86.0	-	-	-
Density Ratio	(%)	96.0	102.5	-	-	-

Specified Density Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)	95	95.2	2	99.25	4.45	0.905
Maximum (%)		-	-	-	-	-
Specified Moisture Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)		-	-	-	-	-
Maximum (%)		-	-	-	-	-

Test Methods Used.

AS1289.1.1 (Prep), AS1289.5.4.1 - (Dry Density Ratio, Moisture Variation & Ratio), AS1289.5.7.1 - (Hilf Density/Moisture Ratio (Rapid Method)), AS1289.5.8.1 (Nuclear Gauge, Direct Transmission), AS1289.1.4.2 (Selection of Test Site - Stratified Random), AS 1289 1.2.1 6.4(b), CV calculations derived from Austroads NTR-09 publication

Remarks Regarding the Lot.



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Approved Signatory

Workbook: WB101, Rev 2 - 20/09/2017


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Compaction Control Test Report (Nuclear Gauge & Hilf)

Page: 1 of 1

Client:	See Civil Pty Ltd	Report No:	14
Client Address:	24A Ozone Street, Tweed Heads, NSW, 2486	Report Date:	28/02/2018
Project:	Flagstone Stage 1K	Project No:	341
Component:	Level 1 - Fill	Test Request:	-
Lot Number:	-	ITP/PCP:	N/A

Sample Information & Location

Sample Number:		11735	-	-	-	-
Field Test Number:		11735	-	-	-	-
Date - Field Tested:		22.02.2018	-	-	-	-
Time - Field Tested:		11:00	-	-	-	-
Material Source / Type:		Onsite - Level 1 Fill				
Remarks / Notes:						
Control Line:		Fill Area				
Location/Chainage/Easting:	(m)	E:33721.6	-	-	-	-
Position/Offset/Northing:	(m)	N:73345.0	-	-	-	-
Level/Layer/R.L.		RL:63.2	-	-	-	-
Layer Depth:	(mm)	-	-	-	-	-
Depth Tested:	(mm)	150	-	-	-	-

Field & Laboratory Results

Field Wet Density:	(t/m ³)	2.14	-	-	-	-
Field Dry Density:	(t/m ³)	1.98	-	-	-	-
Retained Oversize (Wet basis):	(%)	13% on 19.0mm	-	-	-	-
Material Description:		Brown Sandy Clay with Traces Of Gravel	-	-	-	-
Moisture Content Method:		AS1289.2.1.1 - Oven	-	-	-	-
Field Moisture Content:	(%)	8.5	-	-	-	-
Adjusted Lab OMC:	(%)	8.3	-	-	-	-
Fraction Tested:		Passing 19.0mm	-	-	-	-
Lab Max Converted Wet Density:	(t/m ³)	2.19	-	-	-	-
Adjusted Lab Max CWD:	(t/m ³)	2.21	-	-	-	-
Compactive Effort:		Standard	-	-	-	-

Relative Compaction & Moisture

Moisture Variation	(%)	At OMC	-	-	-	-
Moisture Ratio	(%)	100.0	-	-	-	-
Density Ratio	(%)	96.5	-	-	-	-

Specified Density Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)		-	-	-	-	-
Maximum (%)		-	-	-	-	-
Specified Moisture Ratio		Characteristic Value	Number of Tests	Mean	Standard Deviation	Constant k
Minimum (%)		-	-	-	-	-
Maximum (%)		-	-	-	-	-

Test Methods Used.

AS1289.1.1 (Prep), AS1289.5.4.1 - (Dry Density Ratio, Moisture Variation & Ratio), AS1289.5.7.1 - (Hilf Density/Moisture Ratio (Rapid Method)), AS1289.5.8.1 (Nuclear Gauge, Direct Transmission), AS1289.1.4.2 (Selection of Test Site - Stratified Random), AS 1289 1.2.1 6.4(b), CV calculations derived from Austroads NTR-09 publication

Remarks Regarding the Lot.

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NATA Accreditation number: 19902

Approved By:

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Approved Signatory

Workbook: WB101, Rev 2 - 20/09/2017

Appendix C

Individual Lot Reports



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Email: brisbane.south@asct.com.au

Web: www.australiansoilconcretetesting.com.au

21st May 2018

Ref No: 341_SEE Civil_Level 1_Lot 318

SEE Civil Pty Ltd
108 Siganto Drive
Helensvale QLD 4210

CERTIFICATE OF CONTROLLED LEVEL 1 FILLING

LOT 318 – FLAGSTONE CITY STAGE 1K

Australian Soil and Concrete Testing was commissioned by Civcorp Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 *'Guidelines on earthworks for commercial and residential developments'*.

Fill was placed on the allotment between 13/02/18 and 22/02/18.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **318** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 *'Residential Slabs & Footings'*.

Full details of the inspection and testing conducted is included in our report ref no: **341_SEE Civil_Level 1**
Dated 21st May 2018.

Please do not hesitate to contact me if you have any queries.

Yours faithfully

Jason McKenna
Laboratory Manager

ASCT Brisbane South
jason.mckenna@asct.com.au



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21st May 2018

Ref No: 341_SEE Civil_Level 1_Lot 319

SEE Civil Pty Ltd
108 Siganto Drive
Helensvale QLD 4210

CERTIFICATE OF CONTROLLED LEVEL 1 FILLING

LOT 319 – FLAGSTONE CITY STAGE 1K

Australian Soil and Concrete Testing was commissioned by Civcorp Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 *'Guidelines on earthworks for commercial and residential developments'*.

Fill was placed on the allotment between 13/02/18 and 22/02/18.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **319** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 *'Residential Slabs & Footings'*.

Full details of the inspection and testing conducted is included in our report ref no: **341_SEE Civil_Level 1**
Dated 21st May 2018.

Please do not hesitate to contact me if you have any queries.

Yours faithfully

Jason Mckenna
Laboratory Manager

ASCT Brisbane South
jason.mckenna@asct.com.au



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Web: www.australiansoilconcretetesting.com.au

21st May 2018

Ref No: 341_SEE Civil_Level 1_Lot 320

SEE Civil Pty Ltd
108 Siganto Drive
Helensvale QLD 4210

CERTIFICATE OF CONTROLLED LEVEL 1 FILLING

LOT 320 – FLAGSTONE CITY STAGE 1K

Australian Soil and Concrete Testing was commissioned by Civcorp Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 *'Guidelines on earthworks for commercial and residential developments'*.

Fill was placed on the allotment between 13/02/18 and 22/02/18.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **320** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 *'Residential Slabs & Footings'*.

Full details of the inspection and testing conducted is included in our report ref no: **341_SEE Civil_Level 1**
Dated 21st May 2018.

Please do not hesitate to contact me if you have any queries.

Yours faithfully

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21st May 2018

Ref No: 341_SEE Civil_Level 1_Lot 321

SEE Civil Pty Ltd
108 Siganto Drive
Helensvale QLD 4210

CERTIFICATE OF CONTROLLED LEVEL 1 FILLING

LOT 321 – FLAGSTONE CITY STAGE 1K

Australian Soil and Concrete Testing was commissioned by Civcorp Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 *'Guidelines on earthworks for commercial and residential developments'*.

Fill was placed on the allotment between 13/02/18 and 22/02/18.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **321** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 *'Residential Slabs & Footings'*.

Full details of the inspection and testing conducted is included in our report ref no: **341_SEE Civil_Level 1**
Dated 21st May 2018.

Please do not hesitate to contact me if you have any queries.

Yours faithfully

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21st May 2018

Ref No: 341_SEE Civil_Level 1_Lot 322

SEE Civil Pty Ltd
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CERTIFICATE OF CONTROLLED LEVEL 1 FILLING

LOT 322 – FLAGSTONE CITY STAGE 1K

Australian Soil and Concrete Testing was commissioned by Civcorp Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 *'Guidelines on earthworks for commercial and residential developments'*.

Fill was placed on the allotment between 13/02/18 and 22/02/18.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **322** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 *'Residential Slabs & Footings'*.

Full details of the inspection and testing conducted is included in our report ref no: **341_SEE Civil_Level 1**
Dated 21st May 2018.

Please do not hesitate to contact me if you have any queries.

Yours faithfully

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21st May 2018

Ref No: 341_SEE Civil_Level 1_Lot 323

SEE Civil Pty Ltd
108 Siganto Drive
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CERTIFICATE OF CONTROLLED LEVEL 1 FILLING

LOT 323 – FLAGSTONE CITY STAGE 1K

Australian Soil and Concrete Testing was commissioned by Civcorp Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 *'Guidelines on earthworks for commercial and residential developments'*.

Fill was placed on the allotment between 13/02/18 and 22/02/18.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **323** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 *'Residential Slabs & Footings'*.

Full details of the inspection and testing conducted is included in our report ref no: **341_SEE Civil_Level 1**
Dated 21st May 2018.

Please do not hesitate to contact me if you have any queries.

Yours faithfully

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21st May 2018

Ref No: 341_SEE Civil_Level 1_Lot 324

SEE Civil Pty Ltd
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CERTIFICATE OF CONTROLLED LEVEL 1 FILLING

LOT 324 – FLAGSTONE CITY STAGE 1K

Australian Soil and Concrete Testing was commissioned by Civcorp Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 *'Guidelines on earthworks for commercial and residential developments'*.

Fill was placed on the allotment between 13/02/18 and 22/02/18.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **324** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 *'Residential Slabs & Footings'*.

Full details of the inspection and testing conducted is included in our report ref no: **341_SEE Civil_Level 1**
Dated 21st May 2018.

Please do not hesitate to contact me if you have any queries.

Yours faithfully

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21st May 2018

Ref No: 341_SEE Civil_Level 1_Lot 325

SEE Civil Pty Ltd
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CERTIFICATE OF CONTROLLED LEVEL 1 FILLING

LOT 325 – FLAGSTONE CITY STAGE 1K

Australian Soil and Concrete Testing was commissioned by Civcorp Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 *'Guidelines on earthworks for commercial and residential developments'*.

Fill was placed on the allotment between 13/02/18 and 22/02/18.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **325** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 *'Residential Slabs & Footings'*.

Full details of the inspection and testing conducted is included in our report ref no: **341_SEE Civil_Level 1**
Dated 21st May 2018.

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21st May 2018

Ref No: 341_SEE Civil_Level 1_Lot 326

SEE Civil Pty Ltd
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CERTIFICATE OF CONTROLLED LEVEL 1 FILLING

LOT 326 – FLAGSTONE CITY STAGE 1K

Australian Soil and Concrete Testing was commissioned by Civcorp Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 *'Guidelines on earthworks for commercial and residential developments'*.

Fill was placed on the allotment between 13/02/18 and 22/02/18.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **326** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 *'Residential Slabs & Footings'*.

Full details of the inspection and testing conducted is included in our report ref no: **341_SEE Civil_Level 1**
Dated 21st May 2018.

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21st May 2018

Ref No: 341_SEE Civil_Level 1_Lot 327

SEE Civil Pty Ltd
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Helensvale QLD 4210

CERTIFICATE OF CONTROLLED LEVEL 1 FILLING

LOT 327 – FLAGSTONE CITY STAGE 1K

Australian Soil and Concrete Testing was commissioned by Civcorp Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 *'Guidelines on earthworks for commercial and residential developments'*.

Fill was placed on the allotment between 13/02/18 and 22/02/18.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **327** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 *'Residential Slabs & Footings'*.

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21st May 2018

Ref No: 341_SEE Civil_Level 1_Lot 328

SEE Civil Pty Ltd
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CERTIFICATE OF CONTROLLED LEVEL 1 FILLING

LOT 328 – FLAGSTONE CITY STAGE 1K

Australian Soil and Concrete Testing was commissioned by Civcorp Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 *'Guidelines on earthworks for commercial and residential developments'*.

Fill was placed on the allotment between 13/02/18 and 22/02/18.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **328** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 *'Residential Slabs & Footings'*.

Full details of the inspection and testing conducted is included in our report ref no: **341_SEE Civil_Level 1**
Dated 21st May 2018.

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21st May 2018

Ref No: 341_SEE Civil_Level 1_Lot 329

SEE Civil Pty Ltd
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CERTIFICATE OF CONTROLLED LEVEL 1 FILLING

LOT 329 – FLAGSTONE CITY STAGE 1K

Australian Soil and Concrete Testing was commissioned by Civcorp Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 *'Guidelines on earthworks for commercial and residential developments'*.

Fill was placed on the allotment between 13/02/18 and 22/02/18.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **329** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 *'Residential Slabs & Footings'*.

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21st May 2018

Ref No: 341_SEE Civil_Level 1_Lot 534

SEE Civil Pty Ltd
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CERTIFICATE OF CONTROLLED LEVEL 1 FILLING

LOT 534 – FLAGSTONE CITY STAGE 1K

Australian Soil and Concrete Testing was commissioned by Civcorp Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 *'Guidelines on earthworks for commercial and residential developments'*.

Fill was placed on the allotment between 13/02/18 and 22/02/18.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **534** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 *'Residential Slabs & Footings'*.

Full details of the inspection and testing conducted is included in our report ref no: **341_SEE Civil_Level 1**
Dated 21st May 2018.

Please do not hesitate to contact me if you have any queries.

Yours faithfully

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21st May 2018

Ref No: 341_SEE Civil_Level 1_Lot 535

SEE Civil Pty Ltd
108 Siganto Drive
Helensvale QLD 4210

CERTIFICATE OF CONTROLLED LEVEL 1 FILLING

LOT 535 – FLAGSTONE CITY STAGE 1K

Australian Soil and Concrete Testing was commissioned by Civcorp Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 *'Guidelines on earthworks for commercial and residential developments'*.

Fill was placed on the allotment between 13/02/18 and 22/02/18.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **535** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 *'Residential Slabs & Footings'*.

Full details of the inspection and testing conducted is included in our report ref no: **341_SEE Civil_Level 1**
Dated 21st May 2018.

Please do not hesitate to contact me if you have any queries.

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21st May 2018

Ref No: 341_SEE Civil_Level 1_Lot 536

SEE Civil Pty Ltd
108 Siganto Drive
Helensvale QLD 4210

CERTIFICATE OF CONTROLLED LEVEL 1 FILLING

LOT 536 – FLAGSTONE CITY STAGE 1K

Australian Soil and Concrete Testing was commissioned by Civcorp Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 *'Guidelines on earthworks for commercial and residential developments'*.

Fill was placed on the allotment between 13/02/18 and 22/02/18.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **536** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 *'Residential Slabs & Footings'*.

Full details of the inspection and testing conducted is included in our report ref no: **341_SEE Civil_Level 1**
Dated 21st May 2018.

Please do not hesitate to contact me if you have any queries.

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21st May 2018

Ref No: 341_SEE Civil_Level 1_Lot 537

SEE Civil Pty Ltd
108 Siganto Drive
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CERTIFICATE OF CONTROLLED LEVEL 1 FILLING

LOT 537 – FLAGSTONE CITY STAGE 1K

Australian Soil and Concrete Testing was commissioned by Civcorp Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 *'Guidelines on earthworks for commercial and residential developments'*.

Fill was placed on the allotment between 13/02/18 and 22/02/18.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **537** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 *'Residential Slabs & Footings'*.

Full details of the inspection and testing conducted is included in our report ref no: **341_SEE Civil_Level 1**
Dated 21st May 2018.

Please do not hesitate to contact me if you have any queries.

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21st May 2018

Ref No: 341_SEE Civil_Level 1_Lot 538

SEE Civil Pty Ltd
108 Siganto Drive
Helensvale QLD 4210

CERTIFICATE OF CONTROLLED LEVEL 1 FILLING

LOT 538 – FLAGSTONE CITY STAGE 1K

Australian Soil and Concrete Testing was commissioned by Civcorp Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 *'Guidelines on earthworks for commercial and residential developments'*.

Fill was placed on the allotment between 13/02/18 and 22/02/18.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **538** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 *'Residential Slabs & Footings'*.

Full details of the inspection and testing conducted is included in our report ref no: **341_SEE Civil_Level 1**
Dated 21st May 2018.

Please do not hesitate to contact me if you have any queries.

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21st May 2018

Ref No: 341_SEE Civil_Level 1_Lot 539

SEE Civil Pty Ltd
108 Siganto Drive
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CERTIFICATE OF CONTROLLED LEVEL 1 FILLING

LOT 539 – FLAGSTONE CITY STAGE 1K

Australian Soil and Concrete Testing was commissioned by Civcorp Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 *'Guidelines on earthworks for commercial and residential developments'*.

Fill was placed on the allotment between 13/02/18 and 22/02/18.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **539** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 *'Residential Slabs & Footings'*.

Full details of the inspection and testing conducted is included in our report ref no: **341_SEE Civil_Level 1**
Dated 21st May 2018.

Please do not hesitate to contact me if you have any queries.

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21st May 2018

Ref No: 341_SEE Civil_Level 1_Lot 553

SEE Civil Pty Ltd
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CERTIFICATE OF CONTROLLED LEVEL 1 FILLING

LOT 553 – FLAGSTONE CITY STAGE 1K

Australian Soil and Concrete Testing was commissioned by Civcorp Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 *'Guidelines on earthworks for commercial and residential developments'*.

Fill was placed on the allotment between 13/02/18 and 22/02/18.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **553** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 *'Residential Slabs & Footings'*.

Full details of the inspection and testing conducted is included in our report ref no: **341_SEE Civil_Level 1**
Dated 21st May 2018.

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21st May 2018

Ref No: 341_SEE Civil_Level 1_Lot 554

SEE Civil Pty Ltd
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CERTIFICATE OF CONTROLLED LEVEL 1 FILLING

LOT 554 – FLAGSTONE CITY STAGE 1K

Australian Soil and Concrete Testing was commissioned by Civcorp Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 *'Guidelines on earthworks for commercial and residential developments'*.

Fill was placed on the allotment between 13/02/18 and 22/02/18.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **554** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 *'Residential Slabs & Footings'*.

Full details of the inspection and testing conducted is included in our report ref no: **341_SEE Civil_Level 1**
Dated 21st May 2018.

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Ref No: 341_SEE Civil_Level 1_Lot 555

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CERTIFICATE OF CONTROLLED LEVEL 1 FILLING

LOT 555 – FLAGSTONE CITY STAGE 1K

Australian Soil and Concrete Testing was commissioned by Civcorp Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 *'Guidelines on earthworks for commercial and residential developments'*.

Fill was placed on the allotment between 13/02/18 and 22/02/18.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **555** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 *'Residential Slabs & Footings'*.

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Ref No: 341_SEE Civil_Level 1_Lot 556

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CERTIFICATE OF CONTROLLED LEVEL 1 FILLING

LOT 556 – FLAGSTONE CITY STAGE 1K

Australian Soil and Concrete Testing was commissioned by Civcorp Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 *'Guidelines on earthworks for commercial and residential developments'*.

Fill was placed on the allotment between 13/02/18 and 22/02/18.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **556** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 *'Residential Slabs & Footings'*.

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21st May 2018

Ref No: 341_SEE Civil_Level 1_Lot 557

SEE Civil Pty Ltd
108 Siganto Drive
Helensvale QLD 4210

CERTIFICATE OF CONTROLLED LEVEL 1 FILLING

LOT 557 – FLAGSTONE CITY STAGE 1K

Australian Soil and Concrete Testing was commissioned by Civcorp Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 *'Guidelines on earthworks for commercial and residential developments'*.

Fill was placed on the allotment between 13/02/18 and 22/02/18.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **557** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 *'Residential Slabs & Footings'*.

Full details of the inspection and testing conducted is included in our report ref no: **341_SEE Civil_Level 1**
Dated 21st May 2018.

Please do not hesitate to contact me if you have any queries.

Yours faithfully

Jason McKenna
Laboratory Manager

ASCT Brisbane South
jason.mckenna@asct.com.au



ASCT Brisbane South

PO Box 1232

Park Ridge, QLD 4125

ACN: 608 830 306

ABN: 73 193 500 470

Mobile: 0437 776 582 or 0439 776 589

Email: brisbane.south@asct.com.au

Web: www.australiansoilconcretetesting.com.au

21st May 2018

Ref No: 341_SEE Civil_Level 1_Lot 558

SEE Civil Pty Ltd
108 Siganto Drive
Helensvale QLD 4210

CERTIFICATE OF CONTROLLED LEVEL 1 FILLING

LOT 558 – FLAGSTONE CITY STAGE 1K

Australian Soil and Concrete Testing was commissioned by Civcorp Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 *'Guidelines on earthworks for commercial and residential developments'*.

Fill was placed on the allotment between 13/02/18 and 22/02/18.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **558** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 *'Residential Slabs & Footings'*.

Full details of the inspection and testing conducted is included in our report ref no: **341_SEE Civil_Level 1**
Dated 21st May 2018.

Please do not hesitate to contact me if you have any queries.

Yours faithfully

Jason McKenna
Laboratory Manager

ASCT Brisbane South
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21st May 2018

Ref No: 341_SEE Civil_Level 1_Lot 559

SEE Civil Pty Ltd
108 Siganto Drive
Helensvale QLD 4210

CERTIFICATE OF CONTROLLED LEVEL 1 FILLING

LOT 559 – FLAGSTONE CITY STAGE 1K

Australian Soil and Concrete Testing was commissioned by Civcorp Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 *'Guidelines on earthworks for commercial and residential developments'*.

Fill was placed on the allotment between 13/02/18 and 22/02/18.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **559** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 *'Residential Slabs & Footings'*.

Full details of the inspection and testing conducted is included in our report ref no: **341_SEE Civil_Level 1**
Dated 21st May 2018.

Please do not hesitate to contact me if you have any queries.

Yours faithfully

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21st May 2018

Ref No: 341_SEE Civil_Level 1_Lot 725

SEE Civil Pty Ltd
108 Siganto Drive
Helensvale QLD 4210

CERTIFICATE OF CONTROLLED LEVEL 1 FILLING

LOT 725 – FLAGSTONE CITY STAGE 1K

Australian Soil and Concrete Testing was commissioned by Civcorp Pty Ltd to provide earthworks inspection and testing services on a 'Level 1' basis in accordance with the requirements of AS 3798-2007 *'Guidelines on earthworks for commercial and residential developments'*.

Fill was placed on the allotment between 13/02/18 and 22/02/18.

Based on the observations made by Australian Soil and Concrete Testing and the test results obtained during construction the structural fill placed on allotment **725** is considered to have been carried out in general accordance with AS3798-2007 and is considered to be Controlled Fill as defined in AS2870 – 2011 *'Residential Slabs & Footings'*.

Full details of the inspection and testing conducted is included in our report ref no: **341_SEE Civil_Level 1**
Dated 21st May 2018.

Please do not hesitate to contact me if you have any queries.

Yours faithfully

Jason McKenna
Laboratory Manager

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