

## 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 ☒ Ms ☐ Mrs ☐ Dr ☐ Other

First Name

Family Name


OF

Company/organisation

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

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

(List of documentation reviewed)

<input type="text"/>	 <p><b>Department of Planning and Environment</b></p> <p><i>Issued under the Environmental Planning and Assessment Act 1979</i></p> <p>Approved Section 4.55(1A) Modification Application</p> <p>No. MOD 22/6520 (DA 076-11-2010 MOD 1)</p> <p>Granted on the 30 August 2022</p> <p>In respect to DA DA 076-11-2010</p> <p>Signed Mark Brown</p> <p>Sheet No 14 of 14</p>
<input type="text"/>	
<input type="text"/>	
<input type="text"/>	
<input type="text"/>	
<input type="text"/>	

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)

- ☒ 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



Name

Chartered professional status

Date

## 3. Contact details

### Alpine Resorts Team

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**REPORT TO**  
**KOSCIUSZKO THREDBO PTY LTD**

**ON**  
**GEOTECHNICAL ASSESSMENT**

**FOR**  
**PROPOSED SHELTER**

**AT**  
**EAGLES NEST, THREDBO, NSW**

Date: 3 May 2022  
Ref: 34997Hrpt

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Report prepared by:

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Senior Associate I Geotechnical Engineer CPEng 1480317

For and on behalf of

JK GEOTECHNICS

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NORTH RYDE BC NSW 1670

## DOCUMENT REVISION RECORD

Report Reference	Report Status	Report Date
34997Hrpt	Final Report	4 April 2022
34997Hrpt Rev1	Updated plans	3 May 2022

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### **ATTACHMENTS**

Provided Telco Authority Plans

Figure 1: Geotechnical Site Plan

Figure 2: Geotechnical Mapping Symbols

Dynamic Cone Penetration Test Results Sheet

## 1 INTRODUCTION

This report presents the results of our geotechnical assessment for the proposed shelter at Eagles Nest, Thredbo, NSW.

From our review of the plans prepared by Telco Authority Pty Ltd (Drawing Nos. GRN-CRAC-DWG-INF-CSP-01 and GRN-CRAC-DWG-INF-CSP-02) and discussion with Mr Andrew Harrigan of Kosciuszko Thredbo Pty Ltd (KT) on 4 April 2022, we understand construction of a new shelter at the site is proposed. The provided plans are attached to this report for ease of reference. The proposed shelter will be located about 45m to the north-west of the existing top station restaurant and along the upper reaches of a natural slope below the summit outcrop. The proposed shelter will be suspended above existing grade.

The purpose of the geotechnical assessment was to carry out a walkover inspection of the site and to carry out a limited scope geotechnical investigation, and to note 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.

A previous geotechnical assessment was carried out at the site for a similar development proposal and the results were presented in our report, Ref: 24011WHlet, dated 14 January 2011. The relevant information from our previous assessment has been included in this report.

## 2 ASSESSMENT PROCEDURE

Our assessment is based on a walkover inspection of the topographic, surface drainage and geological conditions of the site and its immediate environs by our Senior Geotechnical Engineer (now Senior Associate Geotechnical Engineer), Adrian Hulskamp, on 13 May 2010, and review of the provided plans.

We note that whilst our inspection of the site was carried out a long time ago, our review of available Google Earth and Nearmap aerial images of the site dated 2018 and 2020, show the site to be similar in appearance to when we inspected it.

During the 2010 inspection, a limited scope geotechnical investigation was carried out and comprised the completion of three Dynamic Cone Penetration (DCP) tests (DCP1, DCP2, and DCP2A). DCP1 was carried within the footprint of the proposed shelter. The DCP tests were extended to depths ranging from about 0.35m (DCP2) and 1.9m (DCP2A). The DCP test locations, as shown on the attached Figure 1 included from our previous report, were set out by taped measurements from building corner markers placed at that time (by others) and existing surface features. The relative compaction and density of the subsurface soils were assessed from the DCP test results. The refusal depth of DCP tests can also provide an indicative depth to rock, though we note that refusal can also occur on obstructions in fill, 'corestones' and other hard layers within the soil profile.

The attached Figure 1 presents a geotechnical site plan, which is based on a previously supplied architectural drawing.

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 shelter is located on a west facing hill towards its crest. The topography of the site is moderately sloping down to the west with an average slope of about 10°. A large granite outcrop formed the summit, and numerous granite boulders and tors were scattered elsewhere across the hill. We did not observe any obvious signs of deep seated slope instability.

At the time of our inspection, the drainage conditions across the hill where the proposed shelter is to be located appeared to be good, with the ground covered with patchy grass.

### **4 SUBSURFACE CONDITIONS**

The 1:250,000 geological map of Tallangatta (SJ 55-3) indicates the site is underlain by Lower Devonian Volcanics, comprising '*Granite, granodiorite and tanalite*'.

DCP1 and DCP2 tests reached refusal at about 1.1m and 0.35m depth, respectively. DCP2A was terminated at 1.9m depth. The DCP blow counts are indicative of stiff clay or medium dense extremely weathered granite which is usually a clayey gravelly sand. Noting the location of the site near the crest of a hill with significant exposures of granite, we would expect residual soil/extremely weathered granite to be present with 'corestones' of granite above more consistent bedrock at depth.

### **5 COMMENTS AND RECOMMENDATIONS**

We consider the proposed works will have 'minimal or no geotechnical impact' on the site, noting only shallow excavation for the proposed footings. On this basis, 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 the nature of the proposed development, assuming a relatively flexible type shelter and presence of possible stiff clays/extremely weathered material, it is reasonable to classify the site as Class 'S', in accordance with AS2870-2011 'Residential slabs and footings'. We recommend the following advice for the proposed development:

1. The proposed shelter be supported by concrete pad footings or bucket piers founded at a depth of at least 0.6m. Steel screw piles are strongly not recommended for this site, due to the expected

difficulties installing the piles as premature refusal will probably occur on 'corestones' within the soil profile.

2. The footing excavations must be 'dry' and free of any ponding water, prior to placing the reinforcement cages.
3. A maximum allowable bearing pressure of 100kPa be adopted for founding within the natural soils, on condition the founding soils comprise at least stiff clay, medium dense sand or weathered granite. Higher bearing pressures may be feasible where founding in consistent weathered granite, subject to geotechnical inspection of the footing excavations, if required.
4. If there is any doubt as to the quality of the foundation material, then further geotechnical advice should be sought.
5. We note that larger footings or greater embedment of the footings may be required to counteract uplift loads, or for uniformity of support on weathered bedrock if differential movements are to be reduced or if a design bearing pressure higher than 100kPa is required.
6. Any excavated material must be appropriately disposed of.

## 6 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 civil and 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,





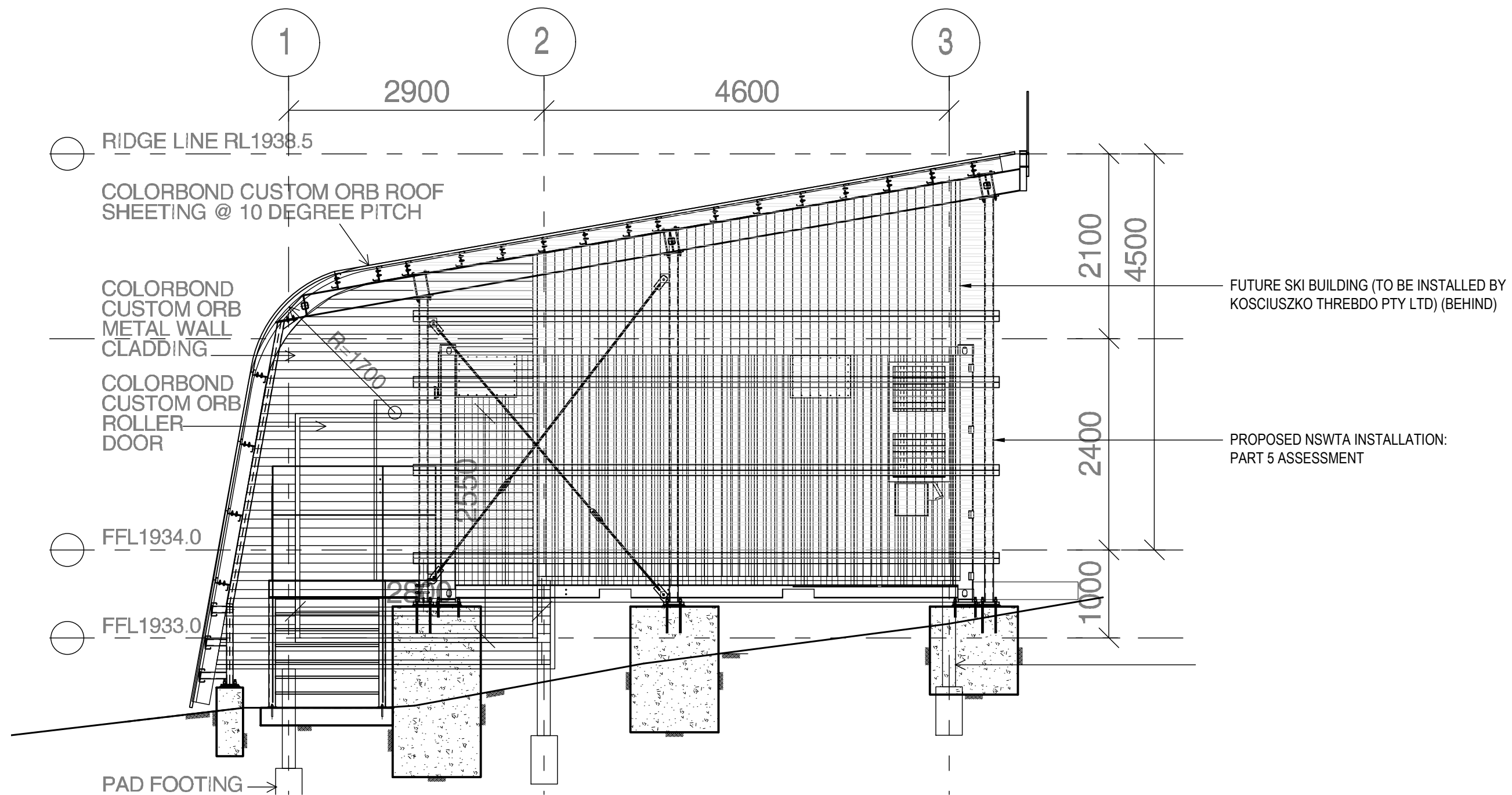
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then substantial further testing (and associated delays) could be expected. We strongly recommend that this requirement is addressed prior to the commencement of excavation on site.

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.

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CONSTRUCTION STAGE PLAN - SOUTHERN ELEVATION  
SCALE 1:50

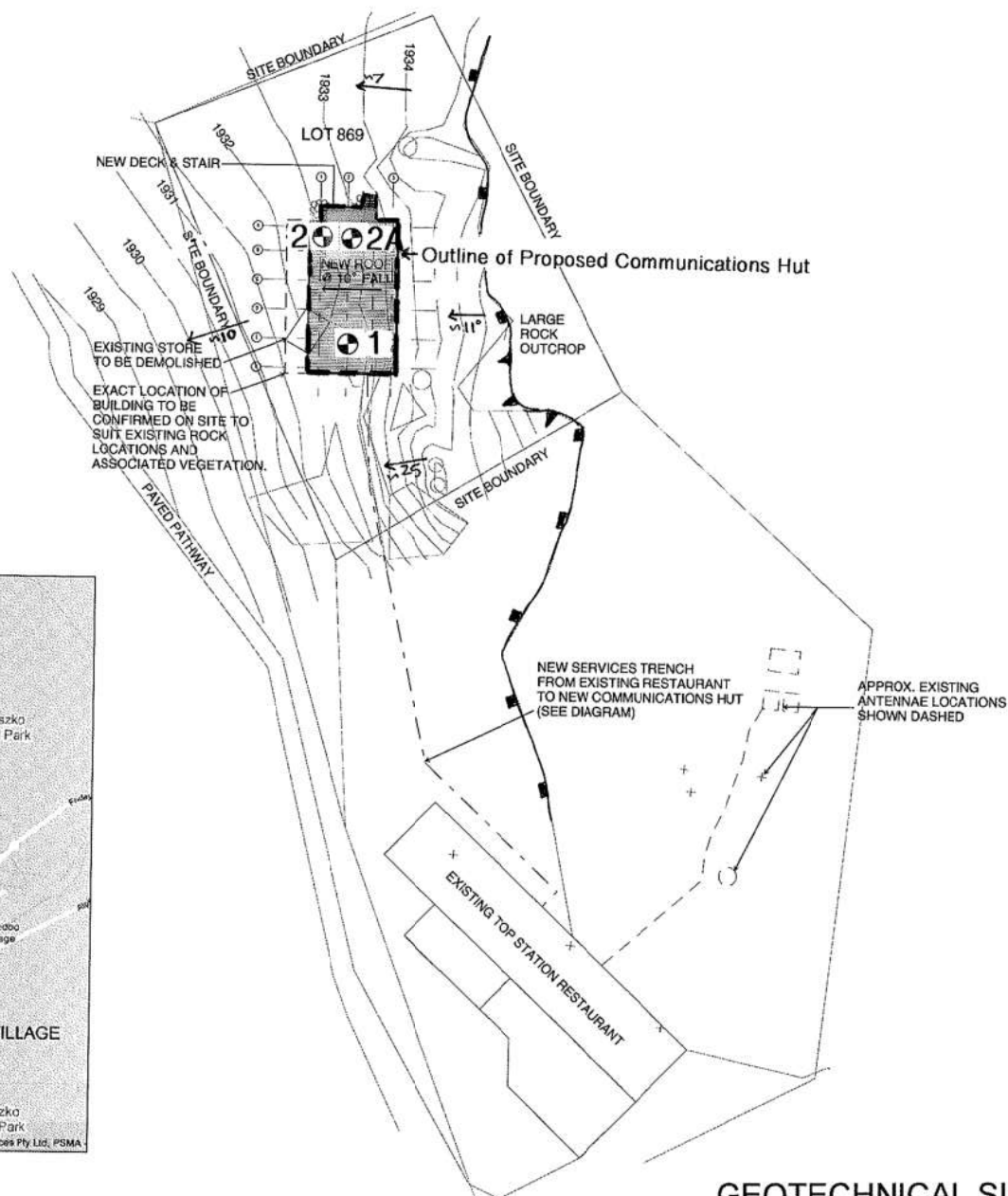
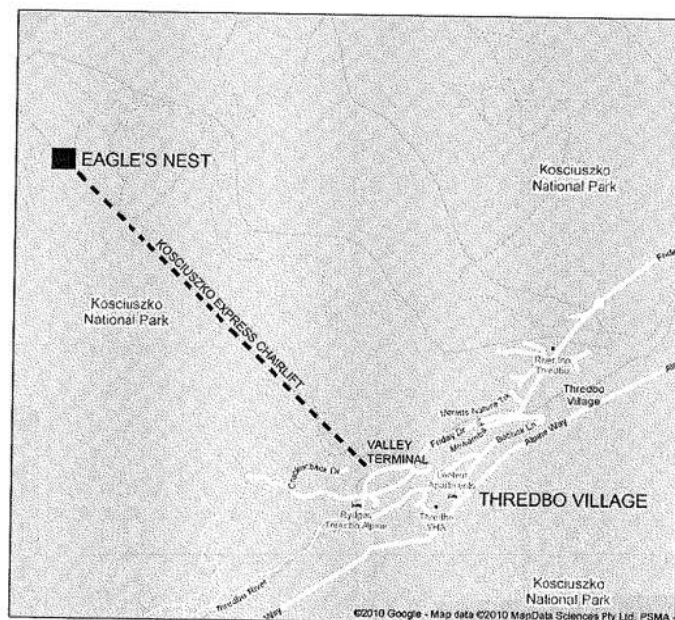
Rev	Date	Revision Details	Department	Consultant	CAD	Designer	Verifier	Approver
A	26.02.22	FOR APPROVAL	TA	CATALYST	JF	JF	JM	CMc



MT CRACKENBACK  
90009734  
LOT 869 EAGLES NEST  
THREDBO, NSW 2625



Drawing Title: CONSTRUCTION STAGE PLAN SOUTHERN ELEVATION		
Drawing Status: FOR CONSTRUCTION	Drawing No. GRN-CRAC-DWG-INF-CSP-02	Revision A



## GEOTECHNICAL SITE PLAN

**Jeffery and Katauskas Pty Ltd**  
CONSULTING GEOTECHNICAL & ENVIRONMENTAL ENGINEERS

Report No. 24011WH

Figure No. 1



### LEGEND

 DCP TEST

## TOPOGRAPHY

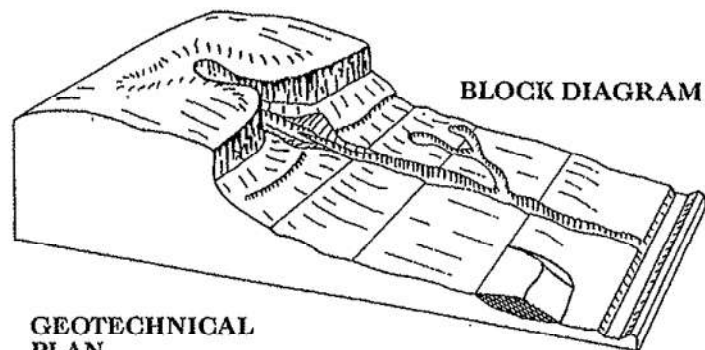
### Symbol Ground Profile

		convex	} well defined or angular break of slope
		concave	
		convex	} poorly defined or smooth change of slope
		concave	
		breaks of slope	} convex and concave too close together to allow the use of separate symbols
		changes of slope	
		sharp	} ridge crest
		rounded	
		Cliff or escarpment or sharp break 40° or more (estimated height in metres)	
		Uniform Slope	} Slope direction and angle (Degrees)
		Concave Slope	
		Convex Slope	
		Top	} Cut or fill slope, arrows pointing down slope
		Bottom	
		Hummocky or irregular ground	

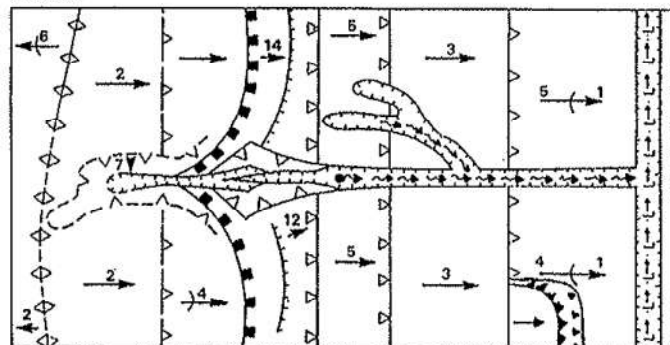
### OTHER FEATURES

	Boulder
	Seepage/spring
	Swallow hole for runoff
	Natural water course
	Open drain, unlined
	Open drain, lined
	Fenceline
	Property boundary
	Dry Stone Wall
	Major joint in rock face (opening in millimetres)
	Tension crack (opening in millimetres)
	Masonry or concrete wall
	Ponding water
	Boggy or swampy area

### EXAMPLE OF USE OF TOPOGRAPHIC SYMBOLS:



GEOTECHNICAL PLAN



(After Gardiner, V & Dackombe, R.V. (1983), Geomorphological Field Manual; George Allen & Unwin).

## GEOTECHNICAL MAPPING SYMBOLS

Jeffery and Katauskas Pty Ltd

Report No. 24011WH Figure No. .2.....







## DYNAMIC CONE PENETRATION TEST RESULTS

Client:	KOSCIUSZKO THREDBO PTY LTD						
Project:	PROPOSED COMMUNICATIONS HUT						
Location:	EAGLES NEST, THREDBO, NSW						
Job No.	24011WH	Hammer Weight & Drop: 9kg/510mm					
Date:	13-5-10	Rod Diameter: 16mm					
Tested By:	A.J.H.	Point Diameter: 20mm					
Number of Blows per 100mm Penetration							
Test Location							
Depth (mm)	<b>1</b>	<b>2</b>	<b>2A</b>				
0 - 100	1	1	3				
100 - 200	5	3	4				
200 - 300	5	3	2				
300 - 400	3	4/50mm	3				
400 - 500	2	REFUSAL	4				
500 - 600	10		3				
600 - 700	6		5				
700 - 800	6		3				
800 - 900	6		3				
900 - 1000	5		3				
1000 - 1100	6		3				
1100 - 1200	8/20mm		3				
1200 - 1300	REFUSAL		4				
1300 - 1400			5				
1400 - 1500			4				
1500 - 1600			3				
1600 - 1700			4				
1700 - 1800			4				
1800 - 1900			3				
1900 - 2000			END				
2000 - 2100							
2100 - 2200							
2200 - 2300							
2300 - 2400							
2400 - 2500							
2500 - 2600							
2600 - 2700							
2700 - 2800							
2800 - 2900							
2900 - 3000							
Remarks:	1. The procedure used for this test is similar to that described in AS1289.6.3.2-1997, Method 6.3.2. 2. Usually 8 blows per 20mm is taken as refusal						