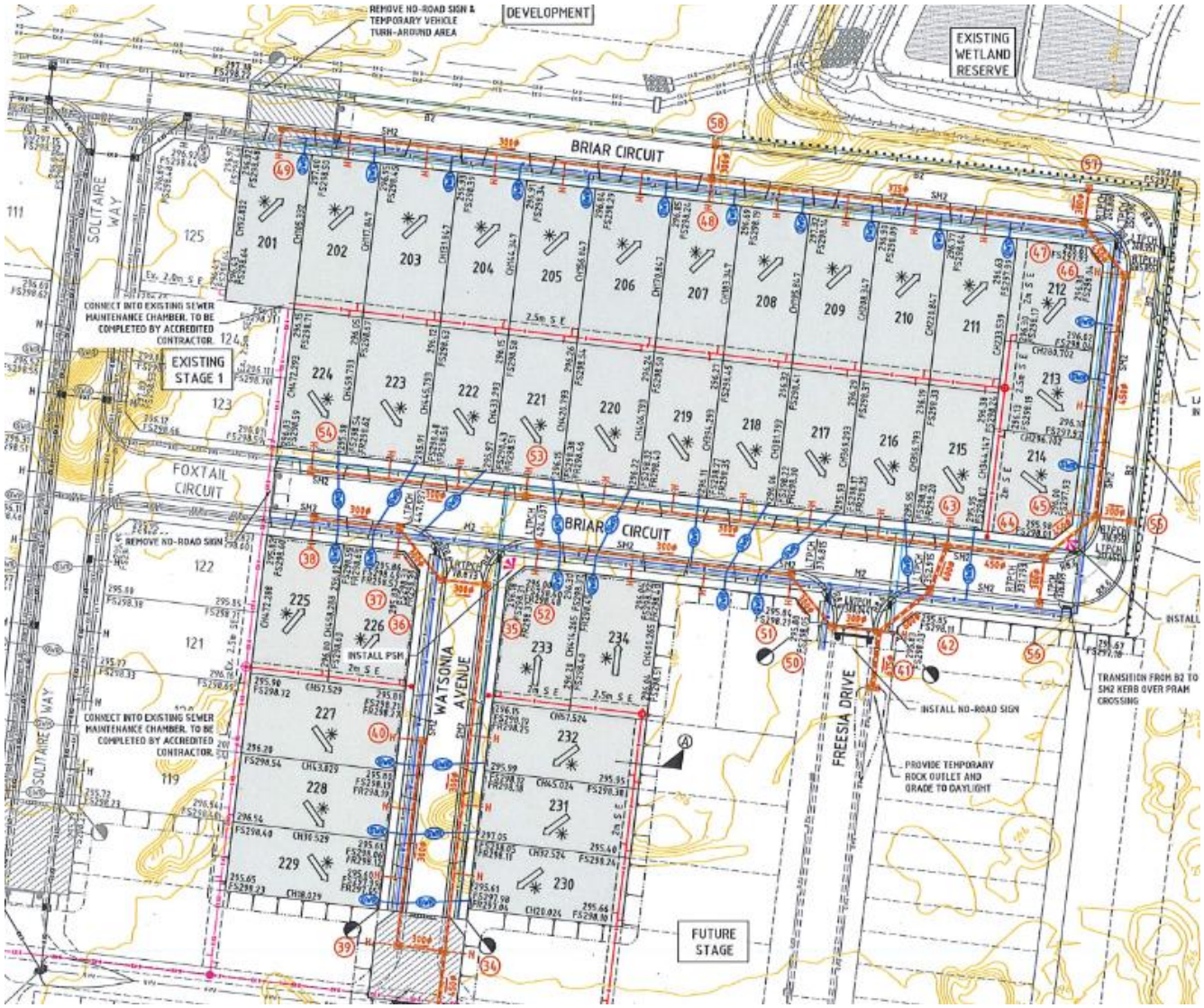
CONTINENT GEOTECH SERVICES

Geotechnical | Environmental I Residential| Pavements

Level 1 Supervision Report
Newbridge South Stage 2 - Wallan



Universal Corporation
March 2021

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Document Details

Project Number	6387.02	Rev 0
Project Name	Newbridge South Stage 2	
Project Location	Wallan - VIC	
Client	Universal Corporation 57 Yale Drive Epping VIC 3076	

1. INTRODUCTION

Continent Geotech Services (CGS) has been engaged by Universal Corporation to provide Level 1 Geotechnical Supervision of fill activity at Newbridge South Stage 2 at Wallan - VIC. The purpose of this report is to summarise the site inspection, compaction control and laboratory testing services performed by CGS for Newbridge South Stage 2 project.

Level 1 Inspection and Testing, as defined in AS3798 – 2007 *'Guideline on Earthworks for Commercial and Residential Development'*, provides for full time inspection of the construction of controlled full and field laboratory testing accordance with AS1289 *'Methods of Testing Soils for Engineering Purposes'.* The compaction control testing was undertaken by our experienced geotechnician/engineer from CGS.

2. PROJECT SUMMARY

CGS provided the Level 1 Inspection and Testing of the controlled fill placed as part of construction and development process of Newbridge South residential subdivision development process.

The earthworks were carried out by Universal corporation with their own/hired equipment. CGS undertook the compaction control testing of the fill material as part of Level 1 Inspection and Testing process. General Fill material used for construction was locally sourced from site and imported from nearby construction activities consists mainly silty clay, which makes material used to be able to test with AS1289 methods for compaction compliance as per AS3798 – 2007.

The areas of controlled fill were placed is shown on site plan attached the Appendix 1 which is based on drawings (18040-02-02, Rev B) prepared by Urban Design and Management. The Level 1 Inspection and testing commenced on Jan 2020 and was completed on June 2020.

3. INSPECTION AND SUPERVISION

3.1 Fill Placement and Testing Specifications

The fill placement and testing were carried out in accordance with AS3798 – 2007 '*Guideline on Earthworks for Commercial and Residential Development'*, the following specifications based generally on the requirements of AS3798:

- The fill area shall be stripped of topsoil, subsoil, soft material and vegetation to firm based approved by superintendent.
- Suitable fill material shall be placed in loose horizontal layers not exceeding 400mm in thickness.
- The fill shall be compacted to Dry Density Ratio of at least 95% Standard (AS1289 5.1.1, 5.4.1 or 5.7.1),
- The fill material shall not contain greater than 20% by volume, of particles size greater than 37.5mm and no particle size over 200mm in any dimension,
- The frequency of field density testing shall be accordance with AS3798 for large scale developments (Type 1), which nominates a frequency of not less than
    - 1 test per layer of 200mm per 2500mm^2
    - 1 test per 500m^3 distributed reasonably evenly throughout the full depth and area: or
    - 3 tests per site visit, which requires the most tests

The technical specification of the structural fill was not provided, so the above guidelines were assumed for earthworks.

3.2 Strip Surface Inspection

The subgrade for the fill area was prepared by removing the topsoil and vegetation layer using a grader. The inspection was carried out to confirm all the vegetation and topsoils are removed from the stripped surface.

Subgrade assessment was carried out by CGS following the topsoil removal and before any fill was placed. The soils exposed at the subgrade comprised natural clays silts and silty clays. No soft spots were observing during the subgrade assessment.

4. EARTHWORKS AND TESTING

The filling operation was undertaken with materials consists gravelly clay and silty clay, which was then conditioned close to optimum moisture for placement of fill. The fill material was visually assessed to confirm the material is clean from debris and vegetative matter and oversize rocks. The fill material used was nominated by site supervisor. It should be noted that no chemical analysis was performed by CGS on fill material. If oversize particle encountered while placing fill were removed where required.

The fill material was then placed in approximately 400mm loose layers, rolling effort with onsite roller. Compacted layers were of maximum 300mm thick that achieved 95% standard compaction which met Australian standards specifications.

The total 187 field density and laboratory Hilf compaction tests were performed. The reports verify the achievement of the minimum density requirement of 95% Standard Compaction throughout the full depth area, with each layer tested accordingly. All the tests results were provided to Universal Corporation for inclusion within their internal quality system (refer to Appendix 2).

The location for all the tests performed is shown in Appendix 1 - Site Plan. It should be noted that any fill placed as part of drainage, sewer works, pavement works is not part of this level 1 supervision report.

5. CONCLUSION

Following the completion of the earthworks and material assessment, the filling procedures conducted by Universal Corporation satisfied the requirements of AS3798, regarding the placement of fill material on a project under Level 1 Supervision, and in accordance with specification as provided to CGS.

This report has been prepared for benefit of our client with respect to the particular brief given to us and it may not be relied upon in other purpose without our prior review and agreement. No responsibility for this report will be taken by CGS if it is altered in any way, or not reproduced in full.

6. LIMITATION OF THIS REPORT

This report is valid for the following completion of level 1 supervision. CGS does not accept responsibility for any distortion or deviation of measurements as reported at the time given. It should be noted that even though the fill layer was moisture conditioned while compacting and meets the requirement but over the dry and wet weather it is subject to drying and cracking. The top 200-300mm of fill will deteriorate with time and should be taken into account by foundation engineer prior to construction of dwelling. The levels nominated in this report are guiding to amounts of fill placed and do not necessarily reflect accurate survey of fill levels.

This report will be considered invalid if:

- Any works were carried/conducted on the site without supervision of CGS technician
- Any other unforeseeable event any event outside of the time described above.

7. UNDERSTANDING LEVEL 1 INSPECTION AND TESTING

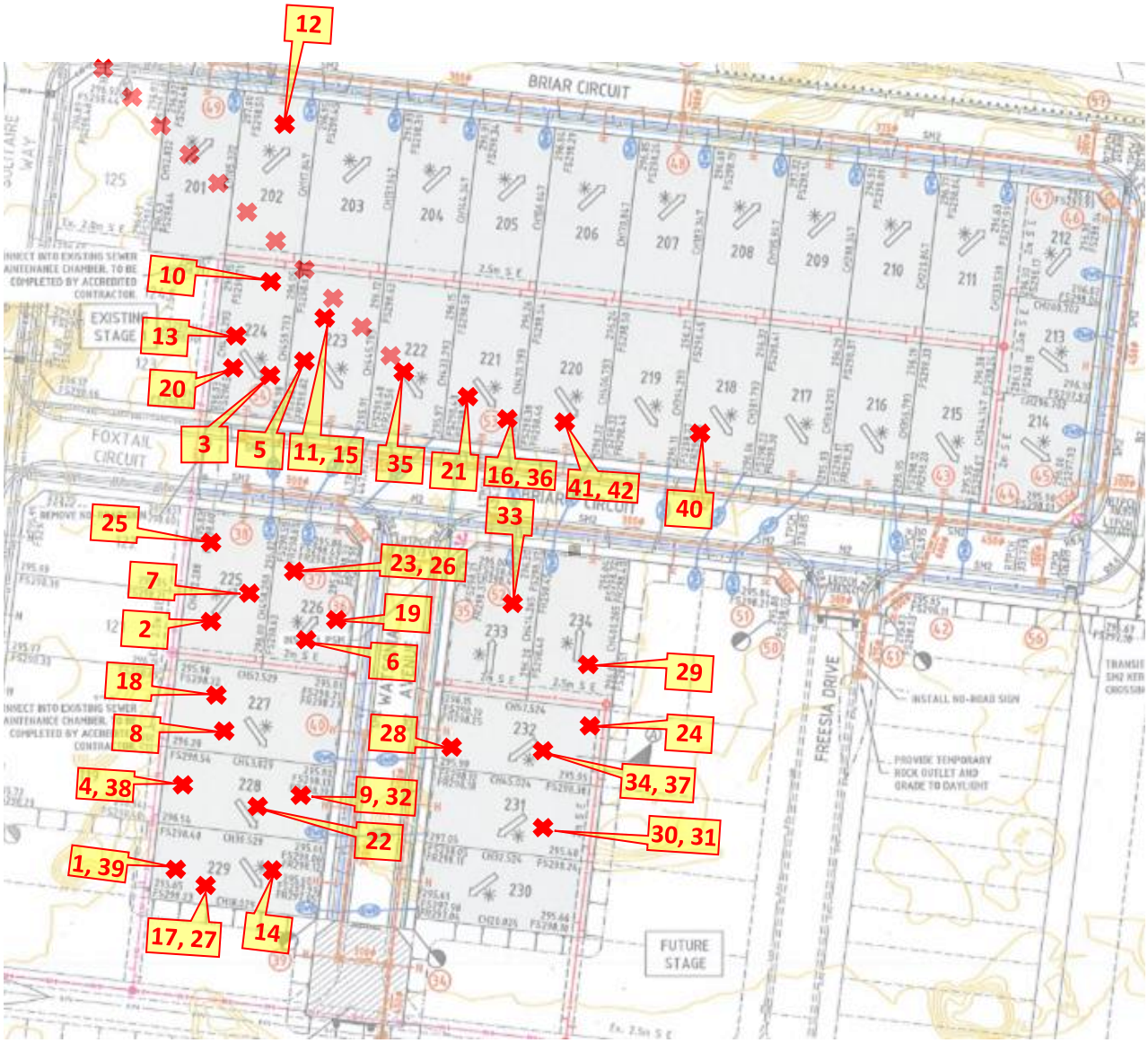
The purpose of performing level 1 inspection and testing is to ensure compliance of fill construction with the nominated specifications. The engagement of Geotechnical Inspection Testing Authority (GITA) allows the contractor to perform his role in the construction of the filling operation while the GITA monitors quality control of process of the fill placement. The visual observations of construction process and methodologies used by contractor allows the GITA to approve the subsequent placement of fill without having to wait to completion of testing and the extended time it takes to complete the laboratory results.

The GITA will carry out random spot checks of the filling operations and complete the compaction control test for day's work. Level 1 inspection and testing requires full time inspection and testing of the fill placement undertaken on site. CGS are notified daily by project foreman where subsequent days of fill placement under level 1 to occur. Generally, projects rely on importation of a fill source, there can be delays in receipt of sufficient material to start placing which may result the periods where GITA representative not required on site. It is contractor's responsibility to notify the GITA prior to start any fill placement. A GITA relies on the contractor to advise when the site attendance required and makes all reasonable visual attempts to assess if the works were the same as pervious day of attendance.

Prepared by

S Kang – Geotechnical Engineer

APPENDIX 1 – SITE PLAN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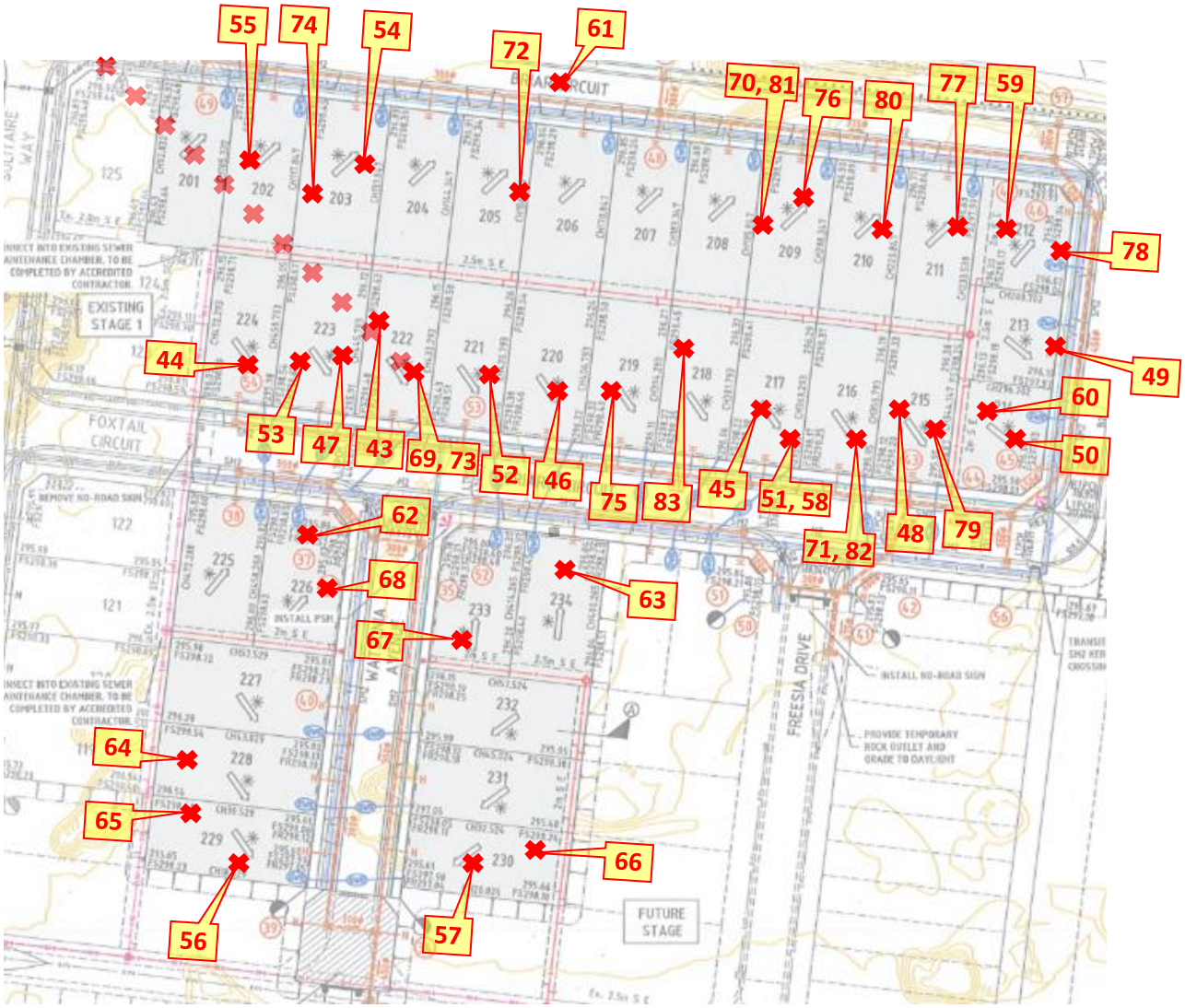
FOXTAIL CIRCUIT
FREESIA DRIVE
FUTURE STAGE
EXISTING STAGE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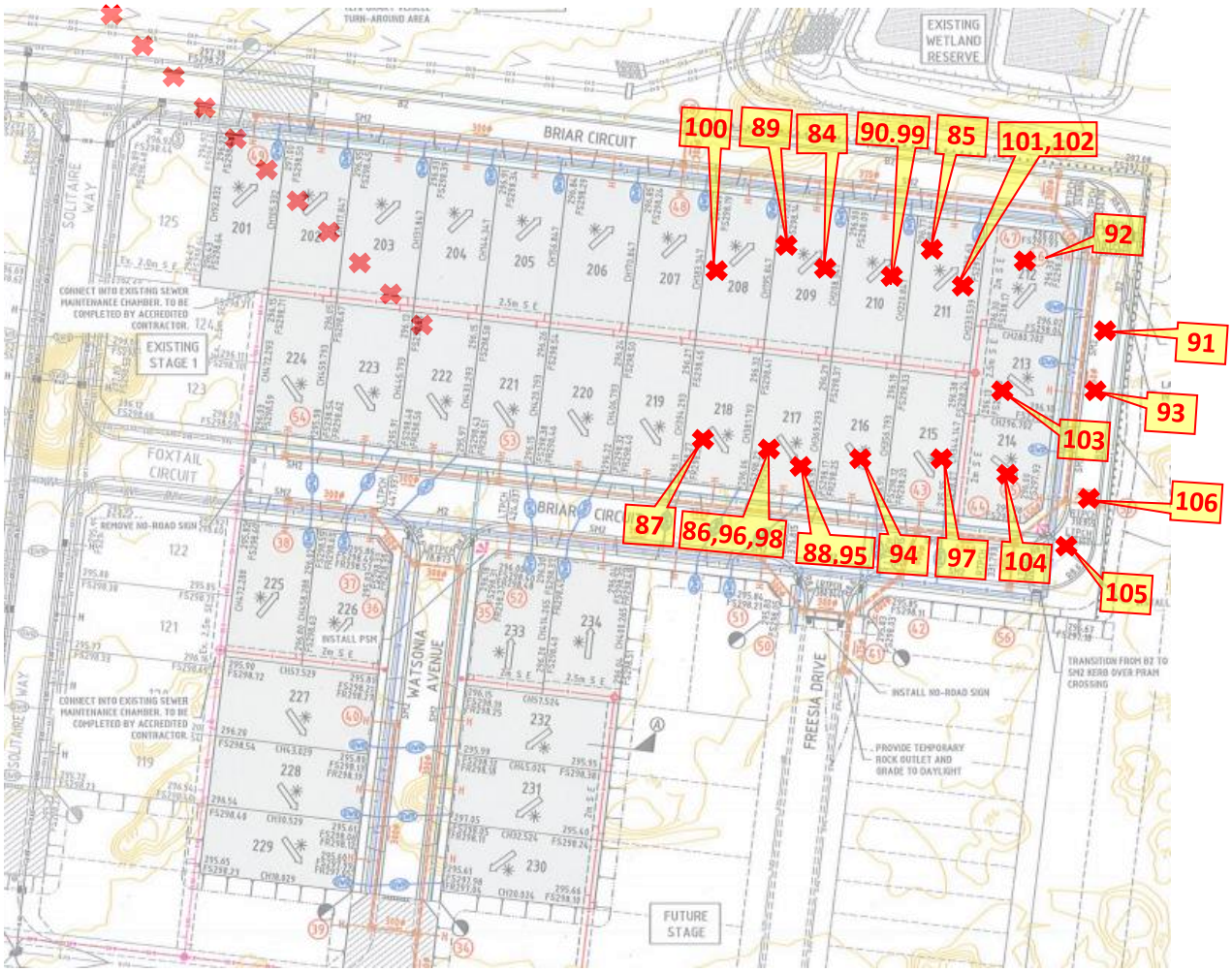
EXISTING STAGE 1
FUTURE STAGE
FOXTAIL CIRCUIT
FRESSIA DRIVE
INSTALL NO-ROAD SIGN
PROVIDE TEMPORARY ROCK OUTLET AND GRADE TO DAYLIGHT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EXISTING WETLAND RESERVE
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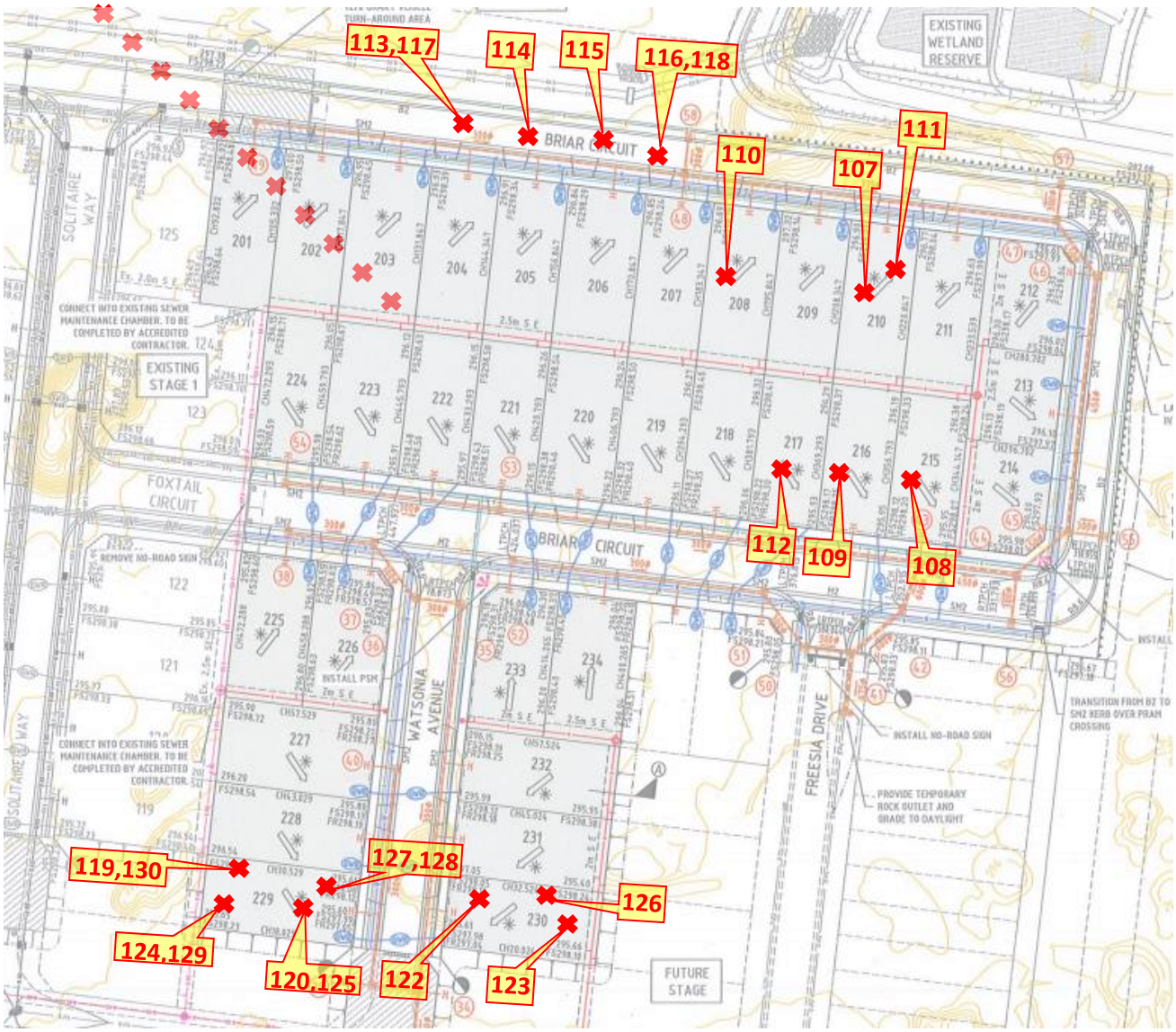
WATSONIA AVENUE
FREESIA DRIVE
FUTURE STAGE
INSTALL NO-ROAD SIGN
PROVIDE TEMPORARY ROCK OUTLET AND GRADE TO DAYLIGHT
TRANSITION FROM B2 TO SH2 KERB OVER PRAM CROSSING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EXISTING WETLAND RESERVE
FUTURE STAGE
INSTALL NO-ROAD SIGN
PROVIDE TEMPORARY ROCK OUTLET AND GRADE TO DAYLIGHT
TRANSITION FROM B2 TO SM2 KERB OVER PRAM CROSSING
CONNECT INTO EXISTING SEWER MAINTENANCE CHAMBER. TO BE COMPLETED BY ACCREDITED CONTRACTOR.
INSTALL PSM
REMOVE NO-ROAD SIGN
TURN-AROUND AREA

APPENDIX 2 – TESTING SUMMARY

Sample No.	Test No.	Lot No.	Layer	Material Type	Date Tested	Density Ratio (%)	Moisture Variation of OMC (%)	Pass/Fail
30265	1	Lot 229	Layer 1 - Stage 2	FILL - Silty Clay	15-Jan-20	95.5	0.5% Dry	Pass
30266	2	Lot 225	Layer 1 - Stage 2	FILL - Silty Clay	15-Jan-20	101.5	2% Dry	Pass
30267	3	Lot 224	Layer 1 - Stage 2	FILL - Silty Clay	15-Jan-20	95.0	2% Dry	Pass
30268	4	Lot 228	Layer 2 - Stage 2	FILL - Silty Clay	15-Jan-20	95.0	1.5% Dry	Pass
30269	5	Lot 223	Layer 2 - Stage 2	FILL - Silty Clay	15-Jan-20	98.0	2% Dry	Pass
30270	6	Lot 226	Layer 2 - Stage 2	FILL - Silty Clay	15-Jan-20	97.0	0.5% Wet	Pass
30389	7	Lot 225	Layer 2 - Stage 2	FILL - Silty Clay	16-Jan-20	102.0	2%Dry	Pass
30390	8	Lot 227	Layer 2 - Stage 2	FILL - Silty Clay	16-Jan-20	99.5	Omc	Pass
30391	9	Lot 228	Layer 2 - Stage 2	FILL - Silty Clay	16-Jan-20	100.5	Omc	Pass
30415	10	Lot 224	Layer 2 - Stage 2	FILL - Silty Clay	17-Jan-20	100.0	0.5% Dry	Pass
30416	11	Lot 223	Layer 2 - Stage 2	FILL - Silty Clay	17-Jan-20	99.0	0.5% Dry	Pass
30417	12	Lot 202	Layer 2 - Stage 2	FILL - Silty Clay	17-Jan-20	100.5	Omc	Pass
30408	13	Lot 224	Layer 3 - Stage 2	FILL - Silty Clay	20-Jan-20	101.5	2% Dry	Pass
30409	14	Lot 229	Layer 3 - Stage 2	FILL - Silty Clay	20-Jan-20	99.5	Omc	Pass
30410	15	Lot 223	Layer 3 - Stage 2	FILL - Silty Clay	20-Jan-20	98.0	2% Dry	Pass
30411	16	Lot 221	Layer 3 - Stage 2	FILL - Silty Clay	20-Jan-20	98.0	2% Wet	Pass

30452	17	Lot 229	Layer 4 - Stage 2	FILL - Silty Clay	21-Jan-20	95.0	2% Wet	Pass
30453	18	Lot 227	Layer 4 - Stage 2	FILL - Silty Clay	21-Jan-20	98.0	Omc	Pass
30454	19	Lot 226	Layer 4 - Stage 2	FILL - Silty Clay	21-Jan-20	96.5	2% Dry	Pass
30461	20	Lot 224	Layer 5 - Stage 2	FILL - Silty Clay	22-Jan-20	101.5	2% Dry	Pass
30462	21	Lot 221	Layer 5 - Stage 2	FILL - Silty Clay	22-Jan-20	100.5	0.5% Wet	Pass
30463	22	Lot 228	Layer 6 - Stage 2	FILL - Silty Clay	22-Jan-20	96.5	0.5% Wet	Pass
30464	23	Lot 226	Layer 6 - Stage 2	FILL - Silty Clay	22-Jan-20	100.5	2% Dry	Pass
30531	24	Lot 232	Layer 6 - Stage 2	FILL - Silty Clay	24-Jan-20	99.5	2% Dry	Pass
30532	25	Lot 225	Layer 6 - Stage 2	FILL - Silty Clay	24-Jan-20	100.0	2% Dry	Pass
30533	26	Lot 226	Layer 6 - Stage 2	FILL - Silty Clay	24-Jan-20	100.0	1.5% Dry	Pass
30534	27	Lot 229	Layer 6 - Stage 2	FILL - Silty Clay	24-Jan-20	97.0	2%Wet	Pass
30538	28	Lot 232	Layer 2 - Stage 2	FILL - Silty Clay	28-Jan-20	96.5	1.5% Dry	Pass
30539	29	Lot 234	Layer 2 - Stage 2	FILL - Silty Clay	28-Jan-20	98.0	2% Dry	Pass
30540	30	Lot 231	Layer 2 - Stage 2	FILL - Silty Clay	28-Jan-20	98.5	2% Dry	Pass
30694	31	Lot 231	Layer 2 - Stage 2	FILL - Silty Clay	11-Feb-20	97.5	2% Dry	Pass
30695	32	Lot 228	Layer 2 - Stage 2	FILL - Silty Clay	11-Feb-20	99.0	1.5% Dry	Pass
30696	33	Lot 233	Layer 2 - Stage 2	FILL - Silty Clay	11-Feb-20	99.0	0.5% Wet	Pass
30697	34	Lot 232	Layer 2 - Stage 2	FILL - Silty Clay	11-Feb-20	99.0	1.5% Dry	Pass

30698	35	Lot 222	Layer 2 - Stage 2	FILL - Silty Clay	11-Feb-20	98.0	0.5% Wet	Pass
30699	36	Lot 221	Layer 2 - Stage 2	FILL - Silty Clay	11-Feb-20	101.0	2% Dry	Pass
30703	37	Lot 232	Layer 3 - Stage 2	FILL - Silty Clay	12-Feb-20	100.0	1.5% Dry	Pass
30704	38	Lot 228	Layer 3 - Stage 2	FILL - Silty Clay	12-Feb-20	99.5	0.5% Dry	Pass
30705	39	Lot 229	Layer 3 - Stage 2	FILL - Silty Clay	12-Feb-20	99.0	Omc	Pass
30706	40	Lot 218	Layer 3 - Stage 2	FILL – Silty Clay	12-Feb-20	96.5	Omc	Pass
30707	41	Lot 220	Layer 3 - Stage 2	FILL - Silty Clay	12-Feb-20	99.0	Omc	Pass
30711	42	Lot 220	Layer 4 - Stage 2	FILL - Silty Clay	13-Feb-20	99.0	0.5% Dry	Pass
30712	43	Lot 222	Layer 4 - Stage 2	FILL - Silty Clay	13-Feb-20	96.5	Omc	Pass
30713	44	Lot 224	Layer 4 - Stage 2	FILL - Silty Clay	13-Feb-20	98.0	0.5% Dry	Pass
30718	45	Lot 217	Layer 5 - Stage 2	FILL - Silty Clay	14-Feb-20	99.0	Omc	Pass
30719	46	Lot 220	Layer 5 - Stage 2	FILL - Silty Clay	14-Feb-20	96.5	0.5% Wet	Pass
30720	47	Lot 223	Layer 5 - Stage 2	FILL - Silty Clay	14-Feb-20	98.5	2% Dry	Pass
30721	48	Lot 215	Layer 5 - Stage 2	FILL - Silty Clay	14-Feb-20	98.0	2% Dry	Pass
30738	49	Lot 213	Layer 2 - Stage 2	FILL - Silty Clay	17-Feb-20	99.5	2% Dry	Pass
30739	50	Lot 214	Layer 2 - Stage 2	FILL - Silty Clay	17-Feb-20	100.5	1.5% Dry	Pass
30740	51	Lot 217	Layer 6 - Stage 2	FILL - Silty Clay	17- Feb-20	100.0	2% Dry	Pass
30806	52	Lot 221	Layer 6 - Stage 2	FILL - Silty Clay	21-Feb-20	100.0	0.5% Dry	Pass
30807	53	Lot 223	Layer 6 - Stage 2	FILL - Silty Clay	21-Feb-20	96.0	Omc	Pass

30808	54	Lot 203	Layer 6 - Stage 2	FILL - Silty Clay	21-Feb-20	98.0	Omc	Pass
30852	55	Lot 202	Layer 4 - Stage 2	FILL - Silty Clay	24-Feb-20	99.0	2% Dry	Pass
30853	56	Lot 229	Layer 4 - Stage 2	FILL - Silty Clay	24-Feb-20	96.5	Omc	Pass
30854	57	Lot 230	Layer 4 - Stage 2	FILL - Silty Clay	24-Feb-20	100.0	Omc	Pass
31068	58	Lot 217	Layer 7 - Stage 2	FILL - Silty Clay	17-Feb-20	95.0	Omc	Pass
31069	59	Lot 212	Layer 4 - Stage 2	FILL - Silty Clay	17-feb-20	96.0	2% Dry	Pass
31070	60	Lot 214	Layer 5 - Stage 2	FILL - Silty Clay	17-Feb-20	96.5	2% Dry	Pass
30863	61	Foxtail Cr	Layer 2 - Stage 2	FILL - Silty Clay	25-Feb-20	97.0	Omc	Pass
30864	62	Lot 226	Layer 7 - Stage 2	FILL - Silty Clay	25-Feb-20	99.5	0.5% Dry	Pass
30865	63	Lot 234	Layer 7 - Stage 2	FILL - Silty Clay	25-Feb-20	98.0	0.5% Dry	Pass
30839	64	Lot 228	Layer 5 - Stage 2	FILL - Silty Clay	26-Feb-20	95.0	Omc	Pass
30840	65	Lot 229	Layer 5 - Stage 2	FILL - Silty Clay	26-Feb-20	97.0	0.5% Dry	Pass
30841	66	Lot 230	Layer 5 - Stage 2	FILL - Silty Clay	26-Feb-20	97.5	Omc	Pass
30899	67	Lot 233	Layer 7 - Stage 2	FILL - Silty Clay	27-Feb-20	99.5	Omc	Pass
30900	68	Lot 226	Layer 7 - Stage 2	FILL - Silty Clay	27-Feb-20	99.0	Omc	Pass
30901	69	Lot 222	Layer 7 - Stage 2	FILL - Silty Clay	27-Feb-20	99.0	Omc	Pass
30924	70	Lot 209	Layer 2 - Stage 2	FILL - Silty Clay	28-Feb-20	99.5	Omc	Pass
30925	71	Lot 216	Layer 4 - Stage 2	FILL - Silty Clay	28-Feb-20	98.5	Omc	Pass
30926	72	Lot 205	Layer 2 - Stage 2	FILL - Silty Clay	28-Feb-20	96.5	0.5% Wet	Pass

30927	73	Lot 222	Layer 7 - Stage 2	FILL - Silty Clay	28-Feb-20	98.5	Omc	Pass
30928	74	Lot 203	Layer 2 - Stage 2	FILL - Silty Clay	28-Feb-20	99.0	0.5% Wet	Pass
30929	75	Lot 219	Layer 7 - Stage 2	FILL - Silty Clay	28-Feb-20	98.5	Omc	Pass
30957	76	Lot 209	Layer 3 - Stage 2	FILL - Silty Clay	03-Mar-20	95.0	Omc	Pass
30958	77	Lot 211	Layer 3 - Stage 2	FILL - Silty Clay	03-Mar-20	95.5	Omc	Pass
30959	78	Lot 212	Layer 3 - Stage 2	FILL - Silty Clay	03-Mar-20	96.0	0.5% Wet	Pass
30960	79	Lot 215	Layer 3 - Stage 2	FILL - Silty Clay	03-Mar-20	95.0	0.5% Wet	Pass
30961	80	Lot 210	Layer 4 - Stage 2	FILL - Silty Clay	04-Mar-20	97.0	Omc	Pass
30962	81	Lot 209	Layer 4 - Stage 2	FILL - Silty Clay	04-Mar-20	98.5	Omc	Pass
30963	82	Lot 216	Layer 4 - Stage 2	FILL - Silty Clay	04-Mar-20	96.5	Omc	Pass
30964	83	Lot 218	Layer 4 - Stage 2	FILL - Silty Clay	04-mar-20	97.0	Omc	Pass
31009	84	Lot 209	Layer 5 - Stage 2	FILL - Silty Clay	11-Mar-20	99.0	Omc	Pass
31010	85	Lot 211	Layer 5 - Stage 2	FILL - Silty Clay	11-Mar-20	98.5	Omc	Pass
31011	86	Lot 217	Layer 5 - Stage 2	FILL - Silty Clay	11-Mar-20	99.5	0.5% Wet	Pass
31012	87	Lot 218	Layer 6 - Stage 2	FILL - Silty Clay	12-Mar-20	96.5	Omc	Pass
31013	88	Lot 217	Layer 6 - Stage 2	FILL - Silty Clay	12-Mar-20	100.0	0.5% Wet	Pass
31014	89	Lot 209	Layer 6 - Stage 2	FILL - Silty Clay	12-Mar-20	99.5	Omc	Pass
31015	90	Lot 210	Layer 6 - Stage 2	FILL - Silty Clay	12-Mar-20	98.0	0.5% Dry	Pass
31082	91	Foxtail Cct	Layer 4 - Stage 2	FILL - Silty Clay	18-Mar-20	96.5	Omc	Pass

31083	92	Lot 212	Layer 6 - Stage 2	FILL - Silty Clay	18-Mar-20	95.5	Omc	Pass
31084	93	Foxtail Cct	Layer 4 - Stage 2	FILL - Silty Clay	18-Mar-20	95.5	1.5% Dry	Pass
30809	94	Lot 216	Layer 6 - Stage 2	FILL - Silty Clay	18-Feb-20	99.5	Omc	Pass
30810	95	Lot 217	Layer 6 - Stage 2	FILL - Silty Clay	18-Feb-20	98.5	Omc	Pass
30811	96	Lot 217	Layer 6 - Stage 2	FILL - Silty Clay	18-Feb-20	98.0	1.5% Dry	Pass
31029	97	Lot 215	Layer 7 - Stage 2	FILL - Silty Clay	13-Mar-20	97.0	Omc	Pass
31030	98	Lot 217	Layer 7 - Stage 2	FILL - Silty Clay	13-Mar-20	96.5	Omc	Pass
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31032	100	Lot 208	Layer 7 - Stage 2	FILL - Silty Clay	13-Mar-20	96.5	Omc	Pass
31054	101	Lot 211	Layer 6 - Stage 2	FILL - Silty Clay	17-Mar-20	100.5	Omc	Pass
31055	102	Lot 211	Layer 6 - Stage 2	FILL - Silty Clay	17-Mar-20	99.0	Omc	Pass
31056	103	Lot 213	Layer 6 - Stage 2	FILL - Silty Clay	17-Mar-20	96.0	Omc	Pass
31097	104	Lot 214	Layer 6 - Stage 2	FILL - Silty Clay	19-Mar-20	100.5	Omc	Pass
31098	105	Foxtail Ct	Layer 6 - Stage 2	FILL - Silty Clay	19-Mar-20	100.0	0.5% Dry	Pass
31099	106	Foxtail Ct	Layer 6 - Stage 2	FILL - Silty Clay	19-Mar-20	97.0	Omc	Pass
31157	107	Lot 210	Layer 8 - Stage 2	FILL - Silty Clay	20-Mar-20	98.0	0.5% Dry	Pass
31158	108	Lot 215	Layer 8 - Stage 2	FILL – Silty Clay	20-Mar-20	99.5	0.5% Dry	Pass
31159	109	Lot 216	Layer 8 - Stage 2	FILL - Silty Clay	20-Mar-20	98.5	0.5% Dry	Pass
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31156	112	Lot 217	Layer 7 - Stage 2	FILL - Silty Clay	23-Mar-20	96.5	0.5% Wet	Pass
31184	113	Foxtail Ct	Layer 7 - Stage 2	FILL - Silty Clay	24-Mar-20	98.0	Omc	Pass
31185	114	Foxtail Ct	Layer 7 - Stage 2	FILL - Silty Clay	24-Mar-20	95.5	0.5% Dry	Pass
31186	115	Foxtail Ct	Layer 7 - Stage 2	FILL - Silty Clay	24-Mar-20	95.0	Omc	Pass
31192	116	Foxtail Ct	Layer 7 - Stage 2	FILL - Silty Clay	25-Mar-20	98.0	0.5% Dry	Pass
31193	117	Foxtail Ct	Layer 7 - Stage 2	FILL - Silty Clay	25-Mar-20	95.0	Omc	Pass
31194	118	Foxtail Ct	Layer 7 - Stage 2	FILL - Silty Clay	25-Mar-20	95.5	Omc	Pass
32502	119	Lot 229	Layer 6 - Stage 2	FILL - Silty Clay	11-Jun-20	98.0	0.5% Wet	Pass
32503	120	Lot 229	Layer 6 - Stage 2	FILL - Silty Clay	11-Jun-20	99.5	Omc	Pass
32504	121	Lot 230	Layer 6 - Stage 2	FILL - Silty Clay	11-Jun-20	95.0	Omc	Pass
32508	122	Lot 230	Layer 6 - Stage 2	FILL - Silty Clay	12-Jun-20	98.5	Omc	Pass
32509	123	Lot 230	Layer 6 - Stage 2	FILL - Silty Clay	12-Jun-20	97.0	0.5% Dry	Pass
32510	124	Lot 229	Layer 6 - Stage 2	FILL - Silty Clay	12-Jun-20	96.0	0.5% Dry	Pass
32545	125	Lot 229	Layer 7 - Stage 2	FILL - Silty Clay	15-Jun-20	99.0	Omc	Pass
32546	126	Lot 230	Layer 7 - Stage 2	FILL - Silty Clay	15-Jun-20	98.0	0.5% Dry	Pass
32547	127	Lot 229	Layer 7 - Stage 2	FILL - Silty Clay	15-Jun-20	95.5	0.5% Dry	Pass
32577	128	Lot 229	Layer 8 - Stage 2	FILL - Silty Clay	16-Jun-20	100.5	1% Dry	Pass
32578	129	Lot 229	Layer 8 - Stage 2	FILL - Silty Clay	16-Jun-20	97.0	0.5% Dry	Pass

32579	130	Lot 229	Layer 8 - Stage 2	FILL - Silty Clay	16-Jun-20	95.0	0.5% Dry	Pass

APPENDIX 3 – NATA LAB RESULTS

Main Laboratory
16 Prime Street
Thomastown VIC 3074
Ph: 03 9465 9813
Fax: 03 9465 7690
e: info@continentgeotech.com.au

Continent Geotech Services

HILF DENSITY RATIO REPORT

Customer: Universal Corporation Pty Ltd
Project: Newbridge South Stage 2
Location: Wallan Vic

Report Number: 6387.02-1
Report Date: 1/02/2020
Request No: -

Testing performed and reported at our Main Laboratory

Sample No.		**30265**	**30266**	**30267**	**30268**	**30269**	**30270**				
ID No.		1	2	3	4	5	6				
Date Sampled		15/01/2020	15/01/2020	15/01/2020	15/01/2020	15/01/2020	15/01/2020				
Time Sampled		am/pm	am/pm	am/pm	am/pm	am/pm	am/pm				
Date Tested		22/01/2020	22/01/2020	22/01/2020	30/01/2020	30/01/2020	30/01/2020				
Material Source		Site Derived	Site Derived	Site Derived	Site Derived	Site Derived	Site Derived				
Material Description		Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay				
To Be Used As		Backfill	Backfill	Backfill	Backfill	Backfill	Backfill				
Sample Location		Lot 229 North of Lot Layer 1	Lot 225 South of Lot Layer 1	Lot 224 North of Lot Layer 1	Lot 228 North of Lot Layer 2	Lot 223 Centre of Lot Layer 2	Lot 226 South of Lot Layer 2				
Layer Depth	*mm*	300	300	300	300	300	300				
Test Depth	*mm*	275	275	275	275	275	275				

Max Size	*mm*	19	19	19	19	19	19				
Oversize Wet	*%*	0	11	12	9	5	5				
Field Wet Density	*t/m³*	1.96	2.06	1.92	1.93	1.98	1.99				
Field Moisture Content	*%*	-	-	-	-	-	-				
PCWD or APCWD*	*t/m³*	**2.05**	**2.03**	**2.02**	**2.03**	**2.02**	**2.05**				

**PCWD - Peak Converted Wet Density , APCWD - Adjusted Peak Converted Wet Density, If Oversize material present PCWD and Moisture Variation is Adjusted*

Moisture Variation or Adjusted* (of OMC)	*t/m³*	**0.5% (dry)**	**2% (dry)**	**2% (dry)**	**1.5% (dry)**	**2% (dry)**	**0.5% (wet)**				
Compactive Effort		Standard	Standard	Standard	Standard	Standard	Standard				
Hilf Density Ratio	*%*	**95.5**	**101.5**	**95.0**	**95.0**	**98.0**	**97.0**				
Min Hilf Density Ratio	*%*	95	95	95	95	95	95				

Note:

Test Methods: AS1289 5.8.1, 5.7.1, 2.1.1
Sampling Test Method: AS1289 1.2.1 6.4(b)

NATA ACCREDITED FOR TECHNICAL COMPETENCE

Accredited for compliance with ISO/IEC 17025-Testing.

The results of tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Approved Signatory

S Kang
NATA Accreditation No. 19945

Main Laboratory
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Fax: 03 9465 7690
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Continent Geotech Services

HILF DENSITY RATIO REPORT

Customer: Universal Corporation Pty Ltd
Project: Newbridge South Stage 2
Location: Wallan Vic

Report Number: 6387.02-2
Report Date: 1/02/2020
Request No: -

Testing performed and reported at our Main Laboratory

Sample No.		**30389**	**30390**	**30391**							
ID No.		1	2	3							
Date Sampled		16/01/2020	16/01/2020	16/01/2020							
Time Sampled		am/pm	am/pm	am/pm							
Date Tested		22/01/2020	22/01/2020	22/01/2020							
Material Source		Site Derived	Site Derived	Site Derived							
Material Description		Silty Clay	Silty Clay	Silty Clay							
To Be Used As		Backfill	Backfill	Backfill							
Sample Location		Lot 225 North of Lot Layer 2	Lot 227 South of Lot Layer 2	Lot 228 North of Lot Layer 2							
Layer Depth	*mm*	300	300	300							
Test Depth	*mm*	275	275	275							

Max Size	*mm*	19	19	19							
Oversize Wet	*%*	0	10	15							
Field Wet Density	*t/m³*	2.07	2.09	2.11							
Field Moisture Content	*%*	-	-	-							
PCWD or APCWD*	*t/m³*	**2.03**	**2.10**	**2.10**							

**PCWD - Peak Converted Wet Density , APCWD - Adjusted Peak Converted Wet Density, If Oversize material present PCWD and Moisture Variation is Adjusted*

Moisture Variation or Adjusted* (of OMC)	*t/m³*	**2% (dry)**	**omc**	**omc**							
Compactive Effort		Standard	Standard	Standard							
Hilf Density Ratio	*%*	**102.0**	**99.5**	**100.5**							
Min Hilf Density Ratio	*%*	95	95	95							

Note:

Test Methods: AS1289 5.8.1, 5.7.1, 2.1.1
Sampling Test Method: AS1289 1.2.1 6.4(b)

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HILF DENSITY RATIO REPORT

Customer: Universal Corporation Pty Ltd
Project: Newbridge South Stage 2
Location: Wallan Vic

Report Number: 6387.02-3
Report Date: 12/02/2020
Request No: -

Testing performed and reported at our Main Laboratory

Sample No.		**30415**	**30416**	**30417**							
ID No.		1	2	3							
Date Sampled		17/01/2020	17/01/2020	17/01/2020							
Time Sampled		am/pm	am/pm	am/pm							
Date Tested		30/01/2020	30/01/2020	30/01/2020							
Material Source		Site Derived	Site Derived	Site Derived							
Material Description		Silty Clay	Silty Clay	Silty Clay							
To Be Used As		Backfill	Backfill	Backfill							
Sample Location		Lot 224 North of Lot Layer 2	Lot223 North of Lot Layer 2	Lot 202 North of Lot Layer 2							
Layer Depth	*mm*	300	300	300							
Test Depth	*mm*	275	275	275							

Max Size	*mm*	19	19	19							
Oversize Wet	*%*	7	6	9							
Field Wet Density	*t/m³*	2.09	2.09	2.10							
Field Moisture Content	*%*	-	-	-							
PCWD or APCWD*	*t/m³*	**2.09**	**2.11**	**2.09**							

**PCWD - Peak Converted Wet Density , APCWD - Adjusted Peak Converted Wet Density, If Oversize material present PCWD and Moisture Variation is Adjusted*

Moisture Variation or Adjusted* (of OMC)	*t/m³*	**0.5% (dry)**	**0.5% (dry)**	**omc**							
Compactive Effort		Standard	Standard	Standard							
Hilf Density Ratio	*%*	**100.0**	**99.0**	**100.5**							
Min Hilf Density Ratio	*%*	95	95	95							

Note:

Test Methods: AS1289 5.8.1, 5.7.1, 2.1.1
Sampling Test Method: AS1289 1.2.1 6.4(b)

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HILF DENSITY RATIO REPORT

Customer: Universal Corporation Pty Ltd
Project: Newbridge South Stage 2
Location: Wallan Vic

Report Number: 6387.02-4
Report Date: 12/02/2020
Request No: -

Testing performed and reported at our Main Laboratory

Sample No.		**30408**	**30409**	**30410**	**30411**						
ID No.		1	2	3	4						
Date Sampled		20/01/2020	20/01/2020	20/01/2020	20/01/2020						
Time Sampled		am/pm	am/pm	am/pm	am/pm						
Date Tested		6/02/2020	6/02/2020	6/02/2020	6/02/2020						
Material Source		Site Derived	Site Derived	Site Derived	Site Derived						
Material Description		Silty Clay	Silty Clay	Silty Clay	Silty Clay						
To Be Used As		Backfill	Backfill	Backfill	Backfill						
Sample Location		Lot 224 Centre of Lot Layer 3	Lot 229 East of Lot Layer 3	Lot 223 North of Lot Layer 3	Lot 221 South of Lot Layer 3						
Layer Depth	*mm*	300	300	300	300						
Test Depth	*mm*	275	275	275	275						

Max Size	*mm*	19	19	19	19						
Oversize Wet	*%*	13	13	11	14						
Field Wet Density	*t/m³*	2.08	2.05	2.00	2.10						
Field Moisture Content	*%*	-	-	-	-						
PCWD or APCWD*	*t/m³*	**2.04**	**2.06**	**2.04**	**2.14**						

**PCWD - Peak Converted Wet Density , APCWD - Adjusted Peak Converted Wet Density, If Oversize material present PCWD and Moisture Variation is Adjusted*

Moisture Variation or Adjusted* (of OMC)	*t/m³*	**2% (dry)**	**omc**	**2% (dry)**	**2% (wet)**						
Compactive Effort		Standard	Standard	Standard	Standard						
Hilf Density Ratio	*%*	**101.5**	**99.5**	**98.0**	**98.0**						
Min Hilf Density Ratio	*%*	95	95	95	95						

Note:

Test Methods: AS1289 5.8.1, 5.7.1, 2.1.1
Sampling Test Method: AS1289 1.2.1 6.4(b)

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HILF DENSITY RATIO REPORT

Customer: Universal Corporation Pty Ltd
Project: Newbridge South Stage 2
Location: Wallan Vic

Report Number: 6387.02-5
Report Date: 12/02/2020
Request No: -

Testing performed and reported at our Main Laboratory

Sample No.		**30452**	**30453**	**30454**							
ID No.		1	2	3							
Date Sampled		21/01/2020	21/01/2020	21/01/2020							
Time Sampled		am/pm	am/pm	am/pm							
Date Tested		6/02/2020	6/02/2020	6/02/2020							
Material Source		Site Derived	Site Derived	Site Derived							
Material Description		Silty Clay	Silty Clay	Silty Clay							
To Be Used As		Backfill	Backfill	Backfill							
Sample Location		Lot 229 East of Lot Layer 4	Lot 227 South of Lot Layer 4	Lot 226 Centre of Lot Layer 4							
Layer Depth	*mm*	300	300	300							
Test Depth	*mm*	275	275	275							

Max Size	*mm*	19	19	19							
Oversize Wet	*%*	9	9	6							
Field Wet Density	*t/m³*	1.95	2.05	1.96							
Field Moisture Content	*%*	-	-	-							
PCWD or APCWD*	*t/m³*	**2.05**	**2.08**	**2.03**							

**PCWD - Peak Converted Wet Density , APCWD - Adjusted Peak Converted Wet Density, If Oversize material present PCWD and Moisture Variation is Adjusted*

Moisture Variation or Adjusted* (of OMC)	*t/m³*	**2% (wet)**	**omc**	**2% (dry)**							
Compactive Effort		Standard	Standard	Standard							
Hilf Density Ratio	*%*	**95.0**	**98.0**	**96.5**							
Min Hilf Density Ratio	*%*	95	95	95							

Note:

Test Methods: AS1289 5.8.1, 5.7.1, 2.1.1
Sampling Test Method: AS1289 1.2.1 6.4(b)

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HILF DENSITY RATIO REPORT

Customer: Universal Corporation Pty Ltd
Project: Newbridge South Stage 2
Location: Wallan Vic

Report Number: 6387.02-6
Report Date: 12/02/2020
Request No: -

Testing performed and reported at our Main Laboratory

Sample No.		**30461**	**30462**	**30463**	**30464**						
ID No.		1	2	3	4						
Date Sampled		22/01/2020	22/01/2020	22/01/2020	22/01/2020						
Time Sampled		am/pm	am/pm	am/pm	am/pm						
Date Tested		6/02/2020	6/02/2020	6/02/2020	6/02/2020						
Material Source		Site Derived	Site Derived	Site Derived	Site Derived						
Material Description		Silty Clay	Silty Clay	Silty Clay	Silty Clay						
To Be Used As		Backfill	Backfill	Backfill	Backfill						
Sample Location		Lot 224 South of Lot Layer 5	Lot 221 Centre of Lot Layer 5	Lot 228 East of Lot Layer 6	Lot 226 East of Lot Layer 6						
Layer Depth	*mm*	300	300	300	300						
Test Depth	*mm*	275	275	275	275						

Max Size	*mm*	19	19	19	19						
Oversize Wet	*%*	11	10	10	8						
Field Wet Density	*t/m³*	2.06	2.06	2.02	2.04						
Field Moisture Content	*%*	-	-	-	-						
PCWD or APCWD*	*t/m³*	**2.03**	**2.05**	**2.09**	**2.03**						

**PCWD - Peak Converted Wet Density , APCWD - Adjusted Peak Converted Wet Density, If Oversize material present PCWD and Moisture Variation is Adjusted*

Moisture Variation or Adjusted* (of OMC)	*t/m³*	**2% (dry)**	**0.5% (wet)**	**0.5% (wet)**	**2% (dry)**						
Compactive Effort		Standard	Standard	Standard	Standard						
Hilf Density Ratio	*%*	**101.5**	**100.5**	**96.5**	**100.5**						
Min Hilf Density Ratio	*%*	95	95	95	95						

Note:

Test Methods: AS1289 5.8.1, 5.7.1, 2.1.1
Sampling Test Method: AS1289 1.2.1 6.4(b)

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HILF DENSITY RATIO REPORT

Customer: Universal Corporation Pty Ltd
Project: Newbridge South Stage 2
Location: Wallan Vic

Report Number: 6387.02-7
Report Date: 12/02/2020
Request No: -

Testing performed and reported at our Main Laboratory

Sample No.		**30531**	**30532**	**30533**	**30534**						
ID No.		1	2	3	4						
Date Sampled		24/01/2020	24/01/2020	24/01/2020	24/01/2020						
Time Sampled		am/pm	am/pm	am/pm	am/pm						
Date Tested		30/01/2020	30/01/2020	30/01/2020	30/01/2020						
Material Source		Site Derived	Site Derived	Site Derived	Site Derived						
Material Description		Silty Clay	Silty Clay	Silty Clay	Silty Clay						
To Be Used As		Backfill	Backfill	Backfill	Backfill						
Sample Location		Lot 232 East of Lot Layer 6	Lot 225 West of Lot Layer 6	Lot 226 West of Lot Layer 6	Lot 229 South of Lot Layer 6						
Layer Depth	*mm*	300	300	300	300						
Test Depth	*mm*	275	275	275	275						

Max Size	*mm*	19	19	19	19						
Oversize Wet	*%*	11	13	8	11						
Field Wet Density	*t/m³*	1.97	2.06	2.05	2.01						
Field Moisture Content	*%*	-	-	-	-						
PCWD or APCWD*	*t/m³*	**1.98**	**2.06**	**2.05**	**2.08**						

**PCWD - Peak Converted Wet Density , APCWD - Adjusted Peak Converted Wet Density, If Oversize material present PCWD and Moisture Variation is Adjusted*

Moisture Variation or Adjusted* (of OMC)	*t/m³*	**2% (dry)**	**2% (dry)**	**1.5% (dry)**	**2% (wet)**						
Compactive Effort		Standard	Standard	Standard	Standard						
Hilf Density Ratio	*%*	**99.5**	**100.0**	**100.0**	**97.0**						
Min Hilf Density Ratio	*%*	95	95	95	95						

Note:

Test Methods: AS1289 5.8.1, 5.7.1, 2.1.1
Sampling Test Method: AS1289 1.2.1 6.4(b)

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HILF DENSITY RATIO REPORT

Customer: Universal Corporation Pty Ltd
Project: Newbridge South Stage 2
Location: Wallan Vic

Report Number: 6387.02-8
Report Date: 12/02/2020
Request No: -

Testing performed and reported at our Main Laboratory

Sample No.		**30538**	**30539**	**30540**							
ID No.		1	2	3							
Date Sampled		28/01/2020	28/01/2020	28/01/2020							
Time Sampled		am/pm	am/pm	am/pm							
Date Tested		1/02/2020	1/02/2020	1/02/2020							
Material Source		Site Derived	Site Derived	Site Derived							
Material Description		Silty Clay	Silty Clay	Silty Clay							
To Be Used As		Backfill	Backfill	Backfill							
Sample Location		Lot 232 South of Lot Layer 2	Lot 234 South of Lot Layer 2	Lot 231 South of Lot Layer 2							
Layer Depth	*mm*	300	300	300							
Test Depth	*mm*	275	275	275							

Max Size	*mm*	19	19	19							
Oversize Wet	*%*	6	7	9							
Field Wet Density	*t/m³*	1.95	2.02	2.03							
Field Moisture Content	*%*	-	-	-							
PCWD or APCWD*	*t/m³*	**2.03**	**2.06**	**2.05**							

**PCWD - Peak Converted Wet Density , APCWD - Adjusted Peak Converted Wet Density, If Oversize material present PCWD and Moisture Variation is Adjusted*

Moisture Variation or Adjusted* (of OMC)	*t/m³*	**1.5% (dry)**	**2% (dry)**	**2% (dry)**							
Compactive Effort		Standard	Standard	Standard							
Hilf Density Ratio	*%*	**96.5**	**98.0**	**98.5**							
Min Hilf Density Ratio	*%*	95	95	95							

Note:

Test Methods: AS1289 5.8.1, 5.7.1, 2.1.1
Sampling Test Method: AS1289 1.2.1 6.4(b)

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HILF DENSITY RATIO REPORT

Customer: Universal Corporation Pty Ltd
Project: Newbridge South Stage 2
Location: Wallan Vic

Report Number: 6387.02-9
Report Date: 15/02/2020
Request No: -

Testing performed and reported at our Main Laboratory

Sample No.		**30694**	**30695**	**30696**	**30697**	**30698**	**30699**				
ID No.		1	2	3	4	5	6				
Date Sampled		11/02/2020	11/02/2020	11/02/2020	11/02/2020	11/02/2020	11/02/2020				
Time Sampled		am/pm	am/pm	am/pm	am/pm	am/pm	am/pm				
Date Tested		12/02/20202	12/02/20202	12/02/20202	12/02/20202	12/02/20202	12/02/20202				
Material Source		Site Derived	Site Derived	Site Derived	Site Derived	Site Derived	Site Derived				
Material Description		Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay				
To Be Used As		Backfill	Backfill	Backfill	Backfill	Backfill	Backfill				
Sample Location		Lot 231 South of Lot Layer 2	Lot 228 West of Lot Layer 2	Lot 233 North of Lot Layer 2	Lot 232 South of Lot Layer 2	Lot 222 South of Lot Layer 2	Lot 221 South of Lot Layer 2				
Layer Depth	*mm*	300	300	300	300	300	300				
Test Depth	*mm*	275	275	275	275	275	275				

Max Size	*mm*	19	19	19	19	19	19				
Oversize Wet	*%*	0	7	8	9	5	0				
Field Wet Density	*t/m³*	1.93	1.95	2.05	2.02	2.00	2.01				
Field Moisture Content	*%*	-	-	-	-	-	-				
PCWD or APCWD*	*t/m³*	**1.98**	**1.97**	**2.07**	**2.05**	**2.05**	**1.99**				

**PCWD - Peak Converted Wet Density , APCWD - Adjusted Peak Converted Wet Density, If Oversize material present PCWD and Moisture Variation is Adjusted*

Moisture Variation or Adjusted* (of OMC)	*t/m³*	**2% (dry)**	**1.5% (dry)**	**0.5% (wet)**	**1.5% (dry)**	**0.5% (wet)**	**2% (dry)**				
Compactive Effort		Standard	Standard	Standard	Standard	Standard	Standard				
Hilf Density Ratio	*%*	**97.5**	**99.0**	**99.0**	**99.0**	**98.0**	**101.0**				
Min Hilf Density Ratio	*%*	95	95	95	95	95	95				

Note:

Test Methods: AS1289 5.8.1, 5.7.1, 2.1.1
Sampling Test Method: AS1289 1.2.1 6.4(b)

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Approved Signatory

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NATA Accreditation No. 19945

Continent Geotech Services

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HILF DENSITY RATIO REPORT

Customer: Universal Corporation Pty Ltd
Project: Newbridge South Stage 2
Location: Wallan Vic

Report Number: 6387.02-10
Report Date: 15/02/2020
Request No: -

Testing performed and reported at our Main Laboratory

Sample No.		**30703**	**30704**	**30705**	**30706**	**30707**					
ID No.		1	2	3	4	5					
Date Sampled		12/02/2020	12/02/2020	12/02/2020	12/02/2020	12/02/2020					
Time Sampled		am/pm	am/pm	am/pm	am/pm	am/pm					
Date Tested		13/02/2020	13/02/2020	13/02/2020	13/02/2020	13/02/2020					
Material Source		Imported	Imported	Imported	Imported	Imported					
Material Description		Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay					
To Be Used As		Backfill	Backfill	Backfill	Backfill	Backfill					
Sample Location		Lot 232 North of Lot Layer 3	Lot 228 South of Lot Layer 3	Lot 229 North of Lot Layer 3	Lot 218 North of Lot Layer 3	Lot 220 Centre of Lot Layer 3					
Layer Depth	*mm*	300	300	300	300	300					
Test Depth	*mm*	275	275	275	275	275					

Max Size	*mm*	19	19	19	19	19					
Oversize Wet	*%*	11	5	8	0	7					
Field Wet Density	*t/m³*	2.05	2.07	2.05	1.99	2.04					
Field Moisture Content	*%*	-	-	-	-	-					
PCWD or APCWD*	*t/m³*	**2.04**	**2.07**	**2.24**	**2.06**	**2.06**					

**PCWD - Peak Converted Wet Density , APCWD - Adjusted Peak Converted Wet Density, If Oversize material present PCWD and Moisture Variation is Adjusted*

Moisture Variation or Adjusted* (of OMC)	*t/m³*	**1.5% (dry)**	**0.5% (dry)**	**omc**	**omc**	**omc**					
Compactive Effort		Standard	Standard	Standard	Standard	Standard					
Hilf Density Ratio	*%*	**100.0**	**99.5**	**99.0**	**96.5**	**99.0**					
Min Hilf Density Ratio	*%*	95	95	95	95	95					

Note:

Test Methods: AS1289 5.8.1, 5.7.1, 2.1.1
Sampling Test Method: AS1289 1.2.1 6.4(b)

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Approved Signatory

S Kang
NATA Accreditation No. 19945

Continent Geotech Services

Main Laboratory
16 Prime Street
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Ph: 03 9465 9813
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HILF DENSITY RATIO REPORT

Customer: Universal Corporation Pty Ltd
Project: Newbridge South Stage 2
Location: Wallan Vic

Report Number: 6387.02-11
Report Date: 9/03/2020
Request No: -

Testing performed and reported at our Main Laboratory

Sample No.		**30711**	**30712**	**30713**							
ID No.		1	2	3							
Date Sampled		13/02/2020	13/02/2020	13/02/2020							
Time Sampled		am/pm	am/pm	am/pm							
Date Tested		18/02/2020	18/02/2020	18/02/2020							
Material Source		Imported	Imported	Imported							
Material Description		Silty Clay	Silty Clay	Silty Clay							
To Be Used As		Backfill	Backfill	Backfill							
Sample Location		Lot 220 South of Lot Layer 4	Lot 222 North of Lot Layer 4	Lot 224 Centre of Lot Layer 4							
Layer Depth	*mm*	300	300	300							
Test Depth	*mm*	275	275	275							

Max Size	*mm*	19	19	19							
Oversize Wet	*%*	7	6	5							
Field Wet Density	*t/m³*	2.02	1.97	1.97							
Field Moisture Content	*%*	-	-	-							
PCWD or APCWD*	*t/m³*	**2.05**	**2.05**	**2.01**							

**PCWD - Peak Converted Wet Density , APCWD - Adjusted Peak Converted Wet Density, If Oversize material present PCWD and Moisture Variation is Adjusted*

Moisture Variation or Adjusted* (of OMC)	*t/m³*	**0.5% (dry)**	**omc**	**0.5% (dry)**							
Compactive Effort		Standard	Standard	Standard							
Hilf Density Ratio	*%*	**99.0**	**96.5**	**98.0**							
Min Hilf Density Ratio	*%*	95	95	95							

Note:

Test Methods: AS1289 5.8.1, 5.7.1, 2.1.1
Sampling Test Method: AS1289 1.2.1 6.4(b)

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Continent Geotech Services

HILF DENSITY RATIO REPORT

Customer: Universal Corporation Pty Ltd
Project: Newbridge South Stage 2
Location: Wallan Vic

Report Number: 6387.02-12
Report Date: 9/03/2020
Request No: -

Testing performed and reported at our Main Laboratory

Sample No.		**30718**	**30719**	**30720**	**30721**						
ID No.		1	2	3	4						
Date Sampled		14/02/2020	14/02/2020	14/02/2020	14/02/2020						
Time Sampled		am/pm	am/pm	am/pm	am/pm						
Date Tested		17/02/2020	17/02/2020	17/02/2020	17/02/2020						
Material Source		Imported	Imported	Imported	Imported						
Material Description		Silty Clay	Silty Clay	Silty Clay	Silty Clay						
To Be Used As		Backfill	Backfill	Backfill	Backfill						
Sample Location		Lot 217 South of Lot Layer 5	Lot 220 North of Lot Layer 5	Lot 223 East of Lot Layer 5	Lot 215 Centre of Lot Layer 5						
Layer Depth	*mm*	300	300	300	300						
Test Depth	*mm*	275	275	275	275						

Max Size	*mm*	19	19	19	19						
Oversize Wet	*%*	7	7	6	5						
Field Wet Density	*t/m³*	2.01	1.98	1.99	1.97						
Field Moisture Content	*%*	-	-	-	-						
PCWD or APCWD*	*t/m³*	**2.03**	**2.05**	**2.02**	**2.01**						

**PCWD - Peak Converted Wet Density , APCWD - Adjusted Peak Converted Wet Density, If Oversize material present PCWD and Moisture Variation is Adjusted*

Moisture Variation or Adjusted* (of OMC)	*t/m³*	**omc**	**0.5% (wet)**	**2% (dry)**	**2% (dry)**						
Compactive Effort		Standard	Standard	Standard	Standard						
Hilf Density Ratio	*%*	**99.0**	**96.5**	**98.5**	**98.0**						
Min Hilf Density Ratio	*%*	95	95	95	95						

Note:

Test Methods: AS1289 5.8.1, 5.7.1, 2.1.1
Sampling Test Method: AS1289 1.2.1 6.4(b)

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HILF DENSITY RATIO REPORT

Customer: Universal Corporation Pty Ltd
Project: Newbridge South Stage 2
Location: Wallan Vic

Report Number: 6387.02-13
Report Date: 9/03/2020
Request No: -

Testing performed and reported at our Main Laboratory

Sample No.		**30738**	**30739**	**30740**							
ID No.		1	2	3							
Date Sampled		17/02/2020	17/02/2020	17/02/2020							
Time Sampled		am/pm	am/pm	am/pm							
Date Tested		18/02/2020	18/02/2020	18/02/2020							
Material Source		Imported	Imported	Imported							
Material Description		Silty Clay	Silty Clay	Silty Clay							
To Be Used As		Backfill	Backfill	Backfill							
Sample Location		Lot 213 West of Lot Layer 2	Lot 214 Centre of Lot Layer 2	Lot 217 South of Lot Layer 6							
Layer Depth	*mm*	300	300	300							
Test Depth	*mm*	275	275	275							

Max Size	*mm*	19	19	19							
Oversize Wet	*%*	6	6	9							
Field Wet Density	*t/m³*	1.99	2.04	1.97							
Field Moisture Content	*%*	-	-	-							
PCWD or APCWD*	*t/m³*	**2.00**	**2.03**	**1.97**							

**PCWD - Peak Converted Wet Density , APCWD - Adjusted Peak Converted Wet Density, If Oversize material present PCWD and Moisture Variation is Adjusted*

Moisture Variation or Adjusted* (of OMC)	*t/m³*	**2% (dry)**	**1.5% (dry)**	**2% (dry)**							
Compactive Effort		Standard	Standard	Standard							
Hilf Density Ratio	*%*	**99.5**	**100.5**	**100.0**							
Min Hilf Density Ratio	*%*	95	95	95							

Note:

Test Methods: AS1289 5.8.1, 5.7.1, 2.1.1
Sampling Test Method: AS1289 1.2.1 6.4(b)

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HILF DENSITY RATIO REPORT

Customer: Universal Corporation Pty Ltd
Project: Newbridge South Stage 2
Location: Wallan Vic

Report Number: 6387.02-14
Report Date: 9/03/2020
Request No: -

Testing performed and reported at our Main Laboratory

Sample No.		**30806**	**30807**	**30808**							
ID No.		1	2	3							
Date Sampled		21/02/2020	21/02/2020	21/02/2020							
Time Sampled		am/pm	am/pm	am/pm							
Date Tested		27/02/2020	27/02/2020	27/02/2020							
Material Source		Imported	Imported	Imported							
Material Description		Silty Clay	Silty Clay	Silty Clay							
To Be Used As		Backfill	Backfill	Backfill							
Sample Location		Lot 221 South of Lot Layer 6	Lot 223 North of Lot Layer 6	Lot 203 South of Lot Layer 6							
Layer Depth	*mm*	300	300	300							
Test Depth	*mm*	275	275	275							

Max Size	*mm*	19	19	19							
Oversize Wet	*%*	3	16	12							
Field Wet Density	*t/m³*	2.04	1.98	2.01							
Field Moisture Content	*%*	-	-	-							
PCWD or APCWD*	*t/m³*	**2.04**	**2.06**	**2.05**							

**PCWD - Peak Converted Wet Density , APCWD - Adjusted Peak Converted Wet Density, If Oversize material present PCWD and Moisture Variation is Adjusted*

Moisture Variation or Adjusted* (of OMC)	*t/m³*	**0.5% (dry)**	**omc**	**omc**							
Compactive Effort		Standard	Standard	Standard							
Hilf Density Ratio	*%*	**100.0**	**96.0**	**98.0**							
Min Hilf Density Ratio	*%*	95	95	95							

Note:

Test Methods: AS1289 5.8.1, 5.7.1, 2.1.1
Sampling Test Method: AS1289 1.2.1 6.4(b)

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HILF DENSITY RATIO REPORT

Customer: Universal Corporation Pty Ltd
Project: Newbridge South Stage 2
Location: Wallan Vic

Report Number: 6387.02-15
Report Date: 9/03/2020
Request No: -

Testing performed and reported at our Main Laboratory

Sample No.		**30852**	**30853**	**30854**							
ID No.		1	2	3							
Date Sampled		24/02/2020	24/02/2020	24/02/2020							
Time Sampled		am/pm	am/pm	am/pm							
Date Tested		3/03/2020	3/03/2020	3/03/2020							
Material Source		Imported	Imported	Imported							
Material Description		Silty Clay	Silty Clay	Silty Clay							
To Be Used As		Backfill	Backfill	Backfill							
Sample Location		Lot 202 South of Lot Layer 4	Lot 229 North of Lot Layer 4	Lot 230 East of Lot Layer 4							
Layer Depth	*mm*	300	300	300							
Test Depth	*mm*	275	275	275							

Max Size	*mm*	19	19	19							
Oversize Wet	*%*	6	13	9							
Field Wet Density	*t/m³*	1.97	1.95	2.00							
Field Moisture Content	*%*	-	-	-							
PCWD or APCWD*	*t/m³*	**1.99**	**2.03**	**2.00**							

**PCWD - Peak Converted Wet Density , APCWD - Adjusted Peak Converted Wet Density, If Oversize material present PCWD and Moisture Variation is Adjusted*

Moisture Variation or Adjusted* (of OMC)	*t/m³*	**2% (dry)**	**omc**	**omc**							
Compactive Effort		Standard	Standard	Standard							
Hilf Density Ratio	*%*	**99.0**	**96.5**	**100.0**							
Min Hilf Density Ratio	*%*	95	95	95							

Note:

Test Methods: AS1289 5.8.1, 5.7.1, 2.1.1
Sampling Test Method: AS1289 1.2.1 6.4(b)

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HILF DENSITY RATIO REPORT

Customer: Universal Corporation Pty Ltd
Project: Newbridge South Stage 2
Location: Wallan Vic

Report Number: 6387.02-58
Report Date: 19/03/2020
Request No: -

Testing performed and reported at our Main Laboratory

Sample No.		**31068**	**31069**	**31070**							
ID No.		1	2	3							
Date Sampled		17/02/2020	17/02/2020	17/02/2020							
Time Sampled		am/pm	am/pm	am/pm							
Date Tested		18/02/2020	18/02/2020	18/02/2020							
Material Source		Imported	Imported	Imported							
Material Description		Silty Clay	Silty Clay	Silty Clay							
To Be Used As		Backfill	Backfill	Backfill							
Sample Location		Lot 217 South of Lot Layer 7	Lot 212 North of Lot Layer 4	Lot 214 South of Lot Layer 5							
Layer Depth	*mm*	300	300	300							
Test Depth	*mm*	275	275	275							

Max Size	*mm*	19	19	19							
Oversize Wet	*%*	9	10	10							
Field Wet Density	*t/m³*	1.92	1.97	1.98							
Field Moisture Content	*%*	-	-	-							
PCWD or APCWD*	*t/m³*	**2.02**	**2.05**	**2.05**							

**PCWD - Peak Converted Wet Density , APCWD - Adjusted Peak Converted Wet Density, If Oversize material present PCWD and Moisture Variation is Adjusted*

Moisture Variation or Adjusted* (of OMC)	*t/m³*	**omc**	**2% (dry)**	**2% (dry)**							
Compactive Effort		Standard	Standard	Standard							
Hilf Density Ratio	*%*	**95.0**	**96.0**	**96.5**							
Min Hilf Density Ratio	*%*	95	95	95							

Note:

Test Methods: AS1289 5.8.1, 5.7.1, 2.1.1
Sampling Test Method: AS1289 1.2.1 6.4(b)

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HILF DENSITY RATIO REPORT

Customer: Universal Corporation Pty Ltd
Project: Newbridge South Stage 2
Location: Wallan Vic

Report Number: 6387.02-17
Report Date: 19/03/2020
Request No: -

Testing performed and reported at our Main Laboratory

Sample No.		**30863**	**30864**	**30865**							
ID No.		1	2	3							
Date Sampled		25/02/2020	25/02/2020	25/02/2020							
Time Sampled		am/pm	am/pm	am/pm							
Date Tested		12/03/2020	12/03/2020	12/03/2020							
Material Source		Imported	Imported	Imported							
Material Description		Silty Clay	Silty Clay	Silty Clay							
To Be Used As		Backfill	Backfill	Backfill							
Sample Location		Foxtail Cr Layer 2 Centre of Cr	Lot 226 Layer 7 North of Lot	Lot 234 Layer 7 North of Lot							
Layer Depth	*mm*	300	300	300							
Test Depth	*mm*	275	275	275							

Max Size	*mm*	19	19	19							
Oversize Wet	*%*	6	6	7							
Field Wet Density	*t/m³*	2.01	1.99	1.95							
Field Moisture Content	*%*	-	-	-							
PCWD or APCWD*	*t/m³*	**2.06**	**2.00**	**1.99**							

**PCWD - Peak Converted Wet Density , APCWD - Adjusted Peak Converted Wet Density, If Oversize material present PCWD and Moisture Variation is Adjusted*

Moisture Variation or Adjusted* (of OMC)	*t/m³*	**omc**	**0.5% (dry)**	**0.5% (dry)**							
Compactive Effort		Standard	Standard	Standard							
Hilf Density Ratio	*%*	**97.0**	**99.5**	**98.0**							
Min Hilf Density Ratio	*%*	95	95	95							

Note:

Test Methods: AS1289 5.8.1, 5.7.1, 2.1.1
Sampling Test Method: AS1289 1.2.1 6.4(b)

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HILF DENSITY RATIO REPORT

Customer: Universal Corporation Pty Ltd
Project: Newbridge South Stage 2
Location: Wallan Vic

Report Number: 6387.02-18
Report Date: 19/03/2020
Request No: -

Testing performed and reported at our Main Laboratory

Sample No.		**30839**	**30840**	**30841**							
ID No.		1	2	3							
Date Sampled		26/02/2020	26/02/2020	26/02/2020							
Time Sampled		am/pm	am/pm	am/pm							
Date Tested		12/03/2020	12/03/2020	12/03/2020							
Material Source		Imported	Imported	Imported							
Material Description		Silty Clay	Silty Clay	Silty Clay							
To Be Used As		Backfill	Backfill	Backfill							
Sample Location		Lot 228 West of Lot Layer 5	Lot 229 North of Lot Layer 5	Lot 230 East of Lot Layer 5							
Layer Depth	*mm*	300	300	300							
Test Depth	*mm*	275	275	275							

Max Size	*mm*	19	19	19							
Oversize Wet	*%*	8	6	7							
Field Wet Density	*t/m³*	1.92	1.88	1.94							
Field Moisture Content	*%*	-	-	-							
PCWD or APCWD*	*t/m³*	**2.03**	**1.94**	**2.00**							

**PCWD - Peak Converted Wet Density , APCWD - Adjusted Peak Converted Wet Density, If Oversize material present PCWD and Moisture Variation is Adjusted*

Moisture Variation or Adjusted* (of OMC)	*t/m³*	**omc**	**0.5% (dry)**	**omc**							
Compactive Effort		Standard	Standard	Standard							
Hilf Density Ratio	*%*	**95.0**	**97.0**	**97.5**							
Min Hilf Density Ratio	*%*	95	95	95							

Note:

Test Methods: AS1289 5.8.1, 5.7.1, 2.1.1
Sampling Test Method: AS1289 1.2.1 6.4(b)

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HILF DENSITY RATIO REPORT

Customer: Universal Corporation Pty Ltd
Project: Newbridge South Stage 2
Location: Wallan Vic

Report Number: 6387.02-19
Report Date: 25/03/2020
Request No: -

Testing performed and reported at our Main Laboratory

Sample No.		**30899**	**30900**	**30901**							
ID No.		1	2	3							
Date Sampled		27/02/2020	27/02/2020	27/02/2020							
Time Sampled		am/pm	am/pm	am/pm							
Date Tested		12/03/2020	12/03/2020	12/03/2020							
Material Source		Imported	Imported	Imported							
Material Description		Silty Clay	Silty Clay	Silty Clay							
To Be Used As		Backfill	Backfill	Backfill							
Sample Location		Lot 233 South of Lot Layer 7	Lot 226 North of Lot Layer 7	Lot 222 North of Lot Layer 7							
Layer Depth	*mm*	300	300	300							
Test Depth	*mm*	275	275	275							

Max Size	*mm*	19	19	19							
Oversize Wet	%	6	7	8							
Field Wet Density	*t/m³*	2.01	2.04	2.02							
Field Moisture Content	%	-	-	-							
PCWD or APCWD*	*t/m³*	**2.02**	**2.06**	**2.04**							

**PCWD - Peak Converted Wet Density , APCWD - Adjusted Peak Converted Wet Density, If Oversize material present PCWD and Moisture Variation is Adjusted*

Moisture Variation or Adjusted* (of OMC)	*t/m³*	**omc**	**omc**	**omc**							
Compactive Effort		Standard	Standard	Standard							
Hilf Density Ratio	%	**99.5**	**99.0**	**99.0**							
Min Hilf Density Ratio	%	95	95	95							

Note:

Test Methods: AS1289 5.8.1, 5.7.1, 2.1.1
Sampling Test Method: AS1289 1.2.1 6.4(b)

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HILF DENSITY RATIO REPORT

Customer: Universal Corporation Pty Ltd
Project: Newbridge South Stage 2
Location: Wallan Vic

Report Number: 6387.02-20
Report Date: 25/03/2020
Request No: -

Testing performed and reported at our Main Laboratory

Sample No.		**30924**	**30925**	**30926**	**30927**	**30928**	**30929**				
ID No.		1	2	3	4	5	6				
Date Sampled		28/02/2020	28/02/2020	28/02/2020	28/02/2020	28/02/2020	28/02/2020				
Time Sampled		am/pm	am/pm	am/pm	am/pm	am/pm	am/pm				
Date Tested		12/03/2020	12/03/2020	12/03/2020	12/03/2020	12/03/2020	12/03/2020				
Material Source		Site Derived	Site Derived	Site Derived	Site Derived	Site Derived	Site Derived				
Material Description		Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay				
To Be Used As		Backfill	Backfill	Backfill	Backfill	Backfill	Backfill				
Sample Location		Lot 209 South of Lot Natural Ground	Lot 216 North of Lot Natural Ground	Lot 205 North of Lot FSL-0.3m	Lot 222 East of Lot FSL-0.3m	Lot 203 North of Lot FSL	Lot 219 North of Lot FSL				
Layer Depth	*mm*	300	300	300	300	300	300				
Test Depth	*mm*	275	275	275	275	275	275				

Max Size	*mm*	19	19	19	19	19	19				
Oversize Wet	*%*	9	8	8	9	10	6				
Field Wet Density	*t/m³*	2.00	1.95	2.01	2.01	2.03	1.99				
Field Moisture Content	*%*	-	-	-	-	-	-				
PCWD or APCWD*	*t/m³*	**2.01**	**1.98**	**2.09**	**2.04**	**2.06**	**2.03**				

**PCWD - Peak Converted Wet Density , APCWD - Adjusted Peak Converted Wet Density, If Oversize material present PCWD and Moisture Variation is Adjusted*

Moisture Variation or Adjusted* (of OMC)	*t/m³*	**omc**	**omc**	**0.5% (wet)**	**omc**	**0.5% (wet)**	**omc**				
Compactive Effort		Standard	Standard	Standard	Standard	Standard	Standard				
Hilf Density Ratio	*%*	**99.5**	**98.5**	**96.5**	**98.5**	**99.0**	**98.5**				
Min Hilf Density Ratio	*%*	95	95	95	95	95	95				

Note:

Test Methods: AS1289 5.8.1, 5.7.1, 2.1.1
Sampling Test Method: AS1289 1.2.1 6.4(b)

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Approved Signatory

S Kang
NATA Accreditation No. 19945

Continent Geotech Services

Main Laboratory
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Ph: 03 9465 9813
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HILF DENSITY RATIO REPORT

Customer: Universal Corporation Pty Ltd
Project: Newbridge South Stage 2
Location: Wallan Vic

Report Number: 6387.02-21
Report Date: 25/03/2020
Request No: -

Testing performed and reported at our Main Laboratory

Sample No.		**30957**	**30958**	**30959**	**30960**						
ID No.		1	2	3	4						
Date Sampled		3/03/2020	3/03/2020	3/03/2020	3/03/2020						
Time Sampled		am/pm	am/pm	am/pm	am/pm						
Date Tested		16/03/2020	16/03/2020	16/03/2020	16/03/2020						
Material Source		Imported	Imported	Imported	Imported						
Material Description		Silty Clay	Silty Clay	Silty Clay	Silty Clay						
To Be Used As		Backfill	Backfill	Backfill	Backfill						
Sample Location		Lot 209 South of Lot Layer 3	Lot 211 North of Lot Layer 3	Lot 212 North of Lot Layer 3	Lot 215 South of Lot Layer 3						
Layer Depth	*mm*	300	300	300	300						
Test Depth	*mm*	275	275	275	275						

Max Size	*mm*	19	19	19	19						
Oversize Wet	*%*	10	9	9	12						
Field Wet Density	*t/m³*	1.96	2.01	2.04	1.98						
Field Moisture Content	*%*	-	-	-	-						
PCWD or APCWD*	*t/m³*	**2.07**	**2.10**	**2.12**	**2.09**						

**PCWD - Peak Converted Wet Density , APCWD - Adjusted Peak Converted Wet Density, If Oversize material present PCWD and Moisture Variation is Adjusted*

Moisture Variation or Adjusted* (of OMC)	*t/m³*	**omc**	**omc**	**0.5% (wet)**	**0.5% (wet)**						
Compactive Effort		Standard	Standard	Standard	Standard						
Hilf Density Ratio	*%*	**95.0**	**95.5**	**96.0**	**95.0**						
Min Hilf Density Ratio	*%*	95	95	95	95						

Note:

Test Methods: AS1289 5.8.1, 5.7.1, 2.1.1
Sampling Test Method: AS1289 1.2.1 6.4(b)

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Continent Geotech Services

HILF DENSITY RATIO REPORT

Customer: Universal Corporation Pty Ltd
Project: Newbridge South Stage 2
Location: Wallan Vic

Report Number: 6387.02-22
Report Date: 25/03/2020
Request No: -

Testing performed and reported at our Main Laboratory

Sample No.		**30961**	**30962**	**30963**	**30964**						
ID No.		1	2	3	4						
Date Sampled		4/03/2020	4/03/2020	4/03/2020	4/03/2020						
Time Sampled		am/pm	am/pm	am/pm	am/pm						
Date Tested		11/03/2020	11/03/2020	11/03/2020	11/03/2020						
Material Source		Imported	Imported	Imported	Imported						
Material Description		Silty Clay	Silty Clay	Silty Clay	Silty Clay						
To Be Used As		Backfill	Backfill	Backfill	Backfill						
Sample Location		Lot 210 South of Lot Layer 4	Lot 209 North of Lot Layer 4	Lot 216 North of Lot Layer 4	Lot 218 North of Lot Layer 4						
Layer Depth	*mm*	300	300	300	300						
Test Depth	*mm*	275	275	275	275						

Max Size	*mm*	19	19	19	19						
Oversize Wet	*%*	7	9	8	10						
Field Wet Density	*t/m³*	2.02	1.97	2.02	1.93						
Field Moisture Content	*%*	-	-	-	-						
PCWD or APCWD*	*t/m³*	**2.08**	**2.00**	**2.09**	**1.99**						

**PCWD - Peak Converted Wet Density , APCWD - Adjusted Peak Converted Wet Density, If Oversize material present PCWD and Moisture Variation is Adjusted*

Moisture Variation or Adjusted* (of OMC)	*t/m³*	**omc**	**omc**	**omc**	**omc**						
Compactive Effort		Standard	Standard	Standard	Standard						
Hilf Density Ratio	*%*	**97.0**	**98.5**	**96.5**	**97.0**						
Min Hilf Density Ratio	*%*	95	95	95	95						

Note:

Test Methods: AS1289 5.8.1, 5.7.1, 2.1.1
Sampling Test Method: AS1289 1.2.1 6.4(b)

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HILF DENSITY RATIO REPORT

Customer: Universal Corporation Pty Ltd
Project: Newbridge South Stage 2
Location: Wallan Vic

Report Number: 6387.02-23
Report Date: 25/03/2020
Request No: -

Testing performed and reported at our Main Laboratory

Sample No.		**31009**	**31010**	**31011**							
ID No.		1	2	3							
Date Sampled		11/03/2020	11/03/2020	11/03/2020							
Time Sampled		am/pm	am/pm	am/pm							
Date Tested		13/03/2020	13/03/2020	13/03/2020							
Material Source		Imported	Imported	Imported							
Material Description		Silty Clay	Silty Clay	Silty Clay							
To Be Used As		Backfill	Backfill	Backfill							
Sample Location		Lot 209 South of Lot Layer 5	Lot 211 South of Lot Layer 5	Lot 217 North of Lot Layer 5							
Layer Depth	*mm*	300	300	300							
Test Depth	*mm*	275	275	275							

Max Size	*mm*	19	19	19							
Oversize Wet	*%*	7	6	6							
Field Wet Density	*t/m³*	2.00	2.02	1.97							
Field Moisture Content	*%*	-	-	-							
PCWD or APCWD*	*t/m³*	**2.02**	**2.05**	**1.98**							

**PCWD - Peak Converted Wet Density , APCWD - Adjusted Peak Converted Wet Density, If Oversize material present PCWD and Moisture Variation is Adjusted*

Moisture Variation or Adjusted* (of OMC)	*t/m³*	**omc**	**omc**	**0.5% (wet)**							
Compactive Effort		Standard	Standard	Standard							
Hilf Density Ratio	*%*	**99.0**	**98.5**	**99.5**							
Min Hilf Density Ratio	*%*	95	95	95							

Note:

Test Methods: AS1289 5.8.1, 5.7.1, 2.1.1
Sampling Test Method: AS1289 1.2.1 6.4(b)

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HILF DENSITY RATIO REPORT

Customer: Universal Corporation Pty Ltd
Project: Newbridge South Stage 2
Location: Wallan Vic

Report Number: 6387.02-22
Report Date: 25/03/2020
Request No: -

Testing performed and reported at our Main Laboratory

Sample No.		**31012**	**31013**	**31014**	**31015**						
ID No.		1	2	3	4						
Date Sampled		12/03/2020	12/03/2020	12/03/2020	12/03/2020						
Time Sampled		am/pm	am/pm	am/pm	am/pm						
Date Tested		13/03/2020	13/03/2020	13/03/2020	13/03/2020						
Material Source		Imported	Imported	Imported	Imported						
Material Description		Silty Clay	Silty Clay	Silty Clay	Silty Clay						
To Be Used As		Backfill	Backfill	Backfill	Backfill						
Sample Location		Lot 218 South of Lot Layer 6	Lot 217 North of Lot Layer 6	Lot 209 North of Lot Layer 6	Lot 210 North of Lot Layer 6						
Layer Depth	*mm*	300	300	300	300						
Test Depth	*mm*	275	275	275	275						

Max Size	*mm*	19	19	19	19						
Oversize Wet	*%*	9	10	0	9						
Field Wet Density	*t/m³*	1.94	2.01	2.08	2.01						
Field Moisture Content	*%*	-	-	-	-						
PCWD or APCWD*	*t/m³*	**2.01**	**2.00**	**2.08**	**2.05**						

**PCWD - Peak Converted Wet Density , APCWD - Adjusted Peak Converted Wet Density, If Oversize material present PCWD and Moisture Variation is Adjusted*

Moisture Variation or Adjusted* (of OMC)	*t/m³*	**omc**	**0.5% (wet)**	**omc**	**0.5% (dry)**						
Compactive Effort		Standard	Standard	Standard	Standard						
Hilf Density Ratio	*%*	**96.5**	**100.0**	**99.5**	**98.0**						
Min Hilf Density Ratio	*%*	95	95	95	95						

Note:

Test Methods: AS1289 5.8.1, 5.7.1, 2.1.1
Sampling Test Method: AS1289 1.2.1 6.4(b)

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HILF DENSITY RATIO REPORT

Customer: Universal Corporation Pty Ltd
Project: Newbridge South Stage 2
Location: Wallan Vic

Report Number: 6387.02-25
Report Date: 25/03/2020
Request No: -

Testing performed and reported at our Main Laboratory

Sample No.		**31082**	**31083**	**31084**							
ID No.		1	2	3							
Date Sampled		18/03/2020	18/03/2020	18/03/2020							
Time Sampled		am/pm	am/pm	am/pm							
Date Tested		22/03/2020	22/03/2020	22/03/2020							
Material Source		Imported	Imported	Imported							
Material Description		Silty Clay	Silty Clay	Silty Clay							
To Be Used As		Backfill	Backfill	Backfill							
Sample Location		Foxtail Cct Centre of Ct Layer 4	Lot 212 North of Lot Layer 6	Foxtail Cct Centre of Ct Layer 4							
Layer Depth	*mm*	300	300	300							
Test Depth	*mm*	275	275	275							

Max Size	*mm*	19	19	19							
Oversize Wet	*%*	7	8	0							
Field Wet Density	*t/m³*	1.98	1.94	1.91							
Field Moisture Content	*%*	-	-	-							
PCWD or APCWD*	*t/m³*	**2.05**	**2.03**	**2.01**							

**PCWD - Peak Converted Wet Density , APCWD - Adjusted Peak Converted Wet Density, If Oversize material present PCWD and Moisture Variation is Adjusted*

Moisture Variation or Adjusted* (of OMC)	*t/m³*	**omc**	**omc**	**1.5% (dry)**							
Compactive Effort		Standard	Standard	Standard							
Hilf Density Ratio	*%*	**96.5**	**95.5**	**95.5**							
Min Hilf Density Ratio	*%*	95	95	95							

Note:

Test Methods: AS1289 5.8.1, 5.7.1, 2.1.1
Sampling Test Method: AS1289 1.2.1 6.4(b)

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HILF DENSITY RATIO REPORT

Customer: Universal Corporation Pty Ltd
Project: Newbridge South Stage 2
Location: Wallan Vic

Report Number: 6387.02-26
Report Date: 28/03/2020
Request No: -

Testing performed and reported at our Main Laboratory

Sample No.		**30809**	**30810**	**30811**							
ID No.		1	2	3							
Date Sampled		18/02/2020	18/02/2020	18/02/2020							
Time Sampled		am/pm	am/pm	am/pm							
Date Tested		20/02/2020	20/02/2020	20/02/2020							
Material Source		Imported	Imported	Imported							
Material Description		Silty Clay	Silty Clay	Silty Clay							
To Be Used As		Backfill	Backfill	Backfill							
Sample Location		Lot 216 South of Lot Layer 6	Lot 217 North of Lot Layer 6	Lot 217 South of Lot Layer 6							
Layer Depth	*mm*	300	300	300							
Test Depth	*mm*	275	275	275							

Max Size	*mm*	19	19	19							
Oversize Wet	*%*	10	9	0							
Field Wet Density	*t/m³*	2.00	1.98	2.00							
Field Moisture Content	*%*	-	-	-							
PCWD or APCWD*	*t/m³*	**2.01**	**2.01**	**2.04**							

**PCWD - Peak Converted Wet Density , APCWD - Adjusted Peak Converted Wet Density, If Oversize material present PCWD and Moisture Variation is Adjusted*

Moisture Variation or Adjusted* (of OMC)	*t/m³*	**omc**	**omc**	**1.5% (dry)**							
Compactive Effort		Standard	Standard	Standard							
Hilf Density Ratio	*%*	**99.5**	**98.5**	**98.0**							
Min Hilf Density Ratio	*%*	95	95	95							

Note:

Test Methods: AS1289 5.8.1, 5.7.1, 2.1.1
Sampling Test Method: AS1289 1.2.1 6.4(b)

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HILF DENSITY RATIO REPORT

Customer: Universal Corporation Pty Ltd
Project: Newbridge South Stage 2
Location: Wallan Vic

Report Number: 6387.02-27
Report Date: 26/03/2020
Request No: -

Testing performed and reported at our Main Laboratory

Sample No.		**31029**	**31030**	**31031**	**31032**						
ID No.		1	2	3	4						
Date Sampled		13/03/2020	13/03/2020	13/03/2020	13/03/2020						
Time Sampled		am/pm	am/pm	am/pm	am/pm						
Date Tested		14/03/2020	14/03/2020	14/03/2020	14/03/2020						
Material Source		Site Derived	Site Derived	Site Derived	Site Derived						
Material Description		Silty Clay	Silty Clay	Silty Clay	Silty Clay						
To Be Used As		Backfill	Backfill	Backfill	Backfill						
Sample Location		Lot 215 North of Lot Layer 7	Lot 217 West of Lot Layer 7	Lot 210 North of Lot Layer 7	Lot 208 South of Lot Layer 7						
Layer Depth	*mm*	300	300	300	300						
Test Depth	*mm*	275	275	275	275						

Max Size	*mm*	19	19	19	19						
Oversize Wet	*%*	0	8	10	11						
Field Wet Density	*t/m³*	1.94	2.00	2.01	1.96						
Field Moisture Content	*%*	-	-	-	-						
PCWD or APCWD*	*t/m³*	**2.00**	**2.07**	**2.04**	**2.02**						

**PCWD - Peak Converted Wet Density , APCWD - Adjusted Peak Converted Wet Density, If Oversize material present PCWD and Moisture Variation is Adjusted*

Moisture Variation or Adjusted* (of OMC)	*t/m³*	**omc**	**omc**	**omc**	**omc**						
Compactive Effort		Standard	Standard	Standard	Standard						
Hilf Density Ratio	*%*	**97.0**	**96.5**	**98.5**	**96.5**						
Min Hilf Density Ratio	*%*	95	95	95	95						

Note:

Test Methods: AS1289 5.8.1, 5.7.1, 2.1.1
Sampling Test Method: AS1289 1.2.1 6.4(b)

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HILF DENSITY RATIO REPORT

Customer: Universal Corporation Pty Ltd
Project: Newbridge South Stage 2
Location: Wallan Vic

Report Number: 6387.02-28
Report Date: 26/03/2020
Request No: -

Testing performed and reported at our Main Laboratory

Sample No.		**31054**	**31055**	**31056**							
ID No.		1	2	3							
Date Sampled		17/03/2020	17/03/2020	17/03/2020							
Time Sampled		am/pm	am/pm	am/pm							
Date Tested		17/03/2020	17/03/2020	17/03/2020							
Material Source		Site Derived	Site Derived	Site Derived							
Material Description		Silty Clay	Silty Clay	Silty Clay							
To Be Used As		Backfill	Backfill	Backfill							
Sample Location		Lot 211 Centre of Lot Layer 6	Lot 211 West of Lot Layer 6	Lot 213 North of Lot Layer 6							
Layer Depth	*mm*	300	300	300							
Test Depth	*mm*	275	275	275							

Max Size	*mm*	19	19	19							
Oversize Wet	%	8	7	9							
Field Wet Density	*t/m³*	2.04	2.06	1.96							
Field Moisture Content	%	-	-	-							
PCWD or APCWD*	*t/m³*	**2.03**	**2.08**	**2.04**							

**PCWD - Peak Converted Wet Density , APCWD - Adjusted Peak Converted Wet Density, If Oversize material present PCWD and Moisture Variation is Adjusted*

Moisture Variation or Adjusted* (of OMC)	*t/m³*	**omc**	**omc**	**omc**							
Compactive Effort		Standard	Standard	Standard							
Hilf Density Ratio	%	**100.5**	**99.0**	**96.0**							
Min Hilf Density Ratio	%	95	95	95							

Note:

Test Methods: AS1289 5.8.1, 5.7.1, 2.1.1
Sampling Test Method: AS1289 1.2.1 6.4(b)

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HILF DENSITY RATIO REPORT

Customer: Universal Corporation Pty Ltd
Project: Newbridge South Stage 2
Location: Wallan Vic

Report Number: 6387.02-29
Report Date: 26/03/2020
Request No: -

Testing performed and reported at our Main Laboratory

Sample No.		**31097**	**31098**	**31099**							
ID No.		1	2	3							
Date Sampled		19/03/2020	19/03/2020	19/03/2020							
Time Sampled		am/pm	am/pm	am/pm							
Date Tested		19/03/2020	19/03/2020	19/03/2020							
Material Source		Site Derived	Site Derived	Site Derived							
Material Description		Silty Clay	Silty Clay	Silty Clay							
To Be Used As		Backfill	Backfill	Backfill							
Sample Location		Lot 214 Centre of Lot Layer 6	Foxtail Court Centre of Lot Layer 6	Foxtail Court Centre of Lot Layer 6							
Layer Depth	*mm*	300	300	300							
Test Depth	*mm*	275	275	275							

Max Size	*mm*	19	19	19							
Oversize Wet	*%*	9	8	10							
Field Wet Density	*t/m³*	2.00	2.07	1.98							
Field Moisture Content	*%*	-	-	-							
PCWD or APCWD*	*t/m³*	**2.00**	**2.06**	**2.04**							

**PCWD - Peak Converted Wet Density , APCWD - Adjusted Peak Converted Wet Density, If Oversize material present PCWD and Moisture Variation is Adjusted*

Moisture Variation or Adjusted* (of OMC)	*t/m³*	**omc**	**0.5% (dry)**	**omc**							
Compactive Effort		Standard	Standard	Standard							
Hilf Density Ratio	*%*	**100.5**	**100.0**	**97.0**							
Min Hilf Density Ratio	*%*	95	95	95							

Note:

Test Methods: AS1289 5.8.1, 5.7.1, 2.1.1
Sampling Test Method: AS1289 1.2.1 6.4(b)

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HILF DENSITY RATIO REPORT

Customer: Universal Corporation Pty Ltd
Project: Newbridge South Stage 2
Location: Wallan Vic

Report Number: 6387.02-30
Report Date: 26/03/2020
Request No: -

Testing performed and reported at our Main Laboratory

Sample No.		**31157**	**31158**	**31159**							
ID No.		1	2	3							
Date Sampled		20/03/2020	20/03/2020	20/03/2020							
Time Sampled		am/pm	am/pm	am/pm							
Date Tested		20/03/2020	20/03/2020	20/03/2020							
Material Source		Site Derived	Site Derived	Site Derived							
Material Description		Silty Clay	Silty Clay	Silty Clay							
To Be Used As		Backfill	Backfill	Backfill							
Sample Location		Lot 210 North of Lot Layer 8	Lot 215 South of Lot Layer 8	Lot 216 South of Lot Layer 8							
Layer Depth	*mm*	300	300	300							
Test Depth	*mm*	275	275	275							

Max Size	*mm*	19	19	19							
Oversize Wet	*%*	10	8	10							
Field Wet Density	*t/m³*	1.97	2.04	2.10							
Field Moisture Content	*%*	-	-	-							
PCWD or APCWD*	*t/m³*	**2.02**	**2.05**	**2.12**							

**PCWD - Peak Converted Wet Density , APCWD - Adjusted Peak Converted Wet Density, If Oversize material present PCWD and Moisture Variation is Adjusted*

Moisture Variation or Adjusted* (of OMC)	*t/m³*	**0.5% (dry)**	**0.5% (dry)**	**0.5% (dry)**							
Compactive Effort		Standard	Standard	Standard							
Hilf Density Ratio	*%*	**98.0**	**99.5**	**98.5**							
Min Hilf Density Ratio	*%*	95	95	95							

Note:

Test Methods: AS1289 5.8.1, 5.7.1, 2.1.1
Sampling Test Method: AS1289 1.2.1 6.4(b)

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Approved Signatory

S Kang
NATA Accreditation No. 19945

Continent Geotech Services

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HILF DENSITY RATIO REPORT

Customer: Universal Corporation Pty Ltd
Project: Newbridge South Stage 2
Location: Wallan Vic

Report Number: 6387.02-31
Report Date: 26/03/2020
Request No: -

Testing performed and reported at our Main Laboratory

Sample No.		**31154**	**31155**	**31156**							
ID No.		1	2	3							
Date Sampled		23/03/2020	23/03/2020	23/03/2020							
Time Sampled		am/pm	am/pm	am/pm							
Date Tested		23/03/2020	23/03/2020	23/03/2020							
Material Source		Site Derived	Site Derived	Site Derived							
Material Description		Silty Clay	Silty Clay	Silty Clay							
To Be Used As		Backfill	Backfill	Backfill							
Sample Location		Lot 208 Layer 7 South of Lot	Lot 210 Layer 7 North of Lot	Lot 217 Layer 7 South of Lot							
Layer Depth	*mm*	300	300	300							
Test Depth	*mm*	275	275	275							

Max Size	*mm*	19	19	19							
Oversize Wet	*%*	9	9	7							
Field Wet Density	*t/m³*	1.97	1.98	1.93							
Field Moisture Content	*%*	-	-	-							
PCWD or APCWD*	*t/m³*	**2.00**	**2.05**	**2.00**							

**PCWD - Peak Converted Wet Density , APCWD - Adjusted Peak Converted Wet Density, If Oversize material present PCWD and Moisture Variation is Adjusted*

Moisture Variation or Adjusted* (of OMC)	*t/m³*	**0.5% (dry)**	**0.5% (dry)**	**0.5% (wet)**							
Compactive Effort		Standard	Standard	Standard							
Hilf Density Ratio	*%*	**98.5**	**96.5**	**96.5**							
Min Hilf Density Ratio	*%*	95	95	95							

Note:

Test Methods: AS1289 5.8.1, 5.7.1, 2.1.1
Sampling Test Method: AS1289 1.2.1 6.4(b)

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HILF DENSITY RATIO REPORT

Customer: Universal Corporation Pty Ltd
Project: Newbridge South Stage 2
Location: Wallan Vic

Report Number: 6387.02-32
Report Date: 26/03/2020
Request No: -

Testing performed and reported at our Main Laboratory

Sample No.		**31184**	**31185**	**31186**							
ID No.		1	2	3							
Date Sampled		24/03/2020	24/03/2020	24/03/2020							
Time Sampled		am/pm	am/pm	am/pm							
Date Tested		24/03/2020	24/03/2020	24/03/2020							
Material Source		Site Derived	Site Derived	Site Derived							
Material Description		Silty Clay	Silty Clay	Silty Clay							
To Be Used As		Backfill	Backfill	Backfill							
Sample Location		Foxtail Court Centre of Lot Layer 7	Foxtail Court Centre of Lot Layer 7	Foxtail Court Centre of Lot Layer 7							
Layer Depth	*mm*	300	300	300							
Test Depth	*mm*	275	275	275							

Max Size	*mm*	19	19	19							
Oversize Wet	*%*	8	6	7							
Field Wet Density	*t/m³*	1.94	1.96	1.93							
Field Moisture Content	*%*	-	-	-							
PCWD or APCWD*	*t/m³*	**1.99**	**2.05**	**2.03**							

**PCWD - Peak Converted Wet Density , APCWD - Adjusted Peak Converted Wet Density, If Oversize material present PCWD and Moisture Variation is Adjusted*

Moisture Variation or Adjusted* (of OMC)	*t/m³*	**omc**	**0.5% (dry)**	**omc**							
Compactive Effort		Standard	Standard	Standard							
Hilf Density Ratio	*%*	**98.0**	**95.5**	**95.0**							
Min Hilf Density Ratio	*%*	95	95	95							

Note:

Test Methods: AS1289 5.8.1, 5.7.1, 2.1.1
Sampling Test Method: AS1289 1.2.1 6.4(b)

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HILF DENSITY RATIO REPORT

Customer: Universal Corporation Pty Ltd
Project: Newbridge South Stage 2
Location: Wallan Vic

Report Number: 6387.02-33
Report Date: 26/03/2020
Request No: -

Testing performed and reported at our Main Laboratory

Sample No.		**31192**	**31193**	**31194**							
ID No.		1	2	3							
Date Sampled		25/03/2020	25/03/2020	25/03/2020							
Time Sampled		am/pm	am/pm	am/pm							
Date Tested		25/03/2020	25/03/2020	25/03/2020							
Material Source		Site Derived	Site Derived	Site Derived							
Material Description		Silty Clay	Silty Clay	Silty Clay							
To Be Used As		Backfill	Backfill	Backfill							
Sample Location		Foxtail Court Centre of Lot Layer 7	Foxtail Court Centre of Lot Layer 7	Foxtail Court Centre of Lot Layer 7							
Layer Depth	*mm*	300	300	300							
Test Depth	*mm*	275	275	275							

Max Size	*mm*	19	19	19							
Oversize Wet	*%*	6	4	6							
Field Wet Density	*t/m³*	2.00	1.95	1.94							
Field Moisture Content	*%*	-	-	-							
PCWD or APCWD*	*t/m³*	**2.04**	**2.05**	**2.03**							

**PCWD - Peak Converted Wet Density , APCWD - Adjusted Peak Converted Wet Density, If Oversize material present PCWD and Moisture Variation is Adjusted*

Moisture Variation or Adjusted* (of OMC)	*t/m³*	**0.5% (dry)**	**omc**	**omc**							
Compactive Effort		Standard	Standard	Standard							
Hilf Density Ratio	*%*	**98.0**	**95.0**	**95.5**							
Min Hilf Density Ratio	*%*	95	95	95							

Note:

Test Methods: AS1289 5.8.1, 5.7.1, 2.1.1
Sampling Test Method: AS1289 1.2.1 6.4(b)

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HILF DENSITY RATIO REPORT

Customer: Universal Corporations Pty Ltd
Project: Newbridge South Stage 2
Location: Wallan, VIC

Report Number: 6387.02 - 34
Report Date: 18/06/2020
Request No: -

Testing performed and reported at our Main Laboratory

Sample No.		**32502**	**32503**	**32504**							
ID No.		1	2	3							
Test Date		11/06/2020	11/06/2020	11/06/2020							
Test Time		am-pm	am-pm	am-pm							
Material Source		Site Derived	Site Derived	Site Derived							
Material Description		Silty Clay	Silty Clay	Silty Clay							
To Be Used As		Fill	Fill	Fill							
Sample Location		Lot 229 North Side Layer 6	Lot 229 North Side Layer 6	Lot 230 North Side Layer 6							
Layer Depth	*mm*	200	200	200							
Test Depth	*mm*	175	175	175							

Max Size	*mm*	19	19	19							
Oversize Wet	%	0	0	0							
Field Wet Density	*t/m³*	1.93	2.05	1.90							
Field Moisture Content	%	-	-	-							
PCWD or APCWD*	*t/m³*	1.97	2.06	2.00							

**PCWD - Peak Converted Wet Density , APCWD - Adjusted Peak Converted Wet Density, If Oversize material present PCWD and Moisture Variation is Adjusted*

Moisture Variation or Adjusted* (of OMC)	*t/m³*	0.5% (wet)	omc	omc							
Compactive Effort		Standard	Standard	Standard							
Hilf Density Ratio	%	**98.0**	**99.5**	**95.0**							
Min Hilf Density Ratio	%	95.0	95.0	95.0							

Note:

Test Methods: AS1289 5.8.1, 5.7.1, 2.1.1
Sampling Test Method: AS1289 1.2.1 6.4(b)

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HILF DENSITY RATIO REPORT

Customer: Universal Corporations Pty Ltd
Project: Newbridge South Stage 2
Location: Wallan, VIC

Report Number: 6387.02 - 35
Report Date: 18/06/2020
Request No: -

Testing performed and reported at our Main Laboratory

Sample No.		**32508**	**32509**	**32510**							
ID No.		1	2	3							
Test Date		12/06/2020	12/06/2020	12/06/2020							
Test Time		am-pm	am-pm	am-pm							
Material Source		Site Derived	Site Derived	Site Derived							
Material Description		Silty Clay	Silty Clay	Silty Clay							
To Be Used As		Fill	Fill	Fill							
Sample Location		Lot 230 East Side Layer 6	Lot 230 West Side Layer 6	Lot 229 East Side Layer 6							
Layer Depth	*mm*	200	200	200							
Test Depth	*mm*	175	175	175							

Max Size	*mm*	19	19	19							
Oversize Wet	%	0	0	0							
Field Wet Density	*t/m³*	2.09	2.09	2.04							
Field Moisture Content	%	-	-	-							
PCWD or APCWD*	*t/m³*	2.13	2.16	2.13							

**PCWD - Peak Converted Wet Density , APCWD - Adjusted Peak Converted Wet Density, If Oversize material present PCWD and Moisture Variation is Adjusted*

Moisture Variation or Adjusted* (of OMC)	*t/m³*	omc	0.5% (dry)	0.5% (dry)							
Compactive Effort		Standard	Standard	Standard							
Hilf Density Ratio	%	**98.5**	**97.0**	**96.0**							
Min Hilf Density Ratio	%	95.0	95.0	95.0							

Note:

Test Methods: AS1289 5.8.1, 5.7.1, 2.1.1
Sampling Test Method: AS1289 1.2.1 6.4(b)

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HILF DENSITY RATIO REPORT

Customer: Universal Corporations Pty Ltd
Project: Newbridge South Stage 2
Location: Wallan, VIC

Report Number: 6387.02 - 36
Report Date: 18/06/2020
Request No: -

Testing performed and reported at our Main Laboratory

Sample No.		**32545**	**32546**	**32547**							
ID No.		1	2	3							
Test Date		15/06/2020	15/06/2020	15/06/2020							
Test Time		am-pm	am-pm	am-pm							
Material Source		Site Derived	Site Derived	Site Derived							
Material Description		Silty Clay	Silty Clay	Silty Clay							
To Be Used As		Fill	Fill	Fill							
Sample Location		Lot 229 South Side Layer 7	Lot 230 South Side Layer 7	Lot 229 South Side Layer 7							
Layer Depth	*mm*	300	300	300							
Test Depth	*mm*	275	275	275							

Max Size	*mm*	19	19	19							
Oversize Wet	%	0	0	0							
Field Wet Density	*t/m³*	2.06	2.10	2.00							
Field Moisture Content	%	-	-	-							
PCWD or APCWD*	*t/m³*	2.08	2.15	2.10							

**PCWD - Peak Converted Wet Density , APCWD - Adjusted Peak Converted Wet Density, If Oversize material present PCWD and Moisture Variation is Adjusted*

Moisture Variation or Adjusted* (of OMC)	*t/m³*	omc	0.5% (dry)	0.5% (dry)							
Compactive Effort		Standard	Standard	Standard							
Hilf Density Ratio	%	**99.0**	**98.0**	**95.5**							
Min Hilf Density Ratio	%	95.0	95.0	95.0							

Note:

Test Methods: AS1289 5.8.1, 5.7.1, 2.1.1
Sampling Test Method: AS1289 1.2.1 6.4(b)

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HILF DENSITY RATIO REPORT

Customer: Universal Corporations Pty Ltd
Project: Newbridge South Stage 2
Location: Wallan, VIC

Report Number: 6387.02 - 37
Report Date: 18/06/2020
Request No: -

Testing performed and reported at our Main Laboratory

Sample No.		**32577**	**32578**	**32579**							
ID No.		1	2	3							
Test Date		16/06/2020	16/06/2020	16/06/2020							
Test Time		am-pm	am-pm	am-pm							
Material Source		Site Derived	Site Derived	Site Derived							
Material Description		Silty Clay	Silty Clay	Silty Clay							
To Be Used As		Fill	Fill	Fill							
Sample Location		Lot 229 South Side Layer 8	Lot 229 South Side Layer 8	Lot 229 South Side Layer 8							
Layer Depth	*mm*	200	200	200							
Test Depth	*mm*	175	175	175							

Max Size	*mm*	19	19	19							
Oversize Wet	%	0	0	0							
Field Wet Density	*t/m³*	2.02	2.09	1.94							
Field Moisture Content	%	-	-	-							
PCWD or APCWD*	*t/m³*	2.01	2.16	2.04							

**PCWD - Peak Converted Wet Density , APCWD - Adjusted Peak Converted Wet Density, If Oversize material present PCWD and Moisture Variation is Adjusted*

Moisture Variation or Adjusted* (of OMC)	*t/m³*	1% (dry)	0.5% (dry)	0.5% (dry)							
Compactive Effort		Standard	Standard	Standard							
Hilf Density Ratio	%	**100.5**	**97.0**	**95.0**							
Min Hilf Density Ratio	%	95.0	95.0	95.0							

Note:

Test Methods: AS1289 5.8.1, 5.7.1, 2.1.1
Sampling Test Method: AS1289 1.2.1 6.4(b)

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