QUALIFIED GEOTECHNICAL ENGINEERS

Aitken Rowe
TESTING LABORATORIES

# SITE CLASSIFICATION REPORT

CLIENT: TROY RAULSTON HOMES – WAGGA WAGGA, NSW

PROJECT DESCRIPTION: PROPOSED RESIDENTIAL DWELLING

LOCATION: No. 14 JOHN POTTS DRIVE, JUNEE, NSW

ACCREDITED CONSTRUCTION MATERIALS
TESTING LABORATORIES

**SC23-178**

**11 SEPTEMBER 2023**

**AITKEN ROWE TESTING LABORATORIES PTY LTD**

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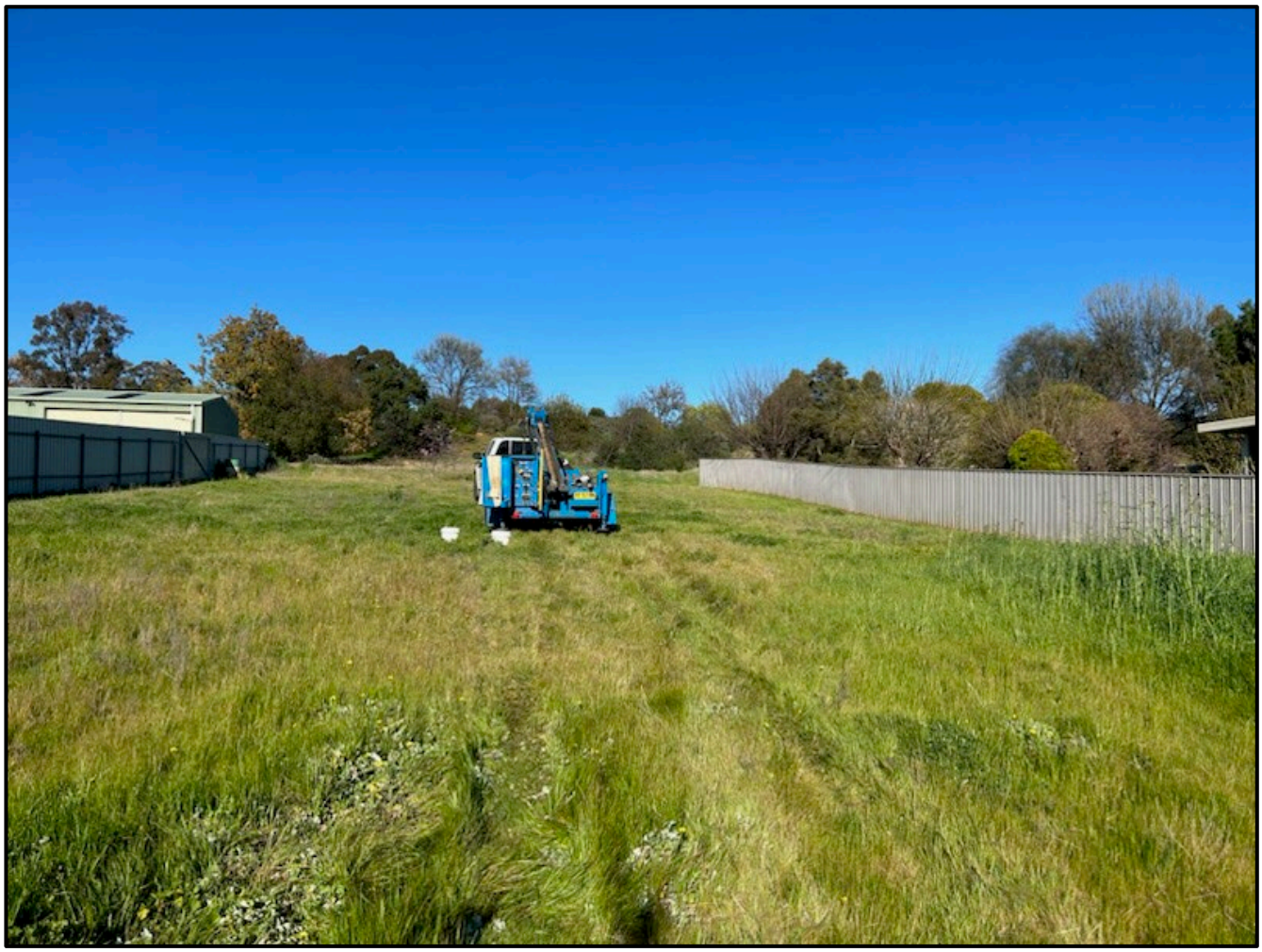
## FIELD INVESTIGATION

At your request, a subsurface exploration was performed at the above location to assess the nature of the underlying soils in order to classify the site in accordance with AS 2870 - 2011 “Residential Slab and Footings”. The following classification is derived from information gained in regard to the history of the site, the description of the natural material and the amount of swell and shrinkage the natural soils experience with variations of water content.

On 4 September 2023, our Geotechnical staff excavated two boreholes (BH1 to 3.0m and BH2 to 2.3m) using a powered drilling rig at the locations shown in the attached sketch. Disturbed samples were taken at various depths to represent various strata. The soil and groundwater conditions in these boreholes were assessed and the boreholes were logged in the field. Visual descriptions of moisture, plasticity and strength were also noted. The soil samples were tested at our NATA accredited laboratory in Wagga Wagga. Dynamic Cone Penetrometer (DCP) testing was performed at the location of BH1 and BH2 to assess the strength of the underlying material. The borehole logs with test results and DCP test reports are attached to this report.



**Site Photo – BH1 Looking South-West (4/09/2023)**

## SITE CONDITIONS, CONCLUSIONS AND RECOMMENDATIONS

The site of the proposed construction is on the south-western side of the road. The site has a downward slope from west to east at approximately 1V:20H.

The borehole investigation revealed that the site is underlain by natural alluvial material comprising topsoil to 0.1m low plasticity sandy silt to 0.5m in BH1 and 0.3m in BH2, overlying fine to coarse grained silty sand to 0.6m in BH2 only, which is then underlain by various low to medium and medium plasticity clays and sandy clays extending to the borehole termination depth at 3.0m in BH1 and 2.3m in BH2. The moisture condition of the underlying material was generally less than plastic limit throughout the profile at the time of the investigation. The underlying clays are considered "poorly drained" which may result in significant volume changes during the wet and dry climatic cycles. No groundwater or seepage was encountered during the drilling, however it should be noted that variations to the water table level could fluctuate with changes to the season, temperature and rainfall.

The DCP test results in BH1 (DCP1) indicate the underlying natural silt and clay-based material (below topsoil) to be stiff consistency to 0.5m then increasing to very stiff consistency with depth throughout the tested profile in BH1 at the time of the investigation.

The DCP test results in BH2 (DCP2) indicate the underlying natural silt-based material (below topsoil) to be very stiff consistency to 0.3m then the natural sand-based material to be loose to medium dense to 0.6m, then the natural clay-based material to be stiff to very stiff consistency to 1.1m then increasing to very stiff consistency with depth throughout the tested profile in BH2 at the time of the investigation.

Based on available data, laboratory test results and estimated characteristic surface movements (ys), the site shall be classified as **"M-D – Moderately reactive deep drying"** in accordance with the Australian Standard AS 2870. We recommend that all the footings be designed in accordance with that Standard and shall be founded below **topsoil into natural ground.**

Based on the type and condition of the subsoil at the time of the field investigation;

- The footing shall be founded on the **stiff consistency or better natural orange yellow brown clay at or below the minimum depth of 0.55 to 0.65m** measured from the existing surface (refer to attached borehole logs), for which an allowable bearing capacity of **100kPa may be adopted**, provided proper drainage measures are incorporated in the design, during and after the construction.

- The slab panel, internal beams and load support thickenings may be founded on the underlying **natural sandy silt material**, for which an allowable bearing capacity of **50kPa may be adopted**, provided topsoil, if any, is removed and the exposed natural subgrade is **proof rolled to detect any soft, loose or heaving areas**. If such areas exist, they shall be excavated and replaced and compacted with granular select fill as required.

It should be noted that the minimum footing depths for various footing systems are determined by the type of construction selected for the proposed dwelling and are presented in Section 3 of AS 2870 – 2011. **It is highly recommended to undertake Dynamic Cone Penetrometer testing at the time of construction to ensure the required bearing capacity can be achieved at the base of the footing system.**

If any additional fill placement is required on site during the site preparation, it is highly recommended to remove the existing topsoil, fill, silt-based material, and unsuitable material, if any, and place granular fill comprising mainly sand and well graded gravel, but caution shall be exercised not to select a 'raw' or non-plastic material that may induce erosion. The fill shall be placed in accordance with Clause 6.4.1 & 6.4.2 of AS2870, or otherwise the site classification shall be reviewed.

The structural fill is to be prepared in such a way that it achieves 95% of Standard Maximum Dry Density in every 150mm thick compacted layer. The placed fill shall be certified by a relevant NATA accredited testing laboratory for which a safe allowable bearing pressure of 100kPa may be adopted, provided proper drainage measures are incorporated in the design, during and after the construction.

Care should be taken when selecting material for use as structural fill. Clay-based fill material is reactive to seasonal changes in moisture content which may result in shrink/swell problems and therefore should be avoided where possible. It should be noted that the placement of reactive clay-based fill material can reduce the cracking zone and adversely affect the estimated characteristic surface movements (ys) of the subject site. Similarly, the cracking zone can be reduced when site cuts are undertaken. **If greater than 0.4m of clay-based fill is placed, or greater than 0.5m of cut is undertaken, the site classification shall be reviewed in accordance with Clauses 2.3.2 and 2.5.2 of AS2870.**

Yours Faithfully,

**Peter Forbes-Taber**
**Geotechnical Engineer**

# GENERAL COMMENT

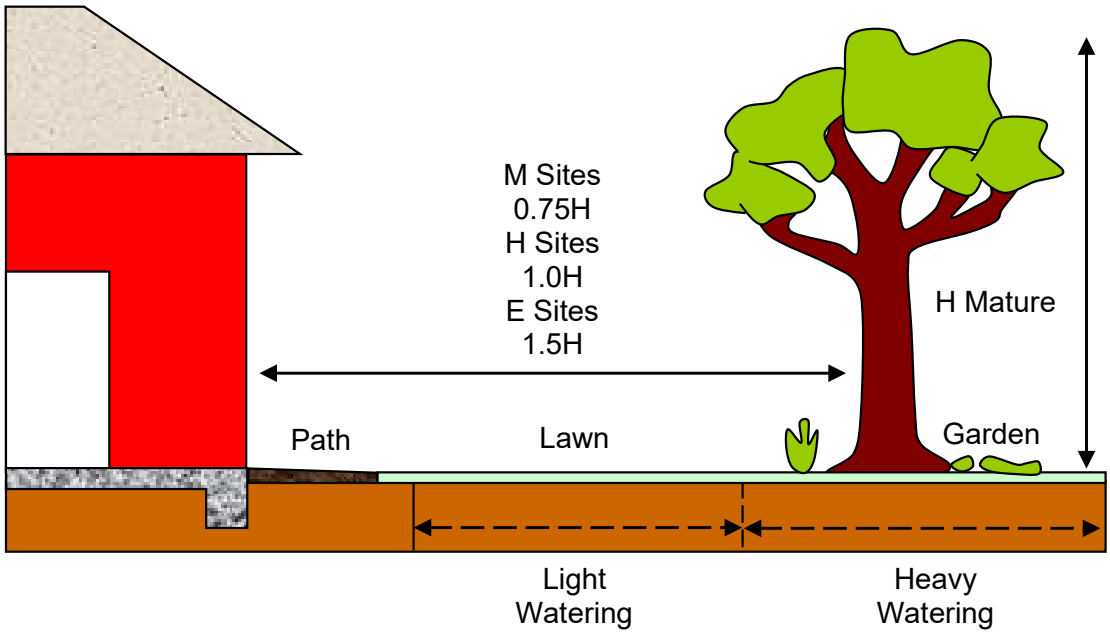
## GARDENS AND TREES

Just as the building of a house changes the moisture conditions of the soil, so does the planting and establishment of a garden. The watering of the gardens increases moisture in the soil which can cause it to swell. Plants also draw moisture out of the soil, especially in long dry spells, causing the soil to shrink.

To avoid excessive moisture fluctuations around the home it is necessary to plan the garden so that only lightly watered areas such as lawns and small garden beds be located in close proximity to the house. Garden beds containing larger shrubs and trees should be kept well away from the building. Heavily watering of gardens near the house should be avoided, although uniform consistent watering of the gardens can be beneficial to prevent damage during long dry periods. Australian native plants generally require less water than exotic varieties. In any case, it is recommended to obtain information about the species to be planted in the garden prior to establishing the area.

If trees exist on site, it is highly recommended to site the proposed residential dwelling away from these trees at a distance equivalent to at least 75% (for Class M sites), 100% (for Class H sites) and 150% (for Class E sites) of the mature height of the tree. If the tree is to be removed, it is highly recommended to remove the entire tree including root system and allow the ground to achieve equilibrium moisture condition prior to construction. To assist with achieving equilibrium moisture content, the material used to backfill the removed tree site should be similar to the surrounding soil. If any trees are to be retained and the dwelling is to be built within the distance equivalent to 75% (for Class M sites), 100% (for Class H sites) and 150% (for Class E sites) of the mature height of the tree, then the footing system shall be designed for **"Class P – Problem site"** classification.

There are no recommendations within the standard for Class A and Class S sites for trees. To ensure that trees do not have a detrimental effect on the underlying materials of the dwelling it is recommended to take care when designing gardens for all soil classifications.



## FOUNDATION EXCAVATION

The foundation excavation at times may expose soft or heaving areas at the base of the footing construction particularly if they are excavated after prolonged periods of rainfall. If such areas are encountered within the footing excavation, then such areas shall be excavated and treated before pouring the concrete. It is highly recommended to incorporate proper drainage measures around the perimeter of the building to ensure surface run-off does not ingress into the founding material.

## RECOMMENDED FOUNDATION MATERIAL

Soil layer variations are common; we have therefore provided a description of the "Recommended foundation material" as a guide to the builder as to the correct foundation depths outside our test sites. In all cases the foundation soil chosen should have a similar consistency and strength to that recommended but need not be of the same type. The depth of the recommended foundation material may vary outside the test locations if the site is excavated or filled in any way after the date of our investigation. It is often difficult to distinguish fill from natural ground during investigation. If any significant variation from the borehole logs is noted during footing excavation i.e. 200mm or more, Aitken Rowe Testing Laboratories Pty Ltd should be consulted. Some allowances should be made for the removal of topsoil, organic matter, roots etc, which may be found in small, localised areas in the footing trenches. Also the effect of past and future trees should be considered in the selection of a design value for differential movement.

## UNEXPECTED GROUND CONDITIONS

It is highly recommended to have experienced Geotechnical personnel inspect the site once the topsoil and unsuitable materials, if any, have been stripped to ensure that the exposed subgrade is consistent across the site. It is also recommended to proof roll the exposed subgrade. Isolated areas of "uncontrolled fill", silt-based material, tree roots, existing services trenches, tile drainage etc, may be identified and may require removal prior to construction. Care should be given to the site history, particularly where orchards/vineyards/trees or existing structures have been removed.

## SITE ESTABLISHMENT

It is important to establish the site as soon as possible around the home as this will assist in stabilising the moisture content in the surrounding soil. The majority of soils expand (increase in volume) when wet, and shrink (decrease in volume) again when they dry out. The change in moisture and volume of soil can cause movement sufficient to damage the home. The more swelling and shrinkage the particular soil types on a site are likely to experience from changing moisture content, the more reactive that site will be. By quickly completing the stormwater drainage and paving around the home the moisture content in the vicinity of the home can be partially stabilised. With careful planting of trees, shrubs and garden beds and well planned watering, the expected soil movement and risk of damage to the home can be minimised.

## SITE DRAINAGE

When initially drawing a plan it is recommended to include the general layout of the site and garden areas. This enables the required levels to be established and ensures that adequate drainage is provided to all areas. This site drainage includes roof stormwater and ground water that may accumulate around the site and result in a change of soil conditions that could cause damage to the building. Retaining walls generally require drainage provisions to be made around and behind the wall. These drains need to be co-ordinated with the total drainage system on the site.

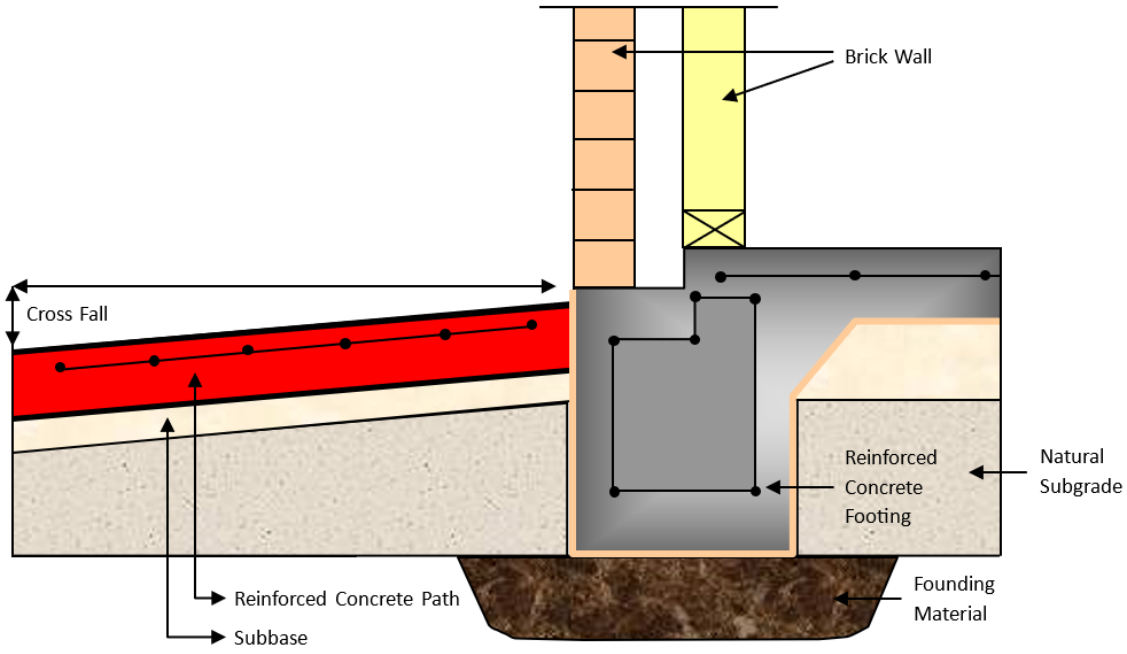
Paved areas also require adequate provision for stormwater runoff and should be graded to collection points that are both accessible for cleaning and connected to the stormwater system. All drains should be designed to prevent surface and subsurface water draining towards the house.

## PAVING

The finished ground level (soil) around the home should be graded away from the house footing with a minimum fall of 50mm over the first metre. Any fill that has been placed during construction should also have the same fall and be well compacted.

Paving provides an excellent “buffer zone” around the house that assists in reducing fluctuations in the moisture conditions adjacent to the footings. If possible this paving should extend outwards from the building line a minimum of 900mm or more for highly reactive soils. It is essential that paving has the right crossfall for the expected reactivity (ground movement) of the site and all surface water is adequately drained. Care needs to be taken if laying pavements in the summer to ensure the crossfalls will not be reduced due to soils swelling in the winter. If it is not possible to construct paving immediately, plastic sheeting with gravel spread on top provides a practical temporary alternative to protect the home until concrete paths can be placed.

For Class A, S, M sites, a minimum 30mm cross fall per metre is advised. For Class H and E sites, a minimum 50mm cross fall per metre is advised.



## DEFINITIONS OF SITE CLASSES

**A** Most sand or rock sites with little or no ground movement from moisture changes.

**S** Slightly reactive clay sites with only slight ground movement from moisture changes.

**M** Moderately reactive clay or silt sites which can experience moderate ground movement from moisture changes.

**M-D** Moderately reactive clay or silt sites with deep moisture changes.

**H1** Highly reactive clay sites, which can experience high ground movement from moisture changes.

**H2** Highly reactive clay sites, which can experience high ground movement from moisture changes.

**H1-D** Highly reactive clay sites with deep moisture changes.

**H2-D** Highly reactive clay sites with deep moisture changes.

**E** Extremely reactive sites, which can experience extreme ground movement from moisture changes.

**E-D** Extremely reactive sites with deep moisture changes.

**P** Sites which include “uncontrolled” fill; soft soils, such as soft clay or silt or loose sands; landslip; mine subsidence; collapsing soils; soils subject to erosion; reactive sites subject to abnormal moisture conditions or sites with large trees adjacent to the footings or sites which cannot be classified otherwise.

## MAINTENANCE

As it is important for the homeowner to maintain the building, it is also important to maintain the site around the home. The primary objective of the site and house footing maintenance is to prevent the soil from becoming too wet or too dry. By keeping the moisture content of the soil under and adjacent to the footing reasonably constant, the potential for the soil to experience significant movement that may damage the building will be limited.

Good site establishment and management is a vital part of the maintenance and protection of the home. Careful planning and detailing of the site around the concrete footing will protect your investment in the home and provide a low maintenance concrete footing for many years.

# ADDENDUM

## LIMITS OF INVESTIGATION

The recommendations made in this report are based on the assumption that the test results are representative of the overall subsurface conditions. However, it should be noted that even under optimum circumstances, actual conditions in some parts of the building site may differ from those said to exist, because no geotechnical engineer, no matter how qualified, and no subsurface exploration program, no matter how comprehensive, can reveal all that is hidden by earth, rock and time. Because the investigation procedure generally includes sampling from either one, two or three boreholes, it may not be possible to conclusively establish the presence or extent the condition of the underlying soil and rock over the whole block until site work commences for the construction.

The client should also be aware that our recommendations refer only to our test site locations and the ground level at the time of testing.

The recommendations in this report are based on the following: -

a) The information gained from our investigation.
b) The present "state of the art" in testing and design.
c) The building type and site treatment conveyed to us by the client.
d) Historical Information

Should the client or their agent have omitted to supply us with the correct relevant information, or make significant changes to the building type and/or building envelope, our report may not take responsibility for any consequences and we reserve the right to make an additional charge if more testing is necessary.

Not withstanding the recommendations made in this report, we also recommend that whenever footings are close to any excavations or easements, that consideration should be given to deepening the footings.

Unless otherwise stated in our commission, any dimensions or slope direction and magnitude should not be used for any building costing calculations and/or positioning. Any sketch supplied should be considered as only an approximate pictorial evidence of our work.

## ADDITIONAL INFORMATION

Refer also to the CSIRO Information Sheet: - BTF18 “Foundation Maintenance and Footing Performance: A Home Owner’s Guide, which can be accessed through https://www.publish.csiro.au/book/7942/.

# SITE PLAN


**NOT DRAWN TO SCALE**

# AITKEN ROWE TESTING LABORATORIES PTY LTD

Borehole No.: **1**
Sheet No.: 1 of 1

Ground Level: Existing
Method: Auger Drilling with TC Bit

Date: ***4/09/2023***
GPS N: ***6141303***
E: ***552927***

| USCS Symbol | Description | Depth (m) | Moisture Condition | Consistency/ Rel. Density | Sample Type | Sample No. | Lab. Test L.S % -2.36mm | Remarks & Field Records |
|---|---|---|---|---|---|---|---|---|
| ML | Sandy SILT; low plasticity, fine to coarse sand, trace gravel, brown | | MC<PL | VSt. | | | | NATURAL |
| ML | Sandy SILT; low plasticity, fine to coarse sand, trace gravel, brown | **0.5** | | St. | D | 1A | 2.0 | |
| CI | CLAY; medium plasticity, with fine to coarse sand, trace gravel, orange yellow brown | **1.0** | | VSt. | D | 1B | 10.5 | Iss = 1.8 |
| CI | Sandy CLAY; medium plasticity, fine to coarse sand, trace gravel, brown | **1.5** | | | D | 1C | 10.0 | |
| CI | CLAY; medium plasticity, with fine to coarse sand, trace gravel, brown | | | | D | 1D | 10.0 | |
| CI | Sandy CLAY; medium plasticity, fine to coarse sand, trace gravel, yellow brown | **2.0** | | | D | 1E | 9.0 | |
| | End of Borehole (BH1) @ 3.0m | **2.5** **3.0** **3.5** **4.0** | | | | | | |

*Registration No.: SC23-178*

*Location: No. 14 John Potts Drive, Junee, NSW*

*Client: Troy Raulston Homes - Wagga Wagga, NSW*

Logged By: HJ

Scale: As shown

Dry on completion

# AITKEN ROWE TESTING LABORATORIES PTY LTD

Borehole No.: **2**
Sheet No.: 1 of 1

Ground Level: Existing
Method: Auger Drilling with TC Bit

Date: ***4/09/2023***
GPS N: ***6141292***
E: ***552821***

| USCS Symbol | Description | Depth (m) | Moisture Condition | Consistency/ Rel. Density | Sample Type | Sample No. | Lab. Test L.S % -2.36mm | Remarks & Field Records |
|---|---|---|---|---|---|---|---|---|
| CL | TOPSOIL: Sandy CLAY; low plasticity, fine to coarse sand, trace gravel, brown | | MC<PL | VSt. | | | | NATURAL |
| ML | Sandy SILT; low plasticity, fine to coarse sand, trace gravel, brown | | | | | | | |
| SM | Silty SAND; fine to coarse grained, fines of low plasticity, trace gravel, brown | **0.5** | | L-MD | D | 2A | 3.0 | |
| CI | CLAY; medium plasticity, with fine to coarse sand, trace gravel, orange yellow brown | **1.0** | | St.-VSt. | | | | |
| CL-CI | Sandy CLAY; low to medium plasticity, fine to coarse grained, trace gravel, yellow grey brown | **1.5** | | VSt. | D | 2B | 8.5 | |
| CI | CLAY; medium plasticity, with fine to coarse sand, trace gravel, brown | | | | | | | |
| CI | Sandy CLAY; medium plasticity, fine to coarse sand, trace gravel, yellow brown | **2.0** | | | | | | |
| | End of Borehole (BH2) @ 2.3m | **2.5** **3.0** **3.5** **4.0** | | | | | | |

*Registration No.: SC23-178*

*Location: No. 14 John Potts Drive, Junee, NSW*

*Client: Troy Raulston Homes - Wagga Wagga, NSW*

Logged By: HJ

Scale: As shown

Dry on completion

# AITKEN ROWE TESTING LABORATORIES PTY LTD

## LOG SYMBOLS

| LOG COLUMN | SYMBOL | DEFINITION |
|---|---|---|
| Groundwater Record | ▼ | Standing water level. Time delay following completion of drilling may be shown. |
| | ▶ | Groundwater seepage into borehole or excavation noted during drilling or excavation. |
| Samples | D | Disturbed bag sample taken between the depths indicated by lines. |
| | U | Undisturbed 50mm diameter tube sample taken between the depths indicated by lines |
| Field Tests | 4, 7, 10 N=17 | Standard Penetration Test (S.P.T.) performed between depths indicated by lines. Individual figures show blows per 150mm penetration driven by SPT hammer. |
| | 5<br>7<br>3 | Dynamic Cone Penetration Test performed between depths indicated by lines. Individual figures show blows per 100mm penetration for 60 degree solid cone driven by 9 kg hammer. |
| Moisture Condition (Silt or Clay based) | MC<PL | Moisture content estimated to be less than plastic limit. |
| | MC=PL | Moisture content estimated to be approx. equal to plastic limit. |
| | MC>PL | Moisture content estimated to be greater than plastic limit. |
| Moisture Condition (Gravel or Sand based) | D | DRY – runs freely through fingers. |
| | M | MOIST – does not run freely but no free water visible on soil surface. |
| | W | WET – free water visible on soil surface. |
| Consistency (Silt or Clay based) | VS | VERY SOFT – unconfined compressive strength less than 25kPa. |
| | S | SOFT – unconfined compressive strength 25-50 kPa. |
| | F | FIRM – unconfined compressive strength 50-100kPa. |
| | St. | STIFF – unconfined compressive strength 100-200kPa. |
| | VSt. | VERY STIFF – unconfined compressive strength 200-400kPa. |
| | H | HARD – unconfined compressive strength greater than 400kPa. |

| Relative Density (Gravel or Sand based) | | Description | Density Index Range % | 'N' Value Range Blows/300mm |
|---|---|---|---|---|
| | VL | VERY LOOSE | <15 | 0-5 |
| | L | LOOSE | 15-35 | 6-10 |
| | MD | MEDIUM DENSE | 35-65 | 11-30 |
| | D | DENSE | 65-85 | 31-60 |
| | VD | VERY DENSE | >85 | >60 |

| | | |
|---|---|---|
| Hand Penetrometer Readings | 300<br>250<br>280 | Numbers indicate individual test results in kPa on representative undisturbed material. |
| Laboratory Test | L.S. % | Linear Shrinkage (As per TfNSW Method T113) |
| | M.C. % | Field Moisture Content (As per Australian Standard AS1289.2.1.1 or TfNSW Method T120) |
| | Iss | Shrink-Swell Index (As per Australian Standard AS1289.7.1.1) |

| Piezometer Construction | Fill | | Piezometer | |
|---|---|---|---|---|
| | | Bentonite | | Solid Pipe |
| | | Washed Fine Graded Gravel | | Slotted Screen |

| | | |
|---|---|---|
| Remarks | 'V' bit | Hardened steel 'V' shaped bit. |
| | 'TC' bit | Tungsten Carbide wing bit. |

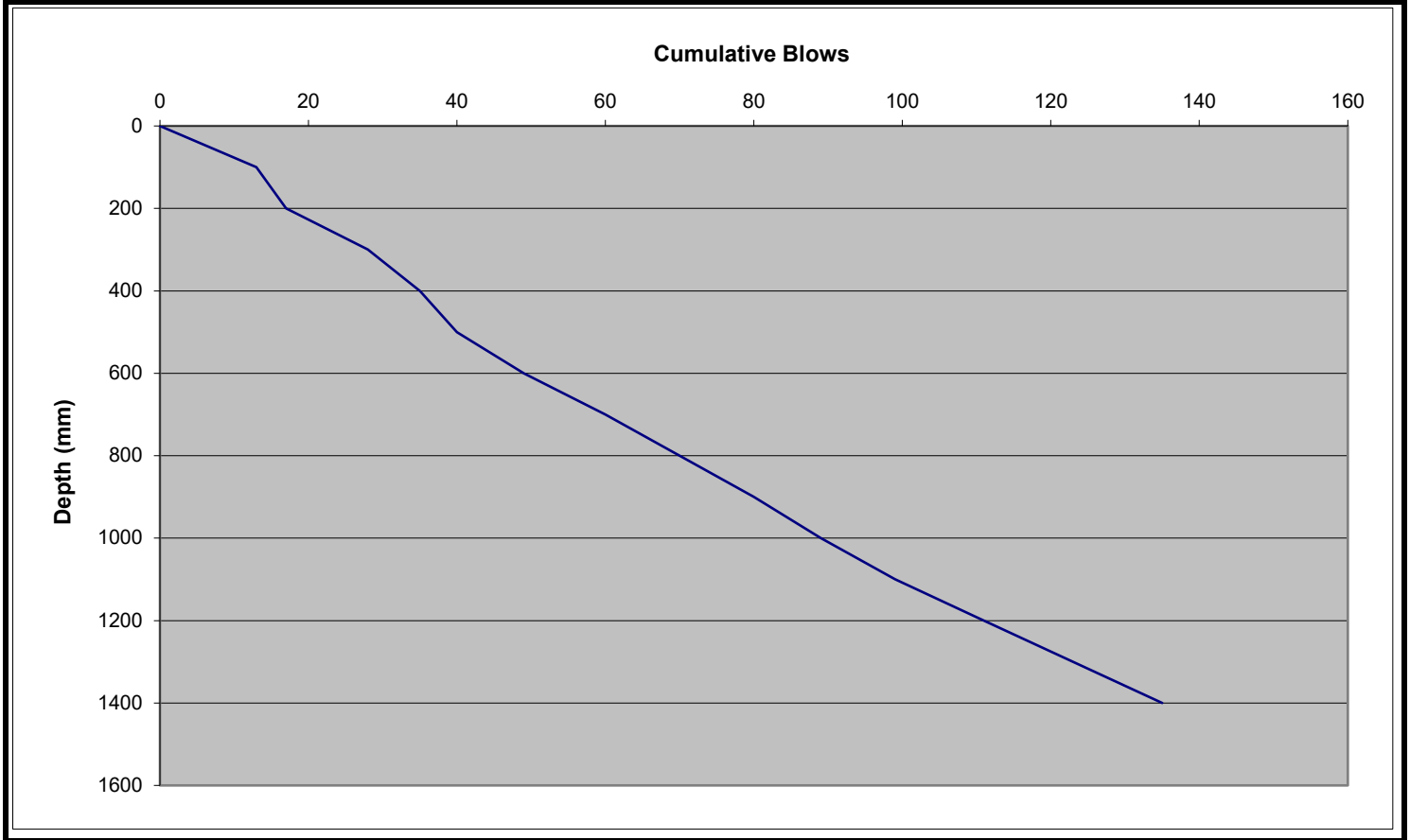
# Aitken Rowe Testing Laboratories Pty Ltd

## ARTL Wagga: 4/2 Riedell Street, Wagga Wagga NSW 2650

## DYNAMIC CONE PENETROMETER REPORT

| | | | |
|---|---|---|---|
| CLIENT: | TROY RAULSTON HOMES - WAGGA WAGGA, NSW | | PAGE: 1 OF: 2 |
| PROJECT: | SITE CLASSIFICATION ASSESSMENT | | REGISTRATION NO: **SC23-178** |
| | PROPOSED RESIDENTIAL DWELLING | | DATE OF TEST: 4/09/2023 |
| LOCATION: | No. 14 JOHN POTTS DRIVE, JUNEE, NSW | **DCP: 1/BH1** | DEPTH BELOW ESL (mm): NIL |
| SOIL DESCRIPTION: | REFER TO BOREHOLE LOGS | | MOISTURE CONDITION: REFER TO LOGS |
| | DEPTH OF GROUND WATER TABLE IF INTERSECTED: N/A | | TEST METHOD: AS 1289.6.3.2 |

| Depth(m) | Blows | Est. CBR | Depth(m) | Blows | Est. CBR | Depth(m) | Blows | Est. CBR | Depth(m) | Blows | Est. CBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 - 0.1 | 13 | 32 | 1.5 - 1.6 | * | * | 3.0 - 3.1 | * | * | 4.5 - 4.6 | * | * |
| 0.1 - 0.2 | 4 | 7 | 1.6 - 1.7 | * | * | 3.1 - 3.2 | * | * | 4.6 - 4.7 | * | * |
| 0.2 - 0.3 | 11 | 25 | 1.7 - 1.8 | * | * | 3.2 - 3.3 | * | * | 4.7 - 4.8 | * | * |
| 0.3 - 0.4 | 7 | 14 | 1.8 - 1.9 | * | * | 3.3 - 3.4 | * | * | 4.8 - 4.9 | * | * |
| 0.4 - 0.5 | 5 | 9 | 1.9 - 2.0 | * | * | 3.4 - 3.5 | * | * | 4.9 - 5.0 | * | * |
| 0.5 - 0.6 | 9 | 20 | 2.0 - 2.1 | * | * | 3.5 - 3.6 | * | * | 5.0 - 5.1 | * | * |
| 0.6 - 0.7 | 11 | 25 | 2.1 - 2.2 | * | * | 3.6 - 3.7 | * | * | 5.1 - 5.2 | * | * |
| 0.7 - 0.8 | 10 | 23 | 2.2 - 2.3 | * | * | 3.7 - 3.8 | * | * | 5.2 - 5.3 | * | * |
| 0.8 - 0.9 | 10 | 23 | 2.3 - 2.4 | * | * | 3.8 - 3.9 | * | * | 5.3 - 5.4 | * | * |
| 0.9 - 1.0 | 9 | 20 | 2.4 - 2.5 | * | * | 3.9 - 4.0 | * | * | 5.4 - 5.5 | * | * |
| 1.0 - 1.1 | 10 | 23 | 2.5 - 2.6 | * | * | 4.0 - 4.1 | * | * | 5.5 - 5.6 | * | * |
| 1.1 - 1.2 | 12 | 28 | 2.6 - 2.7 | * | * | 4.1 - 4.2 | * | * | 5.6 - 5.7 | * | * |
| 1.2 - 1.3 | 12 | 28 | 2.7 - 2.8 | * | * | 4.2 - 4.3 | * | * | 5.7 - 5.8 | * | * |
| 1.3 - 1.4 | 12 | 28 | 2.8 - 2.9 | * | * | 4.3 - 4.4 | * | * | 5.8 - 5.9 | * | * |
| 1.4 - 1.5 | END | * | 2.9 - 3.0 | * | * | 4.4 - 4.5 | * | * | 5.9 - 6.0 | * | * |




NATA
WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

ACCREDITATION NUMBER: 4679

**REMARKS:**

APPROVED SIGNATORY: Peter Forbes-Taber

DATE: 11/09/2023

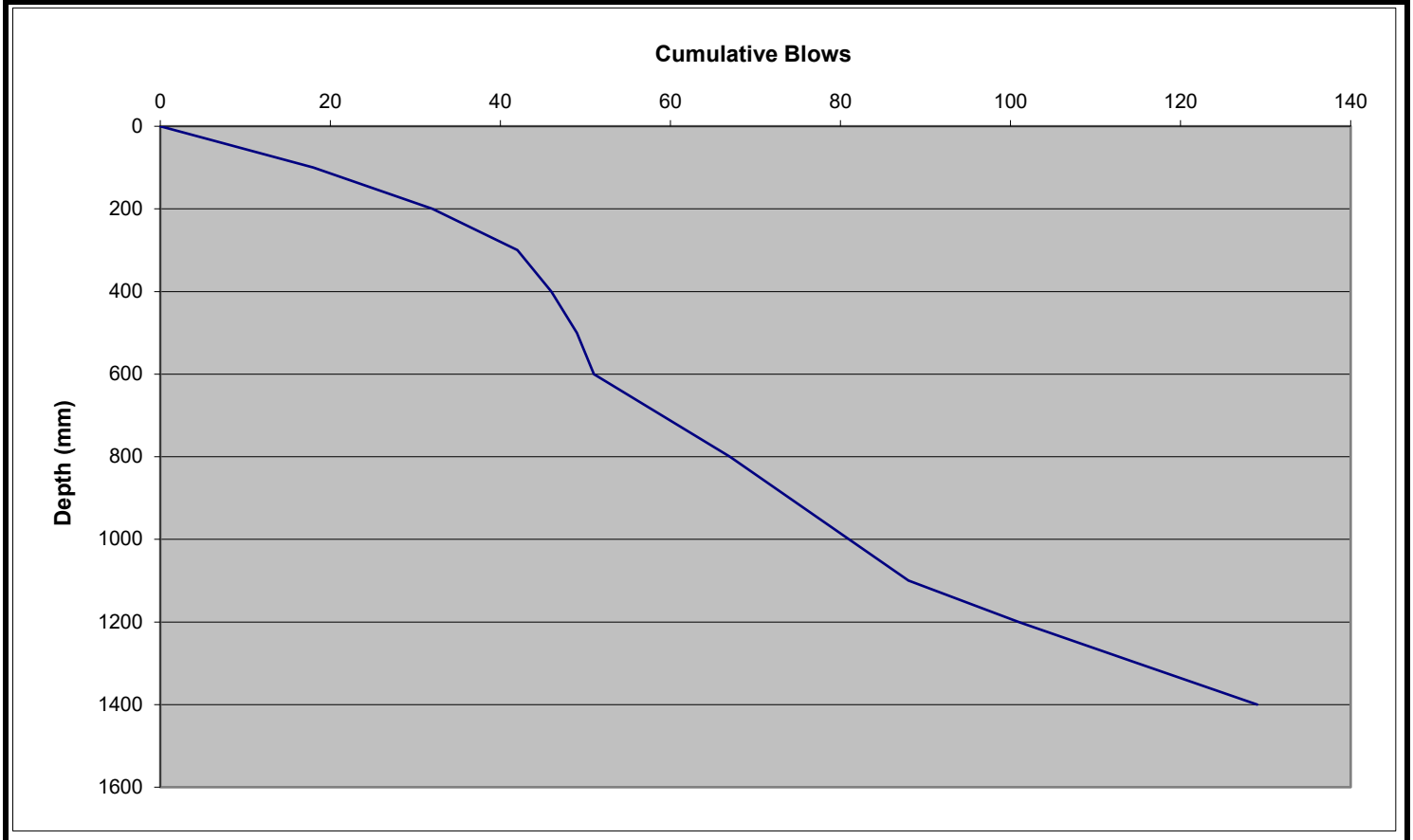
# Aitken Rowe Testing Laboratories Pty Ltd

## ARTL Wagga: 4/2 Riedell Street, Wagga Wagga NSW 2650

## DYNAMIC CONE PENETROMETER REPORT

| | | | |
|---|---|---|---|
| CLIENT: | TROY RAULSTON HOMES - WAGGA WAGGA, NSW | | PAGE: 2 OF: 2 |
| PROJECT: | SITE CLASSIFICATION ASSESSMENT | | REGISTRATION NO: **SC23-178** |
| | PROPOSED RESIDENTIAL DWELLING | | DATE OF TEST: 4/09/2023 |
| LOCATION: | No. 14 JOHN POTTS DRIVE, JUNEE, NSW | **DCP: 2/BH2** | DEPTH BELOW ESL (mm): NIL |
| SOIL DESCRIPTION: | REFER TO BOREHOLE LOGS | | MOISTURE CONDITION: REFER TO LOGS |
| | DEPTH OF GROUND WATER TABLE IF INTERSECTED: N/A | | TEST METHOD: AS 1289.6.3.2 |

| Depth(m) | Blows | Est. CBR | Depth(m) | Blows | Est. CBR | Depth(m) | Blows | Est. CBR | Depth(m) | Blows | Est. CBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 - 0.1 | 18 | 48 | 1.5 - 1.6 | * | * | 3.0 - 3.1 | * | * | 4.5 - 4.6 | * | * |
| 0.1 - 0.2 | 14 | 35 | 1.6 - 1.7 | * | * | 3.1 - 3.2 | * | * | 4.6 - 4.7 | * | * |
| 0.2 - 0.3 | 10 | 23 | 1.7 - 1.8 | * | * | 3.2 - 3.3 | * | * | 4.7 - 4.8 | * | * |
| 0.3 - 0.4 | 4 | 7 | 1.8 - 1.9 | * | * | 3.3 - 3.4 | * | * | 4.8 - 4.9 | * | * |
| 0.4 - 0.5 | 3 | 5 | 1.9 - 2.0 | * | * | 3.4 - 3.5 | * | * | 4.9 - 5.0 | * | * |
| 0.5 - 0.6 | 2 | 3 | 2.0 - 2.1 | * | * | 3.5 - 3.6 | * | * | 5.0 - 5.1 | * | * |
| 0.6 - 0.7 | 8 | 17 | 2.1 - 2.2 | * | * | 3.6 - 3.7 | * | * | 5.1 - 5.2 | * | * |
| 0.7 - 0.8 | 8 | 17 | 2.2 - 2.3 | * | * | 3.7 - 3.8 | * | * | 5.2 - 5.3 | * | * |
| 0.8 - 0.9 | 7 | 14 | 2.3 - 2.4 | * | * | 3.8 - 3.9 | * | * | 5.3 - 5.4 | * | * |
| 0.9 - 1.0 | 7 | 14 | 2.4 - 2.5 | * | * | 3.9 - 4.0 | * | * | 5.4 - 5.5 | * | * |
| 1.0 - 1.1 | 7 | 14 | 2.5 - 2.6 | * | * | 4.0 - 4.1 | * | * | 5.5 - 5.6 | * | * |
| 1.1 - 1.2 | 13 | 32 | 2.6 - 2.7 | * | * | 4.1 - 4.2 | * | * | 5.6 - 5.7 | * | * |
| 1.2 - 1.3 | 14 | 35 | 2.7 - 2.8 | * | * | 4.2 - 4.3 | * | * | 5.7 - 5.8 | * | * |
| 1.3 - 1.4 | 14 | 35 | 2.8 - 2.9 | * | * | 4.3 - 4.4 | * | * | 5.8 - 5.9 | * | * |
| 1.4 - 1.5 | END | * | 2.9 - 3.0 | * | * | 4.4 - 4.5 | * | * | 5.9 - 6.0 | * | * |

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WORLD RECOGNISED ACCREDITATION

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ACCREDITATION NUMBER: 4679

**REMARKS:**

APPROVED SIGNATORY: Peter Forbes-Taber

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