

Haynes Consulting Engineers Pty Ltd
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LEVEL 2 CERTIFICATION

**24 Lots at Gold Run Avenue, Blacksmith Court, Wagon Wheel Court and Pewter Court,
McIntosh Creek
Lots 1-10, 22-31, and 40-43 SP329986**

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21 November 2023

File No 1803

To: Roberts Bros. Pty Ltd
(by email)

LEVEL 2 CERTIFICATION

**24 Lots at Gold Run Avenue, Blacksmith Court, Wagon Wheel Court and Pewter Court,
McIntosh Creek
Lots 1-10, 22-31, and 40-43 SP329986**

This letter provides Level 2 certification to AS3798-2007 'Guidelines on earthworks for commercial and residential developments' and includes the results of testing conducted during filling earthworks on proposed lots 1-10, 22-31 and 40-43 on SP329986.

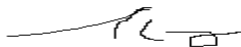
Roberts Brothers Pty Ltd personnel undertook the cut to fill and compaction using existing site material to create house sites.

Determination of field density of compacted fill in accordance with AS1289 was completed by Douglas Partners Pty Ltd as attached. The compaction tests show that results were above the required 95% Standard Compaction. Test locations are shown on the attached plans 1803-MR34 sheet numbers R2 REV4, R3 REV4, R4 REV6.

This certification only provides an assurance of the density of the fill tested, and suitability of the stripped surface for placement of that fill. This certification does not address any other issues that may be relevant to foundation and building construction.

Please refer to report limitations attached, the Client in this instance is Roberts Brothers Pty Ltd.

Regards,



A Haynes BE Civil (Hons) RPEQ MIEAust CPEng

LIMITATIONS

This report is provided for the sole use by the Client and its professional advisers. No responsibility whatsoever for the contents of this report will be accepted to any person other than the Client. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, is the responsibility of such third parties. Haynes Consulting Engineers accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

Haynes Consulting Engineers did not perform a complete assessment of all possible conditions or circumstances that may exist at the site referenced in the report. If a service is not expressly indicated, do not assume it has been provided. If a matter is not addressed, do not assume that any determination has been made by Haynes Consulting Engineers in regards to it.

Conditions may exist which were undetectable given that economic and time constraints limit the practical extent of investigation. Variations in conditions may occur between investigation locations, and there may be special conditions pertaining to the site which have not been revealed by the investigation and which have not therefore been taken into account in the report.

Where variations exist on site, additional studies and actions may be required. Haynes Consulting Engineers's opinions are based upon information that existed at the time that the works were performed. The passage of time, man-made or natural events, may alter the site conditions. It is understood that the Services undertaken allowed Haynes Consulting Engineers to form an opinion of the actual conditions of the site at the time the site was visited and cannot be used to assess the effect of any subsequent changes in the quality of the site, or its surroundings, or any laws or regulations.

Any assessments made in this report are based on the conditions indicated from published sources and the findings of the investigation described. Actual subsurface conditions may differ from those indicated in the report (e.g. between boreholes or test pits). No warranty is included, either express or implied, that the actual conditions will conform exactly to the assessments contained in this report.

Where data supplied by the client or other external sources, including previous site investigation data, have been used, it has been assumed that the information is correct unless otherwise stated. No responsibility is accepted by Haynes Consulting Engineers for incomplete or inaccurate data supplied by others.

Material Test Report



Geotechnics | Environment | Groundwater

Douglas Partners Pty Ltd

Sunshine Coast Laboratory

1/28 Kessling Avenue Kunda Park QLD 4556

Phone: (07) 5351 0400

Email: Shae.Harry@douglaspartners.com.au

Report Number: 217466.00-1
Issue Number: 1
Date Issued: 14/09/2022
Client: Roberts Bros Pty Ltd
 123 Cooroy Belli Creek Road, Cooroy QLD 4563
Contact: John Roberts
Project Number: 217466.00
Project Name: Proposed Subdivision
Project Location: Mcintosh Park, Stage 3 & 4, Mcintosh Creek QLD
Work Request: 19399
Date Sampled: 18/08/2022
Dates Tested: 18/08/2022 - 26/08/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Onsite



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Shae Harry
 Laboratory Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-19399A	SS-19399B	
Date Tested	18/08/2022	18/08/2022	
Time Tested	14:02	14:13	
Test Request #/Location	Bulk Earthworks Lot 40	Bulk Earthworks Lot 40	
Easting	463959	463964	
Northing	7096071	7096075	
Elevation (m)	0.3 < F.L	1.0 < F.L	
Thickness of Layer (mm)	150	150	
Soil Description	Gravelly Clay	Gravelly Clay	
Test Depth (mm)	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	0	0	
Field Wet Density (FWD) t/m ³	2.02	2.08	
Field Dry Density (FDD) t/m ³	**	**	
Peak Converted Wet Density t/m ³	1.91	1.91	
Adjusted Peak Converted Wet Density t/m ³	**	**	
Moisture Variation (Wv) %	0.5	0.0	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	106.0	108.5	
Compaction Method	Standard	Standard	
Report Remarks	**	**	

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report

Report Number: 217466.00-4
Issue Number: 1
Date Issued: 21/10/2022
Client: Roberts Bros Pty Ltd
 123 Cooroy Belli Creek Road, Cooroy QLD 4563
Contact: John Roberts
Project Number: 217466.00
Project Name: Proposed Subdivision
Project Location: Mcintosh Park, Stage 3 & 4, Mcintosh Creek QLD
Work Request: 20384
Date Sampled: 13/10/2022
Dates Tested: 13/10/2022 - 19/10/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Onsite



Accredited for compliance with ISO/IEC 17025 - Testing

 Approved Signatory: Craig Camm
 dp-craig.camm

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-20384A		
Date Tested	13/10/2022		
Time Tested	13:39		
Test Request #/Location	Lot 31		
Easting	464054		
Northing	7096005		
Elevation (m)	0.85 < F.L.		
Thickness of Layer (mm)	150		
Soil Description	Clayey Gravel		
Test Depth (mm)	150		
Sieve used to determine oversize (mm)	19.0		
Percentage of Wet Oversize (%)	0		
Field Wet Density (FWD) t/m ³	2.09		
Field Dry Density (FDD) t/m ³	**		
Peak Converted Wet Density t/m ³	1.98		
Adjusted Peak Converted Wet Density t/m ³	**		
Moisture Variation (Wv) %	-0.5		
Adjusted Moisture Variation %	**		
Hilf Density Ratio (%)	105.5		
Compaction Method	Standard		
Report Remarks	**		

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report



Geotechnics | Environment | Groundwater

Douglas Partners Pty Ltd

Sunshine Coast Laboratory

1/28 Kessling Avenue Kunda Park QLD 4556

Phone: (07) 5351 0400

Email: Shae.Harry@douglaspartners.com.au

Report Number: 217466.00-5
Issue Number: 1
Date Issued: 24/10/2022
Client: Roberts Bros Pty Ltd
 123 Cooroy Belli Creek Road, Cooroy QLD 4563
Contact: John Roberts
Project Number: 217466.00
Project Name: Proposed Subdivision
Project Location: Mcintosh Park, Stage 3 & 4, Mcintosh Creek QLD
Work Request: 20382
Date Sampled: 13/10/2022
Dates Tested: 13/10/2022 - 24/10/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Material Source: Onsite



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Shae Harry
 Laboratory Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-20382A	SS-20382B	
Date Tested	13/10/2022	13/10/2022	
Time Tested	13:48	13:56	
Test Request #/Location	Bulk Earthworks Lot 30	Bulk Earthworks Lot 30	
Easting	464122	464127	
Northing	7095965	7095974	
Layer / Reduced Level	0.3m < F.L.	0.8m < F.L.	
Thickness of Layer (mm)	150	150	
Soil Description	Gravelly Clay	Gravelly Clay	
Test Depth (mm)	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	7	0	
Field Wet Density (FWD) t/m ³	2.15	2.16	
Field Dry Density (FDD) t/m ³	**	**	
Peak Converted Wet Density t/m ³	**	2.07	
Adjusted Peak Converted Wet Density t/m ³	2.11	**	
Moisture Variation (Wv) %	**	-0.5	
Adjusted Moisture Variation %	-1.0	**	
Hilf Density Ratio (%)	101.5	104.5	
Compaction Method	Standard	Standard	
Report Remarks	**	**	

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report

Report Number: 217466.00-6
Issue Number: 1
Date Issued: 08/12/2022
Client: Roberts Bros Pty Ltd
123 Cooroy Belli Creek Road, Cooroy QLD 4563
Contact: John Roberts
Project Number: 217466.00
Project Name: Proposed Subdivision
Project Location: Mcintosh Park, Stage 3 & 4, Mcintosh Creek QLD
Work Request: 21182
Date Sampled: 28/11/2022
Dates Tested: 28/11/2022 - 08/12/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Lot Number: 10
Material Source: Onsite



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook

Assistant Laboratory Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-21182A	SS-21182B	
Date Tested	28/11/2022	28/11/2022	
Time Tested	**	**	
Test Request #/Location	Lot 10	Lot 10	
Easting	464215	464210	
Northing	7096074	7096058	
Elevation (m)	1.1 <F.L	2.2 <F.L	
Thickness of Layer (mm)	150	150	
Soil Description	Gravelly Clay	Gravelly Clay	
Test Depth (mm)	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	11	10	
Field Wet Density (FWD) t/m ³	2.16	2.15	
Field Dry Density (FDD) t/m ³	**	**	
Peak Converted Wet Density t/m ³	**	**	
Adjusted Peak Converted Wet Density t/m ³	2.18	2.19	
Moisture Variation (Wv) %	**	**	
Adjusted Moisture Variation %	2.5	2.5	
Hilf Density Ratio (%)	99.0	98.0	
Compaction Method	Standard	Standard	
Report Remarks	**	**	

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report

Report Number: 217466.00-7
Issue Number: 1
Date Issued: 12/12/2022
Client: Roberts Bros Pty Ltd
 123 Cooroy Belli Creek Road, Cooroy QLD 4563
Contact: John Roberts
Project Number: 217466.00
Project Name: Proposed Subdivision
Project Location: Mcintosh Park, Stage 3 & 4, Mcintosh Creek QLD
Work Request: 21183
Date Sampled: 28/11/2022
Dates Tested: 28/11/2022 - 08/12/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Lot Number: 8
Material Source: Onsite

Douglas Partners Pty Ltd
 Sunshine Coast Laboratory
 1/28 Kessling Avenue Kunda Park QLD 4556
 Phone: (07) 5351 0400
 Email: martin.cook@douglaspartners.com.au



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
 Assistant Laboratory Manager
 Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-21183A		
Date Tested	28/11/2022		
Time Tested	**		
Test Request #/Location	Lot 8		
Easting	464182		
Northing	7096026		
Elevation (m)	0.4 <F.L		
Thickness of Layer (mm)	150		
Soil Description	Gravelly Clay		
Test Depth (mm)	150		
Sieve used to determine oversize (mm)	19.0		
Percentage of Wet Oversize (%)	13		
Field Wet Density (FWD) t/m ³	2.13		
Field Dry Density (FDD) t/m ³	**		
Peak Converted Wet Density t/m ³	**		
Adjusted Peak Converted Wet Density t/m ³	2.22		
Moisture Variation (Wv) %	**		
Adjusted Moisture Variation %	1.5		
Hilf Density Ratio (%)	96.0		
Compaction Method	Standard		
Report Remarks	**		

Moisture Variation Note:

Positive values = test is dry of OMC
 Negative values = test is wet of OMC

Material Test Report



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Douglas Partners Pty Ltd

Sunshine Coast Laboratory

1/28 Kessling Avenue Kunda Park QLD 4556

Phone: (07) 5351 0400

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Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook

Assistant Laboratory Manager

Laboratory Accreditation Number: 828

Report Number: 217466.00-8
Issue Number: 1
Date Issued: 09/01/2023
Client: Roberts Bros Pty Ltd
 123 Cooroy Belli Creek Road, Cooroy QLD 4563
Contact: John Roberts
Project Number: 217466.00
Project Name: Proposed Subdivision
Project Location: Mcintosh Park, Stage 3 & 4, Mcintosh Creek QLD
Work Request: 21327
Date Sampled: 08/12/2022
Dates Tested: 08/12/2022 - 21/12/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Lot Number: 9
Material Source: Onsite

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-21327A	SS-21327B	
Date Tested	08/12/2022	08/12/2022	
Time Tested	10:37	10:49	
Test Request #/Location	Lot 9	Lot 9	
Easting	464200	464211	
Northing	7095999	7096010	
Elevation (m)	0.4 <F.L.	0.9 <F.L.	
Thickness of Layer (mm)	150	150	
Soil Description	Gravelly Clay	Gravelly Clay	
Test Depth (mm)	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	0	0	
Field Wet Density (FWD) t/m ³	2.15	2.15	
Field Dry Density (FDD) t/m ³	**	**	
Peak Converted Wet Density t/m ³	1.99	2.08	
Adjusted Peak Converted Wet Density t/m ³	**	**	
Moisture Variation (Wv) %	2.5	0.5	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	108.0	103.5	
Compaction Method	Standard	Standard	
Report Remarks	**	**	

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report

Report Number: 217466.00-9
Issue Number: 1
Date Issued: 09/01/2023
Client: Roberts Bros Pty Ltd
 123 Cooroy Belli Creek Road, Cooroy QLD 4563
Contact: John Roberts
Project Number: 217466.00
Project Name: Proposed Subdivision
Project Location: Mcintosh Park, Stage 3 & 4, Mcintosh Creek QLD
Work Request: 21328
Date Sampled: 08/12/2022
Dates Tested: 08/12/2022 - 21/12/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Lot Number: 10
Material Source: Onsite

Douglas Partners Pty Ltd
 Sunshine Coast Laboratory
 1/28 Kessling Avenue Kunda Park QLD 4556
 Phone: (07) 5351 0400
 Email: martin.cook@douglaspartners.com.au



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
 Assistant Laboratory Manager
 Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-21328A		
Date Tested	08/12/2022		
Time Tested	11:07		
Test Request #/Location	Lot 10		
Easting	464227		
Northing	7096058		
Elevation (m)	0.4 <F.L.		
Thickness of Layer (mm)	150		
Soil Description	Gravelly Clay		
Test Depth (mm)	150		
Sieve used to determine oversize (mm)	19.0		
Percentage of Wet Oversize (%)	4		
Field Wet Density (FWD) t/m ³	2.11		
Field Dry Density (FDD) t/m ³	**		
Peak Converted Wet Density t/m ³	**		
Adjusted Peak Converted Wet Density t/m ³	2.15		
Moisture Variation (Wv) %	**		
Adjusted Moisture Variation %	0.5		
Hilf Density Ratio (%)	98.0		
Compaction Method	Standard		
Report Remarks	**		

Moisture Variation Note:

Positive values = test is dry of OMC
 Negative values = test is wet of OMC

Material Test Report

Report Number: 217466.00-10
Issue Number: 1
Date Issued: 09/01/2023
Client: Roberts Bros Pty Ltd
 123 Cooroy Belli Creek Road, Cooroy QLD 4563
Contact: John Roberts
Project Number: 217466.00
Project Name: Proposed Subdivision
Project Location: Mcintosh Park, Stage 3 & 4, Mcintosh Creek QLD
Work Request: 21330
Date Sampled: 08/12/2022
Dates Tested: 08/12/2022 - 22/12/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Lot Number: 43
Material Source: Onsite

Douglas Partners Pty Ltd
 Sunshine Coast Laboratory
 1/28 Kessling Avenue Kunda Park QLD 4556
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 Email: martin.cook@douglaspartners.com.au



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
 Assistant Laboratory Manager
 Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-21330A	SS-21330B	
Date Tested	08/12/2022	08/12/2022	
Time Tested	11:20	11:29	
Test Request #/Location	Lot 43	Lot 43	
Easting	464088	464077	
Northing	7096152	7096136	
Elevation (m)	0.4 <F.L.	0.9 <F.L.	
Thickness of Layer (mm)	150	150	
Soil Description	Gravelly Clay	Gravelly Clay	
Test Depth (mm)	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	0	0	
Field Wet Density (FWD) t/m ³	2.05	2.07	
Field Dry Density (FDD) t/m ³	**	**	
Peak Converted Wet Density t/m ³	1.98	2.03	
Adjusted Peak Converted Wet Density t/m ³	**	**	
Moisture Variation (Wv) %	-2.0	-2.0	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	104.0	102.5	
Compaction Method	Standard	Standard	
Report Remarks	**	**	

Moisture Variation Note:

Positive values = test is dry of OMC
 Negative values = test is wet of OMC

Material Test Report



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Douglas Partners Pty Ltd

Sunshine Coast Laboratory

1/28 Kessling Avenue Kunda Park QLD 4556

Phone: (07) 5351 0400

Email: martin.cook@douglaspartners.com.au

Report Number: 217466.00-11
Issue Number: 1
Date Issued: 09/01/2023
Client: Roberts Bros Pty Ltd
 123 Cooroy Belli Creek Road, Cooroy QLD 4563
Contact: John Roberts
Project Number: 217466.00
Project Name: Proposed Subdivision
Project Location: Mcintosh Park, Stage 3 & 4, Mcintosh Creek QLD
Work Request: 21331
Date Sampled: 08/12/2022
Dates Tested: 08/12/2022 - 22/12/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Lot Number: 42
Material Source: Onsite



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook

Assistant Laboratory Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-21331A		
Date Tested	08/12/2022		
Time Tested	11:43		
Test Request #/Location	Lot 42		
Easting	464090		
Northing	7096072		
Elevation (m)	0.4 <F.L.		
Thickness of Layer (mm)	150		
Soil Description	Gravelly Clay		
Test Depth (mm)	150		
Sieve used to determine oversize (mm)	19.0		
Percentage of Wet Oversize (%)	0		
Field Wet Density (FWD) t/m ³	2.05		
Field Dry Density (FDD) t/m ³	**		
Peak Converted Wet Density t/m ³	2.00		
Adjusted Peak Converted Wet Density t/m ³	**		
Moisture Variation (Wv) %	-1.5		
Adjusted Moisture Variation %	**		
Hilf Density Ratio (%)	102.5		
Compaction Method	Standard		
Report Remarks	**		

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report

Report Number: 217466.00-12
Issue Number: 1
Date Issued: 09/01/2023
Client: Roberts Bros Pty Ltd
 123 Cooroy Belli Creek Road, Cooroy QLD 4563
Contact: John Roberts
Project Number: 217466.00
Project Name: Proposed Subdivision
Project Location: Mcintosh Park, Stage 3 & 4, Mcintosh Creek QLD
Work Request: 21332
Date Sampled: 08/12/2022
Dates Tested: 08/12/2022 - 22/12/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Lot Number: 41
Material Source: Onsite

Douglas Partners Pty Ltd
 Sunshine Coast Laboratory
 1/28 Kessling Avenue Kunda Park QLD 4556
 Phone: (07) 5351 0400
 Email: martin.cook@douglaspartners.com.au



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
 Assistant Laboratory Manager
 Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-21332A	SS-21332B	
Date Tested	08/12/2022	08/12/2022	
Time Tested	12:06	12:22	
Test Request #/Location	Lot 41	Lot 41	
Easting	464023	464008	
Northing	7096095	7096068	
Elevation (m)	0.4 <F.L.	0.8 <F.L.	
Thickness of Layer (mm)	150	150	
Soil Description	Gravelly Clay	Gravelly Clay	
Test Depth (mm)	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	0	0	
Field Wet Density (FWD) t/m ³	2.19	2.11	
Field Dry Density (FDD) t/m ³	**	**	
Peak Converted Wet Density t/m ³	2.11	2.10	
Adjusted Peak Converted Wet Density t/m ³	**	**	
Moisture Variation (Wv) %	0.0	-0.5	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	104.0	100.5	
Compaction Method	Standard	Standard	
Report Remarks	**	**	

Moisture Variation Note:
 Positive values = test is dry of OMC
 Negative values = test is wet of OMC

Material Test Report



Geotechnics | Environment | Groundwater

Douglas Partners Pty Ltd

Sunshine Coast Laboratory

1/28 Kessling Avenue Kunda Park QLD 4556

Phone: (07) 5351 0400

Email: martin.cook@douglaspartners.com.au

Report Number: 217466.00-13
Issue Number: 1
Date Issued: 10/01/2023
Client: Roberts Bros Pty Ltd
 123 Cooroy Belli Creek Road, Cooroy QLD 4563
Contact: John Roberts
Project Number: 217466.00
Project Name: Proposed Subdivision
Project Location: Mcintosh Park, Stage 3 & 4, Mcintosh Creek QLD
Work Request: 21326
Date Sampled: 08/12/2022
Dates Tested: 08/12/2022 - 22/12/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Lot Number: 22
Material Source: Onsite



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Approved Signatory: Martin Cook

Assistant Laboratory Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-21326A	SS-21326B	SS-21326C
Date Tested	08/12/2022	08/12/2022	08/12/2022
Time Tested	10:01	10:16	10:27
Test Request #/Location	Lot 22	Lot 22	Lot 22
Easting	464227	464220	464210
Northing	7095893	7095911	7095915
Elevation (m)	0.4 <F.L.	1.2 <F.L.	1.8 <F.L.
Thickness of Layer (mm)	150	150	150
Soil Description	Gravelly Clay	Gravelly Clay	Gravelly Clay
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	11	3
Field Wet Density (FWD) t/m ³	2.16	2.18	2.13
Field Dry Density (FDD) t/m ³	**	**	**
Peak Converted Wet Density t/m ³	2.05	**	**
Adjusted Peak Converted Wet Density t/m ³	**	2.11	2.11
Moisture Variation (Wv) %	2.5	**	**
Adjusted Moisture Variation %	**	1.0	2.0
Hilf Density Ratio (%)	105.0	103.5	101.0
Compaction Method	Standard	Standard	Standard
Report Remarks	**	**	**

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report



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Douglas Partners Pty Ltd

Sunshine Coast Laboratory

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Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook

Assistant Laboratory Manager

Laboratory Accreditation Number: 828

Report Number: 217466.00-14
Issue Number: 1
Date Issued: 10/01/2023
Client: Roberts Bros Pty Ltd
 123 Cooroy Belli Creek Road, Cooroy QLD 4563
Contact: John Roberts
Project Number: 217466.00
Project Name: Proposed Subdivision
Project Location: Mcintosh Park, Stage 3 & 4, Mcintosh Creek QLD
Work Request: 21329
Date Sampled: 08/12/2022
Dates Tested: 08/12/2022 - 22/12/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Lot Number: 7
Material Source: Onsite

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-21329A	SS-21329B	SS-21329C
Date Tested	09/12/2022	09/12/2022	09/12/2022
Time Tested	11:16	11:25	11:34
Test Request #/Location	Lot 7	Lot 7	Lot 7
Easting	464285	464283	464281
Northing	7096082	7096088	709079
Elevation (m)	0.4 <F.L.	0.9 <F.L.	1.6 <F.L.
Thickness of Layer (mm)	150	150	150
Soil Description	Gravelly Clay	Gravelly Clay	Gravelly Clay
Test Depth (mm)	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0	8	0
Field Wet Density (FWD) t/m ³	2.10	2.11	2.10
Field Dry Density (FDD) t/m ³	**	**	**
Peak Converted Wet Density t/m ³	2.02	**	2.02
Adjusted Peak Converted Wet Density t/m ³	**	2.06	**
Moisture Variation (Wv) %	-3.0	**	0.0
Adjusted Moisture Variation %	**	0.5	**
Hilf Density Ratio (%)	104.0	102.5	104.0
Compaction Method	Standard	Standard	Standard
Report Remarks	**	**	**

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report

Report Number: 217466.00-16
Issue Number: 1
Date Issued: 20/02/2023
Client: Roberts Bros Pty Ltd
 123 Cooroy Belli Creek Road, Cooroy QLD 4563
Contact: John Roberts
Project Number: 217466.00
Project Name: Proposed Subdivision
Project Location: Mcintosh Park, Stage 3 & 4, Mcintosh Creek QLD
Work Request: 21840
Date Sampled: 20/01/2023
Dates Tested: 20/01/2023 - 07/02/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Lot Number: 29
Material Source: Onsite

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Approved Signatory: Martin Cook
 Assistant Laboratory Manager
 Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-21840B	SS-21840C	
Date Tested	20/01/2023	20/01/2023	
Time Tested	11:06	11:14	
Test Request #/Location	Lot 29	Lot 29	
Layer / Reduced Level	0.3<F.L.	0.6<F.L.	
Thickness of Layer (mm)	150	150	
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	
Test Depth (mm)	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	20	16	
Field Wet Density (FWD) t/m ³	2.15	2.16	
Field Dry Density (FDD) t/m ³	**	**	
Peak Converted Wet Density t/m ³	**	**	
Adjusted Peak Converted Wet Density t/m ³	2.11	2.12	
Moisture Variation (Wv) %	**	**	
Adjusted Moisture Variation %	1.0	2.0	
Hilf Density Ratio (%)	102.0	102.5	
Compaction Method	Standard	Standard	
Report Remarks	**	**	

Moisture Variation Note:

Positive values = test is dry of OMC
 Negative values = test is wet of OMC

Material Test Report

Report Number: 217466.00-17
Issue Number: 1
Date Issued: 20/02/2023
Client: Roberts Bros Pty Ltd
123 Cooroy Belli Creek Road, Cooroy QLD 4563
Contact: John Roberts
Project Number: 217466.00
Project Name: Proposed Subdivision
Project Location: Mcintosh Park, Stage 3 & 4, Mcintosh Creek QLD
Work Request: 22393
Date Sampled: 20/01/2023
Dates Tested: 07/02/2023 - 07/02/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Lot Number: 27
Material Source: Onsite



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Approved Signatory: Martin Cook

Assistant Laboratory Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-22393A		
Date Tested	20/01/2023		
Time Tested	11:01		
Test Request #/Location	Lot 27		
Elevation (m)	0.3 <F.L		
Soil Description	Gravelly Sandy Clay		
Test Depth (mm)	150		
Sieve used to determine oversize (mm)	19.0		
Percentage of Wet Oversize (%)	0		
Field Wet Density (FWD) t/m ³	2.08		
Field Dry Density (FDD) t/m ³	**		
Peak Converted Wet Density t/m ³	2.05		
Adjusted Peak Converted Wet Density t/m ³	**		
Moisture Variation (Wv) %	-0.5		
Adjusted Moisture Variation %	**		
Hilf Density Ratio (%)	101.0		
Compaction Method	Standard		
Report Remarks	**		

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report



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Report Number: 217466.00-20
Issue Number: 1
Date Issued: 01/03/2023
Client: Roberts Bros Pty Ltd
 123 Cooroy Belli Creek Road, Cooroy QLD 4563
Contact: John Roberts
Project Number: 217466.00
Project Name: Proposed Subdivision
Project Location: Mcintosh Park, Stage 3 & 4, Mcintosh Creek QLD
Work Request: 21184
Date Sampled: 28/11/2022
Dates Tested: 28/11/2022 - 08/12/2022
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Lot Number: 31
Material Source: Onsite



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Approved Signatory: Martin Cook
 Assistant Laboratory Manager
 Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-21184A		
Date Tested	28/11/2022		
Time Tested	**		
Test Request #/Location	Lot 31		
Easting	464047		
Northing	7096002		
Elevation (m)	0.3 <F.L		
Thickness of Layer (mm)	150		
Soil Description	Gravelly Clay		
Test Depth (mm)	150		
Sieve used to determine oversize (mm)	19.0		
Percentage of Wet Oversize (%)	0		
Field Wet Density (FWD) t/m ³	2.21		
Field Dry Density (FDD) t/m ³	**		
Peak Converted Wet Density t/m ³	2.10		
Adjusted Peak Converted Wet Density t/m ³	**		
Moisture Variation (Wv) %	6.0		
Adjusted Moisture Variation %	**		
Hilf Density Ratio (%)	105.5		
Compaction Method	Standard		
Report Remarks	**		

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report

Report Number: 217466.00-21
Issue Number: 1
Date Issued: 01/03/2023
Client: Roberts Bros Pty Ltd
 123 Cooroy Belli Creek Road, Cooroy QLD 4563
Contact: John Roberts
Project Number: 217466.00
Project Name: Proposed Subdivision
Project Location: Mcintosh Park, Stage 3 & 4, Mcintosh Creek QLD
Work Request: 22299
Date Sampled: 14/02/2023
Dates Tested: 14/02/2023 - 28/02/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Lot Number: 24
Material Source: Onsite

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Approved Signatory: Martin Cook
 Assistant Laboratory Manager
 Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-22299A		
Date Tested	14/02/2023		
Time Tested	12:22		
Test Request #/Location	Lot 24		
Easting	0464146		
Northing	7095849		
Elevation (m)	0.9 <F.L		
Thickness of Layer (mm)	150		
Soil Description	Gravelly Silty Clay		
Test Depth (mm)	150		
Sieve used to determine oversize (mm)	19.0		
Percentage of Wet Oversize (%)	0		
Field Wet Density (FWD) t/m ³	2.00		
Field Dry Density (FDD) t/m ³	**		
Peak Converted Wet Density t/m ³	2.02		
Adjusted Peak Converted Wet Density t/m ³	**		
Moisture Variation (Wv) %	1.5		
Adjusted Moisture Variation %	**		
Hilf Density Ratio (%)	99.0		
Compaction Method	Standard		
Report Remarks	**		

Moisture Variation Note:

Positive values = test is dry of OMC
 Negative values = test is wet of OMC

Material Test Report

Report Number: 217466.00-22
Issue Number: 1
Date Issued: 02/03/2023
Client: Roberts Bros Pty Ltd
 123 Cooroy Belli Creek Road, Cooroy QLD 4563
Contact: John Roberts
Project Number: 217466.00
Project Name: Proposed Subdivision
Project Location: Mcintosh Park, Stage 3 & 4, Mcintosh Creek QLD
Work Request: 22294
Date Sampled: 14/02/2023
Dates Tested: 14/02/2023 - 28/02/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Lot Number: 26
Material Source: Onsite

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Approved Signatory: Martin Cook
 Assistant Laboratory Manager
 Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-22294A	SS-22294B	
Date Tested	14/02/2023	14/02/2023	
Time Tested	11:37	11:39	
Test Request #/Location	Lot 26	Lot 26	
Easting	0464018	0464026	
Northing	7095737	7094026	
Elevation (m)	0.3 <F.L	0.8 <F.L	
Thickness of Layer (mm)	150	150	
Soil Description	Clayey Sandy Gravel	Clayey Sandy Gravel	
Test Depth (mm)	150	150	
Sieve used to determine oversize (mm)	19.0	37.5	
Percentage of Wet Oversize (%)	17	19	
Field Wet Density (FWD) t/m ³	2.15	2.14	
Field Dry Density (FDD) t/m ³	**	**	
Peak Converted Wet Density t/m ³	**	**	
Adjusted Peak Converted Wet Density t/m ³	2.15	2.18	
Moisture Variation (Wv) %	**	**	
Adjusted Moisture Variation %	1.5	1.5	
Hilf Density Ratio (%)	100.0	98.0	
Compaction Method	Standard	Standard	
Report Remarks	**	**	

Moisture Variation Note:

Positive values = test is dry of OMC
 Negative values = test is wet of OMC

Material Test Report



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Report Number: 217466.00-23
Issue Number: 1
Date Issued: 02/03/2023
Client: Roberts Bros Pty Ltd
 123 Cooroy Belli Creek Road, Cooroy QLD 4563
Contact: John Roberts
Project Number: 217466.00
Project Name: Proposed Subdivision
Project Location: Mcintosh Park, Stage 3 & 4, Mcintosh Creek QLD
Work Request: 22296
Date Sampled: 14/02/2023
Dates Tested: 14/02/2023 - 28/02/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Lot Number: 25
Material Source: Onsite



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Approved Signatory: Martin Cook
 Assistant Laboratory Manager
 Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-22296A	SS-22296B	
Date Tested	14/02/2023	14/02/2023	
Time Tested	12:00	12:09	
Test Request #/Location	Lot 25	Lot 25	
Easting	0464103	0464118	
Northing	7095782	7095809	
Elevation (m)	0.3 <F.L	0.8 <F.L	
Soil Description	Gravelly Sandy Clay	Gravelly Sandy Clay	
Test Depth (mm)	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	11	0	
Field Wet Density (FWD) t/m ³	2.36	2.12	
Field Dry Density (FDD) t/m ³	**	**	
Peak Converted Wet Density t/m ³	**	2.14	
Adjusted Peak Converted Wet Density t/m ³	2.30	**	
Moisture Variation (Wv) %	**	2.0	
Adjusted Moisture Variation %	2.0	**	
Hilf Density Ratio (%)	103.0	99.5	
Compaction Method	Standard	Standard	
Report Remarks	**	**	

Moisture Variation Note:
 Positive values = test is dry of OMC
 Negative values = test is wet of OMC

Material Test Report

Report Number: 217466.00-25
Issue Number: 1
Date Issued: 13/03/2023
Client: Roberts Bros Pty Ltd
 123 Cooroy Belli Creek Road, Cooroy QLD 4563
Contact: John Roberts
Project Number: 217466.00
Project Name: Proposed Subdivision
Project Location: Mcintosh Park, Stage 3 & 4, Mcintosh Creek QLD
Work Request: 22539
Date Sampled: 27/02/2023
Dates Tested: 27/02/2023 - 08/03/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Lot Number: 24
Material Source: Onsite



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Approved Signatory: Martin Cook

Assistant Laboratory Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-22539A		
Date Tested	27/02/2023		
Time Tested	11:45		
Test Request #/Location	Lot 24		
Chainage (m)	0464141		
Location Offset (m)	7095841		
Elevation (m)	0.3 <F.L		
Thickness of Layer (mm)	150		
Soil Description	Gravelly Silty Clay		
Test Depth (mm)	150		
Sieve used to determine oversize (mm)	19.0		
Percentage of Wet Oversize (%)	0		
Field Wet Density (FWD) t/m ³	2.18		
Field Dry Density (FDD) t/m ³	**		
Peak Converted Wet Density t/m ³	2.13		
Adjusted Peak Converted Wet Density t/m ³	**		
Moisture Variation (Wv) %	2.5		
Adjusted Moisture Variation %	**		
Hilf Density Ratio (%)	102.5		
Compaction Method	Standard		
Report Remarks	**		

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report

Report Number: 217466.00-26
Issue Number: 1
Date Issued: 13/03/2023
Client: Roberts Bros Pty Ltd
 123 Cooroy Belli Creek Road, Cooroy QLD 4563
Contact: John Roberts
Project Number: 217466.00
Project Name: Proposed Subdivision
Project Location: Mcintosh Park, Stage 3 & 4, Mcintosh Creek QLD
Work Request: 22541
Date Sampled: 27/02/2023
Dates Tested: 27/02/2023 - 07/03/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Lot Number: 3
Material Source: Onsite

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Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
 Assistant Laboratory Manager
 Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-22541A		
Date Tested	27/02/2023		
Time Tested	11:52		
Test Request #/Location	Lot 3		
Easting	0464273		
Northing	7096295		
Elevation (m)	0.3 <F.L		
Thickness of Layer (mm)	150		
Soil Description	Gravelly Silty Clay		
Test Depth (mm)	150		
Sieve used to determine oversize (mm)	19.0		
Percentage of Wet Oversize (%)	0		
Field Wet Density (FWD) t/m ³	2.17		
Field Dry Density (FDD) t/m ³	**		
Peak Converted Wet Density t/m ³	2.04		
Adjusted Peak Converted Wet Density t/m ³	**		
Moisture Variation (Wv) %	3.0		
Adjusted Moisture Variation %	**		
Hilf Density Ratio (%)	106.5		
Compaction Method	Standard		
Report Remarks	**		

Moisture Variation Note:

Positive values = test is dry of OMC
 Negative values = test is wet of OMC

Material Test Report

Report Number: 217466.00-27
Issue Number: 1
Date Issued: 13/03/2023
Client: Roberts Bros Pty Ltd
 123 Cooroy Belli Creek Road, Cooroy QLD 4563
Contact: John Roberts
Project Number: 217466.00
Project Name: Proposed Subdivision
Project Location: Mcintosh Park, Stage 3 & 4, Mcintosh Creek QLD
Work Request: 22542
Date Sampled: 27/02/2023
Dates Tested: 27/02/2023 - 07/03/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Lot Number: 4
Material Source: Onsite

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Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
 Assistant Laboratory Manager
 Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-22542A		
Date Tested	27/02/2023		
Time Tested	12:04		
Test Request #/Location	Lot 4		
Easting	0464201		
Northing	7096300		
Elevation (m)	0.7 <F.L		
Thickness of Layer (mm)	150		
Soil Description	Gravelly Silty Clay		
Test Depth (mm)	150		
Sieve used to determine oversize (mm)	19.0		
Percentage of Wet Oversize (%)	0		
Field Wet Density (FWD) t/m ³	2.05		
Field Dry Density (FDD) t/m ³	**		
Peak Converted Wet Density t/m ³	2.02		
Adjusted Peak Converted Wet Density t/m ³	**		
Moisture Variation (Wv) %	2.0		
Adjusted Moisture Variation %	**		
Hilf Density Ratio (%)	102.0		
Compaction Method	Standard		
Report Remarks	**		

Moisture Variation Note:

Positive values = test is dry of OMC
 Negative values = test is wet of OMC

Material Test Report



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Report Number: 217466.00-29
Issue Number: 1
Date Issued: 22/03/2023
Client: Roberts Bros Pty Ltd
 123 Cooroy Belli Creek Road, Cooroy QLD 4563
Contact: John Roberts
Project Number: 217466.00
Project Name: Proposed Subdivision
Project Location: Mcintosh Park, Stage 3 & 4, Mcintosh Creek QLD
Work Request: 22745
Date Sampled: 09/03/2023
Dates Tested: 09/03/2023 - 22/03/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Lot Number: 28
Material Source: Onsite



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook

Assistant Laboratory Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-22745A	SS-22745B	
Date Tested	09/03/2023	09/03/2023	
Time Tested	09:45	09:50	
Test Request #/Location	Lot 28	Lot 28	
Easting	0464018	0464033	
Northing	7095856	7095866	
Elevation (m)	0.3 <F.L	0.7 <F.L	
Thickness of Layer (mm)	150	150	
Soil Description	Clayey Sandy Gravel	Clayey Sandy Gravel	
Test Depth (mm)	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	9	5	
Field Wet Density (FWD) t/m ³	2.04	2.01	
Field Dry Density (FDD) t/m ³	**	**	
Peak Converted Wet Density t/m ³	**	**	
Adjusted Peak Converted Wet Density t/m ³	1.96	2.03	
Moisture Variation (Wv) %	**	**	
Adjusted Moisture Variation %	4.0	1.0	
Hilf Density Ratio (%)	104.0	99.0	
Compaction Method	Standard	Standard	
Report Remarks	**	**	

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report



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Report Number: 217466.00-30
Issue Number: 1
Date Issued: 22/03/2023
Client: Roberts Bros Pty Ltd
 123 Cooroy Belli Creek Road, Cooroy QLD 4563
Contact: John Roberts
Project Number: 217466.00
Project Name: Proposed Subdivision
Project Location: Mcintosh Park, Stage 3 & 4, Mcintosh Creek QLD
Work Request: 22746
Date Sampled: 09/03/2023
Dates Tested: 09/03/2023 - 21/03/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Lot Number: 23
Material Source: Onsite



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook

Assistant Laboratory Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-22746A		
Date Tested	09/03/2023		
Time Tested	10:05		
Test Request #/Location	Lot 23		
Easting	0464168		
Northing	7095884		
Elevation (m)	0.3 <F.L		
Thickness of Layer (mm)	150		
Soil Description	Clayey Sandy Gravel		
Test Depth (mm)	150		
Sieve used to determine oversize (mm)	19.0		
Percentage of Wet Oversize (%)	17		
Field Wet Density (FWD) t/m ³	2.19		
Field Dry Density (FDD) t/m ³	**		
Peak Converted Wet Density t/m ³	**		
Adjusted Peak Converted Wet Density t/m ³	2.12		
Moisture Variation (Wv) %	**		
Adjusted Moisture Variation %	3.5		
Hilf Density Ratio (%)	103.5		
Compaction Method	Standard		
Report Remarks	**		

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report

Report Number: 217466.00-36
Issue Number: 1
Date Issued: 03/05/2023
Client: Roberts Bros Pty Ltd
 123 Cooroy Belli Creek Road, Cooroy QLD 4563
Contact: John Roberts
Project Number: 217466.00
Project Name: Proposed Subdivision
Project Location: Mcintosh Park, Stage 3 & 4, Mcintosh Creek QLD
Work Request: 23363
Date Sampled: 12/04/2023
Dates Tested: 12/04/2023 - 27/04/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Lot Number: 6
Material Source: Onsite

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Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
 Assistant Laboratory Manager
 Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-23363A	SS-23363B	
Date Tested	12/04/2023	12/04/2023	
Time Tested	11:05	11:10	
Test Request #/Location	Lot 6	Lot 6	
Easting	0464235	0464256	
Northing	7096192	7096191	
Elevation (m)	0.3 <F.L	0.7 <F.L	
Soil Description	Gravelly Silty Clay	Gravelly Silty Clay	
Test Depth (mm)	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	0	0	
Field Wet Density (FWD) t/m ³	2.20	2.09	
Field Dry Density (FDD) t/m ³	**	**	
Peak Converted Wet Density t/m ³	2.10	2.00	
Adjusted Peak Converted Wet Density t/m ³	**	**	
Moisture Variation (Wv) %	6.5	3.5	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	104.5	104.5	
Compaction Method	Standard	Standard	
Report Remarks	**	**	

Moisture Variation Note:

Positive values = test is dry of OMC
 Negative values = test is wet of OMC

Material Test Report



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Report Number: 217466.00-37
Issue Number: 1
Date Issued: 03/05/2023
Client: Roberts Bros Pty Ltd
 123 Cooroy Belli Creek Road, Cooroy QLD 4563
Contact: John Roberts
Project Number: 217466.00
Project Name: Proposed Subdivision
Project Location: Mcintosh Park, Stage 3 & 4, Mcintosh Creek QLD
Work Request: 23364
Date Sampled: 12/04/2023
Dates Tested: 12/04/2023 - 27/04/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Lot Number: 5
Material Source: Onsite



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook

Assistant Laboratory Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-23364A	SS-23364B	
Date Tested	12/04/2023	12/04/2023	
Time Tested	11:20	11:30	
Test Request #/Location	Lot 5	Lot 5	
Easting	0464279	0464253	
Northing	7096227	7096230	
Elevation (m)	0.6 <F.L	0.3 <F.L	
Soil Description	Silty Clay	Silty Clay	
Test Depth (mm)	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	0	0	
Field Wet Density (FWD) t/m ³	2.00	2.12	
Field Dry Density (FDD) t/m ³	**	**	
Peak Converted Wet Density t/m ³	1.98	1.97	
Adjusted Peak Converted Wet Density t/m ³	**	**	
Moisture Variation (Wv) %	2.0	3.0	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	101.0	108.0	
Compaction Method	Standard	Standard	
Report Remarks	**	**	

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report



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Report Number: 217466.00-38
Issue Number: 1
Date Issued: 03/05/2023
Client: Roberts Bros Pty Ltd
 123 Cooroy Belli Creek Road, Cooroy QLD 4563
Contact: John Roberts
Project Number: 217466.00
Project Name: Proposed Subdivision
Project Location: Mcintosh Park, Stage 3 & 4, Mcintosh Creek QLD
Work Request: 23365
Date Sampled: 12/04/2023
Dates Tested: 12/04/2023 - 26/04/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Lot Number: 4
Material Source: Onsite



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook

Assistant Laboratory Manager

Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-23365A		
Date Tested	12/04/2023		
Time Tested	11:40		
Test Request #/Location	Lot 4		
Easting	0464262		
Northing	7096272		
Elevation (m)	0.3 <F.L		
Soil Description	Silty Clay		
Test Depth (mm)	150		
Sieve used to determine oversize (mm)	19.0		
Percentage of Wet Oversize (%)	4		
Field Wet Density (FWD) t/m ³	2.14		
Field Dry Density (FDD) t/m ³	**		
Peak Converted Wet Density t/m ³	**		
Adjusted Peak Converted Wet Density t/m ³	2.08		
Moisture Variation (Wv) %	**		
Adjusted Moisture Variation %	1.0		
Hilf Density Ratio (%)	102.5		
Compaction Method	Standard		
Report Remarks	**		

Moisture Variation Note:

Positive values = test is dry of OMC

Negative values = test is wet of OMC

Material Test Report



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Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook

Assistant Laboratory Manager

Laboratory Accreditation Number: 828

Report Number: 217466.00-39
Issue Number: 1
Date Issued: 03/05/2023
Client: Roberts Bros Pty Ltd
 123 Cooroy Belli Creek Road, Cooroy QLD 4563
Contact: John Roberts
Project Number: 217466.00
Project Name: Proposed Subdivision
Project Location: Mcintosh Park, Stage 3 & 4, Mcintosh Creek QLD
Work Request: 23366
Date Sampled: 12/04/2023
Dates Tested: 12/04/2023 - 26/04/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Lot Number: 2
Material Source: Onsite

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-23366A		
Date Tested	12/04/2023		
Time Tested	11:45		
Test Request #/Location	Lot 2		
Easting	0464175		
Northing	7096247		
Elevation (m)	0.4 <F.L		
Soil Description	Silty Clay		
Test Depth (mm)	150		
Sieve used to determine oversize (mm)	19.0		
Percentage of Wet Oversize (%)	11		
Field Wet Density (FWD) t/m ³	2.03		
Field Dry Density (FDD) t/m ³	**		
Peak Converted Wet Density t/m ³	**		
Adjusted Peak Converted Wet Density t/m ³	2.01		
Moisture Variation (Wv) %	**		
Adjusted Moisture Variation %	2.0		
Hilf Density Ratio (%)	100.5		
Compaction Method	Standard		
Report Remarks	**		

Moisture Variation Note:
 Positive values = test is dry of OMC
 Negative values = test is wet of OMC

Material Test Report

Report Number: 217466.00-40
Issue Number: 1
Date Issued: 03/05/2023
Client: Roberts Bros Pty Ltd
 123 Cooroy Belli Creek Road, Cooroy QLD 4563
Contact: John Roberts
Project Number: 217466.00
Project Name: Proposed Subdivision
Project Location: Mcintosh Park, Stage 3 & 4, Mcintosh Creek QLD
Work Request: 23367
Date Sampled: 12/04/2023
Dates Tested: 12/04/2023 - 27/04/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Lot Number: 1
Material Source: Onsite

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Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Martin Cook
 Assistant Laboratory Manager
 Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-23367A	SS-23367B	
Date Tested	12/04/2023	12/04/2023	
Time Tested	11:51	12:01	
Test Request #/Location	Lot 1	Lot 1	
Easting	0464133	0464127	
Northing	7096195	7096235	
Elevation (m)	0.7 <F.L	0.3 <F.L	
Soil Description	Silty Clay	Silty Clay	
Test Depth (mm)	150	150	
Sieve used to determine oversize (mm)	19.0	19.0	
Percentage of Wet Oversize (%)	0	0	
Field Wet Density (FWD) t/m ³	1.98	2.02	
Field Dry Density (FDD) t/m ³	**	**	
Peak Converted Wet Density t/m ³	1.94	2.00	
Adjusted Peak Converted Wet Density t/m ³	**	**	
Moisture Variation (Wv) %	2.5	2.0	
Adjusted Moisture Variation %	**	**	
Hilf Density Ratio (%)	102.0	101.0	
Compaction Method	Standard	Standard	
Report Remarks	**	**	

Moisture Variation Note:

Positive values = test is dry of OMC
 Negative values = test is wet of OMC

Material Test Report

Report Number: 217466.00-41
Issue Number: 1
Date Issued: 17/05/2023
Client: Roberts Bros Pty Ltd
 123 Cooroy Belli Creek Road, Cooroy QLD 4563
Contact: John Roberts
Project Number: 217466.00
Project Name: Proposed Subdivision
Project Location: Mcintosh Park, Stage 3 & 4, Mcintosh Creek QLD
Work Request: 23643
Date Sampled: 27/04/2023
Dates Tested: 27/04/2023 - 13/05/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Lot Number: 54
Material Source: Onsite

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Approved Signatory: Martin Cook
 Assistant Laboratory Manager
 Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-23643A		
Date Tested	27/04/2023		
Time Tested	10:55		
Test Request #/Location	Stage 5 Lot 54		
Elevation (m)	0.3 <F.L		
Thickness of Layer (mm)	150		
Soil Description	Silty Clay		
Test Depth (mm)	150		
Sieve used to determine oversize (mm)	19.0		
Percentage of Wet Oversize (%)	0		
Field Wet Density (FWD) t/m ³	2.02		
Field Dry Density (FDD) t/m ³	**		
Peak Converted Wet Density t/m ³	1.97		
Adjusted Peak Converted Wet Density t/m ³	**		
Moisture Variation (Wv) %	2.0		
Adjusted Moisture Variation %	**		
Hilf Density Ratio (%)	102.5		
Compaction Method	Standard		
Report Remarks	**		

Moisture Variation Note:

Positive values = test is dry of OMC
 Negative values = test is wet of OMC

Material Test Report

Report Number: 217466.00-57
Issue Number: 1
Date Issued: 03/11/2023
Client: Roberts Bros Pty Ltd
 123 Cooroy Belli Creek Road, Cooroy QLD 4563
Contact: John Roberts
Project Number: 217466.00
Project Name: Proposed Subdivision
Project Location: Mcintosh Park, Stage 3 & 4, Mcintosh Creek QLD
Work Request: 26379
Date Sampled: 30/10/2023
Dates Tested: 30/10/2023 - 01/11/2023
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 95% Standard Hilf Density Ratio
Location: Bulk Earthworks
Lot Number: 3
Material Source: Onsite

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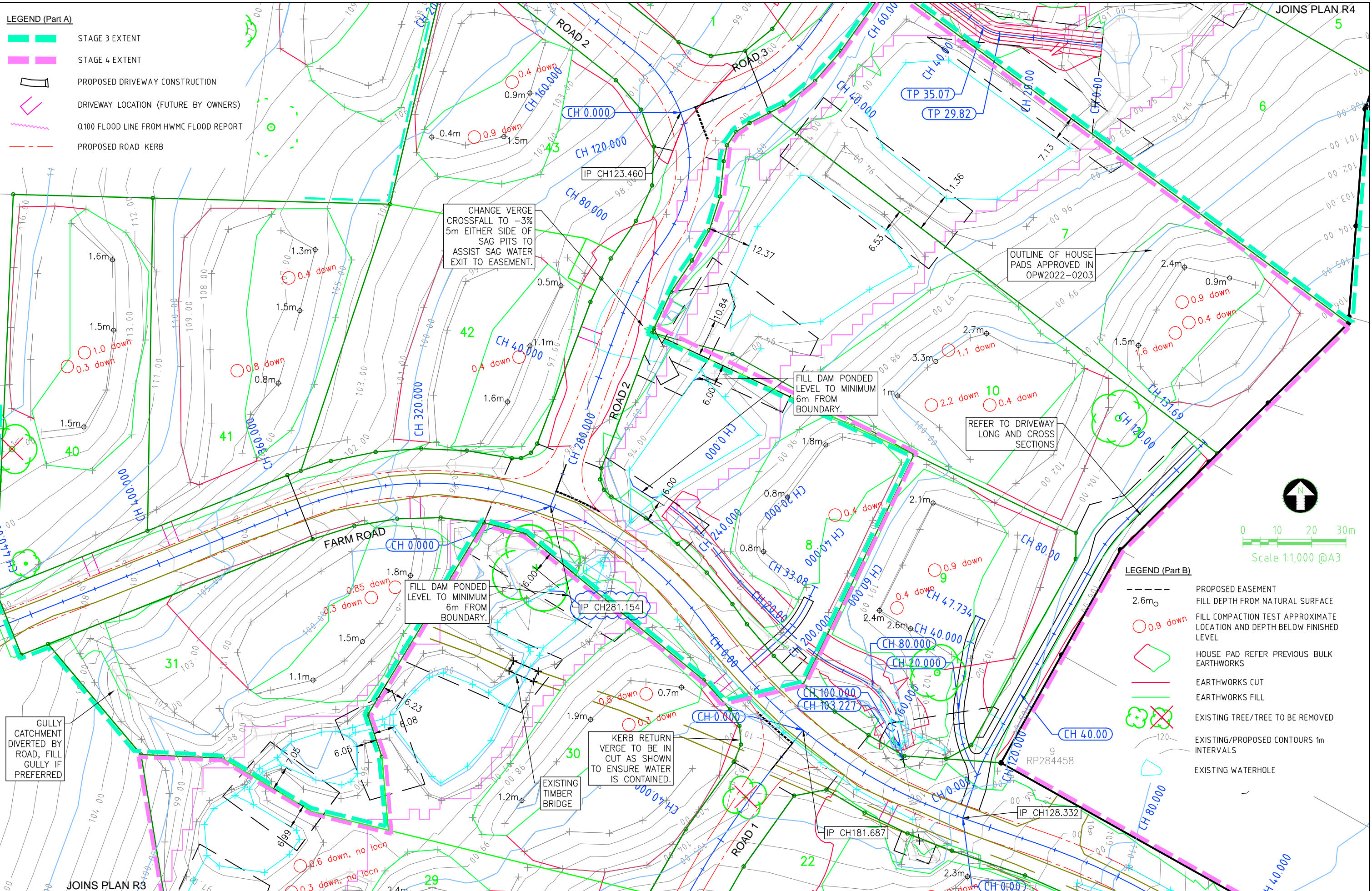
Approved Signatory: Martin Cook
 Assistant Laboratory Manager
 Laboratory Accreditation Number: 828

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	SS-26379A		
Date Tested	30/10/2023		
Time Tested	10:05		
Test Request #/Location	Lot 3		
Easting	0464209		
Northing	7096294		
Elevation (m)	0.7 <F.L		
Soil Description	Silty Clayey Gravel		
Test Depth (mm)	150		
Sieve used to determine oversize (mm)	19.0		
Percentage of Wet Oversize (%)	18		
Field Wet Density (FWD) t/m ³	2.00		
Field Dry Density (FDD) t/m ³	**		
Peak Converted Wet Density t/m ³	**		
Adjusted Peak Converted Wet Density t/m ³	1.96		
Moisture Variation (Wv) %	**		
Adjusted Moisture Variation %	6.0		
Hilf Density Ratio (%)	102.0		
Compaction Method	Standard		
Report Remarks	**		

Moisture Variation Note:
 Positive values = test is dry of OMC
 Negative values = test is wet of OMC

LEGEND (Part A)

- STAGE 3 EXTENT
- STAGE 4 EXTENT
- PROPOSED DRIVEWAY CONSTRUCTION
- DRIVEWAY LOCATION (FUTURE BY OWNERS)
- Q100 FLOOD LINE FROM HVMC FLOOD REPORT
- PROPOSED ROAD KERB



JOINS PLAN R4
5

JOINS PLAN R3

LEGEND (Part B)

- PROPOSED EASEMENT
- FILL DEPTH FROM NATURAL SURFACE
- 0.9 down FILL COMPACTION TEST APPROXIMATE LOCATION AND DEPTH BELOW FINISHED LEVEL
- HOUSE PAD REFER PREVIOUS BULK EARTHWORKS
- EARTHWORKS CUT
- EARTHWORKS FILL
- ✕ EXISTING TREE/TREE TO BE REMOVED
- EXISTING/PROPOSED CONTOURS 1m INTERVALS
- EXISTING WATERHOLE

A3	4	17-11-23	ASCEN AND COMPACTION LOCATIONS	ATH	PSM(AHD)RL	42916	161.931
	3	30-8-23	REVISED LOT 29-30 BDY	ATH	SURVEYED	MURRAY & ASSOC	
	2	29-8-23	ADD CUT LINES	ATH	RPEQ NO.	13201	
	1	28-8-23	HOUSE PADS FOR DISCLOSURE PLANS	ATH	RPEQ NAME	ALLISTER HAYNES	
	0	20-12-22	FOR CONSTRUCTION	ATH	CERTIFIED		
Rv	DATE	REVISIONS	APPR.				

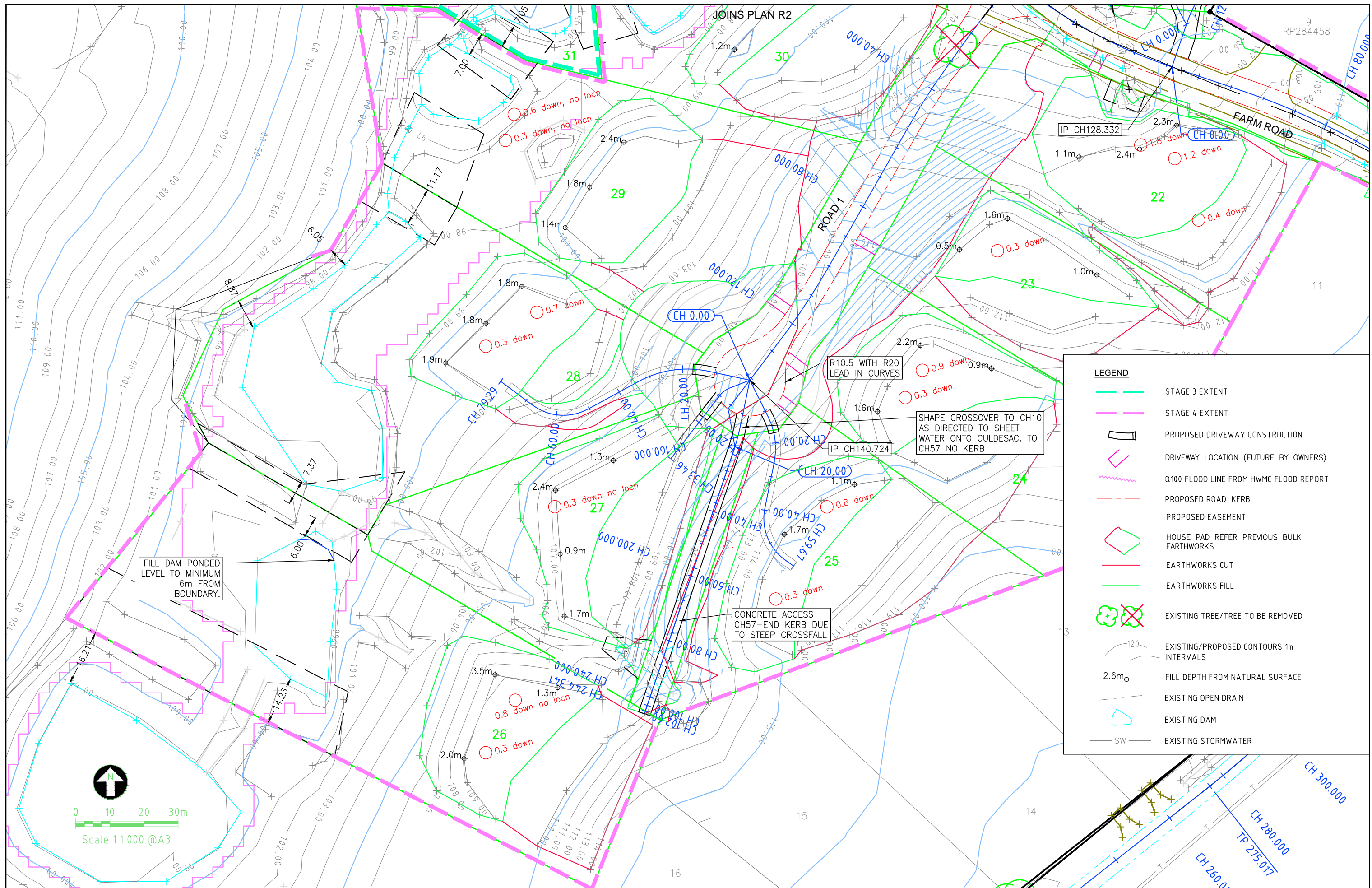
4	17-11-23	ASCEN AND COMPACTION LOCATIONS	ATH	PSM(AHD)RL	42916	161.931
3	30-8-23	REVISED LOT 29-30 BDY	ATH	SURVEYED	MURRAY & ASSOC	
2	29-8-23	ADD CUT LINES	ATH	RPEQ NO.	13201	
1	28-8-23	HOUSE PADS FOR DISCLOSURE PLANS	ATH	RPEQ NAME	ALLISTER HAYNES	
0	20-12-22	FOR CONSTRUCTION	ATH	CERTIFIED		
Rv	DATE	REVISIONS	APPR.			

HAYNES
CONSULTING
ENGINEERS

HAYNES CONSULTING ENGINEERS
 ABN 53 613 630 078
 PO BOX 549 NOOSA HEADS QLD 4667
 (0432) 784 150

MCINTOSH PARK STAGE 3-4
 LOT 900 SP284458, 24 LOTS ROADWORKS AND DRAINAGE OPW
 478 MCINTOSH CREEK ROAD, MCINTOSH CREEK, FOR ROBERTS BROS.
LAYOUT PLAN 1

1803-MR34
 Sheet No. - Revision No.
R2 **4**



LEGEND	
	STAGE 3 EXTENT
	STAGE 4 EXTENT
	PROPOSED DRIVEWAY CONSTRUCTION
	DRIVEWAY LOCATION (FUTURE BY OWNERS)
	Q100 FLOOD LINE FROM HWC FLOOD REPORT
	PROPOSED ROAD KERB
	PROPOSED EASEMENT
	HOUSE PAD REFER PREVIOUS BULK EARTHWORKS
	EARTHWORKS CUT
	EARTHWORKS FILL
	EXISTING TREE/TREE TO BE REMOVED
	EXISTING/PROPOSED CONTOURS 1m INTERVALS
	FILL DEPTH FROM NATURAL SURFACE
	EXISTING OPEN DRAIN
	EXISTING DAM
	EXISTING STORMWATER

A3	DATE	REVISIONS
4	17-11-23	ASCON + ADD TEST LOCATIONS
3	30-8-23	REVISE LOT 29-30 BDY
2	29-8-23	ADD CUT LINES
1	28-8-23	HOUSE PADS FOR DISCLOSURE PLANS FOR CONSTRUCTION
0	20-12-22	

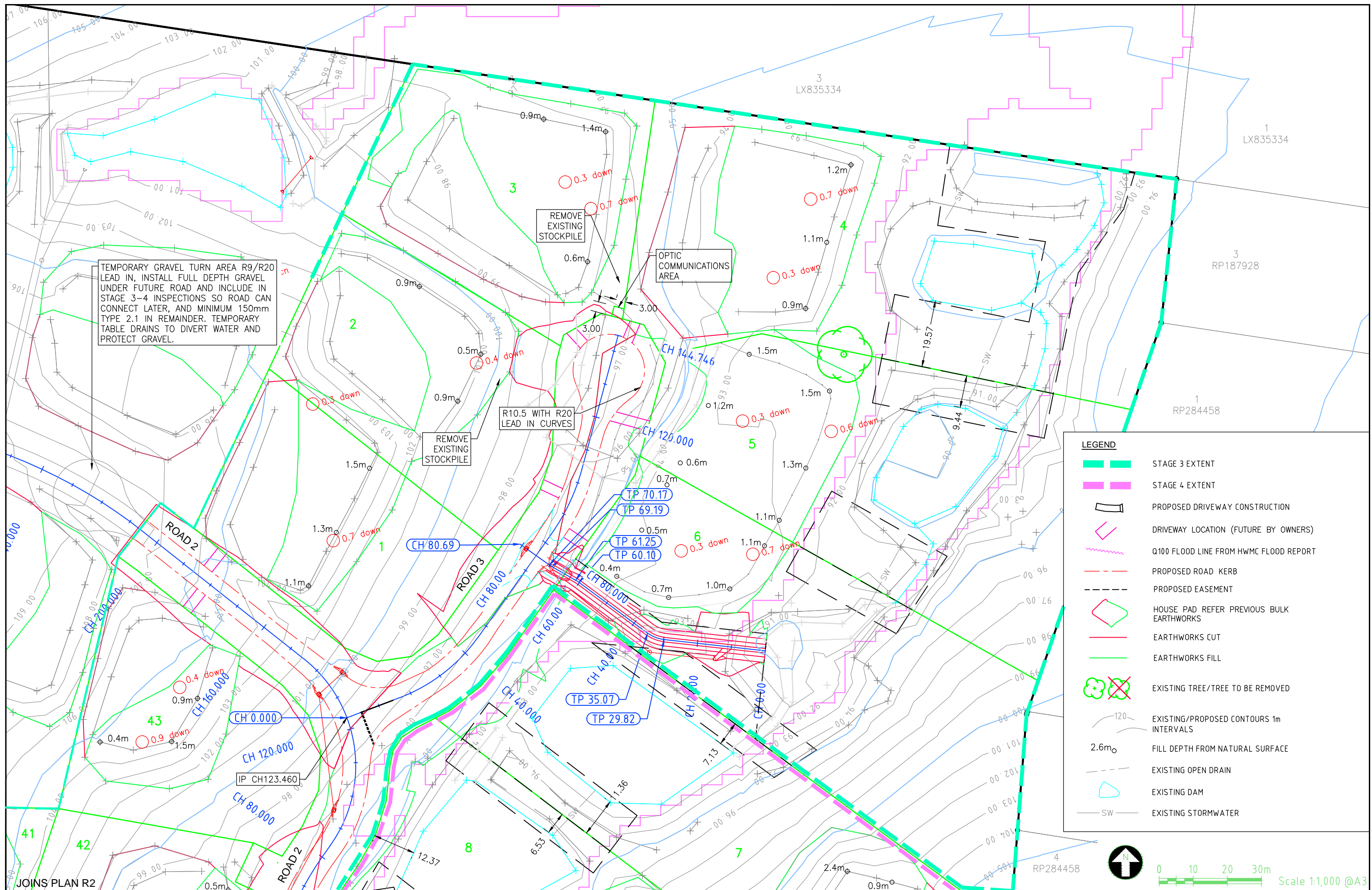
ATH	PSM/(AHD)RL	42916	161.931
ATH	SURVEYED	MURRAY & ASSOC	
ATH	RPEQ NO.	13201	
ATH	RPEQ NAME	ALLISTER HAYNES	
ATH	CERTIFIED		

HAYNES CONSULTING ENGINEERS

HAYNES CONSULTING ENGINEERS
 ABN 53 613 630 078
 PO BOX 549 NOOSA HEADS QLD 4567
 (0432) 784 150

MCINTOSH PARK STAGE 3-4
 LOT 900 SP284458, 25 LOTS ROADWORKS AND DRAINAGE OPW
 478 MCINTOSH CREEK ROAD, MCINTOSH CREEK, FOR ROBERTS BROS.
LAYOUT PLAN 2

1803-MR34
 Sheet No. - Revision No.
R3 4



TEMPORARY GRAVEL TURN AREA R9/R20 LEAD IN, INSTALL FULL DEPTH GRAVEL UNDER FUTURE ROAD AND INCLUDE IN STAGE 3-4 INSPECTIONS SO ROAD CAN CONNECT LATER, AND MINIMUM 150mm TYPE 2.1 IN REMAINDER. TEMPORARY TABLE DRAINS TO DIVERT WATER AND PROTECT GRAVEL.

REMOVE EXISTING STOCKPILE

OPTIC COMMUNICATIONS AREA

R10.5 WITH R20 LEAD IN CURVES

REMOVE EXISTING STOCKPILE

- LEGEND**
- STAGE 3 EXTENT
 - STAGE 4 EXTENT
 - PROPOSED DRIVEWAY CONSTRUCTION
 - DRIVEWAY LOCATION (FUTURE BY OWNERS)
 - Q100 FLOOD LINE FROM HVMC FLOOD REPORT
 - PROPOSED ROAD KERB
 - PROPOSED EASEMENT
 - HOUSE PAD REFER PREVIOUS BULK EARTHWORKS
 - EARTHWORKS CUT
 - EARTHWORKS FILL
 - ⊗ EXISTING TREE/TREE TO BE REMOVED
 - 120 EXISTING/PROPOSED CONTOURS 1m INTERVALS
 - 2.6m_o FILL DEPTH FROM NATURAL SURFACE
 - EXISTING OPEN DRAIN
 - EXISTING DAM
 - SW EXISTING STORMWATER



0 10 20 30m Scale 1:1,000 @A3

A3	6	21-11-23	REVISE LOT 3, 4 TEST DEPTHS ASCON + ADD TEST LOCATIONS	ATH	PSM(AHD)RL	42916	161.931
	5	17-11-23			SURVEYED	MURRAY & ASSOC	
	Rv	DATE	REVISIONS	APPR.	RPEQ NO.	13201	
					RPEQ NAME	ALLISTER HAYNES	
					CERTIFIED		

HE HAYNES CONSULTING ENGINEERS

HAYNES CONSULTING ENGINEERS
 ABN 53 613 630 078
 PO BOX 549 NOOSA HEADS QLD 4567
 (0432) 784 150

MCINTOSH PARK STAGE 3-4
 LOT 900 SP284458, 25 LOTS ROADWORKS AND DRAINAGE OPW
 478 MCINTOSH CREEK ROAD, MCINTOSH CREEK, FOR ROBERTS BROS.
LAYOUT PLAN 3

1803-MR34
 Sheet No. - Revision No.
R4 6