



Form 4 – Minimal Impact Certification

DA Number: _____

This form may be used where minor construction works which present minimal or no geotechnical impact on the site or related land are proposed to be erected within the "G" line area of the geotechnical maps.

A geotechnical engineer or engineering geologist must inspect the site and/or review the proposed development documentation to determine if the proposed development requires a geotechnical report to be prepared to accompany the development application. Where the geotechnical engineer determines that such a report is not required then they must complete this form and attach design recommendations where required. A copy of Form 4 with design recommendation, if required, must be submitted with the development application.

Please contact the Alpine Resorts Team in Jindabyne for further information - phone 02 6456 1733.

To complete this form, please place a cross in the appropriate boxes [] and complete all sections.

1. Declaration made by geotechnical engineer or engineering geologist in relation to a nil or minimal geotechnical impact assessment and site classification

I, Mr [X] Ms [] Mrs [] Dr [] Other []

First Name: PAUL Family Name: STUBBS

OF Company/organisation: JK GEOTECHNICS PTY LIMITED

certify that I am a geotechnical engineer /engineering geologist as defined by the "Policy" and I have inspected the site and reviewed the proposed development known as reviewed the report prepared by A Hulskamp of JK Geotechnics (Ref 33066SHrpt, dated 7/04/20)

PROPOSED LANDSCAPED SEATING

As a result of my site inspection and review of the following documentation

(List of documentation reviewed)

- * Architectural drawings by David Law (Beaton-Land-DACC, Sheets 1 to 4, Issue B, dated 18/2/20)

I have determined that;

- the current load-bearing capacity of the existing building will not be exceeded or adversely impacted by the proposed development, and
- the proposed works are of such a minor nature that the requirement for geotechnical advice in the form of a geotechnical report, prepared in accordance with the "Policy", is considered unnecessary for the adequate and safe design of the structural elements to be incorporated into the new works, and
- in accordance with AS 2870.1 Residential Slabs and Footings, the site is to be classified as a type

(insert classification type)

Class 'S'

- I have attached design recommendations to be incorporated in the structural design in accordance with this site classification.

I am aware that this declaration shall be used by the Department as an essential component in granting development consent for a structure to be erected within the "G" line area (as identified on the geotechnical maps) of Kosciuszko Alpine Resorts without requiring the submission of a geotechnical report in support of the development application.

2. Signatures

Signature



Chartered professional status

CPEng (130775), MIEAust

Name

Paul Stubbs

Date

7/04/2020

3. Contact details

Alpine Resorts Team

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For and on behalf of
JK GEOTECHNICS
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DOCUMENT REVISION RECORD

Report Reference	Report Status	Report Date
33066RHrpt	Final Report	7 April 2020

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ATTACHMENTS

Architectural Drawings by David Law



1 INTRODUCTION

This report presents the results of our geotechnical assessment for the proposed landscaped seating at 20 Mountain Drive, Thredbo, NSW.

The provided architectural drawings by David Law (Ref No. Beaton-Land-DACC, Sheets 1 to 4, Issue B, dated 18 February 2020) show that the proposed works will comprise some minor regrading of existing surface levels (estimated to be less than about 0.2m) followed by construction of a new paved outdoor area, with a low height stone wall along the northern and eastern sides of the area. The drawings show that the proposed stone wall will be supported by a reinforced concrete strip footing. We have assumed that a relatively low bearing pressure would be imposed by the proposed stone wall.

The purpose of the geotechnical assessment was to carry out a walkover inspection of the site and review the provided architectural drawings, and to assess whether the proposed works present 'minimal or no geotechnical impact' on the site, and if so, to prepare a signed Form 4 – Minimal Impact Certification. Based on our assessment, we would determine whether a further geotechnical report, which includes a risk assessment, would be required.

2 ASSESSMENT PROCEDURE

The assessment included a walkover inspection of the topographic, surface drainage and geological conditions of the site and its immediate environs by our Senior Associate level geotechnical engineer (Adrian Hulskamp) on 17 March 2020, and a review of the provided architectural drawings.

A subsurface investigation, geotechnical laboratory testing of site soils and testing of the soils and groundwater for possible contamination were outside the agreed scope of this assessment.

3 SITE OBSERVATIONS

The area of the proposed landscaped seating is located on a gently sloping east facing hillside, which grades at about 5° down to the east, but with some locally flatter areas. Mountain Drive bounds the site along its southern side.

At the time of our inspection, the site contained a two-storey timber clad and mortared granite block lodge that was occupied by Nos. 20 & 22 Mountain Drive, with No. 20 occupying the eastern portion. The lodge appeared to be in good external condition, based on a cursory inspection from within the site and Mountain Drive. The proposed landscaped seating area, is located along the northern side of the lodge, and sloped down to the north-east at about 2°. The ground surface where the landscaped seating is proposed was mostly covered by grass, some scattered granite boulders, small shrubs and some tree stumps. Refer to Plate 1 below.



Plate 1: View looking west showing proposed landscaped seating area.

The ground surface immediately to the north and east of the proposed landscaped seating area was either grass or gravel covered.

The neighbouring two storey timber clad and mortared granite block lodge to the north (Serendipity) was set back about 7m from the subject site and appeared to be in good external condition based on a cursory inspection from within the site.

We did not observe any obvious signs of hillside slope instability, such as slumping, tension cracks, etc.

The site also appeared to be well drained. No 'soft' or 'boggy' ground in the vicinity of the proposed works was observed.

4 COMMENTS AND RECOMMENDATIONS

We consider that the proposed works will have 'minimal or no geotechnical impact' on the site. This is based on the following:

- The gently sloping hillside and ground surface where the works are proposed;
- The relatively shallow depths of excavation and filling required for the proposed works; and
- The assumed relatively low bearing pressure imposed by the stone wall.



On the basis of the above, we consider that a geotechnical report prepared in accordance with the Geotechnical Policy for Kosciuszko Alpine Resorts (2003) is not required. This report is preceded by a completed Form 4 – Minimal Impact Certification.

Based on our site observations, and experience on other nearby sites in Thredbo, we expect the site to be underlain by residual clayey sands and/or sandy clays of low to medium plasticity with granite bedrock at relatively shallow depth. As the clays may have some shrink-swell potential, the site has therefore been assessed as Class 'S', in accordance with AS2870-2011 'Residential slabs and footings'.

We recommend the following advice be taken into consideration for the works:

- All vegetation, topsoil, root affected soils, deleterious fill (if present) and any detached boulders should be stripped from the footprint of the proposed works. All tree stumps within the footprint must also be removed.
- We expect that any minor regrading of surface levels could be carried out using a bucket fitted to a small excavator, or by hand, assuming only soil or extremely weathered granite is encountered. Care must be taken to not undermine the footings of the adjoining lodge during the regrading works. In this regard, consideration should be given to excavating test pits to expose the footings and determine the foundation materials and founding levels. If there are any concerns then further geotechnical advice will need to be sought.
- Though unlikely, if bedrock of very low or higher strength is encountered, then further geotechnical advice should be sought on suitable rock excavation equipment and controlling of vibrations to reduce the risk of damage to adjoining structures.
- Any excavated natural soils can be reused where ground surface levels are to be raised, provided the material is free of organic matter, contains a maximum particle size not exceeding 40mm and is not too 'wet'. The materials should be placed and compacted in maximum 100mm thick loose layers using a whacker packer or vibrating plate (sled) compactor until no heaving of the layer is observed. If the material is 'dry', then some water may need to be added to facilitate compaction. If there is any cause for concern, then further geotechnical advice should be sought.
- The proposed stone wall strip footing should be designed for a maximum allowable bearing pressure of 50kPa, provided the footing is at least 0.3m wide and embedded at least 0.5m below surrounding ground surface levels. The footing must be founded in natural soil, either at least loose residual sands or stiff residual clays, or weathered bedrock. If different materials are present in the base of the footing excavation, then construction joints should be installed at, or close to, the change in founding material, to permit relative movements. If there is any concern as to the quality of the foundation material, then further geotechnical advice should be sought.
- The strip footing excavation should be cleaned out of any loose or softened materials, and any standing water removed, immediately prior to pouring.
- After the stone wall has been constructed and the subgrade prepared, the pavers can be laid. The surface of the pavers should be graded with a slight fall to promote runoff in a controlled manner. A bedding sand or compacted roadbase layer should be provided below the pavers for more uniform support.



- Any excavated material which is not reused must be appropriately disposed of off-site.
- Any existing subsoil drainage or surface drainage measures disturbed as part of the proposed works should be reconstructed so that the current site drainage is maintained.

5 GENERAL COMMENTS

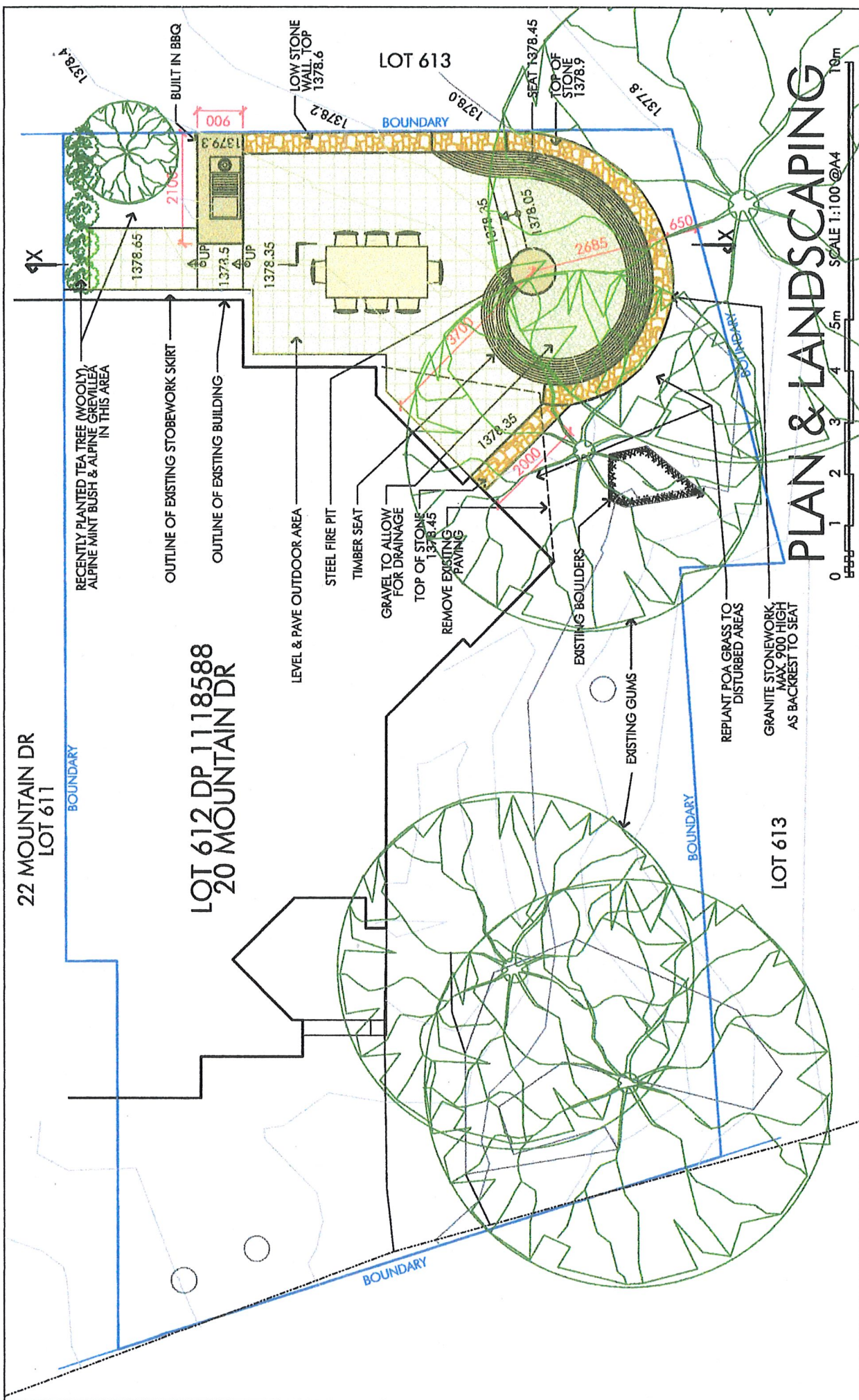
The recommendations presented in this report include specific issues to be addressed during the construction phase of the project. In the event that any of the construction phase recommendations presented in this report are not implemented, the general recommendations may become inapplicable and JK Geotechnics accept no responsibility whatsoever for the performance of the structure where recommendations are not implemented in full and properly tested, inspected and documented.

It is possible that the subsurface soil, rock or groundwater conditions encountered during construction may be found to be different (or may be interpreted to be different) from those expected. Also, we have not had the opportunity to observe surface run-off patterns during heavy rainfall and cannot comment directly on this aspect. If conditions appear to be at variance or cause concern for any reason, then we recommend that you immediately contact this office.

This report provides advice on geotechnical aspects for the proposed structural design. As part of the documentation stage of this project, Contract Documents and Specifications may be prepared based on our report. However, there may be design features we are not aware of or have not commented on for a variety of reasons. The designers should satisfy themselves that all the necessary advice has been obtained. If required, we could be commissioned to review the geotechnical aspects of contract documents to confirm the intent of our recommendations has been correctly implemented.

A waste classification is required for any soil and/or bedrock excavated from the site prior to offsite disposal. Subject to the appropriate testing, material can be classified as Virgin Excavated Natural Material (VENM), Excavated Natural Material (ENM), General Solid, Restricted Solid or Hazardous Waste. Analysis can take up to seven to ten working days to complete, therefore, an adequate allowance should be included in the construction program unless testing is completed prior to construction. If contamination is encountered, then substantial further testing (and associated delays) could be expected. We strongly recommend that this requirement is addressed prior to the commencement of excavation on site.

This report has been prepared for the particular project described and no responsibility is accepted for the use of any part of this report in any other context or for any other purpose. If there is any change in the proposed development described in this report then all recommendations should be reviewed. Copyright in this report is the property of JK Geotechnics. We have used a degree of care, skill and diligence normally exercised by consulting engineers in similar circumstances and locality. No other warranty expressed or implied is made or intended. Subject to payment of all fees due for the assessment, the client alone shall have a licence to use this report. The report shall not be reproduced except in full.



PLAN & LANDSCAPING

SCALE 1:100@A4



Datum: AHD

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Proposed Landscaped Seating to Dwelling at
 Lot 612 DP 1118588,
 20 Mountain Dr, Woodridge, Thredbo
 For Charbelle Pty Ltd c/o M & B Beaton

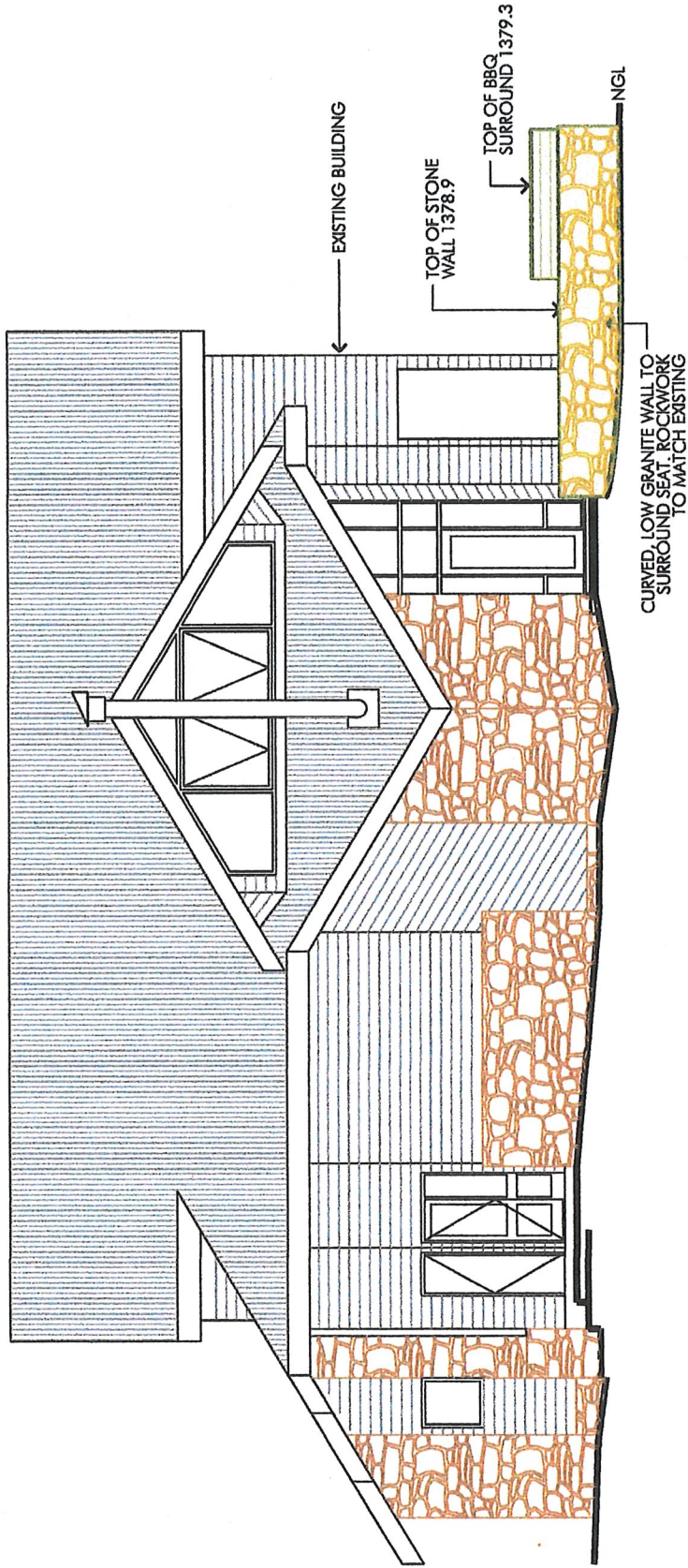
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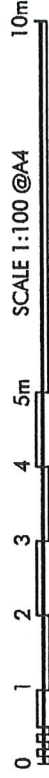
BEATON-LAND-DACC

DAVCC

Sheet	Issue
1	B



EAST ELEVATION



Proposed Landscaped Seating to Dwelling at
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 20 Mountain Dr, Woodridge, Thredbo
 For Charbelle Pty Ltd c/o M & B Beaton



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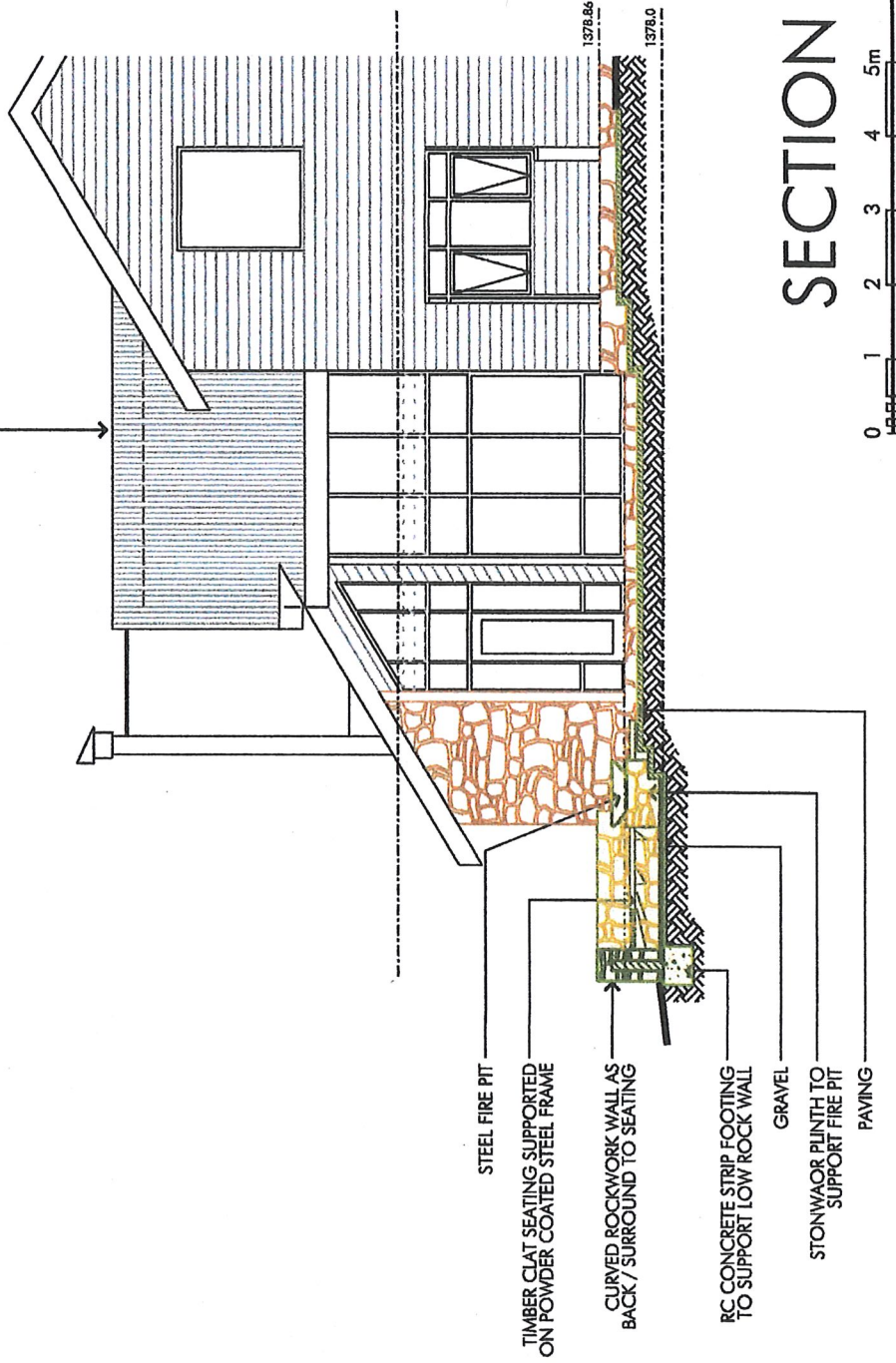
Sheet 2

Issue B

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EXISTING BUILDING



SECTION X

Proposed Landscaped Seating to Dwelling at
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Sheet 4

Issue B