

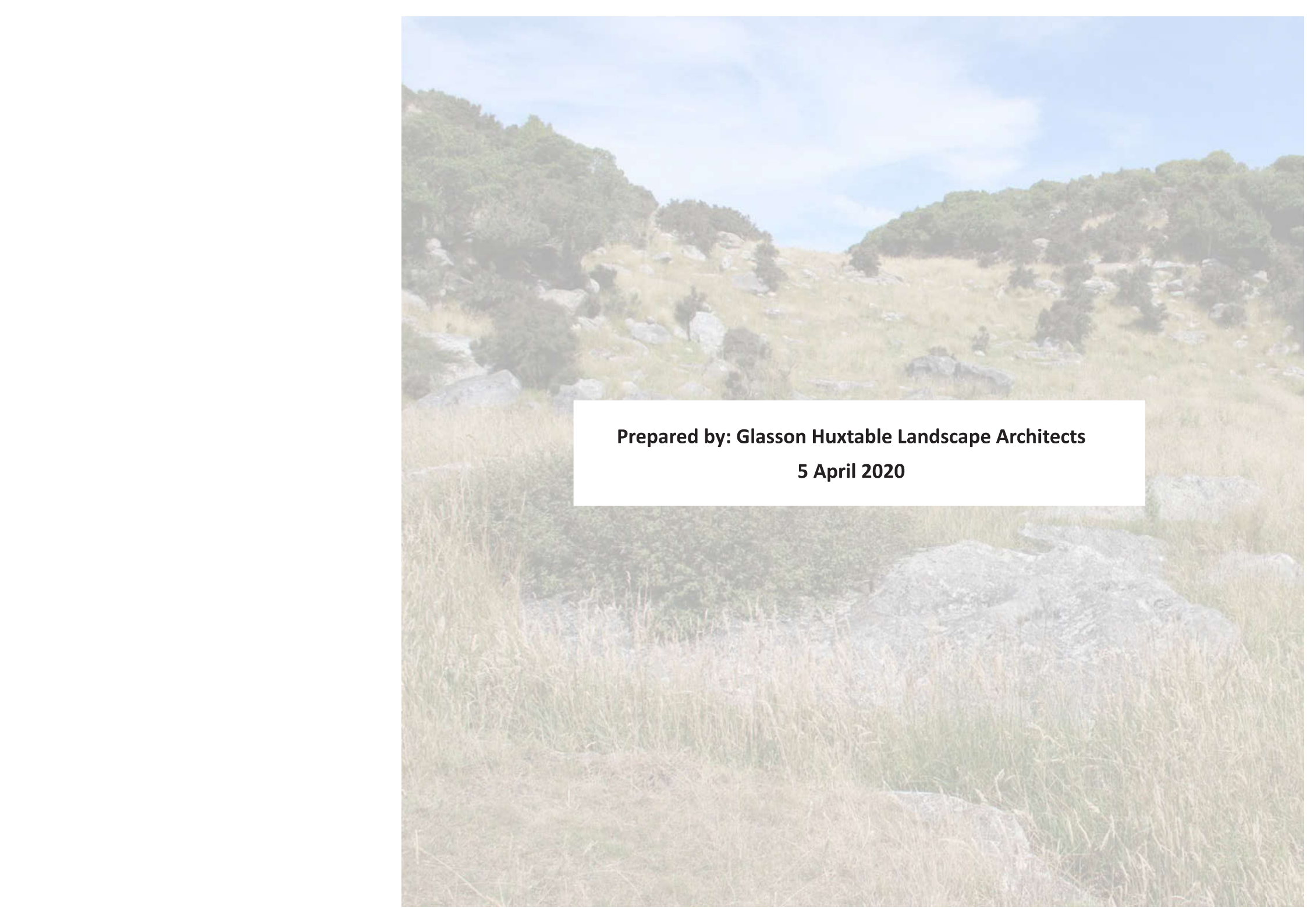
Mt Cass Wind Farm - Pattern Book for Site Rehabilitation



mainpower



GLASSON HUXTABLE
LANDSCAPE ARCHITECTS

A landscape photograph showing a grassy hillside with scattered rocks and trees. The foreground is filled with tall, dry grass and large, grey rocks. The middle ground shows a slope covered in green grass and small trees. The background features a blue sky with white clouds.

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5 April 2020



Mt Cass Wind Farm: Pattern Book

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Document Details

Date: 5 April 2020
Reference: 0616

Status:

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Acknowledgements:

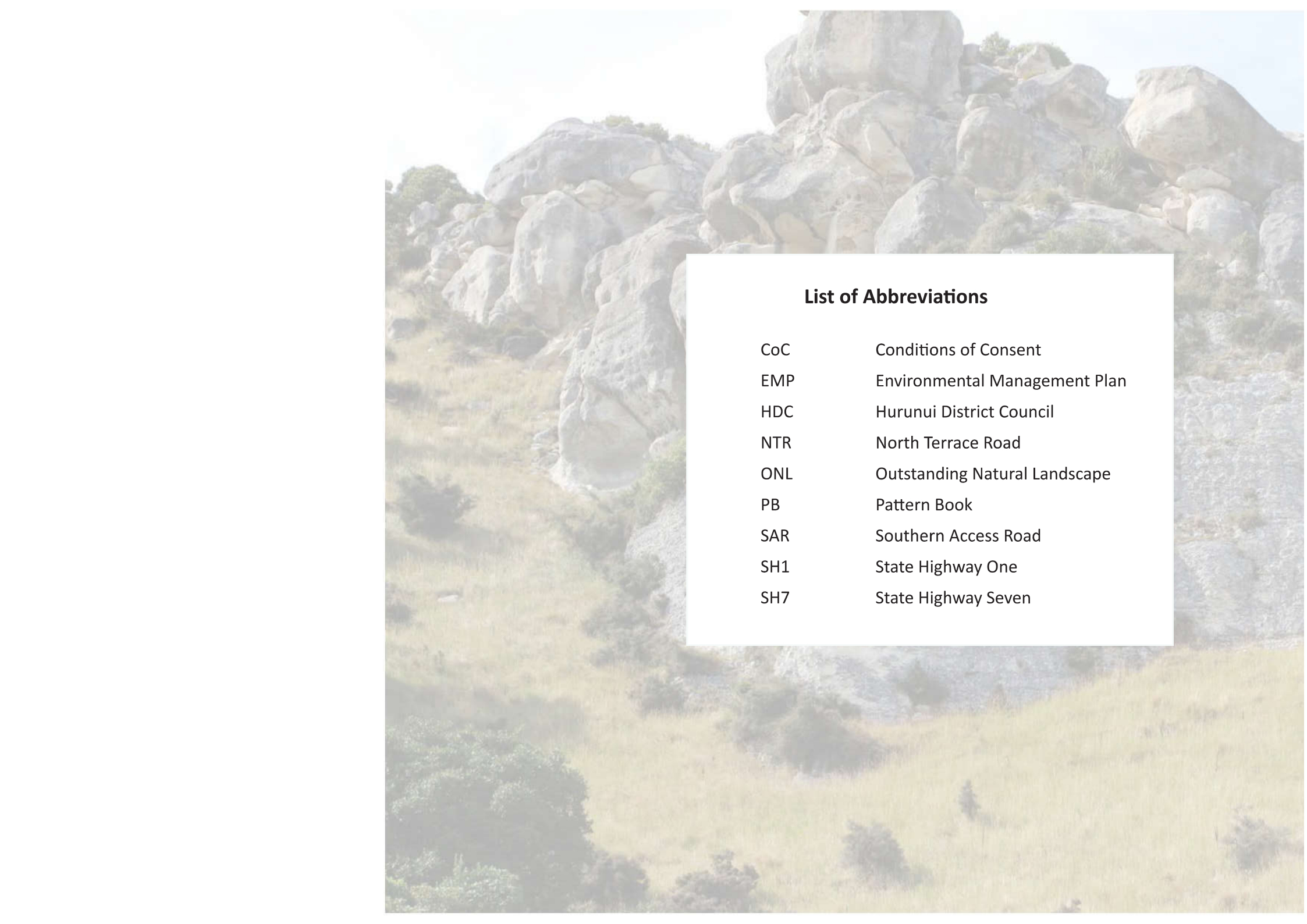
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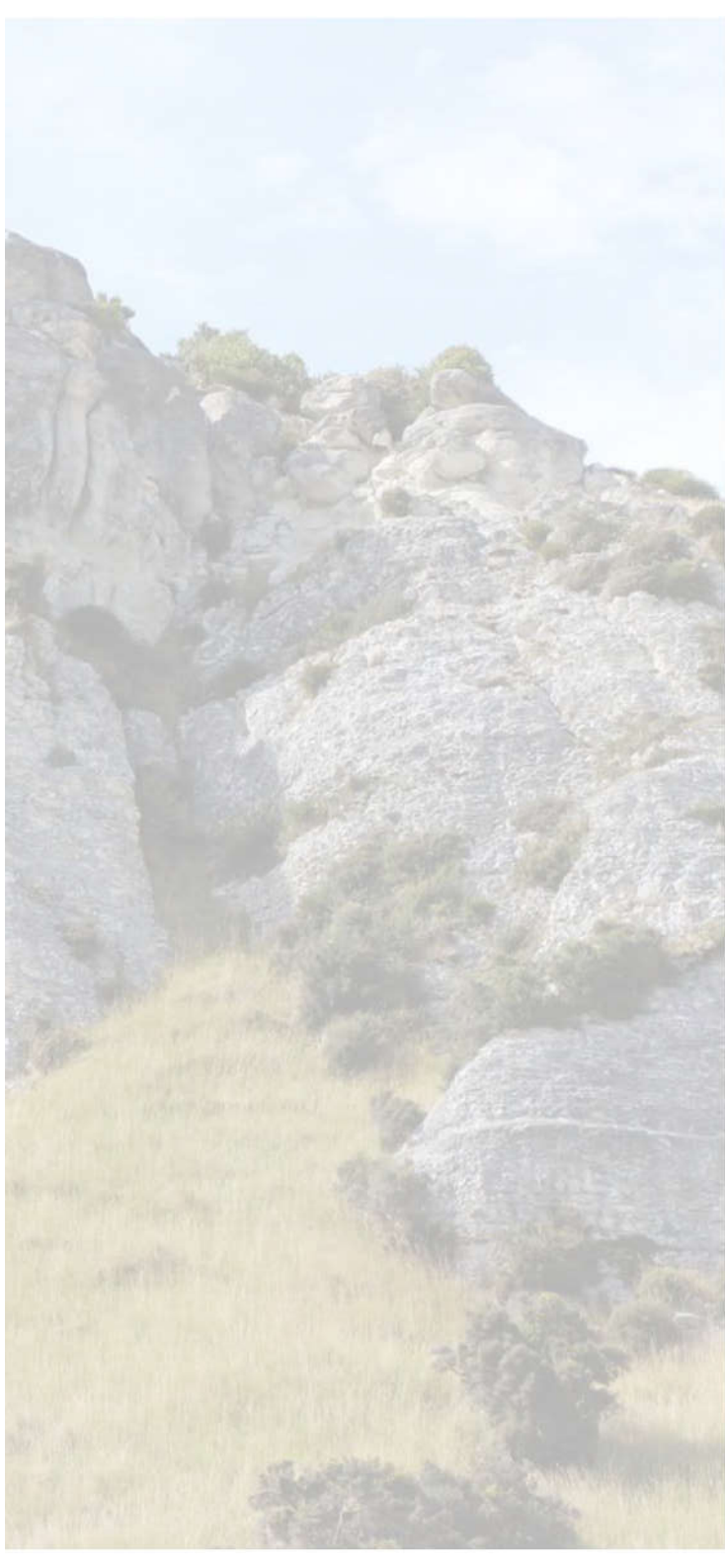
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List of Abbreviations

CoC	Conditions of Consent
EMP	Environmental Management Plan
HDC	Hurunui District Council
NTR	North Terrace Road
ONL	Outstanding Natural Landscape
PB	Pattern Book
SAR	Southern Access Road
SH1	State Highway One
SH7	State Highway Seven



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Introduction



Introduction

1.1. Purpose

The conditions of consent (CoC) for the Mt Cass wind farm require methods to mitigate the landscape and visual effects occurring due to engineering solutions for components of the windfarm. To achieve these requirements, a panel of two landscape architects representing Hurunui District Council and Mt Cass Wind Farm Ltd have compiled this Pattern Book.

The Pattern Book is a guide for the civil designer for how the landscape mitigation will occur on the site in different situations. As such, it contains a set of guidelines for contractors to adhere to when undertaking the implementation of the wind farm.

The pattern book provides:

Guidance for rehabilitation and visual mitigation of the North Terrace Road (NTR), Southern Access Road (SAR), ramp roads, disposal areas, laydown areas, and turbine platforms. (refer to the 'Map: Zones of Landform and Landcover' plan for the location of these areas). The PB applies to areas both inside and outside of the conservation management area but includes all civil works onsite.

The PB is the result of liaison between Mt Cass Wind Farm Ltd. and the HDC regarding suitable methods of rehabilitation and visual mitigation. Other relevant disciplines (e.g.: geomorphologists, ecologists and project engineers) have been consulted and provided input into the PB as required to ensure consistency with the Environmental Management Plan (EMP) and engineer construction drawings. (CoC 104)

This is an initial document and it is anticipated that there will be ongoing discussions between the designers and contractors during the design phase. As

part of the construction process the project landscape architect, Chris Glasson of Glasson Huxtable and the HDC representative landscape architect (Nikki Smetham of Rough & Milne) shall:

- Undertake site visits when necessary, at any stage of the project including construction phase.
- Liaise with the project manager and make on-site decisions where necessary during the construction phase.
- Provide written reports to HDC and Mt Cass Wind Farm Ltd. regarding on-site decisions.
- Peer review civil design in accordance with the PB.

The above input is in accordance with the CoC (103-104).

At the time of preparing the PB, the engineering and architectural plans and details had not been prepared. The PB is a conceptual guideline for the engineering designers and contractors, it is not a specification document and as stated earlier, it shall be used in conjunction with ongoing collaboration between the designers and contractors during the design phase.

The construction of the NTR and ramp roads, and to a minor degree the disposal sites, batching areas and turbine platforms will require various combinations of cuts (including short sections of box cuts), cut and fill, and areas of fill. The limestone outcrops close to the existing farm tracks indicate the topsoil is a relatively thin veneer and the proposed cuts are likely to expose fresh and un-weathered limestone.



Purpose (continued)

With regard to earthworks for roading rehabilitation, the plans indicate that cuts are typically up to 5-6m, but in places there may be cuts up to 12 m in height. Downhill of the NTR, below Mt Cass, are filled areas of up to 10 m height. The base of the fill will be 40 m along the length of the road.

It is the cut faces and the constant gradient line of the roads across the face of the slopes that have the most potential for significant adverse effects. This is exacerbated by a margin of uncertainty regarding the exact nature of the substrate that will be encountered during the construction of the NTR and ramp roads where they cross the scarp face and ridgeline. Where the road or platform cuts intrude into limestone base rock, then effects are likely to be significantly more visible than if the cuts are into fractured rock and soil.

Some of the windfarm earthworks will be visible from public viewpoints. For example, from the SH1 and SH7 where the NTR and ramp roads are visible, and from the Mt Cass Road adjacent to Tiromoana Reserve, where the SAR is visible. Therefore, it is important to reduce any landscape and visual impact as much as possible by applying the measures outlined in the PB. (See Introduction, Table 1: Viewpoints and 1.4.2 Viewpoints Map).

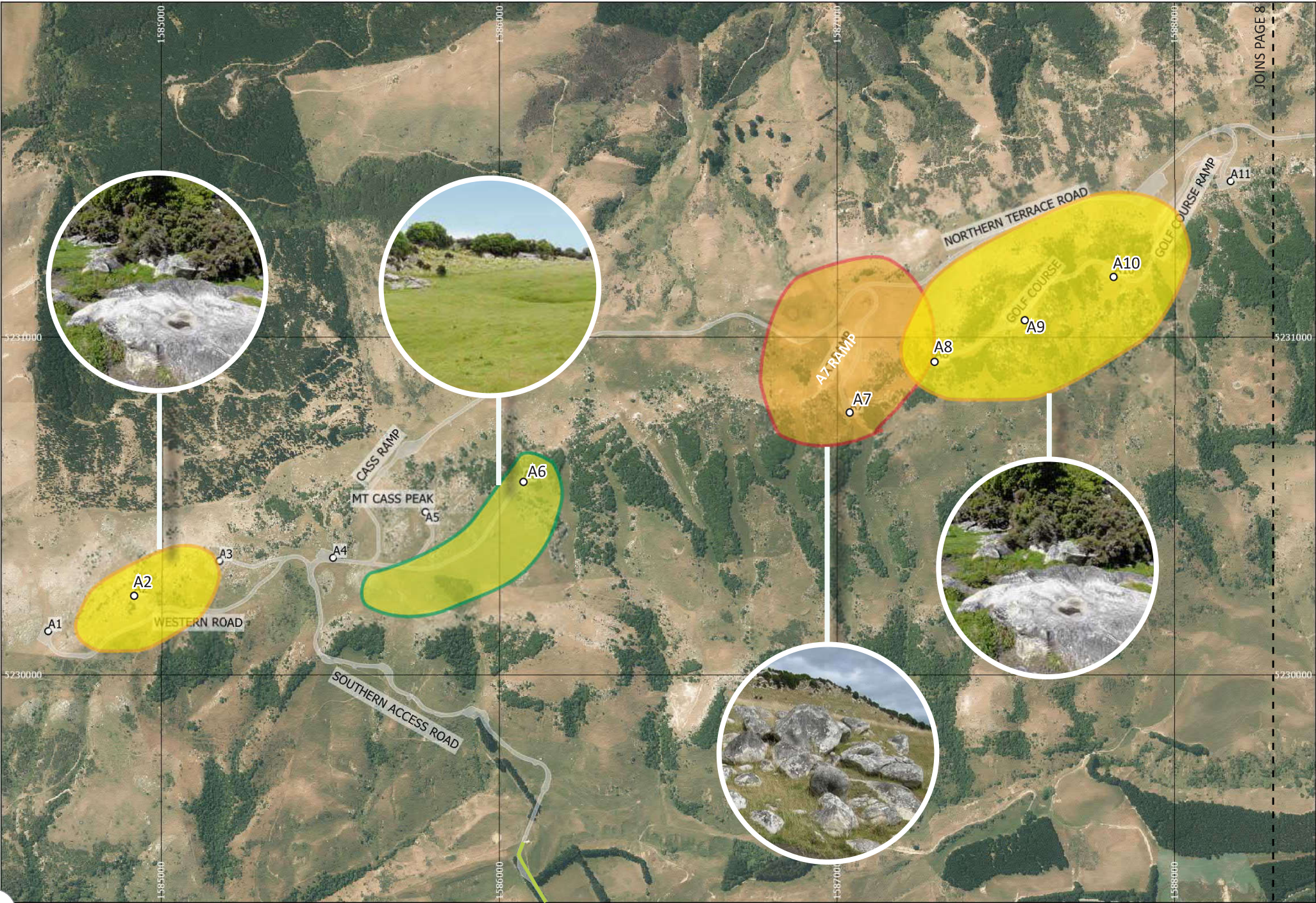
In areas where the roads and turbines will be more visible from locations off site, mitigation planting treatment is to be focussed in order to lessen the visual impact for those off site. These areas are identified on 1.5 Visibility Map.

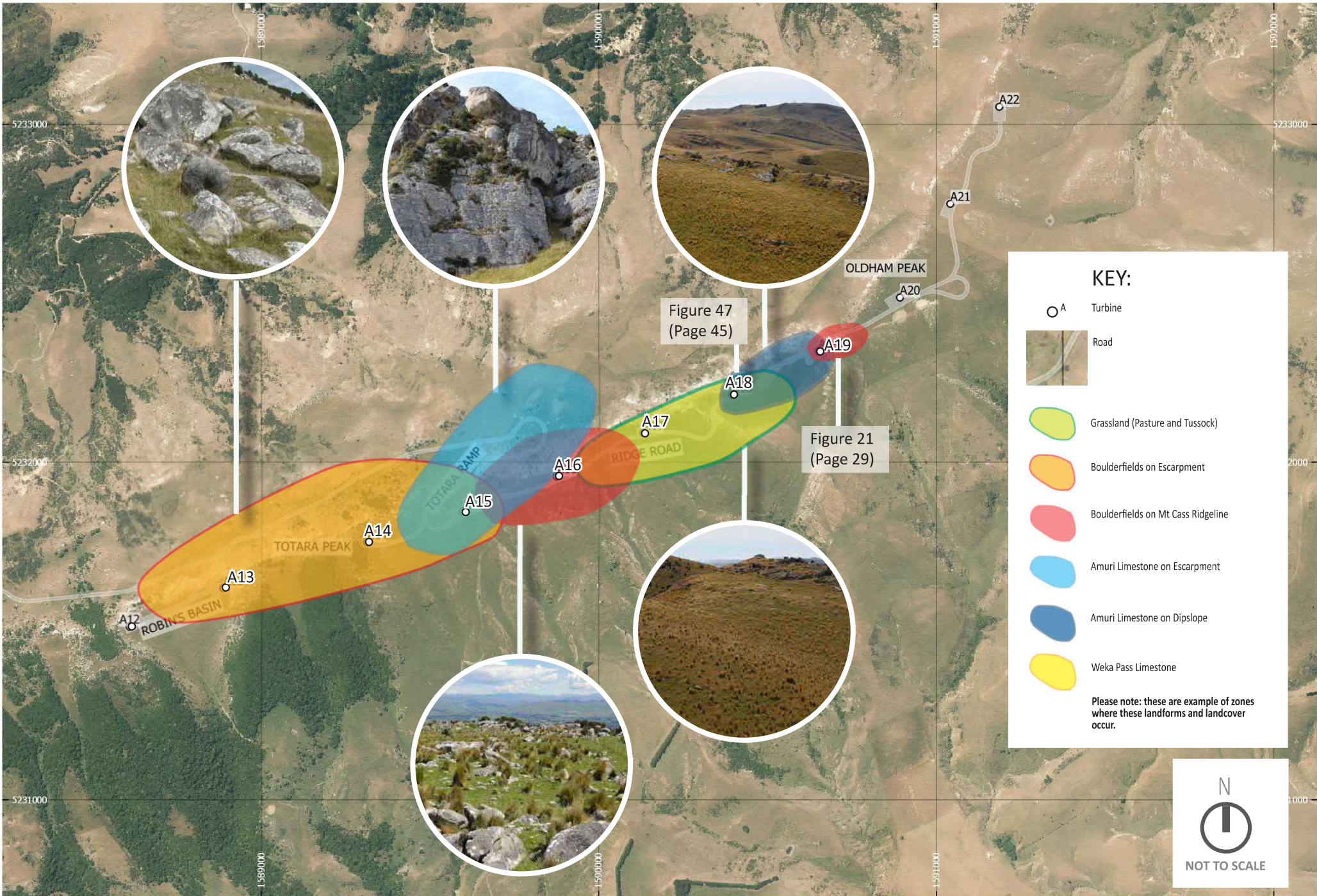
As well, the area of forest and pavement form part of an outstanding natural landscape (ONL), giving status to the high quality of the Mt Cass landscape. This means that any development on, or in the vicinity of the ONL, should be undertaken to maintain ONL values.

1.2 Structure

The PB has been organised according to the differing landform and landcover types across the site. Each type has been described and the landscape and visual effects assessed, with mitigation measures applied in order to gain an acceptable outcome. This provides a consistent approach to the landscape mitigation, but with a consequence that some repetition will occur where similar treatments are used in different landforms.

1.3 Map: Landform and Landcover Character





1.4 Viewpoints

The aim is to reduce the visual impact, reducing ecological effects and to protect and enhance the landscape. The following elements are visible from the main public viewpoints of SH1, SH7, Mt Cass Road, Amberley and the Tiromoana walkway.

1.4.1 Table of Viewpoints

Viewpoint	Element	Distance	Degree Visibility
SH7 (at Maungatahi farm gate)	Ramp Roads off Northern Terrace Roads	10.9km	Very low in am Low in pm
SH1 (at Mt Cass Road junction)	None	7.8km	-
Mt Cass Road	Southern Access Road	2.6km	Low in am Very low in pm
Stockgrove Road	None	9.6km	-
SH1 at Omihi	Ramp Roads for A12 and A15	5.0km	Very low in am Low in pm
South end of Amberley township	Southern access Road and West extension road at west end	14.35km	negligible
Tiromoana Walkway	Can view part of Southern Access Road through to viewing no elements	2.6km+	Low in am Very low in pm

Table 1: Viewpoints

1.4.2 Viewpoints Map



KEY:

- ① SH7 (at Maungatahi farm gate)
- ② SH1 (at Mt Cass Road junction)
- ③ Mt Cass Road
- ④ Stockgrove Road
- ⑤ SH1 at Omihi
- ⑥ South end of Amberley township
- ⑦ Tiromoana Walkway

1.5 Visibility Map

