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Our ref: 7480-3-R1 Rev4
13 June 2025

Kosciuszko Thredbo Pty Ltd / EVT
1 Friday Drive
Thredbo NSW 2625

Attention: Chloe Chalk

Dear Chloe,

NSW GOVERNMENT
Department of Planning
Housing and Infrastructure

Issued under the Environmental Planning and Assessment Act 1979

Approved Application No 24/14995

Granted on the 15 July 2025

Signed M Brown

Sheet No 4 of 11

Geotechnical Assessment for Kareela Hutte Access Road, Thredbo NSW

1 Introduction

This report presents the results of a geotechnical assessment for a proposed access road to Kareela Hutte in Thredbo NSW. The assessment was commissioned by Chloe Chalk of Kosciuszko Thredbo Pty Ltd / EVT, PO KTM0041723, and was carried out in accordance with our proposal reference 7480-P1 dated 16 February 2024.

The site is understood to be located within an area designated as 'G' as defined in the 'NSW Department of Planning, Environmental Planning and Assessment Act, 1979, State Environmental Planning Policy (Kosciuszko National Park – Alpine Resorts) 2007 Land Application Map.' However, it is assessed that the proposed works will have 'minimal or no geotechnical impact' on the site, based on the likely subsurface conditions, the lack of obvious signs of hillside instability observed or expected, the relatively small area of the development, and the development details, as outlined in this assessment. We therefore consider that a geotechnical report prepared in accordance with the Geotechnical Policy for Kosciuszko Alpine Resorts (2003) is not required in accordance with Clause 3.1.e of the DIPNR's "Geotechnical Policy – Kosciuszko Alpine Resorts", November 2003. A completed Form 4 – Minimal Impact Certification is attached to this assessment.

This report must be read in conjunction with the attached "Important Information about your Geotechnical Report".

2 Project Details

Documents supplied to us for this assessment comprised:

- Track Plan (by CLM Civil Pty Ltd, project V-333, Sheets 1 to 5, Issue D, dated 13/1/25).

It is proposed to construct the access road and secondary access track from the nearby dirt track to the southwest directly to the southwest side of Kareela Hutte as shown in the attached plan.

3 Assessment Procedure

The assessment comprised the following scope of work:

- A review of existing regional maps and reports relevant to the site held within our files.
- Visual observations of surface features by a Senior Principal Geotechnical Engineer on 15 March 2024.
- Engineering assessment and reporting.

4 Regional Topography

The regional topography comprises moderately to steeply sloping terrain flanking the north-easterly flowing Thredbo River, with ground slopes over the land flanking the river generally ranging from 10º to 30º and some locally steeper sections, and more gentle slopes over the river shoulders. Numerous drainage depressions and watercourses flow towards the river, with some of the persistent watercourses to the north of the river carved several metres into the underlying granite bedrock. Side slopes to creeks and watercourses are typically steeper at 20° to 35º, and typically include numerous granite boulders and cobbles.

5 Site Observations

The site is located north of the Thredbo River and northwest of Thredbo Village in Thredbo as shown in Plate 1.

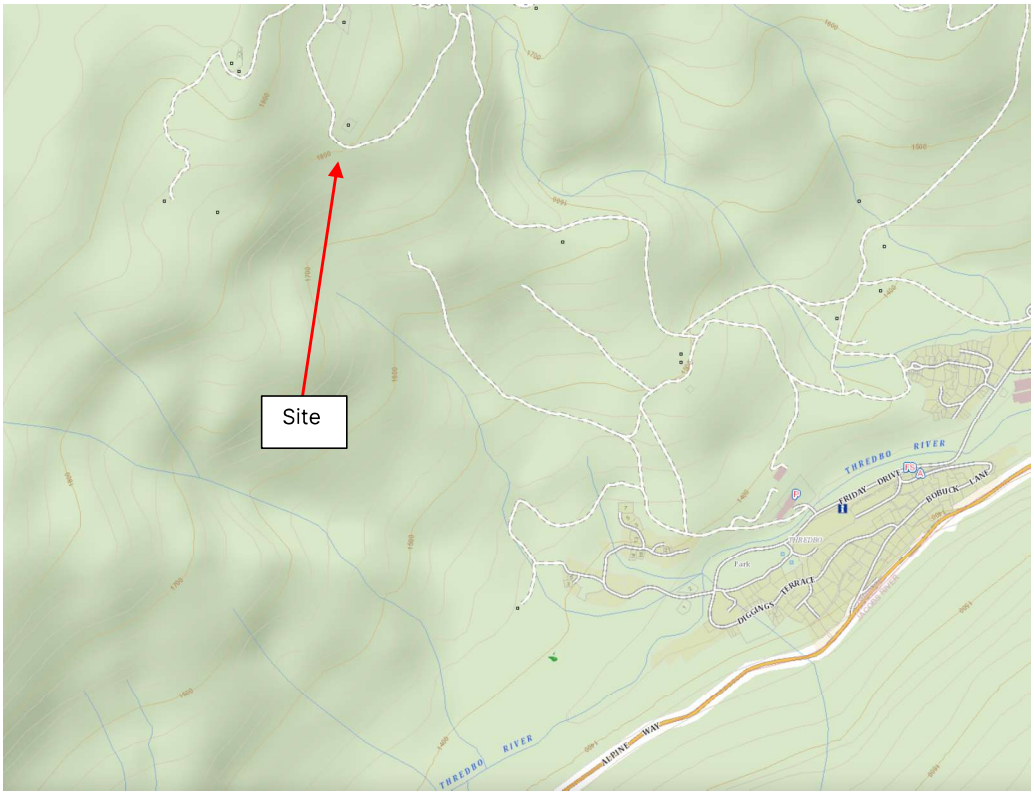

Plate 1 - Site Locality (not to scale)

The proposed track runs from a gravel track located southwest of the Kareela Hutte as shown in the attached Plan. It is situated on a south-easterly facing slope of about 15° as shown in Photos 1 to 3.

Granite exposures were observed across the proposed access track alignment. Variable subsurface conditions are expected to be encountered including minor fill, clay slope-wash soils, completely decomposed granite (sands), with granite cobbles and boulders interspersed throughout the profile, and occasionally granite bedrock is anticipated.

No obvious signs of slope instability were observed during the site inspection. No signs of surface seepage were observed.

6 Discussions & Recommendations

It is understood that the proposed primary access track will be 3m wide and secondary access track will be 1.2m wide. It is recommended that the track is constructed by filling on top of the slope (i.e., no cut-to-fill earthworks). For a downslope batter of nominally 2H:1V, the width of the earthworks would be 3m track width plus 3.5m width for the downslope batter for a total formation width of about 6.5m.

Alternatively, a steeper batter could be formed using rock fill, nominally 1H:1V, in which case the total formation width would be 4m.

For either case, the maximum fill depth would be less than 1m above existing ground surface level. The latest Civil Plans indicate maximum filling of less than 0.6m thickness.

It is understood that a turning area is to be provided adjacent to Kareela Hutte, at the location shown in Photo 3, and at the level of the small timber deck outside the access door. This will require extensive filling with a batter slope for soils (2H:1V) or rockfill facing (1H:1V), or a suspended deck.

The following recommendations are provided for the development:

- Based on our site observations and previous test pitting in the general area, we expect that due to previous site disturbance and observed slopes, the site is Class 'P', in accordance with AS2870-2011 'Residential slabs and footings'.
- Excavation is anticipated to be predominantly within completely weathered granite and cobbles and boulders with some overlying soils. Excavation could be achieved by suitably sized excavator, with rock-breaking or blasting required if less weathered granite is encountered.
- No cutting is proposed except for subgrade preparation for filling, and footing excavation for retaining works or suspended structures.
- Filling for the access track formation, and for the turning circle if required, should be constructed as follows:
    - Strip existing fill and topsoil.
    - Prepare horizontal benches within the stripped surface of width suitable for compaction equipment and proof roll with tracked excavator and tamping with excavator bucket. Areas of soft or heaving soils should be further excavated.
    - Place earth fill in horizontal layers over prepared subgrade, in layers not exceeding 0.2m loose thickness and compact to a dry density ratio (AS1289.5.4.1–2007) not less than 95% Standard.

Suitable earth fill could comprise a mixture of site-won soils and decomposed granite but should not include material with excessive moisture content (>3% wet of Standard Optimum) or excessive organic content (>2% by mass).

- Filling should be over-placed (i.e., extend beyond the design formation extent and level) and then trimmed back after compaction, to ensure that the outside edges of the earth mound are adequately compacted.
- A maximum batter slope of 2H:1V to be adopted for earth fill construction, for local stability requirements.
- A maximum batter slope of 1H:1V to be adopted for rock fill facing to the earthworks, width of rockfill and erosion protection to be determined during detailed design.

- Earth fill to be covered by topsoil and vegetated or otherwise protected to limit erosion.
- Foundations for rock retaining and suspended structures should be on weathered granite and may be designed for an allowable bearing pressure of at least 200kPa.

7 Limitations

In addition to the limitations inherent in site investigations (refer to the attached Information Sheets), it must be pointed out that the recommendations in this report are based on assessed subsurface conditions from limited observations.

This report may have included geotechnical recommendations for design and construction of temporary works (e.g., temporary batter slopes or temporary shoring of excavations). Such temporary works are expected to perform adequately for a relatively short period only, which could range from a few days (for temporary batter slopes) up to six months (for temporary shoring). This period depends on a range of factors including but not limited to: site geology; groundwater conditions; weather conditions; design criteria; and level of care taken during construction. If there are factors which prevent temporary works from being completed and/or which require temporary works to function for periods longer than originally designed, further advice must be sought from the Geotechnical Engineer.

This report and details for the proposed development should be submitted to relevant regulatory authorities that have an interest in the property (e.g., Department of Planning) or are responsible for services that may be within or adjacent to the site for their review.

Asset accepts no liability where our recommendations are not followed or are only partially followed. The document "Important Information about your Geotechnical Report" in Appendix A provides additional information about the uses and limitations of this report.

❖❖❖

For and on behalf of

Asset Geotechnical Engineering Pty Ltd

Mark Bartel
BE, MEngSc, GMQ, CPEng, RPEQ/NER(Civil), DEP/PRE (NSW)
Managing Director | Senior Principal Geotechnical Engineer

Encl: Site Photos
Plan Showing Proposed Access Road, Kareela Hutte, Thredbo
Important Information about your Geotechnical Report
Form 4

Document Control

Distribution Register

Copy	Media	Recipient	Location
1	Secure PDF	Chloe Chalk	Kosciuszko Thredbo Pty Ltd / EVT
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3	Secure PDF	Mark Bartel	Asset Geotechnical Engineering

Document Status

Rev	Revision Details	Date	Author	Reviewer	Approver
0	Initial issue	28 March 2024	MAB		MAB
1	Updated with review comments	16 September 2024	MAB		MAB
2	Minor amendment – site is within 'G' area	17 December 2024	TK	MAB	MAB
3	Updated Civil Plans	12 June 2025	MAB		MAB
4	Updated Civil Plans	13 June 2025	MAB		MAB

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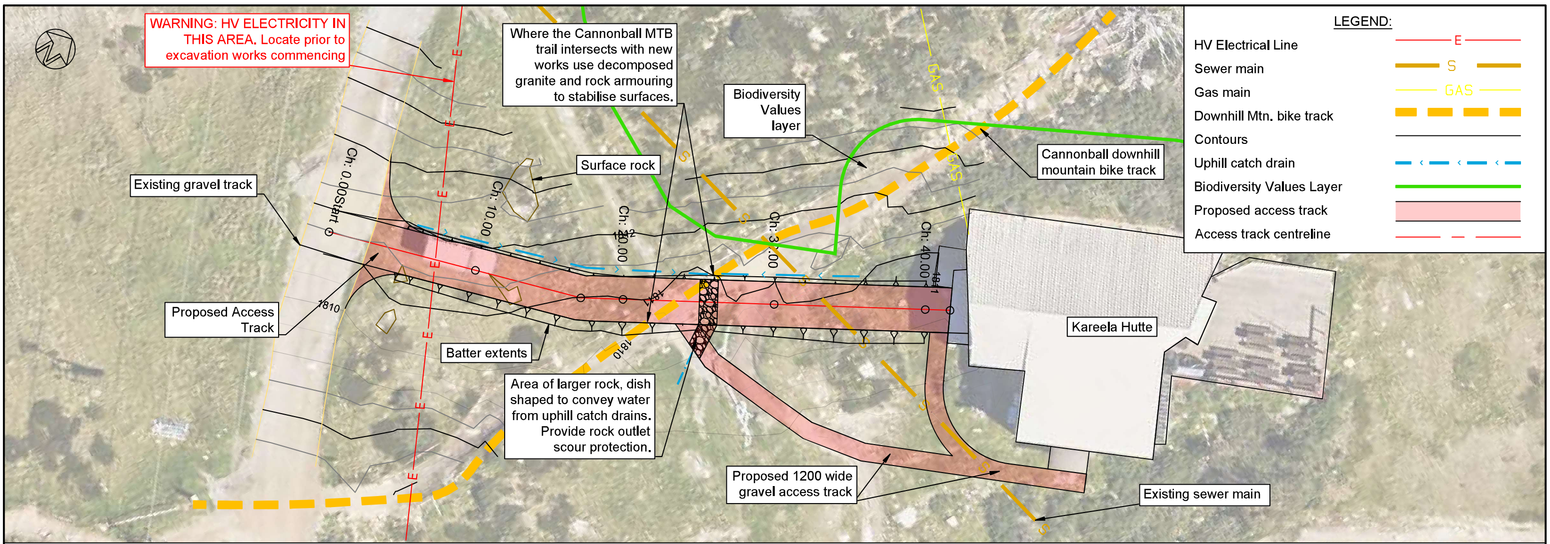
ISO 9001:2015
ISO 14001:2015
ISO 45001:2018 AS/NZS 4801:2001

Site Photos

Photo 1 – View along proposed access track.

Photo 2 – Closer view along proposed access track.

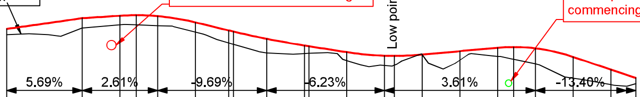
Photo 3 – View of southwest side of Kareela Hutte.



Existing Gravel Track. Add additional gravel to ensure smooth transition to new access track

WARNING: HV ELECTRICITY IN THIS AREA. Locate prior to excavation works commencing

WARNING: Sewer main crossing. Locate prior to excavation works commencing



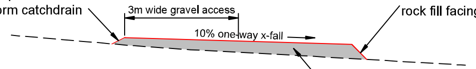
Cut Fill	+0.150	+0.261	+0.241	+0.256	+0.249	+0.257	+0.331	+0.337	+0.375	+0.211	+0.184	+0.224	+0.259	+0.245	+0.002	+0.235	+0.227	+0.328	+0.413	+0.562	+0.397	+0.150
Design Levels	1811.626	1811.911	1811.976	1811.990	1811.964	1811.799	1811.586	1811.557	1811.365	1811.188	1811.169	1811.013	1810.919	1810.915	1810.948	1811.038	1811.129	1811.148	1811.113	1810.884	1810.549	1810.330
Existing Levels	1811.476	1811.650	1811.735	1811.734	1811.715	1811.542	1811.255	1811.220	1810.990	1810.977	1810.985	1810.789	1810.660	1810.670	1810.946	1810.803	1810.902	1810.820	1810.700	1810.322	1810.152	1810.180
Chainage	0.000	5.000	7.500	8.563	10.000	12.500	14.701	15.000	17.201	19.701	20.000	22.500	25.000	25.665	27.500	30.000	32.500	33.562	35.000	37.500	40.000	41.639

Access Track Long Section
1:250H 1:100 V

NOT FOR CONSTRUCTION

Uphill fill batter slopes to be 2:1 to form catchdrain

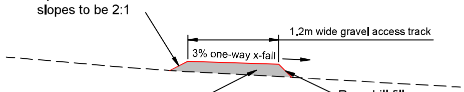
Downhill fill batter 1:1 using rock fill facing



Compacted minimum 150mm thick DGS20 road base or approved equivalent

Access Track - Proposed Works
Typical Cross Section

Uphill fill batter slopes to be 2:1



Downhill fill batter 1:1 using rock fill facing

Compacted 50mm thick DGS20 road base on a 50mm decomposed granite base. Gravel to be placed on natural surface (no excavation).

Gravel Access track - Proposed Works
Typical Cross Section

Rev	Date	Description
A	1/8/24	First Issue
B	28/8/24	Secondary access track added
C	9/9/24	Access track relocated
D	13/1/25	Long section amended

Proposed Access Track to
Kareela Hutte

CLM CiViL
CLM CiViL Engineering
205 Bobundara Road
BERRIDALE NSW 2628
PH: 0427 886 623
E: greg@clmcivil.com.au

Client: Kosciuszko Thredbo Pty Ltd

This Drawing: Site Plan and Access Track Long Section

Status: Client Review

Datum: GDA2020/AHD | Scale: Plan 1:250 | Size: A3

Project Number: V-333 | Sheet: 2 of 5 | Revision: D

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)

Department of Planning
Housing and Infrastructure

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Signed M Brown

Sheet No 5 of 11

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

Chartered professional status

Name

Date

3. Contact details

Alpine Resorts Team
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