GEOTECH TESTING PTY LTD ®
ABN 71 076 676 321

Job No: 7747/57
Our Ref: 7747/57-AA-R1
18 January 2022

Redbank Communities
PO Box 262
NORTH RICHMOND NSW 2754
Email: ravipillay@redbankcommunities.com.au

Attention: Mr R Pillay

Dear Sir

re: **Redbank Development – Promenade**
Grose Vale Road, North Richmond
Site Classification Report

Please find herewith the results of a geotechnical investigation at the above site. The purpose of the investigation was to determine existing subsurface conditions, collect representative soil samples for laboratory testing and classify the proposed lots as per Australia Standard AS2870-2011 "Residential slabs & footings"). A total of ninety-seven (97) lots (Lots 1501 to 1585 and 2001 to 2012) are covered in this report.

This report contains information on surface and sub-surface conditions encountered at the site, together with site classification of the above lots.

If you have any questions, please do not hesitate to contact the undersigned.

Yours faithfully
GEOTECH TESTING PTY LTD

ZIAUDDIN AHMED
Senior Associate

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APPENDICES

1.0 INTRODUCTION

This report provides results of a geotechnical investigation at the subject site. The purpose of the investigation was to determine existing subsurface conditions and classify the proposed lots as per AS2870-2011. A total of ninety-seven (97) lots are covered in this report (Lots 1501 to 1585 and 2001 to 2012).

Site classification in accordance with AS2870-2011 is only applicable for the design of footing system for a single dwelling, house, townhouse or similar structure that would be detached or separated by a party wall or common wall including buildings classified as Class 1 and Class 10a in the Building Code of Australia (BCA). AS2870 is not suitable for dwellings situated vertically above or below another dwelling. Therefore, a geotechnical investigation would be required for other dwellings to be classified in accordance with the BCA.

It is understood that the proposed dwellings are to be of brick veneer construction and that wall loadings are expected to be in the range of 15kN/m to 50kN/m. The maximum working load (safe bearing pressure) would be in the order of 50kPa for ground supported floor slabs and 100kPa for strip and pad footings (AS2870-2011).

2.0 FIELD WORK

The investigation work was conducted on 19 and 30 November and 15 December 2021, under the supervision of Geotechnical Engineers from the company and consisted of excavation of thirty-nine (TP1 to TP39), using an excavator. The approximate test pit locations are indicated on the attached Drawing No 7747/57-AA2. The test pits were terminated at a depth of 1.5m from existing ground level. Description of subsurface materials encountered in the test pits is provided in the attached Table A.

3.0 SITE CONDITIONS

3.1 Site Description

At the time of investigation, earthworks and construction of internal roads were completed.

3.2 Sub-Surface Conditions

The following table summarises the prevailing subsurface conditions at the site, more details are given in the test pits logs in the attached Table A.

Fill	Silty sandy Clay, low plasticity, brown- orange, trace fine gravel Gravelly Clay, low plasticity, brown- grey, with ripped shale Silty Clay, medium plasticity, orange-grey Silty Clay, medium plasticity, brown-grey Silty Clay/Clayey Silt, medium to high plasticity, dark brown, with fine rootlets Silty Clay, high plasticity, dark grey, with rootlets
Natural	Sandy CLAY, medium plasticity, orange-grey Silty CLAY, medium to high plasticity, brown-yellow, with red-brown ironstone gravel Shaley CLAY, low to medium plasticity, brown-grey, with siltstone and shale fragments, grading into extremely weathered shale at 1.5m

Groundwater was not observed in the test pits during the short time that they remained open. It must be noted that fluctuations in the level of groundwater might occur due to variations in rainfall, temperature, and/or other factors not evident during investigation.

4.0 LABORATORY TESTING

During the site investigation, six (6) undisturbed samples (U_{50}) and four (4) disturbed samples were recovered to conduct shrink/swell and Atterberg limit tests. The purpose of the testing was to assess soil reactivity and soil plasticity. The tests were conducted as per relevant Australian Standards and the results are summarised below and detailed in the attached certificates.

Test Pit	Sample Depth (m)	Material Description	I_{ss} (%/$_p$F)	W_L (%)	W_P (%)	I_P (%)
2	1.2 – 1.7	(CI) Silty CLAY, medium plasticity, orange-grey, with some fine to medium gravel	1.7	-	-	-
5	0.3 – 0.8	FILL : Silty Clay, medium plasticity, brown, grey, with some fine to medium gravel	1.0	-	-	-
9	0.2 – 0.7	FILL : Silty Clay, medium plasticity, orange-grey, with some fine to medium gravel	2.3	-	-	-
7	0.2 – 0.4	FILL : Silty Clay, medium plasticity, brown-grey, with shale fragments	-	48	19	31
13	0.5 – 1.0	FILL : Silty Clay, medium plasticity, brown-grey, with some fine to medium gravel	-	40	19	21
14	0.3 – 0.5	FILL : Silty Clay, medium plasticity, brown-grey, with shale fragments	-	46	19	27
17	0.3 – 0.5	FILL : Silty Clay, medium plasticity, brown-grey, with shale fragments	-	41	19	22
30	0.5 – 0.95	FILL : Silty Clay, medium plasticity, grey to dark grey, with shale fragments	0.4	-	-	-
33	0.5 – 0.95	FILL : Silty Clay, medium plasticity, grey to dark grey, with shale fragments	0.3	-	-	-
36	0.5 – 0.95	FILL : Silty Clay, medium plasticity, grey to dark grey, with shale fragments	0.5	-	-	-

I_{ss}: Shrink/Swell Index; W_L : Liquid Limit; W_P : Plastic Limit; I_P : Plasticity Index

5.0 DISCUSSION & RECOMMENDATIONS

5.1 Assessment of Fill

Based on the inspection of the test pits and previous field density tests, the fill placed at the site was assessed as “Controlled” fill. Results of the field density tests carried out at the site were provided in a number of certificates under our job 7747/54.

5.2 Site Classification

Based on the above information, site classifications to AS2870-2011 are summarised in Appendix B. It should be noted that lots containing more than 400mm of clay fill (assessed as controlled fill) would originally be classified as Class P in accordance with AS2870-2011. However, based on the results of this investigation, including laboratory testing, the lots would are re-classified as detailed in Appendix B.

It is recommended that footings for the proposed dwellings are founded on the same stratum, below any topsoil, loose or deleterious material, to minimise the potential for differential movement. In the event that bedrock is encountered in any portion of the footing excavations, the remainder of the foundations must be supported on bedrock to ensure even bearing.

The classifications presented in Appendix B of this report are applicable to the Lots at the date of conducting the investigation, being 19 and 30 November and 15 December 2021 and are made on the following assumptions:

- The design and construction requirements of AS2870 must be followed.
- The recommendations for foundation performance and site maintenance set out in Appendix B of AS2870 must be followed.
- The proposed dwellings must be in accordance with AS2870. A detailed geotechnical investigation will be required for other dwellings to be classified in accordance with the BCA.

It is recommended that house owners are made aware of recommendations in the CSIRO publication, "Guide to Home Owners on Foundation Maintenance and Footing Performance" and AS2870 Appendix H of AS2871-2011.

GEOTECH TESTING PTY LTD

APPENDIX A

TABLE A
(Summary of Test Pits)

TEST PIT LOCATION PLAN
(Drawing No 7747/57-AA1 & 7747/57-AA2)

GEOTECH TESTING PTY LTD ®
34 Borec Road
Penrith
NSW 2750
ABN 71 076 676 321
Ph: 02 4722 2744
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e-mail:info@geotech.com.au

NOTES

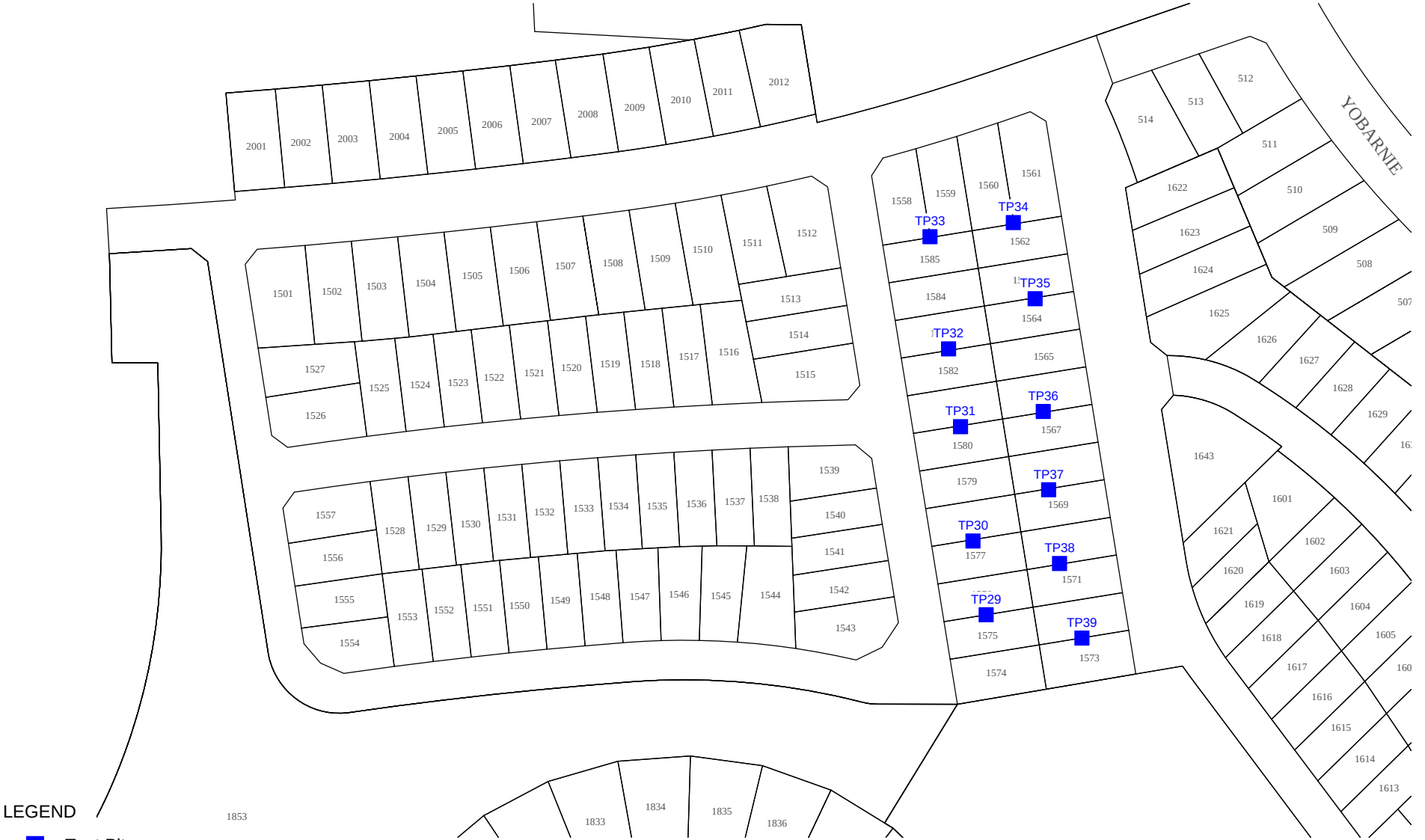
1. Site features are indicative and are not to scale.
2. This drawing has been produced using a base plan provided by others to which additional information e.g test pits, borehole locations or notes have been added. Some or all of the plan may not be relevant at the time of producing this drawing

Redbank Communities
Proposed Development
Southern Heights, Ridgteops and Promenade
Grose Vale Road, North Richmond

Test Pit Locations

Drawing No: 7747/57-AA1
Job No: 7747/57
Drawn By: MH
Date: 3 December 2021
Checked By: ZA

File No: 7747-54
Layers: 0, AA1



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Redbank Communities
Proposed Development
Promenade
Grose Vale Road, North Richmond

Test Pit Locations

Drawing No: 7747/57-AA2
Job No: 7747/57
Drawn By: MH
Date: 13 January 2022
Checked By: ZA

File No: 7747-54
Layers: 0, AA2

TABLE A

Job No: 7747/57
Our Ref: 7747/57-AA (Promenade, Redbank Development, North Richmond)

TEST PIT	DEPTH (m)	SAMPLE DEPTH (m)	MATERIAL DESCRIPTION
TP1	0.0 – 1.0	0.3 – 0.5 (DS)	FILL: Silty Sandy Clay, low plasticity, brown to orange, sand, fine to medium grained, trace fine gravel, well compacted, (M<OMC)
	1.0 – 1.5	1.0 – 1.2 (DS)	(Cl) Sandy CLAY, medium plasticity, orange to grey, sand fine to medium grained, stiff to very stiff (M≥PL)
TP2	0.0 – 1.2	0.3 – 0.5 (DS)	FILL: Gravelly Clay, low plasticity, brown to grey, with ripped shale, well compacted, (M<OMC)
	1.2 – 1.7	1.2 – 1.7 (U_{50})	(Cl) Silty CLAY, medium plasticity, brown, some red-brown ironstone gravel, very stiff, (M=PL)
TP3	0 – 0.3	0.3 – 0.8 (U_{50})	FILL: Silty Sandy Clay, low plasticity, brown to orange, sand, fine to medium grained, trace fine gravel, well compacted, (M<OMC)
	0.3 – 0.5		FILL: Silty Clay, high plasticity, orange to grey, well compacted, (M=OMC)
	0.5 – 1.3	0.5 – 0.8 (DS)	(Cl) Silty CLAY, medium plasticity, brown, some red - brown ironstone gravel, stiff to very stiff, (M=PL)
	1.3 – 1.5		(Cl) Silty CLAY, medium plasticity, brown – yellow, with red - brown ironstone gravel, very stiff, (M=PL)
TP4	0.0 – 0.3		FILL: Silty Sandy Clay, low plasticity, brown to orange, sand, fine to medium grained, trace of fine gravel, well compacted, (M < OMC)
	0.3 – 1.0	0.3 – 0.5 (DS)	FILL: Silty Clay, medium plasticity, brown to grey, well compacted, (M ≤ OMC)
	1.0 – 1.5		(Cl) Silty CLAY, medium plasticity, brown, some red - brown ironstone gravel, stiff to very stiff (M=PL)
TP5	0.0 – 1.2	0.3 – 0.8 (U_{50}) 0.7 – 0.9 (DS)	FILL: Silty Clay, medium plasticity, brown to grey, well compacted (M ≤ OMC)
	1.2 – 1.5		(Cl) Silty CLAY, medium plasticity, brown, some red-brown ironstone gravel, very stiff (M=PL)
TP6	0.0 – 0.2		FILL: Gravelly Clay, low plasticity, brown to grey, with ripped shale, well compacted (M<OMC)
	0.2 – 1.3	0.2 - 0.4 (DS) 1.0 – 1.2 (DS)	FILL: Silty Clay, low plasticity, brown to grey, moist, well compacted (M<OMC)

TABLE A

TEST PIT	DEPTH (m)	SAMPLE DEPTH (m)	MATERIAL DESCRIPTION
TP6	1.3 – 1.5		CI) Silty CLAY, medium plasticity, brown – yellow, with red - brown ironstone gravel, very stiff (M=PL)
TP7	0.0 – 0.2		TOPSOIL: Silty Clay, medium to high plasticity, dark brown, with fine rootlets
	0.2 – 1.0	0.2 – 0.4 (DS)	FILL: Gravelly Clay, low plasticity, brown to grey, with ripped shale, well compacted, (M < OMC)
	1.0 – 1.5	1.0 – 1.2 (DS)	(CI) Silty CLAY, medium plasticity, brown, some red-brown ironstone gravel, stiff to very stiff (M=PL)
TP8	0.0 – 0.2		TOPSOIL: Silty Clay, medium to high plasticity, dark brown, with fine rootlets
	0.2 – 1.1	0.3 – 0.5 (DS)	FILL: Silty Sandy Clay, medium plasticity, brown to orange, sand, fine to medium grained, trace of fine gravel, well compacted, (M < OMC)
	1.1 – 1.5	1.2 – 1.4 (DS)	(CI) Silty CLAY, medium plasticity, brown, some red-brown ironstone gravel, stiff to very stiff (M=PL)
TP9	0.0 – 0.2		TOPSOIL: Silty Clay, medium to high plasticity, dark brown, with fine rootlets
	0.2 – 1.2	0.2 – 0.7 (U_{50})	FILL: Silty Clay, medium plasticity, orange to grey, moist, well compacted, (M=OMC)
	1.2 – 1.5	1.2 – 1.4 (DS)	(CI) Silty CLAY, medium plasticity, brown, some red - brown ironstone gravel, stiff to very stiff, (M=PL)
TP10	0.0 – 0.2		FILL: Clayey Silt/Silty Clay, high plasticity, dark grey, with rootlets
	0.2 – 1.2	0.3 – 0.5 (DS)	FILL: Silty Clay, medium plasticity, brown to grey, well compacted, (M ≤ OMC)
	1.2 – 1.4	1.2 – 1.4 (DS)	FILL: Silty Clay, medium plasticity, brown to grey, well compacted, (M ≤ OMC)
	1.4 – 1.5		(CI) Silty CLAY, medium plasticity, brown, some red-brown ironstone gravel, very stiff (M=PL)
TP11	0 – 0.2		FILL/TOPSOIL: Clayey Silt/Silty Clay, high plasticity, dark grey, with rootlets
	0.2 – 1.2	0.3 – 0.5 (DS)	FILL: Silty Clay, medium plasticity, orange to grey, well compacted, (M=OMC)
	1.2 – 1.5	1.3 – 1.5 (DS)	(CI) Silty CLAY, medium plasticity, brown, some red-brown ironstone gravel, stiff to very consistency (M=PL)

TABLE A

TEST PIT	DEPTH (m)	SAMPLE DEPTH (m)	MATERIAL DESCRIPTION
TP12	0 – 0.2		FILL/TOPOSIL : Silty Clay, Medium to high plasticity, dark brown, with fine rootlets
	0.2 – 1.0	0.3 – 0.5 (DS)	FILL: Gravelly Clay, low plasticity, brown to grey, with ripped shale, well compacted, (M < OMC)
	1.0 – 1.2	1.0 – 1.2 (DS)	FILL: Silty Clay, high plasticity, dark grey, with silt, and fine rootlets, firm to stiff consistency, (M = OMC)
	1.2 – 1.5	1.2 – 1.5 (DS)	(CI) Silty CLAY, medium plasticity, brown, some red-brown ironstone gravel, stiff to very stiff, (M=PL)
TP13	0.0 – 0.2		FILL/TOPSOIL : Silty Clay/Clayey Silt, medium to high plasticity, dark brown, with fine rootlets
	0.2 – 1.0	0.3 – 0.5 (DS) 0.5 – 1.0 (U_{50})	FILL : Silty Clay, medium plasticity, brown-grey, well compacted (M≤OMC)
	1.0 – 1.5	1.3 – 1.5 (DS)	FILL : Gravelly Clay, low plasticity, brown- grey, with ripped shale, well compacted (M<OMC)
TP14	0.0 – 0.9	0.3 – 0.5 (DS)	FILL : Gravelly Clay, low plasticity, brown- grey, with ripped shale, well compacted (M<OMC)
	0.9 – 1.5	1.2 – 1.5 (DS)	(CH) Silty CLAY, medium to high plasticity, orange, stiff to very stiff (M>PL)
TP15	0 – 0.2		FILL/TOPSOIL : Silty Clay/Clayey Silt, medium to high plasticity, dark brown, with fine rootlets
	0.2 – 0.4		FILL : Gravelly Clay, low plasticity, brown- grey, with ripped shale, well compacted (M<OMC)
	0.4 – 1.0	0.4 – 0.6 (DS)	Silty CLAY, medium to high plasticity, brown-yellow, with red-brown ironstone gravel
	1.0 – 1.3	1.0 – 1.2(DS)	Silty CLAY, medium plasticity, brown, some red-brown ironstone gravel, stiff to very stiff
	1.3 – 1.5		Shaley CLAY, low to medium plasticity, brown – grey, with siltstone and shale, grading into extremely weathered shale at 1.5m
TP16	0.0 – 0.2		FILL/TOPSOIL : Silty Clay/Clayey Silt, medium to high plasticity, dark brown, with fine rootlets
	0.2 – 0.5	0.3 – 0.5 (DS)	Silty CLAY, medium to high plasticity, brown-yellow, with red-brown ironstone gravel

TABLE A

TEST PIT	DEPTH (m)	SAMPLE DEPTH (m)	MATERIAL DESCRIPTION
TP16	0.5 – 1.2	0.5 – 0.7(D/S)	Silty CLAY, medium plasticity, brown, some red-brown ironstone gravel, stiff to very stiff
	1.2 – 1.5		Shaley CLAY, low to medium plasticity, brown – grey, with siltstone and shale, grading into extremely weathered shale at 1.5m
TP17	0.0 – 0.2		FILL/TOPSOIL : Silty Clay/Clayey Silt, medium to high plasticity, dark brown, with fine rootlets
	0.2 – 1.1	0.3 – 0.5(DS)	FILL : Gravelly Clay, low plasticity, brown- grey, with ripped shale, well compacted (M<OMC)
	1.1 – 1.5	1.2 – 1.4(DS)	Silty CLAY, medium to high plasticity, brown-yellow, with red-brown ironstone gravel
TP18	0.0 – 0.2		FILL : Silty Clay, medium plasticity, brown-grey, well compacted (M≤OMC)
	0.2 – 1.5	0.2 – 0.4(DS) 1.3 – 1.5(DS)	FILL : Gravelly Clay, low plasticity, brown- grey, with ripped shale, well compacted (M<OMC)
TP19	0.0 – 0.2		FILL/TOPSOIL : Silty Clay/Clayey Silt, medium to high plasticity, dark brown, with fine rootlets
	0.2 – 1.0	0.2 – 0.7 (U_{50})	FILL : Silty Clay, medium plasticity, orange-grey, well compacted (M=OMC)
	1.0 – 1.5	1.0 – 1.2(DS)	FILL : Silty Clay, medium plasticity, brown-grey, well compacted (M≤OMC)
TP20	0.0 – 0.2		FILL/TOPSOIL : Silty Clay/Clayey Silt, medium to high plasticity, dark brown, with fine rootlets
	0.2 – 1.5	0.2 – 0.4(DS) 1.0 – 1.2(DS)	FILL : Gravelly Clay, low plasticity, brown- grey, with ripped shale, well compacted (M<OMC)
TP21	0.0 – 1.5	0.3 – 0.5 (DS) 1.0 – 1.2(DS)	FILL : Gravelly Clay, low plasticity, brown- grey, with ripped shale, well compacted (M<OMC)
TP22	0.0 – 0.8	0.3 – 0.5(DS)	FILL : Gravelly Clay, low plasticity, brown- grey, with ripped shale, well compacted (M<OMC)
	0.8 – 1.3	0.8 – 1.3 (U_{50}) 0.8 – 1.0(DS)	FILL : Silty Clay, medium plasticity, orange-grey, well compacted (M=OMC)

TABLE A

TEST PIT	DEPTH (m)	SAMPLE DEPTH (m)	MATERIAL DESCRIPTION
TP22		1.3 – 1.5(DS)	Sandy CLAY, medium plasticity, orange-grey, stiff to very stiff
TP23	0.0 – 0.5	0.3 – 0.5(DS)	FILL : Gravelly Clay, low plasticity, brown- grey, with ripped shale, well compacted (M<OMC)
	0.5 – 1.0	0.5 – 1.0(U_{50})	FILL : Silty Clay, medium plasticity, orange-grey, well compacted (M=OMC)
	1.0 – 1.3	1.0 – 1.2(DS)	Sandy CLAY, medium plasticity, orange-grey, stiff to very stiff
	1.3 – 1.5		Shaley CLAY, low to medium plasticity, brown – grey, with siltstone and shale, grading into extremely weathered shale at 1.5m
TP24	0.0 – 0.2		FILL/TOPSOIL : Silty Clay/Clayey Silt, medium to high plasticity, dark brown, with fine rootlets
	0.2 – 1.5	0.3 – 0.5(DS) 1.0 – 1.3(DS)	Shaley CLAY, low to medium plasticity, brown – grey, with siltstone and shale, grading into extremely weathered shale at 1.5m
TP25	0.0 – 0.2		FILL/TOPSOIL : Silty Clay/Clayey Silt, medium to high plasticity, dark brown, with fine rootlets
	0.2 – 1.2	0.3 – 0.8(DS)	Sandy CLAY, medium plasticity, orange-grey, stiff to very stiff
	1.2 – 1.5	1.2 – 1.4(DS)	Silty CLAY, medium plasticity, brown, some red-brown ironstone gravel, stiff to very stiff
TP26	0.0 – 0.3		FILL/TOPSOIL : Silty Clay/Clayey Silt, medium to high plasticity, dark brown, with fine rootlets
	0.3 – 1.3	0.3 – 0.5(DS)	FILL : Silty sandy Clay, low plasticity, brown- orange, trace fine gravel, well compacted (M<OMC)
	1.3 – 1.5	1.3 – 1.5(DS)	Silty CLAY, medium plasticity, brown, some red-brown ironstone gravel, stiff to very stiff
TP27	0.0 – 0.2		FILL/TOPSOIL : Silty Clay/Clayey Silt, medium to high plasticity, dark brown, with fine rootlets
	0.2 – 1.0	0.3 – 0.5(DS)	FILL : Silty Clay, medium plasticity, orange-grey, well compacted (M=OMC)

TABLE A

TEST PIT	DEPTH (m)	SAMPLE DEPTH (m)	MATERIAL DESCRIPTION
TP27	1.0 – 1.5	1.0 – 1.2(DS)	Silty CLAY, medium plasticity, brown, some red-brown ironstone gravel, stiff to very stiff
TP28	0.0 – 0.2		FILL/TOPSOIL : Silty Clay/Clayey Silt, medium to high plasticity, dark brown, with fine rootlets
	0.2 – 1.3	0.5 – 0.7(DS)	FILL : Silty Clay, medium plasticity, orange-grey, well compacted (M=OMC)
	1.3 – 1.5	1.3 – 1.5(DS)	Silty CLAY, medium to high plasticity, brown-yellow, with red-brown ironstone gravel
TP29	0.0 – 0.2		TOPSOIL : Silty Clay, low to medium plasticity, brown
	0.2 – 1.5		FILL : Silty Clay, medium plasticity, brown to grey, trace of gravel
TP30	0.0 – 0.2		TOPSOIL : Silty Clay, low to medium plasticity, brown
	0.2 – 1.1	0.5 – 0.95 (U50)	FILL : Silty Clay, medium plasticity, grey to dark grey, with shale fragments
	1.1 – 1.5		FILL : Silty Clay, medium plasticity, brown to orange
TP31	0.0 – 0.2		TOPSOIL : Silty Clay, low to medium plasticity, brown
	0.2 – 1.5		FILL : Silty Clay, medium plasticity, grey to dark grey, with shale fragments
TP32	0.0 – 0.2		TOPSOIL : Silty Clay, low to medium plasticity, brown
	0.2 – 1.3		FILL : Silty Clay, medium plasticity, grey to dark grey, with shale fragments
	1.3 – 1.5		FILL : Silty Clay, medium plasticity, brown to orange
TP33	0.0 – 0.2		TOPSOIL : Silty Clay, low to medium plasticity, brown
	0.2 – 1.5	0.5 – 0.95 (U50)	FILL : Silty Clay, medium plasticity, grey to dark grey, with shale fragments
TP34	0.0 – 0.2		TOPSOIL : Silty Clay, low to medium plasticity, brown
	0.2 – 1.5		FILL : Silty Clay, medium plasticity, grey to dark grey, with shale fragments

TABLE A

TEST PIT	DEPTH (m)	SAMPLE DEPTH (m)	MATERIAL DESCRIPTION
TP35	0.0 – 0.2		TOPSOIL : Silty Clay, low to medium plasticity, brown
	0.2 – 1.5		FILL : Silty Clay, medium plasticity, brown to grey, trace of gravel
TP36	0.0 – 0.2		TOPSOIL : Silty Clay, low to medium plasticity, brown
	0.2 – 1.5		FILL : Silty Clay, medium plasticity, grey to dark grey, with shale fragments
TP37	0.0 – 0.2		TOPSOIL : Silty Clay, low to medium plasticity, brown
	0.2 – 1.5		FILL : Silty Clay, medium plasticity, brown to grey, trace of gravel
TP38	0.0 – 0.2		TOPSOIL : Silty Clay, low to medium plasticity, brown
	0.2 – 1.5		FILL : Silty Clay, medium plasticity, grey to dark grey, with shale fragments
TP39	0.0 – 0.2		TOPSOIL : Silty Clay, low to medium plasticity, brown
	0.2 – 1.5		FILL : Silty Clay, medium plasticity, brown to grey, trace of gravel

APPENDIX B

TABLE B
SUMMARY OF SITE CLASSIFICATIONS

Job No: 7747/57
Our Ref: 7747/57-AA-R1

SUMMARY OF SITE CLASSIFICATIONS

Redbank Development - Promenade
Grose Vale Road, North Richmond

Site Classification

Lot	Site Classification	Lot	Site Classification	Lot	Site Classification
1501	Class “M”	1534	Class “M”	1567	Class “M”
1502	Class “M”	1535	Class “M”	1568	Class “M”
1503	Class “M”	1536	Class “M”	1569	Class “M”
1504	Class “M”	1537	Class “M”	1570	Class “M”
1505	Class “M”	1538	Class “M”	1571	Class “M”
1506	Class “M”	1539	Class “M”	1572	Class “M”
1507	Class “M”	1540	Class “M”	1573	Class “M”
1508	Class “M”	1541	Class “M”	1574	Class “M”
1509	Class “M”	1542	Class “M”	1575	Class “M”
1510	Class “M”	1543	Class “M”	1576	Class “M”
1511	Class “M”	1544	Class “M”	1577	Class “M”
1512	Class “M”	1545	Class “M”	1578	Class “M”
1513	Class “M”	1546	Class “M”	1579	Class “M”
1514	Class “M”	1547	Class “M”	1580	Class “M”
1515	Class “M”	1548	Class “M”	1581	Class “M”
1516	Class “M”	1549	Class “M”	1582	Class “M”
1517	Class “M”	1550	Class “M”	1583	Class “M”
1518	Class “M”	1551	Class “M”	1584	Class “M”
1519	Class “M”	1552	Class “M”	1585	Class “M”
1520	Class “M”	1553	Class “M”	2001	Class “M”
1521	Class “M”	1554	Class “M”	2002	Class “M”
1522	Class “M”	1555	Class “M”	2003	Class “M”
1523	Class “M”	1556	Class “M”	2004	Class “M”
1524	Class “M”	1557	Class “M”	2005	Class “M”
1525	Class “M”	1558	Class “M”	2006	Class “M”
1526	Class “M”	1559	Class “M”	2007	Class “M”
1527	Class “M”	1560	Class “M”	2008	Class “M”
1528	Class “M”	1561	Class “M”	2009	Class “M”
1529	Class “M”	1562	Class “M”	2010	Class “M”
1530	Class “M”	1563	Class “M”	2011	Class “M”
1531	Class “M”	1564	Class “M”	2012	Class “M”
1532	Class “M”	1565	Class “M”		
1533	Class “M”	1566	Class “M”		

M : Moderately Reactive (AS2870-2011 “Residential slabs & footings”)

Redbank Communities
ZA/18.01.2022

APPENDIX C

LABORATORY TEST RESULTS

GEOTECH TESTING PTY LTD®
ABN 71 076 676 321

REDBANK COMMUNITIES
PO BOX 1918
PENRITH NSW 2750

Job No:	7747/57
Tested By:	JC
Checked By:	HW
Date Tested:	24/11/2021
Laboratory	Penrith

SITE CLASSIFICATION
PROPOSED DEVELOPMENT, GROSE VALE ROAD, NORTH RICHMOND, STAGE SOUTHERN HEIGHTS

TEST RESULTS - SHRINK / SWELL INDEX

Test Procedure: AS 1289 7.1.1

Sample Identification	Test Pit 2	Test Pit 5	Test Pit 9	
Depth (m)	1.2 - 1.7	0.3 - 0.8	0.2 - 0.7	
Laboratory Number	7747/57-1	7747/57-2	7747/57-3	
Test Description				
Moisture Content				
Initial %	20.3	15.0	21.7	
Final %	23.8	16.9	26.9	
Swell %	0.3	0.6	Nil	
Shrinkage %	3.0	1.4	4.2	
Shrink/Swell Index %/$_p$F	1.7	1.0	2.3	
Material Description	(CI) Silty CLAY. Medium plasticity, orange-grey, with some fine to medium gravel	FILL: Silty Clay, brown-grey with some fine to medium gravel	FILL: Silty Clay, medium plasticity, orange-grey with some fine to medium gravel	

Form No R007 Version 12 06/13

NATA Accreditation Number 2734
Corporate Site Number 2727

Accredited for compliance with ISO/IEC 17025 - Testing.

A Kench 24/11/2021
Approved Signatory

34 Borec Road, Penrith NSW 2750
Telephone: (02) 4722 2744

Unit 4, 18-20 Whyalla Place, Prestons NSW 2170
Telephone: (02) 9607 6111

email: info@geotech.com.au www.geotech.com.au

GEOTECH TESTING PTY LTD®
ABN 71 076 676 321

REDBANK COMMUNITIES
PO BOX 1918
PENRITH NSW 2750

Job No:	7747/57
Tested By:	JC
Checked By:	AK
Date Tested:	20/12/2021
Laboratory	Penrith

SITE CLASSIFICATION
PROPOSED DEVELOPMENT, GROSE VALE ROAD, NORTH RICHMOND, STAGE SOUTHERN HEIGHTS

TEST RESULTS - SHRINK / SWELL INDEX

Test Procedure: AS 1289 7.1.1

Sample Identification	Test Pit 30	Test Pit 33	Test Pit 36	
Depth (m)	0.5 - 0.95	0.5 - 0.95	0.5 - 0.95	
Laboratory Number	7747/57-14	7747/57-15	7747/57-16	
Test Description				
Moisture Content				
Initial %	14.3	17.0	11.5	
Final %	20.0	19.2	20.0	
Swell %	1.3	Nil	1.7	
Shrinkage %	0.1	0.5	Nil	
Shrink/Swell Index $\%/_{p}F$	0.4	0.3	0.5	
Material Description	FILL: Silty Clay, low plasticity, grey, some fine to medium gravel	FILL: Silty Clay, low plasticity, grey, some fine to medium gravel	FILL: Silty Clay, low plasticity, grey, some fine to medium gravel	

Form No R007 Version 12 06/13

NATA

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REDBANK COMMUNITIES
PO BOX 1918
PENRITH NSW 2750

SITE CLASSIFICATION
PROPOSED DEVELOPMENT, GROSE VALE ROAD, NORTH RICHMOND, STAGE SOUTHERN HEIGHTS

TEST RESULTS - ATTERBERG LIMITS

Test Procedure AS1289 3.1.1, 3.2.1, 3.3.1, 3.4.1

Job No:	7747/57	Tested By:	BG
Laboratory	Penrith	Checked By:	HW
Date Tested	19/11/2021		

Sample Identification	Test Pit 13	Test Pit 7	Test Pit 14
Laboratory Number	7747/57-4	7747/57-5	7747/57-6
Depth (m)	0.5 - 1.0	0.2 - 0.4	0.3 - 0.5
Test Description			
Liquid Limit (W_L)	40%	48%	46%
Plastic Limit (W_P)	19%	19%	19%
Plastic Index (I_P)	21%	30%	26%
Linear Shrinkage (LS)	11.0%	11.0%	13.0%
Mould Length (mm)	125	127	125
Sample History	Oven Dried Dry Sieved	Oven Dried Dry Sieved	Oven Dried Dry Sieved
Material Description	FILL: Silty CLAY, medium plasticity, brown-grey with fine to medium gravel	FILL: Silty Clay, medium plasticity, brown-grey, with shale fragments	FILL: Silty Clay, medium plasticity, brown-grey with shale fragments

Form No R004 Version 12 - 06/13 - Issued by ER

E Rizkalla 6/12/2021
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REDBANK COMMUNITIES
PO BOX 1918
PENRITH NSW 2750

SITE CLASSIFICATION
PROPOSED DEVELOPMENT, GROSE VALE ROAD, NORTH RICHMOND, STAGE SOUTHERN HEIGHTS

TEST RESULTS - ATTERBERG LIMITS

Test Procedure AS1289 3.1.1, 3.2.1, 3.3.1, 3.4.1

Job No:	7747/57	Tested By:	BG
Laboratory	Penrith	Checked By:	HW
Date Tested	19/11/2021		

Sample Identification	Test Pit 17
Laboratory Number	7747/57-7
Depth (m)	0.3 - 0.5
Test Description	
Liquid Limit (W_L)	41%
Plastic Limit (W_P)	19%
Plastic Index (I_P)	22%
Linear Shrinkage (LS)	10.0%
Mould Length (mm)	127
Sample History	Oven Dried Dry Sieved
Material Description	FILL: Silty Clay, medium plasticity, brown-grey, with shale fragments

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E Rizkalla 6/12/2021
Approved Signatory

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