



Job No: 8574/13
Our Ref: 8574/13-AA
7 May 2018

J K Williams Contracting Pty Ltd
P O Box 308
PENRITH NSW 2750
Email: SHartog@jkw.com.au

Attention: Mr S Hartog

Dear Sir

re: **Proposed Caddens Hill Residential Subdivision (Stage 4)**
O'Connell Lane, Caddens
Site Classification Report

Please find herewith our site classification report for the proposed dwellings at the above development. A total of ninety-eight (98) lots (Lot 397, 398, 400 to 494 and 499) 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 proposed lots in accordance with AS2870-2011 "Residential slabs & footings".

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

Yours faithfully
GEOTECH TESTING PTY LTD

A handwritten signature in black ink, appearing to be "Ziauddin Ahmed", written in a cursive style.

ZIAUDDIN AHMED
Associate Geotechnical Engineer

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1.0 INTRODUCTION

This report provides results of a site classification investigation for proposed dwellings to be located at Caddens Hill Residential Development – Stage 4. A total of ninety-eight (98) lots (Lot 397, 398, 400 to 494 and 499) are covered in this report.

Site classification in accordance with AS2870-2011 is only applicable for design of footing systems 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 field work for the investigation was carried out 19 and 20 April 2018, under the full time supervision of a Geotechnical Engineer from this company. The field work was consisted of excavation of forty-eight (48) test pits (TP1 to TP48) to depths ranging from 0.2m to 1.5m. Test pits at shallow depths were terminated due to refusal on bedrock. The locations of the test pits are shown on the attached Drawing No 8574/13-AA1 in Appendix A. A summary of the field data obtained is presented in Appendix A.

3.0 SITE CONDITIONS

3.1 Surface Conditions

Stage 4 is bound by Stage 5 and raingarden to the north, Stage 1 to the west, Stage 3 to the east and future subdivision (open lot) to the south. At the time of the investigation, the internal roads were constructed and services installed. Site surface levels gently fall away from the hill top park, which is located eastern portion of the subdivision.

3.2 Sub-Surface Conditions

The test pit investigation revealed the following generalised sub-surface profile:

Topsoil	Silty Clay, low to medium plasticity, brown, trace of root fibres
Fill	Clayey Silt, low plasticity, brown, grey, with gravel Silty Clay, medium plasticity, brown, with shale boulders/cobbles
Natural	Shaley CLAY, high plasticity, brown-grey Silty CLAY, medium to high plasticity, orange, brown, grey with occasion shale gravel
Bedrock	SHALE

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Stage 4 - O'Connell Lane, Caddens

Groundwater or seepage 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.

4.0 LABORATORY TESING

Seven (7) soil samples were recovered during the field work of the investigation and tested for shrink/swell index tests (AS1289 7.1.1). The purpose of the test was to assess soil reactivity due to variation in moisture content. The tests results are detailed in the attached certificate and summarised below:

TP	Sample Depth (m)	Summary Description	Shrink/Swell Index % _{pF}
10	0.5 – 1.0	FILL : Silty Gravelly Clay, low to medium plasticity, brown	1.9
13	0.3 – 0.8	(CI) Silty CLAY, medium plasticity, orange-brown	2.3
17	0.5 – 1.0	FILL : Silty Gravelly Clay, low to medium plasticity, brown	1.3
21	0.3 – 0.8	FILL : Silty Gravelly Clay, low to medium plasticity, brown	0.6
30	0.8 – 1.3	(CI-CH) Silty CLAY, medium to high plasticity, orange, brown	2.9
33	0.2 – 0.7	(CL) Silty CLAY, low plasticity, brown	1.0
38	0.4 – 0.9	(CL-CI) Silty CLAY, low to medium plasticity, brown	1.7

5.0 DISCUSSION & RECOMMENDATIONS

5.1 Assessment of Fill

Fill was encountered in a number of test pits excavated across the site. It should be noted that a number of field density tests were conducted by Geotech Testing Pty Ltd during the fill placement and the results are provided in our summary report (Our Ref: 8574/5-AC dated 30 April 2018). Based on our inspection of the fill during the investigation and the above field density tests results, it is our assessment that the fill at Stage 4 is "Controlled Fill".

5.2 Site Classification

Based on the field and laboratory results, the site classification to AS2870-2011 "Residential slabs & footings" for the proposed lots are summarised in Appendix B of this report.

It is recommended that footings for the proposed dwellings are founded on the same stratum, below any topsoil or deleterious material to minimise the potential for differential movement. Footings supported on compacted clay fill may be designed for a safe bearing pressure of 100kPa, subject to insitu testing of the exposed footings utilising the Dynamic Cone Penetrometer (DCP) test.

The above recommendations are applicable to the Lots at the date of conducting the investigation, being 19 and 20 April 2018 and are made on the following assumptions:

1. The construction requirements of AS2870-2011 must be followed.
2. The recommendations for site maintenance set out in Appendix B of AS2870 are followed.
3. The performance expectations set out in Appendix C of AS2870 are acceptable.

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Stage 4 - O'Connell Lane, Caddens

It is recommended that house owners are made aware of the recommendations given by the CSIRO publication, "Guide to Home Owners on Foundation Maintenance and Footing Performance".

GEOTECH TESTING PTY LTD

A handwritten signature in black ink, consisting of a stylized 'J' followed by a series of loops and a final flourish.

APPENDIX A

TABLE A SUMMARY OF TEST PITS

DRAWING NO 8574/13-AA1
(Test Pit Location Plan)

TABLE A

Job No: 8574/13
Our Ref: 8574/13-AA

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TEST PIT NUMBER	DEPTH (m)	SAMPLE DEPTH (m)	MATERIAL DESCRIPTION
TP1	0.0-1.0	0.3-0.8 (AH)	FILL: Clayey Silt, low plasticity, brown-grey, with gravel
	1.0		Refusal on shale
TP2	0.0-0.3		FILL: Clayey Silt, low plasticity, brown-grey, with shale gravel
	0.3-0.5		(CH) Shaley CLAY, high plasticity, brown-grey, M _s PL, H
	0.5		Refusal on shale bedrock
TP3	0.0-0.2		FILL: Clayey Silt, low plasticity, brown-grey, with shale gravel
	0.2		Refusal on shale bedrock
TP4	0.0-0.2		FILL: Clayey Silt, low plasticity, brown-grey, with shale gravel
	0.2-0.4		(CH) Shaley CLAY, high plasticity, brown-grey, M _s PL, H
	0.4		Refusal on shale bedrock
TP5	0.0-0.2		FILL: Clayey Silt, low plasticity, brown-grey, with gravel
	0.2-0.3		(CH) Shaley CLAY, high plasticity, brown-grey, M _s PL, H
	0.3		Refusal on shale bedrock
TP6	0.0-0.2		FILL: Clayey Silt, low plasticity, brown-grey, with shale gravel
	0.2-0.6		(CH) Shaley CLAY, high plasticity, brown-grey, M _s PL, H
	0.6		Refusal on shale bedrock
TP7	0.0-0.2		FILL: Clayey Silt, low plasticity, brown-grey, with shale gravel
	0.2-0.6		(CH) Shaley CLAY, high plasticity, brown-grey, M _s PL, H
	0.6		Refusal on shale

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TEST PIT NUMBER	DEPTH (m)	SAMPLE DEPTH (m)	MATERIAL DESCRIPTION
TP8	0.0-0.2	0.5-1.0 (U ₅₀)	FILL: Silty Clay, medium plasticity, brown, with shale boulders/cobbles
	0.2-0.5		(CH) Shaley CLAY, high plasticity, brown-grey, M _s PL, H
TP9	0.0-0.3		FILL: Silty Clay, medium plasticity, brown, with shale boulders/cobbles
	0.3-0.5		(CH) Shaley CLAY, high plasticity, brown-grey, M _s PL, H
TP10	0.0-1.5	0.5-1.0 (U ₅₀)	FILL: Silty Clay, medium plasticity, brown, with shale boulders/cobbles
TP11	0.0-1.5		FILL: Silty Clay, medium plasticity, brown, with shale boulders/cobbles
TP12	0.0-0.3		FILL: Silty Clay, medium plasticity, brown, with shale boulders/cobbles, inclusion of timber fragments
	0.3-0.6		(CH) Shaley CLAY, high plasticity, brown-grey, M _s PL, H
	0.6		Refusal on bedrock
TP13	0.0-0.3	0.3-0.8 (U ₅₀)	FILL: Silty Clay, medium plasticity, brown, with shale boulders/cobbles
	0.3-1.5		(CI-CH) Silty CLAY, medium to high plasticity, orange, M _s PL, St-VSt
TP14	0.0-0.2		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace of root fibres
	0.2-0.5		(CI) Silty CLAY, medium plasticity, brown, M _s PL, St Refusal on shale bedrock
TP15	0.0-1.5		FILL: Silty Clay, medium plasticity, brown, with shale boulders/cobbles
TP16	0.0-1.5		FILL: Silty Clay, medium plasticity, brown, with shale boulders/cobbles
TP17	0.0-1.5	0.5-1.0 (U ₅₀)	FILL: Silty Clay, medium plasticity, brown, with shale boulders/cobbles

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TEST PIT NUMBER	DEPTH (m)	SAMPLE DEPTH (m)	MATERIAL DESCRIPTION
TP18	0.0-1.5		FILL: Silty Clay, medium plasticity, brown, with shale boulders/cobbles
TP19	0.0-0.5		FILL: Silty Clay, medium plasticity, brown, with shale boulders/cobbles
	0.5-1.3		(CI-CH) Silty CLAY, medium plasticity, brown-grey, with shale gravel, VSt-H
	1.3		Refusal on shale bedrock
TP20	0.0-0.3		FILL: Silty Clay, medium plasticity, brown, with shale gravel boulders/cobbles
	0.3-1.0		(CI-CH) Silty CLAY, medium plasticity, brown-grey, with shale gravel, VSt-H
TP21	0.0-1.5	0.3-0.8 (U ₅₀)	FILL: Silty Clay, medium plasticity, brown, with shale boulders/cobbles
TP22	0.0-0.2		FILL: Silty Clay, medium plasticity, brown, with shale boulders/cobbles
	0.2-0.4		(CH) Shaley CLAY, high plasticity, brown-grey, M _s PL, H Refusal on shale bedrock
TP23	0.0-0.2		FILL: Silty Clay, medium plasticity, brown, with shale boulders/cobbles
	0.2-0.5		(CH) Shaley CLAY, high plasticity, brown-grey, M _s PL, H Refusal on shale bedrock
TP24	0.0-0.2		FILL: Silty Clay, medium plasticity, brown, with shale boulders/cobbles
	0.2-0.5		(CH) Shaley CLAY, high plasticity, brown-grey, M _s PL, H Refusal on shale bedrock
TP25	0.0-0.2		FILL: Silty Clay, medium plasticity, brown, with shale boulders/cobbles
	0.2-0.4		(CH) Shaley CLAY, high plasticity, brown-grey, M _s PL, H Refusal on shale bedrock

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TEST PIT NUMBER	DEPTH (m)	SAMPLE DEPTH (m)	MATERIAL DESCRIPTION
TP26	0.0-0.1		(CH) Shaley CLAY, high plasticity, brown-grey, M _s PL, H
	0.1		Refusal on bedrock
TP27	0.0-0.2		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace of root fibres
	0.2-0.5		(CI-CH) Silty CLAY, medium plasticity, brown-grey, with shale gravel, VSt-H
	0.5		Refusal on shale bedrock
TP28	0.0-0.2		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace of root fibres
	0.2-0.8		(CI) Silty CLAY, medium plasticity, brown, M _s PL, St
	0.8-1.2		(CI-CH) Silty CLAY, medium plasticity, brown-grey, with shale gravel, VSt-H
	1.2		Refusal on shale bedrock
TP29	0.0-0.2		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace of root fibres
	0.2-0.5		(CI) Silty CLAY, medium plasticity, brown, M _s PL, St
	0.5-1.2		(CI-CH) Silty CLAY, medium plasticity, brown-grey, with shale gravel, VSt-H
	1.2		Refusal on shale bedrock
TP30	0.0-0.8	0.8-1.3 (U ₅₀)	FILL: Silty Clay, medium plasticity, brown, with shale boulders/cobbles
	0.8-1.5		(CI-CH) Silty CLAY, medium to high plasticity, orange, M _s PL, St-VSt
TP31	0.0-0.2		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace of root fibres
	0.2-0.4		(CI) Silty CLAY, medium plasticity, brown, M _s PL, St
	0.4-1.5		(CI-CH) Silty CLAY, medium to high plasticity, orange, M _s PL, St-VSt

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TEST PIT NUMBER	DEPTH (m)	SAMPLE DEPTH (m)	MATERIAL DESCRIPTION
TP32	0.0-0.2		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace of root fibres
	0.2-0.5		(CI) Silty CLAY, medium plasticity, brown, M ₅₀ PL, St
	0.5-1.5		(CI-CH) Silty CLAY, medium to high plasticity, orange, M ₅₀ PL, St-VSt
TP33	0-0.2	0.2-0.7 (U ₅₀)	TOPSOIL: Silty Clay, low to medium plasticity, brown, trace of root fibres
	0.2-0.7		(CI) Silty CLAY, medium plasticity, brown, M ₅₀ PL, St
	0.7-1.5		(CI-CH) Silty CLAY, medium to high plasticity, orange, M ₅₀ PL, St-VSt
TP34	0.0-0.2		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace of root fibres
	0.2-0.6		(CI) Silty CLAY, medium plasticity, brown, M ₅₀ PL, St
	0.6-1.5		(CI-CH) Silty CLAY, medium plasticity, brown-grey, with shale gravel, VSt-H
TP35	0.0-0.2		FILL: Clayey Silt, low plasticity, brown-grey, with shale gravel
	0.2-1.0		(CI) Silty CLAY, medium plasticity, brown, M ₅₀ PL, St
	1.0-1.2		(CI-CH) Silty CLAY, medium plasticity, brown-grey, with shale gravel, VSt-H
	1.2		Refusal on shale bedrock
TP36	0.0-0.3	0.0-0.3	FILL: Silty Clay, medium plasticity, brown, with shale boulders/cobbles
	0.3-0.5		(CI-CH) Silty CLAY, medium plasticity, brown-grey, with shale gravel, VSt-H
	0.5		Refusal on shale bedrock
TP37	0.0-0.4		FILL: Silty Clay, medium plasticity, brown, with shale boulders/cobbles
	0.4-1.5		(CI) Silty CLAY, medium plasticity, brown, M ₅₀ PL, St

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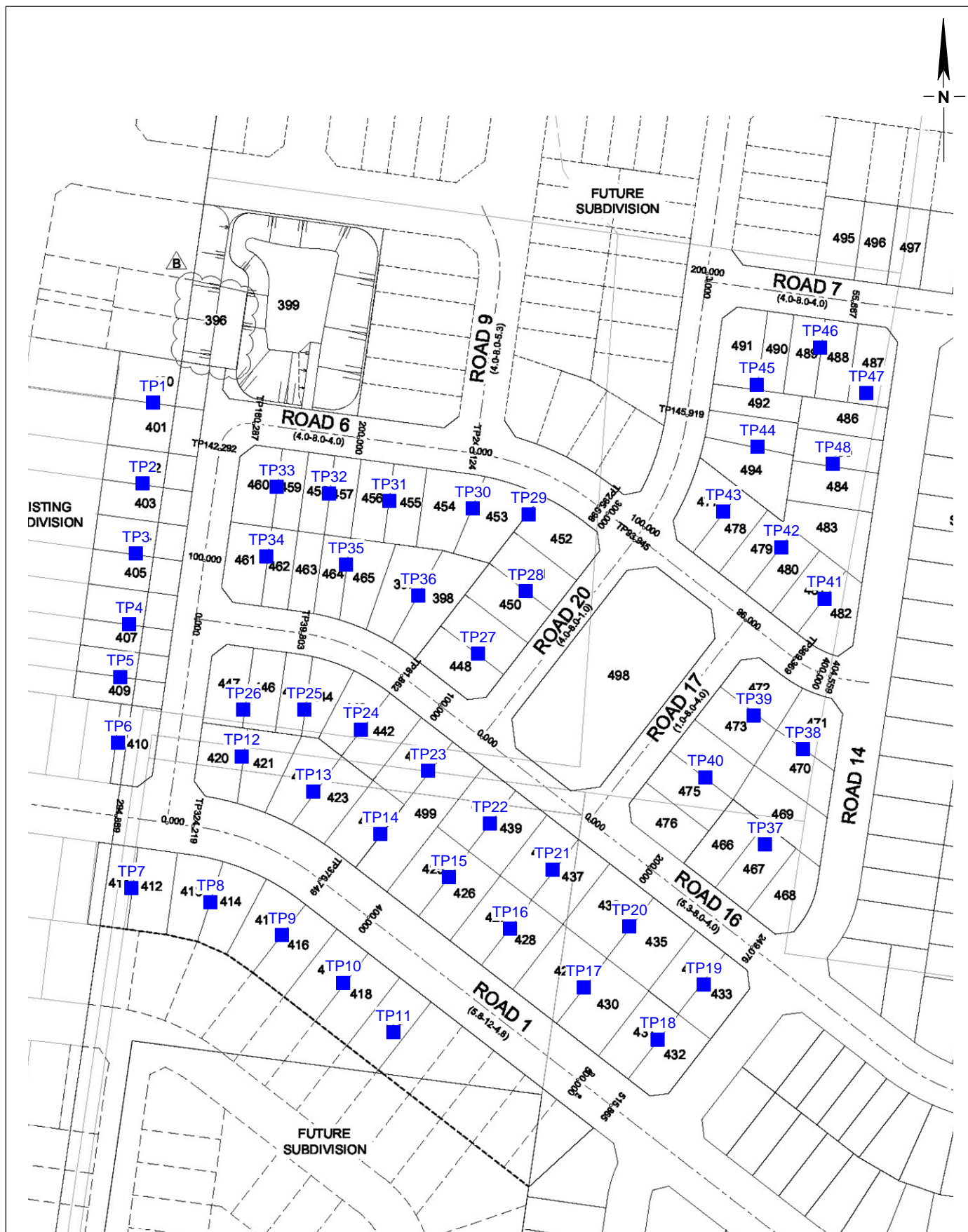
TEST PIT NUMBER	DEPTH (m)	SAMPLE DEPTH (m)	MATERIAL DESCRIPTION
TP38	0.0-0.4	0.4-0.9 (U ₅₀)	FILL: Silty Clay, medium plasticity, brown, with shale boulders/cobbles
	0.4-1.5		(CI) Silty CLAY, medium plasticity, brown, M _s PL, St
TP39	0.0-0.3		FILL: Silty Clay, medium plasticity, brown, with shale boulders/cobbles
	0.3-0.4		(CH) Shaley CLAY, high plasticity, brown-grey, M _s PL, H
	0.4		Refusal on shale bedrock
TP40	0.0-0.8		FILL: Silty Clay, medium plasticity, brown, with shale boulders/cobbles
	0.8-1.0		(CH) Shaley CLAY, high plasticity, brown-grey, M _s PL, H
	1.0		Refusal on shale bedrock
TP41	0.0-0.2		FILL: Silty Clay, medium plasticity, brown, with shale boulders/cobbles
	0.2-0.3		(CH) Shaley CLAY, high plasticity, brown-grey, M _s PL, H
	0.3		Refusal on shale bedrock
TP42	0.0-0.2		FILL: Clayey Silt, low plasticity, brown-grey, with gravel
	0.2-0.3		(CH) Shaley CLAY, high plasticity, brown-grey, M _s PL, H
	0.3		Refusal on shale bedrock
TP43	0.0-0.3		FILL: Clayey Silt, low plasticity, brown-grey, with gravel
	0.3-0.4		(CH) Shaley CLAY, high plasticity, brown-grey, M _s PL, H
	0.4		Refusal on shale bedrock
TP44	0.0-0.4		FILL: Clayey Silt, low plasticity, brown-grey, with gravel
	0.4-0.5		(CH) Shaley CLAY, high plasticity, brown-grey, M _s PL, H
	0.5		Refusal on shale bedrock

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TEST PIT NUMBER	DEPTH (m)	SAMPLE DEPTH (m)	MATERIAL DESCRIPTION
TP45	0.0-0.4	0.0-0.4 (AH)	FILL: Silty Clay, medium plasticity, brown, with shale boulders/cobbles
	0.4-0.6		(CH) Shaley CLAY, high plasticity, brown-grey, M _s PL, H
	0.6		Refusal on shale bedrock
TP46	0.0-0.2		FILL: Clayey Silt, low plasticity, brown-grey, with gravel
	0.2-0.4		(CH) Shaley CLAY, high plasticity, brown-grey, M _s PL, H
	0.4		Refusal on shale bedrock
TP47	0.0-0.2		FILL: Clayey Silt, low plasticity, brown-grey, with gravel
	0.2-0.3		(CH) Shaley CLAY, high plasticity, brown-grey, M _s PL, H
	0.3		Refusal on shale bedrock
TP48	0.0-0.2		FILL: Silty Clay, medium plasticity, brown, with shale boulders/cobbles
	0.2-0.3		(CH) Shaley CLAY, high plasticity, brown-grey, M _s PL, H
	0.3		Refusal on shale bedrock



LEGEND

■ Test Pit

PREPARED BY:

GEOTECH
TESTING PTY LTD

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Penrith
NSW 2750
ABN 71 076 676 321

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J K Williams Contracting Pty Ltd
Proposed Caddens Hill Residential Subdivision
Stage 4
O'Connell Lane, Caddens

Test Pit Locations

Drawing No: 8574/13-AA1
Job No: 8574/13
Drawn By: MH
Date: 20 April 2018
Checked By: ZA
File No: 8574-13
Layers: 0, AA1

APPENDIX B

SUMMARY OF SITE CLASSIFICATIONS

Job No: 8574/13
Our Ref: 8574/13-AA

TABLE B

SUMMARY OF SITE CLASSIFICATIONS

**CADDENS HILL RESIDENTIAL DEVELOPMENT
STAGE 4
O'Connell Lane, Caddens**

Lot	Site Classification	Lot	Site Classification	Lot	Site Classification
400	Class "M"	433	Class "M"	466	Class "M"
401	Class "M"	434	Class "M"	467	Class "M"
402	Class "S"	435	Class "M"	468	Class "M"
403	Class "S"	436	Class "M"	469	Class "M"
404	Class "S"	437	Class "M"	470	Class "M"
405	Class "S"	438	Class "M"	471	Class "M"
406	Class "S"	439	Class "S"	472	Class "S"
407	Class "S"	440	Class "S"	473	Class "S"
408	Class "S"	441	Class "S"	474	Class "M"
409	Class "S"	442	Class "S"	475	Class "M"
410	Class "S"	443	Class "S"	476	Class "M"
411	Class "S"	444	Class "S"	477	Class "S"
412	Class "S"	445	Class "S"	478	Class "S"
413	Class "M"	446	Class "S"	479	Class "S"
414	Class "M"	447	Class "S"	480	Class "S"
415	Class "M"	448	Class "S"	481	Class "S"
416	Class "M"	449	Class "S"	482	Class "S"
417	Class "M"	450	Class "M"	483	Class "S"
418	Class "M"	451	Class "M"	484	Class "S"
419	Class "M"	452	Class "M"	485	Class "S"
420	Class "S"	453	Class "H1"	486	Class "S"
421	Class "S"	454	Class "H1"	487	Class "S"
422	Class "M"	455	Class "H1"	488	Class "S"
423	Class "M"	456	Class "H1"	489	Class "S"
424	Class "M"	457	Class "H1"	490	Class "S"
425	Class "M"	458	Class "H1"	491	Class "S"
426	Class "M"	459	Class "H1"	492	Class "S"
427	Class "M"	460	Class "H1"	493	Class "S"
428	Class "M"	461	Class "H1"	494	Class "S"
429	Class "M"	462	Class "H1"	499	Class "M"
430	Class "M"	463	Class "M"	397	Class "S"
431	Class "M"	464	Class "M"	398	Class "S"
432	Class "M"	465	Class "M"		
S: Slightly Reactive, Free Surface Movement: 0-20mm M: Moderately Reactive, Free Surface Movement: 20-40mm H1: Highly Reactive, Free Surface Movement: 40-60mm					

APPENDIX C

LABORATORY TEST RESULTS

J K WILLIAMS CONTRACTING PTY LTD
PO BOX 308
PENRITH NSW 2750

Job No: 8574/13
Tested By: JM
Checked By: AK
Date Tested: 24/04/2018
Laboratory: Penrith

SITE CLASSIFICATION

PROPOSED CADDENS HILL RESIDENTIAL SUBDIVISION - O'CONNELL LANE, STAGE 4, CADDENS

TEST RESULTS - SHRINK / SWELL INDEX

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Test Procedure: AS 1289 7.1.1				
Sample Identification	Test Pit 10	Test Pit 13	Test Pit 17	Test Pit 21
Depth (m)	0.5 - 1.0	0.3 - 0.8	0.5 - 1.0	0.3 - 0.8
Laboratory Number	8574/13-1	8574/13-2	8574/13-3	8574/13-4
Test Description				
Moisture Content				
Initial %	9.0	17.1	14.3	11.6
Final %	24.0	27.4	18.3	15.1
Swell %	6.1	3.3	3.3	0.8
Shrinkage %	0.4	2.6	0.7	0.6
Shrink/Swell Index % _{pF}	1.9	2.3	1.3	0.6
Material Description	FILL: Silty gravelly Clay, low to medium plasticity, brown	(Cl) Silty CLAY, medium plasticity, orange-brown	FILL: Silty gravelly Clay, low plasticity, brown	FILL: Silty gravelly Clay, low plasticity, brown

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

01/05/2018

Approved Signatory

Head Office:
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Prestons Laboratory:
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J K WILLIAMS CONTRACTING PTY LTD
PO BOX 308
PENRITH NSW 2750

Job No: 8574/13
Tested By: JM
Checked By: AK
Date Tested: 24/04/2018
Laboratory: Penrith

SITE CLASSIFICATION
PROPOSED CADDENS HILL RESIDENTIAL SUBDIVISION - O'CONNELL LANE, STAGE 4, CADDENS

TEST RESULTS - SHRINK / SWELL INDEX

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Test Procedure: AS 1289 7.1.1				
Sample Identification	Test Pit 30	Test Pit 33	Test Pit 38	
Depth (m)	0.8 - 1.3	0.2 - 0.7	0.4 - 0.9	
Laboratory Number	8574/13-5	8574/13-6	8574/13-7	
Test Description				
Moisture Content				
Initial %	18.7	8.5	16.6	
Final %	22.1	16.0	23.7	
Swell %	2.6	1.3	1.2	
Shrinkage %	3.9	1.1	2.5	
Shrink/Swell Index % _{pF}	2.9	1.0	1.7	
Material Description	(CI-CH) Silty CLAY, medium to high plasticity, orange-brown	(CL) Silty CLAY, low plasticity, brown	(CL-CI) Silty CLAY, low to medium plasticity, brown	

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 24/04/2018
Approved Signatory

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