PUBLIC NOTICE DETAILS

PLANNING APPLICATION DETAILS

Application Number:	DA 2026/42
Application Type:	Discretionary Development Application
Property Location:	Mt King William, Lyell Highway, Derwent Bridge
Proposal:	Utility (Upgrade Telecommunications Facility) and Associated Works
Advertising Commencement Date:	09 June 2026
Representation Period Closing Date:	23 June 2026
Responsible Officer:	Louisa Brown, Senior Planning Officer

The relevant documents may be viewed at Council's website www.centralhighlands.tas.gov.au or at Council's Offices 19 Alexander Street, Bothwell & 6 Tarleton Street, Hamilton during normal business hours.

Enquiries regarding this Application can be made by contacting Central Highlands Council on (03) 6259 5503 or by emailing development@centralhighlands.tas.gov.au. Please quote the "Application Number" when making your enquiry.

Representations on this application may be made to the General Manager in writing either by:

Post: 19 Alexander Street, Bothwell TAS 7030
Email: development@centralhighlands.tas.gov.au

All representations must include the authors full name, contact number and postal address and be received by 5.00pm on the representation period closing date.

May 2026

PLANNING PERMIT APPLICATION

Proposed TasGRN telecommunication works at:

Existing Communications compound, Mount King William 1, Franklin-Gordon Wild Rivers National Park

Tasmanian Government Radio Network

TasGRN: Mt King William

ACQUIRECOMM
PROPERTY & PLANNING SOLUTIONS

Document Control

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Acquirecomm Pty Ltd

Date 31 March 2023

Version	Date	Author	Reason
1	13/09/2021	Emily Hart	Initial Draft
2	14/09/2021	Emily Wardlaw	Amendments
3	11/11/2021	Emily Wardlaw	Final Review
4	31/03/2023	Emily Wardlaw	Amendments based on EIA findings and new format TPS.
5	27/8/2025	Emily Wardlaw	Updated for lodgement

Contents

Executive Summary

This report has been prepared by Acquirecomm Pty Ltd on behalf of Telstra Corporation Ltd in support of a planning permit application for the upgrade of an existing Telecommunications Facility at the Dept of Police Fire and Emergency Management Radio Station (DPFEM), MOUNT KING WILLIAM, SOUTHWEST TAS 7139 as part of the TasGRN Project.

The Tasmanian Government Radio Network (TasGRN) is a collaborative project to transition eight core user organisations, currently using five separate radio communications networks, onto one unified, digital, and interoperable radio network.

The result will be a more reliable and resilient network enabling the provision of better services to the Tasmanian community.

The site has no Title or PID information, and is located at GDA co-ordinates: -42.223936, 146.138763. The proposed development is located at the existing DPFEM Site, on Crown Land, Authority Parks and Wildlife. The site is located on public authority land within World Heritage Tasmanian Wilderness and the National Heritage Franklin-Gordon Wild Rivers National Park.

Refer to copy of Title at Appendix A.

A discretionary application for planning approval for the TasGRN equipment is required.

This report outlines the purpose and demand for the development and addresses the planning merits of the proposal and its consistency with the relevant planning controls and codes of the Central Highlands Planning Scheme. It is supported by the accompanied plans which show the proposed layout and design of the facility.

The proposed development of the site represents the provision of essential emergency communications infrastructure to the area as sought under the TasGRN Project. The proposed facility will have an acceptable impact on the amenity of the area in terms of its use of materials and siting. The facility is designed to have regard to its surrounds and represents an appropriate balance between the net community benefit from the provision of essential emergency services communications and the protection of the environment from any adverse impacts.

It is noted that the proposal is currently being assessed via an EIA Level 3 by PWS Tasmania. Additionally, An EBPC Referral Decision Notice determined that the proposal was not a controlled action (with Particular Manners). Refer to Appendix F.

Site and Proposal Details

Address of Site	DPFEM Facility, MT KING WILLIAM 1, CROWN LAND, SOUTHWEST TAS 7139
Legal Property Description	Land: No Title or Property ID GDA co-ordinates: -42.223936, 146.138763 Crown Land Authority Parks and Wildlife World Heritage Area Reserve Status; a Declared Property Franklin-Gordon Wild Rivers National Park Access: Via helicopter to a purpose built helipad. There is a walking track approx. 5km back to Harbacks Road.
Local Authority	Central Highlands Council
Use	Utility
Zone and Overlays & Codes	Zone 23 Environmental Management Zone C13 Bushfire-prone Areas Code; Bushfire-prone areas C5 Telecommunications Code C15 Landslip Hazard Code; Part Low and part medium landslip hazard band C7 Natural Assets Code; Priority vegetation area
Permit Type	Discretionary
Owner	Crown Land, Authority Parks and Wildlife (DPIPWE)
Applicant	Telstra Corporation Limited ABN 051 775 556 C/- Acquirecomm PO Box 586 Elsternwick, Vic, 3185
Contact Person	Emily Wardlaw Director Planning Services 0422685472 emily@acquirecomm.com.au
Our Reference	TAS GRN MT KING WILLIAM

1 Introduction

The most extensive upgrade to multiagency emergency radio communications in Tasmania's history has commenced following the signing of a contract between the Tasmanian Government and Telstra to deliver the Tasmanian Government Radio Network (TasGRN).

The TasGRN will replace five separate radio networks with one digital, public-safety grade radio network to be delivered by Telstra and supported by Motorola Solutions Australia P/L. The Project is a key element in delivering the State's objective in keeping Tasmanians safe. The network will also enhance day to day operations beyond emergency services and will support sustainable forest and reserved land management, utility providers and health transport services.

Initial users of the TasGRN will include:

- Tasmania Police;
- Tasmania Fire Service;
- Ambulance Tasmania;
- State Emergency Service;
- Department of Primary Industries, Parks, Water and Environment;
- Sustainable Timber Tasmania;
- DPFEM; and,
- Hydro Tasmania

Design and construction of the new network has now commenced with user organisations expected to begin migrating over to the new infrastructure in the 2022/2023 financial year.

You can read more about the project here:

http://www.premier.tas.gov.au/site_resources_2015/additional_releases/telstra_awarded_tasgrn_contract

https://www.tasgrn.tas.gov.au/

The project includes approximately 160 sites located within all 29 Local Government areas. The project will involve the co-location of TasGRN equipment on existing communications structures owned by a variety of operators. There will be a small number of new structures required to ensure breadth of coverage across Tasmania.

Telstra has contracted Acquirecomm Pty Ltd to undertake the required environmental and planning approvals on each site.

2 Purpose and Demand

The TasGRN Project is a result of the Tasmanian Government's response to the ***Report of the Auditor-General No. 10 of 2013-2014 (Government Radio Communication – Appendix One 1***) which recommended a whole-of-Government radio network (Tasmanian Government Radio Network - TasGRN). The TasGRN aims to deliver a reliable, functional and usable state-wide public safety grade radio communications network fit for purpose in supporting emergency response, public order during major events and the day to day operations of Tasmania's Emergency Services Organisations (ESOs), land managers and the electricity supply industry.

The Auditor-General's report made eleven recommendations supporting progress and development of a whole-of-government radio network, including:

- Agencies should work together to resolve congestion issues.
- Agencies should investigate ways to provide secure and confidential communications.
- Any whole-of-government network should consider a level of duplication with regard to infrastructure and cost.

TASMANIAN GOVERNMENT RADIO NETWORK, (TASGRN) PROJECT SUBMISSION TO THE PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS 27 JULY 2020

Project director Scott Wilson-Haffenden said the contract signing with Telstra was a significant milestone for the state.

> *"The contract signing marks the commencement of an important partnership with Telstra and it's key subcontractor Motorola to develop a radio network that addresses recommendations made by the state government, and most notably the Tasmanian government's response to the report from the auditor-general."*

Acting Premier Jeremy Rockliff said the project, which includes a $567 million investment, was the most significant radio communications technological upgrade in the state's history.

> *"Effective radio communications are absolutely mission critical to keeping Tasmanians safe, and having such extensive infrastructure and radio communications across multiple agencies is critical and vitally important so that all agencies are working together through the one combined network, in order to ensure the responsiveness of those on the front line."*

Police, Fire and Emergency Management Minister Mark Shelton said it would mean a more cohesive emergency management response, not only in bushfire situations but in day-to-day scenarios.

> *"Having an inter-operable radio network that all the agencies will be connected to allows these agencies to coordinate responses to the emergencies - whether it be*

the SES talking to the police or whether it's fire talking to Transcend on a car crash or road rescue, these things are about keeping Tasmanians safe."

http://www.premier.tas.gov.au/site_resources_2015/additional_releases/telstra_awarded_tasgrn_contract

The Project Submission to the Parliamentary Standing Committee on Public Works, 27 July 2020 states that:

The TasGRN will have far-reaching social and environmental impacts, many of which will apply to the Tasmanian community as a whole.

The submission lists that the Social and Environmental Impacts, in broad terms, include:

- Increased access and ease of use to mission-critical radio communications for the State's large volunteer base;
- Geographical equity for regional and remote citizens to have access to, and receive,more responsive and coordinated emergency services;
- Geographical equity due to new government-funded site infrastructure having the potential to be leveraged by commercial providers, to deliver more telecommunication services in regional and remote Tasmania;
- Improved health, public safety and natural disaster response outcomes for all citizens of Tasmania, including improved WHS for User Organisations;
- Avoided privacy breaches due to enhanced network security;
- Potential for economic and social benefits for rural towns through the provision of TasGRN site access to commercial mobile service providers, enabling greater commercial and social connectivity.
- Improved public confidence in ESO operations due to improved security and response times.

The submission also states that the environmental impacts of the TasGRN include:

- Increased ability to protect the environment due to ESOs' more timely and coordinated response to extreme events (e.g. bushfires, floods);
- Increased ability to protect World Heritage zones due to enhanced coverage in rural and forested areas enabling greater mobility of resources; and
- The addition of new sites will intrude on natural environment.

A full copy of the submission can be found at:

https://www.parliament.tas.gov.au/ctee/Joint/Submissions/Tasmanian%20Government%20Radio%20Network%20Project-Department%20of%20Police,%20Fire%20and%20Emergency%20Management%20Submission.pdf

3 Site Selection

The TasGRN User Organisations have undertaken an extensive coverage prediction and site selection process. This process generated a design that will economically leverage existing sites, minimising green-field builds to meet the State's coverage requirements. The trunked radio site design utilises the best mix of available site infrastructure, using a combination of State, Telstra and other sites assets.

The preliminary coverage design utilises a mix of VHF and UHF frequencies.

Selection of the UHF and VHF site locations is primarily based on UHF coverage requirements and may require multiple sites in close proximity to maximise channel availability.

To obtain the level of coverage required by User Organisations the TasGRN will comprise 138 individual sites spread throughout the State and also 17 Radio Link Sites. There are only three (3) greenfield sites, in total, required to be built across the State, the remaining quantity of sites will utilise existing site components.

This application to upgrade the existing DPFEM site at MT KING WILLIAM 1, CROWN LAND, SOUTHWEST TAS 7139 with TasGRN Equipment is one of the 16 existing sites identified within Central Highlands Council under the project to be upgraded.

The site selection has gone through a rigorous process to determine the most effective and critical locations for TasGRN sites within the whole network. This occurred during the project procurement stage with Government TasGRN project team and Telstra. It included detailed radio frequency engineering input with the vast majority of the 138 transmission sites being located on or at existing radio communications sites. Only (2) new site is proposed for the whole project at Redan Hill and Railton. Redan Hill has since be removed from the project due to significant impacts found on the TWWHA.

A site outside of the TWWHA that would service this region is not possible. Land outside of the TWWHA is at least 10km east of Mt King William 1 and is zoned Rural Resource. Whilst a site in this location would have been less sensitive in terms of World Heritage and Reserve classification, it would not provide the required coverage to the region west of Mt King William. The Mt King William Range is one of the highest elevations in this area and the mountain would effectively block coverage extending west from any sites positioned outside of the TWWHA to the east.

The intent of the TasGRN network is to improve the provision of services delivered by ESOs and other User Organisations with the provision of a modern, resilient, public-safety grade interoperable radio communications network. The majority of emergency services communications sites within the TWWHA are contained on the edges of the protected area, including the existing TMRN site at Mt King William 1. The installation of the TasGRN facility at Mt King William 1 will increase coverage to the region, particularly areas to the south where there is a significant lack of communications sites. The TasGRN installation has been designed for breadth and resilience (as described in section 2.3 Design

below), therefore increasing the ability to protect World Heritage zones due to enhanced coverage, enabling greater mobility of resources.

The site is located within the TWWHA Recreation Zone and the Remote Area Management Overlay.

The TasGRN proposal at Mt King William 1 is consistent with the aims of the Recreation Zone (TWWHAMP 2016 3.1.1.2) in that the infrastructure is located at a site where infrastructure is already provided for, and it is for essential safety purposes.

The Remote Area Management Overlay identifies areas where providing and maintaining vital infrastructure (including communications towers) in otherwise remote settings are required. The proposed TasGRN facility accords with the intent of this overlay in that it is replacing the aging and inefficient TMRN network to allow Emergency Services Communications to be maintained and improved.

The TasGRN site at Mt King William 1 is an important element within the TasGRN network. Communications sites within the TWWHA are limited and are predominately focused on the edges of the TWWHA area. The elevated position at Mt King William 1 will ensure a broad coverage across the region and radio communications dishes will provide important link connections to TasGRN sites located at Derwent Bridge.

The redundant TMRN infrastructure will be removed from the site as part of the project.

4 Proposed Development

The proposed development at the existing DPFEM Radio site is located within the Tasmanian Wilderness World Heritage Area and the Franklin-Gordon Wild Rivers National Park, on an elevated position at, Mt King William 1, Crown Land, Southwest Tasmania. The site is located at an elevation of 1324m TAS 7139, comprises the following:

Commented [FM1]: Refer to designs in appendix?

Discretionary Permit Activity:

- Installation of a 7m Mast (hosting two radio dishes and a 5.8m Dipole Antenna) installed on a concrete pad with rock anchors
- Installation of one equipment shelters on piers fixed to rock via anchors.
- Power Supply: The equipment will be powered by a hybrid solar system including solar array and generators. This consists of (2) Generators and (2) 450L fuel tanks on a platform fixed to rock via rock anchors to support the site with backup power. (6) Solar Arrays each containing 6 panels (36 in total) to be installed on a staggered layout. The footprint for each array is 3.9m x 3.4m. (11) Solar Battery Bank Units to be installed on a platform. Submains to be installed in above ground conduits.
- Ancillary equipment includes Safety Signage above ground, Ø150mm conduit from the mast downslope to the shelter, and a GPS antenna and CCTV security camera on the Shelter roof.
- Colour treatments to external equipment include disruptive pattern camouflage painting techniques, non-reflective treatments on steelwork, colour stain on visible concrete.
- Use of the existing helipad
- Removal of redundant TMRN equipment on site.

Offsite staging area: A Helicopter staging and material stockpiling location has been identified at the PWS Helipad Base located at Derwent Bridge 12.3km North East from site, GPS: -42.133251°, 146.22263°. This location is accessible by public roads and have cleared and graded surfaces.

The proposal has a new footprint area of 107 square meters.

The works are part of the TasGRN Project to provide one digital, public-safety grade radio network. This is a non-public network and there will be no provision for public access to the network (or telecommunications services).

Refer to Plans attached at Appendix B.

5 Subject Site

The existing DPFEM site is located within the Tasmanian Wilderness World Heritage Area and Franklin-Gordon Wild Rivers National Park, on an elevated position at, MT KING WILLIAM 1, CROWN LAND, SOUTHWEST TAS 7139. The site is located at an elevation of 1324m to ensure adequate radio communications to the region.

There is no title or PID information on the site and the GDA co-ordinates are -42.223936, 146.138763.

The site has long been established and is located in area used for communications. Access to the site is via helicopter only. There is an existing walking track approximately 5km back to Harbacks Road. The site is located on the rocky peak of Mt King William 1 and is regularly snow-capped in winter.

The existing DPFEM site accommodates a TMRN Equipment Shelter, Solar Array and Battery Bank at the northern end of the site located close to the site's helipad. A Parks and Wildlife radio hut and supporting solar panels are located to the southeast toward the highpoint on the site. Further southeast at the highpoint is a vacated bitumen and rock pad, and (2) 5m foldable monopoles hosting a number of antennas. The TMRN network has now been switched off in place of the TasGRN network. The redundant equipment will be removed form site.

The nearest settlement of Derwent Bridge is located approximately 15km north east of the site.

Refer to photos of the site and surrounds below.

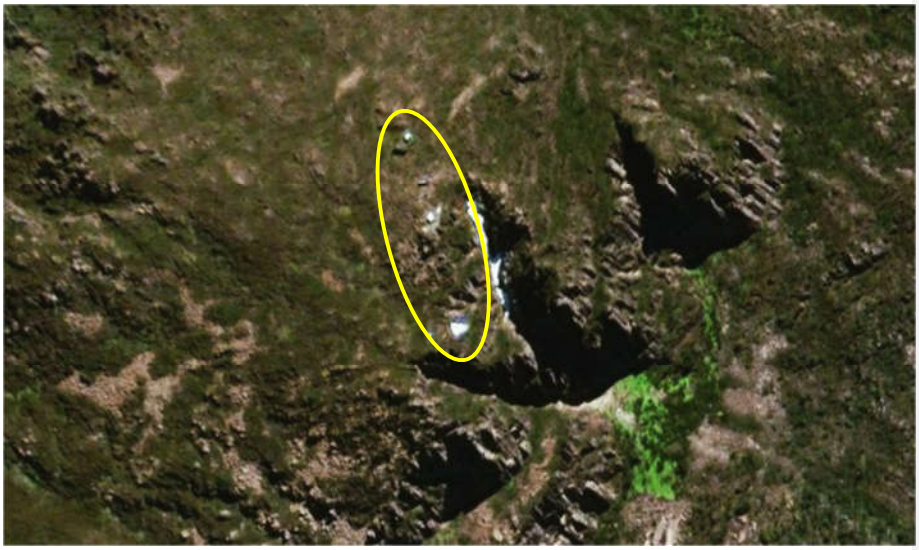


FIGURE 1 AERIAL VIEW OF SUBJECT SITE

FIGURE 2 BROAD AERIAL VIEW OF SUBJECT SITE (RED PIN) LOCATED TOWARD THE NORTHEAST BOUNDARY OF FRANKLIN-GORDON RIVER NATIONAL PARK, SHOWING OTHER COMMS SITES VIA WHITE CIRCLES AND LAKE KING WILLIAM TO THE EAST

FIGURE 3 AERIAL VIEW SHOWING SITE AT TOP OF MT KING WILLIAM (ELEVATION 1324M)

FIGURE 4 INTERNAL VIEW OF SITE SHOWING HELIPAD AND TMRN SHELTER AND BATTERY BANKS AND SOLAR ARRAY

FIGURE 5 INTERNAL VIEW OF SITE SHOWING PARKS AND WILDLIFE (PWS) HUT AND ADDITIONAL SOLAR ARRAY

FIGURE 6 INTERNAL VIEW OF SITE SHOWING VACANT BITUMEN PAD WHERE PROPOSED TASGRN MAST AND OMNI ANTENNA WILL BE LOCATED AND 5M FOLDABLE MONOPOLES

FIGURE 7 INTERNAL VIEW OF SITE LOOKING SOUTH EAST

FIGURE 8 AERIAL VIEW OF SITE LOOKING SOUTH

6 Regulatory Framework & Assessment

5.1 Federal Legislation

Radiocommunications Act 1992

The object of the *Radiocommunications Act 1992* is to provide for management of the radiofrequency spectrum in order to:

- maximise, by ensuring the efficient allocation and use of the spectrum, the overall public benefit derived from using the radiofrequency spectrum.
- make adequate provision of the spectrum for use by public or community services.
- provide a responsive and flexible approach to meeting the needs of users of the spectrum.
- encourage the use of efficient radiocommunication technologies so that a wide range of services of an adequate quality can be provided.
- provide an efficient, equitable and transparent system of charging for the use of spectrum, taking account of the value of both commercial and non-commercial use of spectrum.
- support the communications policy objectives of the Commonwealth Government.
- provide a regulatory environment that maximises opportunities for the Australian communications industry in domestic and international markets.
- promote Australia's interests concerning international agreements, treaties and conventions relating to radiocommunications or the radiofrequency spectrum.

The TasGRN Network is licensed to operate the under the relevant spectrum requirements within the 420-430MHz (UHF) and 160-175MHz (VHF).

Telecommunications (Low Impact Facilities) Determination 2018

The Telecommunications (Low-impact Facilities) Determination came into effect on 1st July 1997 and has recently been superseded by the *Telecommunications (Low-impact Facilities) Determination 2018.*

The Determination contains a list of Telecommunications (and Radiocommunications) Facilities that the Commonwealth will continue to regulate. These are facilities that are essential to maintaining telecommunications networks and are unlikely to cause significant community disruption during their installation or operation. These facilities are therefore considered to be 'Low-impact' and do not require planning approval under State or territory laws.

As the site is located in an Area of Environmental Significance, the works do not meet the provisions of the Determination and are required to be assessed under the relevant state and local planning provisions. The proposal is currently being assessed via an EIA Level 3 by PWS Tasmania, and also requires a Planning Permit (as per this application with Central highlands Council).

Commonwealth Environment Protection and Biodiversity Conservation Act 1999

The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act) provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places—defined in the EPBC Act as Matters of National Environmental Significance (MNES). MNES include World Heritage Properties such as the Tasmanian Wilderness World Heritage Area (TWWHA).

Approval from the Federal Minster is required under the Act, if an action will have, or is likely to have, a significant impact on a MNES. The test for 'significant impact' requires a world heritage value to be degraded, altered or modified.

Telstra has undertaken referral to the Department of Climate Change, Energy, the Environment and Water (DCCEEW) to assess if the activity is a controlled action under the (EPBC Act).

The referral contained a detailed assessment of potential impacts and mitigation to the Outstanding Universal Values (OUV) of the TWWHA from the proposed action. No submissions were received during the public consultation on the proposed action, and DCCEEW determined in March 2025 that the proposed action is not a controlled action if taken in a particular manner. *Refer to EPBC Referral Decision Notice 2024/09816 at Appendix F*. Telstra's detailed referral can be reviewed via this link: Project Decision · EPBC Act Public Portal

Additionally, the Tasmanian Wilderness World Heritage Area Management Plan 2016 (TWWHA) recognises existing uses and rights under provision 3.5:

> *3 .5 RECOGNITION OF EXISTING USES AND RIGHTS*
>
> *There is provision within the NPRMA for existing leases, licences and other rights to remain in force following reservation of land (s 35(3)). The provisions are of particular importance within the 2013 boundary extension. The intent and application of these provisions is acknowledged in the Management Plan.*

Electromagnetic Energy and Health

EMF is sometimes known as electromagnetic radiation (EMR) or electromagnetic energy (EME). Electromagnetic fields are present everywhere in our environment – the earth, sun and ionosphere are all natural sources of EMF.

Telstra rely on the expert advice of international and national health authorities including the World Health Organization (WHO) and the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) for overall assessments of health and safety impacts.

The International Commission on Non-Ionizing Radiation Protection (ICNIRP) has issued guidelines on levels of allowable public exposure to Radio Frequency (RF) fields, including guidelines on RF from mobile phones and base stations that Telstra adheres to. These guidelines have a large safety margin built into them.

Telstra confirms that the proposed TasGRN facility will comply with the mandated standard (RPS-S1) for EMF set by ARPANSA, which is based on the safety guidelines recommended by the WHO. The safety standard works by limiting the network signal to a level low enough to protect all people, in all environments, 24 hours a day. The safety limit itself has a significant safety margin built into it.

Further information about EMF can be sourced at:

- Commonwealth Department of Health (ARPANSA) www.arpansa.gov.au
- Australian Communications and Media Authority (ACMA) www.acma.gov.au
- World Health Organisation (WHO) www.who.int/en/

Built and Cultural Heritage

Built and Cultural Heritage

In order to ascertain if any cultural or natural heritage values of local, state or national significance apply to the site, a search was conducted of the relevant databases and heritage registers. The subject site within the World Heritage Area (TWWHA) Reserve and within the National Heritage Listed Franklin-Gordon Wild Rivers National Park. Telstra has undertaken referral to the Department of Climate Change, Energy, the Environment and Water (DCCEEW) to assess if the activity is a controlled action under the (EPBC Act). DCCEEW determined in March 2025 that the proposed action is not a controlled action if taken in a particular manner. *Refer to EPBC Referral Decision Notice 2024/09816 at Appendix F.*

Aboriginal Heritage

Aboriginal cultural heritage must be considered as part of all planning applications. This proposal was assessed against the Aboriginal Heritage Tasmania (AHT) Property Search website to assess if there were any matters of Aboriginal cultural heritage on the site. The search did not identify any registered Aboriginal relics or apparent risk of impacting Aboriginal relics.

As part of the PWS EIA Level 3 Assessment, an Aboriginal Cultural Heritage Assessment was undertaken and found no evidence of cultural heritage on the site. Consultation was also undertaken with the Tasmanian Aboriginal Community and Aboriginal Heritage Tasmania (AHT) and the Aboriginal Heritage Council (AHC). AHT acknowledged the findings and recommendations of the assessment and that for the purposes of the *Aboriginal Heritage Act 1975* the report conforms to the assessment standards outlined in the Aboriginal Heritage Standards and Procedures.

Refer to Appendix D for a copy of the AHT search record, and AHT Response on the Aboriginal Cultural Heritage Assessment Report.

Telstra are aware that all Aboriginal heritage is protected under the Aboriginal Heritage Act 1975. Telstra's constructors will be notified that if any Aboriginal heritage is found, works are to cease immediately and AHT be contacted for advice. The AHT Unanticipated Discovery Plan, will be provided to the constructors to have on hand during ground disturbing works, to aid in meeting the requirements under the Act.

5.2 Requirement for a Planning Permit

Under the provisions of the Central Highlands Planning Scheme, the proposed development falls under a Utility definition. A Utility is a discretionary Use within the Environmental Management Zone. However, pursuant to Clause 7.2, a discretionary use, must be considered as if that use class had permitted status in that Use Table, where the proposal for development does not establish a new use, or substantially intensify the use.

- A discretionary permit is required for Buildings and Works under the Environmental Management Zone.
- A discretionary permit is required under C5 Telecommunications Code
- There is no permit requirement under C15 Landslip Hazard Code; Low and medium landslip hazard band as the use is for a utility and the development requires authorisation under the Building Act 2016. However, a landslip hazard report has been undertaken to assess potential risks, and all recommendations will be implemented during construction activities. *Refer to Appendix 1.*
- There is no permit requirement under C13 Bushfire-prone Areas Code; Bushfire-prone areas as the proposal is not considered a vulnerable or hazardous use as defined in this Code.
- There is no permit requirement under C7 Natural Assets Code; Priority vegetation area as the vegetation is within a national park, and the native vegetation is not protected by legislation, a permit condition, an agreement made under section 71 of the Act, or a covenant. This is supported by the ***North Barker Natural Values Assessment*** **at Appendix E**

As such, an assessment of the proposal against the Acceptable Solutions (and where application the Performance Criteria) of the relevant Zone and Codes is provided below.

5.3 Central Highlands Planning Scheme Zone and Code Assessment

Clause 23 Environmental Management Zone

The proposed use and development is located within the Environmental Management Zone. A Utility is a discretionary Use within the Environmental Management Zone. However, pursuant to Clause 7.2, a discretionary use, must be considered as if that use class had permitted status in that Use Table, where the proposal for development does not establish a new use, or substantially intensify the use.

An assessment is provided below against the Development Standards for Buildings and Works.

23.4 Development Standards for Buildings and Works	
23.4.1 Development area **Objective: That the development area is:** **(a) compatible with the values of the site and surrounding area; and** **(b) minimises disturbance of the site.**	
Acceptable Solutions	**Assessment of Proposal**
A1 The development area must: (a) be not more than 500m²; (b) be in accordance with an authority under the National Parks and Reserve Management Regulations 2019 granted by the Managing Authority or the Nature Conservation Act 2002; or (c) be in accordance with an approval of the Director-General of Lands under the Crown Lands Act 1976.	The installation covers a maximum area of 107 square meters. Whilst the footprint will be increased on the site, care has been taken to position the infrastructure to utilise mainly rocky areas near the summit, largely free of vegetation. The footprint is the minimum size necessary to provide for and meet the technical and resiliency requirements under the TasGRN Project parameters, and for the safe operation of the site. The design also considered the remote area and the need to reduce helicopter maintenance trips to the site, whilst reducing reliance on fossil fuels with solar being the predominant power provision. The proposal is subject to an EIA Level 3 Assessment and PWS have given approval for the lodgement of this application.
23.4.2 Building height, setback and siting **Objective: That the design and siting of buildings responds appropriately to the values of the site and surrounding area.**	
Acceptable Solutions	**Assessment of Proposal**
A1 Building height must:	a) Not applicable as the maximum height in the Telecommunications Code applies in this

(a) be not more than 6m; (b) be in accordance with an authority under the National Parks and Reserve Management Regulations 2019 granted by the Managing Authority or Nature Conservation Act 2002; or (c) be in accordance with an approval of the Director-General of Lands under the Crown Lands Act 1976.	instance. (5.5.3 Where there is a conflict between a provision in a code and a provision in a zone, the code provision prevails.)
A2 Buildings must have a setback from all boundaries: (a) not less than 10m; (b) not less than the existing building for an extension; (c) in accordance with an authority under the National Parks and Reserve Management Regulations 2019 granted by the Managing Authority and/or Nature Conservation Act 2002; or (d) be in accordance with an approval of the Director-General of Lands under the Crown Lands Act 1976.	A2 Complies. The works are in proximity to the existing DPFEM equipment. There will be no significant change to setback conditions on the site. All setbacks meet the requirements under A2. The proposed works are located on an existing and established use within the TWWHA and as described under 3.5 of the TWWHA Management Plan. The proposal is subject to an EIA Level 3 Assessment and PWS have given approval for the lodgement of this application.
A3 Buildings for a sensitive use must be separated from an adjoining Rural Zone or Agriculture Zone: (a) not less than 200m; or (b) where an existing building for a sensitive use on the site is within 200m of that boundary, not less than the existing building.	A3 The works are not for a sensitive use. The proposed works are located on an existing and established Telecommunications use within the TWWHA and as described under 3.5 of the TWWHA Management Plan. The proposal is subject to an EIA Level 3 Assessment and PWS have given approval for the lodgement of this application.
23.4.3 Exterior finish **Objective: That exterior finishes are not prominent and blend with the character of the site and surrounding area.**	
Acceptable Solutions	**Assessment of Proposal**
A1 Exterior building finishes must: (a) be coloured using colours with a light reflectance value not more than 40% in dark natural tones of grey, green or brown; (b) be in accordance with an authority under National Parks and Reserve Management Regulations 2019 granted	Complies. An extensive Visual Impact and Wilderness Assessment has been prepared as part of the EIA Level 3 Process with PWS. As a result of the findings, and is available on request.

by the Managing Authority or the Nature Conservation Act 2002; or (c) be in accordance with an approval of the Director-General of Lands under the Crown Lands Act 1976.	Telstra will implement the finding of the report, specifically the following in relation to exterior building finishes: • use of materials of an appropriate finish, including low glare solar panels, to reduce the initial visual reflection; and • Employ the use of Disruptive Pattern Camouflage painting techniques such as the light grey, med grey, dark grey & olive green on a very light grey background colourations used by the Royal Australian Navy. • Use painted (dark colours as above) or a dull galvanised finish is all steel and/or aluminium elements to reduce reflectivity and better blend the works with the background. • Colour stain all visible concrete elements to tone down reflectivity using one of the following methods: dark coloured additive to general purpose concrete mix, application of a surface colour treatment such as an oxidizing compound, spray bitumen or a starchy material (to encourage moss formation). **Rendering montages are provided at Appendix H to demonstrate the exterior finishes. Please note since these 2023 VWIA Reports, 24 Solar Panels on 4 solar arrays have been removed from the designs at each site, footings have been reduced in bulk (concrete piers to steel posts) and all mitigaitons from the VWIA's will be implemented.**
23.4.4 Vegetation management **Objective: That the site contributes to the values of the surrounding area by restricting vegetation removal.**	
Acceptable Solutions	**Assessment of Proposal**
A1 Building and works must: (a) be located on land where the native vegetation cover has been lawfully removed; or (b) be in accordance with an authority under National Parks and Reserve Management Regulations 2019 granted	The proposal has undergone extensive assessment via a Natural Values Assessment. This report is available at Appendix E. The report found that: *Vegetation* *None of the units recorded in our investigation accord to communities listed as threatened*

by the Managing Authority or the Nature Conservation Act 2002.	*under the Tasmanian Nature Conservation Act 2002 (NCA) or the Commonwealth Environment Protection and Biodiversity Conservation Act 2000 (EPBCA).* *<u>Threatened Flora</u>* *No threatened flora species were observed nor are considered to be at risk.* *<u>Weeds and Plant Pathogens</u>* *No declared weeds were observed.* *Appropriate construction hygiene should be applied to avoid the spread/introduction of weeds or introduction of pathogens. These should be included in any Construction Environment Management Plan.* PWS have provided approval for the lodgement of this application as a result of the review and ongoing assessment of the EIA Level 3. Telstra will adhere to all commitments made as part of this process.

C5 Telecommunications Code

The purpose of the Telecommunications Code is:

- To provide for telecommunication networks as a service for the community.
- To ensure that facilities are co-located where practicable.
- To ensure that facilities use mitigation measures to avoid an unreasonable loss of visual amenity.

An assessment is provided below against the Development Standards for Buildings and Works.

C5.6.1 Visual amenity **Objective: That facilities do not cause an unreasonable loss of visual amenity.**	
Acceptable Solutions	**Assessment of Proposal**
A1 No Acceptable Solution.	
Performance Criteria	**Assessment of Proposal**
P1.1 Facilities located within existing utility corridors or on sites with existing facilities, must not cause an unreasonable loss of visual amenity, having regard to:	Complies. The proposal is located in an existing utility corridor and will be located in proximity to the existing radiocommunications facilities on the site.

(a) the siting and design of facilities; (b) best practice methods to: (i) reduce the visual impact of facilities; or (ii) conceal facilities within the surrounding natural or built environment; (c) the need to minimise clearing of vegetation; and (d) functional and safety requirements to establish, operate and maintain facilities.	An extensive Visual Impact and Wilderness Assessment has been prepared as part of the EIA Level 3 Process with PWS. As a result of the findings, and is available on request. Tesltra will implement the findings of the report, specifically the following in relation to exterior building finishes: • use of materials of an appropriate finish, including low glare solar panels, to reduce the initial visual reflection; and • Employ the use of Disruptive Pattern Camouflage painting techniques such as the light grey, med grey, dark grey & olive green on a very light grey background colourations used by the Royal Australian Navy. • Use painted (dark colours as above) or a dull galvanised finish is all steel and/or aluminium elements to reduce reflectivity and better blend the works with the background. • Colour stain all visible concrete elements to tone down reflectivity using one of the following methods: dark coloured additive to general purpose concrete mix, application of a surface colour treatment such as an oxidizing compound, spray bitumen or a starchy material (to encourage moss formation). **Rendering montages are provided at Appendix H to demonstrate the exterior finishes.** Please note since these 2023 VWIA Reports, 24 Solar Panels on 4 solar arrays have been removed from the designs at each site, footings have been reduced in bulk (concrete piers to steel posts) and all mitigations from the VWIA's will be implemented. The installation covers a maximum area of 107 square meters. Whilst the footprint will be increased on the site, care has been taken to position the infrastructure to utilise mainly rocky areas near the summit, largely free of vegetation. The footprint is the minimum size necessary to provide for and meet the technical and resiliency requirements under the TasGRN

	Project parameters, and for the safe operation of the site. The site is in the World Heritage Tasmanian Wilderness. The proposed upgrade is located within proximity to the existing DPFEM radiocommunications equipment at the highpoint on Mt King William. Equipment and materials will be delivered to site via helicopter and will utilise the existing helipad and stand areas. The equipment shelter, generators, fuel tanks, and solar panels will be installed on rock anchors, concrete pads, and steel posts which will be no larger than required to support the proposed equipment. Due to the limited nature of the proposed works in terms of ground disturbance and duration there is no undue threat to flora and fauna in the area. Additionally, there will not be a significant impact to matters relating the location within the World Heritage Tasmanian Wilderness. A Natural Values Assessment has been prepared at **Appendix E** and provided recommendations for action to be taken during and post construction works. The report found there was no undue threat to fauna and flora. Telstra will implement all the recommendations of this report, along with the particular manner of the EPBC Referral Decision, and the commitments made in the PWS EIA Level 3 RAA. The works will ensure a modern reliable emergency services network that will assist in the protection of remote and valued heritage landscapes in times of emergency such as bushfires.
A2 Building height of freestanding towers must be not more than: (a) 30m in the Rural Living Zone, General Business Zone, Central Business Zone, Commercial Zone, General Industrial Zone, Rural Zone, Agriculture Zone, Landscape Conservation Zone, Environmental Management Zone,	Complies. The proposed tower is well within the acceptable height, being 12.9m.

Major Tourism Zone, Port and Marine Zone, or Utilities Zone; (b) 20m in the General Residential Zone, Inner Residential Zone, Low Density Residential Zone, Village Zone, Urban Mixed Use Zone, Local Business Zone, Light Industrial Zone, Community Purpose Zone, Recreation Zone, Open Space Zone, Future Urban Zone and a particular purpose zone.	

The proposed development meets the majority of the Acceptable Solutions and the relevant Performance Criteria within the development standards of the Environmental Management Zone and the Telecommunications Code. As such, a discretionary permit is required.

The omni antenna is a critical element in the new Tasmanian Government Radio Network and is sited to ensure the efficient and safe operation of the network.

Overall, the proposed development represents an acceptable change to the existing conditions on the site. The facility has been appropriately sited and designed to minimise visibility and amenity impacts on the surrounding environment as much as possible. There will a moderate visual impact from the proposed installation and a small height increase of 7.9m to the existing conditions on site.

In the overall context of the social and economic benefits the TASGRN Network will deliver, a reasonable balance has been struck with the siting and design of the TasGRN Facility

6 Conclusion

This application forms an integral part of the TasGRN Project. The Project is a direct result of the Tasmanian Government's response to the *Report of the Auditor-General No. 10 of 2013-2014* which recommended a whole-of-Government radio network (Tasmanian Government Radio Network - TasGRN).

The result will be a more reliable and resilient network enabling the provision of better services to the Tasmanian community.

The proposed development meets the purpose and Acceptable Solutions and the relevant Performance Criteria of the Telecommunications Code and the Environmental Management Zone.

The proposed upgrade to the existing DPFEM facility at Mount King William1, SOUTHWEST TAS 7139, will from an integral component in the new Tasmanian Government Radio Network.

Acquirecomm on behalf of Telstra, have undertaken an assessment of the relevant matters as required by the *Radiocommunications Act 1992,* the *Telecommunications Act 1997*, the Central Highlands *Planning Scheme 2015,* the *Environment Protection and Biodiversity Conservation Act 2000*, and the

Aboriginal Heritage Act 1975. The proposal is considered appropriate in light of the relevant legislative, environmental, technical, radio coverage and public safety requirements.

It is noted that the proposal is currently being assessed via an EIA Level 3 by PWS Tasmania. Telsra will adhere to all commitments made during this process. Additionally, An EBPC Referral Decision Notice determined that the proposal was not a controlled action (with Particular Manners). Refer to Appendix F. Telstra will also adhere to the particular manners as outlined in the decision notice.

This assessment demonstrates that the proposal achieves a reasonable balance between the provision of essential radio communication services and the need to protect the environment from adverse impacts from such development, particularly with the particular manners implemented under the EPBC Act, and the PWS RAA Assessment and commitments. It is respectively requested that permission is granted for this permit application.

Appendix A Certificate of Title

NO TITLE AVAILABLE

Acquirecomm
CONNECTING TRANSFORMING DELIVERING.

Appendix B Plans and Elevations

DRAWING DESCRIPTION	DRAWING NUMBER	SHEET NO.	ISSUE NO.	ISSUE DATE	DRAWING STATUS				
					CANCELLED	PRELIMINARY	FOR CONSTRUCTION	AS BUILT	REFERENCE ONLY
SITE SPECIFIC NOTES - SHEET 1 OF 2	T113006	S0	2	15/05/25			✓		
SITE SPECIFIC NOTES - SHEET 2 OF 2	T113006	S0-1	2	15/05/25			✓		
SITE LAYOUT AND ACCESS	T113006	S1	2	15/05/25			✓		
SITE SETOUT PLAN	T113006	S1-1	2	15/05/25			✓		
ANTENNA LAYOUT PLAN	T113006	S1-2	2	15/05/25			✓		
EAST ELEVATION	T113006	S3	2	15/05/25			✓		
ANTENNA CONFIGURATION TABLE	T113006	S3-1	2	15/05/25			✓		
SITE EARTHING	T113006	G4	1	25/11/21			✓		
RADIO CONNECTION SCHEMATIC	T113006	A2	1	25/11/21			✓		
ELECTRICAL SPECIFICATION	T113006	E0	2	15/05/25			✓		
EQUIPMENT LAYOUT	T113006	E1	2	15/05/25			✓		
SOLAR HYBRID SYSTEM - BLOCK DIAGRAM	T113006	E2	2	15/05/25			✓		
DC POWER LINE DIAGRAM	T113006	E4	1	25/11/21			✓		
RACK LAYOUT	T113006	E5	1	25/11/21			✓		
EQUIPMENT SHELTER FOOTINGS - TAS GRN - SHEET 1	T113006	H1	2	15/05/25			✓		
EQUIPMENT SHELTER FOOTINGS - TAS GRN - SHEET 2	T113006	H1-1	2	15/05/25			✓		
EQUIPMENT SHELTER FOOTINGS - TAS GRN - SHEET 3	T113006	H1-1A	1	15/05/25			✓		
FOOTING DETAILS - SHEET 1	T113006	T2	2	15/05/25			✓		
FOOTING DETAILS - SHEET 2	T113006	T2-1	2	15/05/25			✓		
ANTENNAS A1 & A5 MOUNT DETAILS - SHEET 1	T113006	T3	1	25/11/21			✓		
ANTENNAS A1 & A5 MOUNT DETAILS - SHEET 2	T113006	T3-1	1	25/11/21			✓		
ANTENNA A2 MOUNT DETAILS - SHEET 1	T113006	T3-2	1	25/11/21			✓		
ANTENNA A2 MOUNT DETAILS - SHEET 2	T113006	T3-3	1	25/11/21			✓		
MAST GENERAL ARRANGEMENT	T113006	T4	1	25/11/21			✓		
MAST SEGMENT DETAILS	T113006	T4-1	1	25/11/21			✓		
TOP SEGMENT DETAILS	T113006	T4-2	1	25/11/21			✓		
HORIZONTAL BOTTOM BRACE DETAIL	T113006	T4-3	1	25/11/21			✓		
SOLAR FRAME & FOOTING DETAILS - SHEET 1	T113006	T8	2	15/05/25			✓		
SOLAR FRAME & FOOTING DETAILS - SHEET 2	T113006	T8-1	2	15/05/25			✓		
SOLAR FRAME & FOOTING DETAILS - SHEET 3	T113006	T8-1A	1	15/05/25			✓		
SOLAR FRAME & FOOTING DETAILS - SHEET 4	T113006	T8-2	2	15/05/25			✓		
SOLAR FRAME & FOOTING DETAILS - SHEET 5	T113006	T8-3	2	15/05/25			✓		
SOLAR FRAME & FOOTING DETAILS - SHEET 6	T113006	T8-3A	1	15/05/25			✓		
SOLAR FRAME & FOOTING DETAILS - SHEET 7	T113006	T8-4	2	15/05/25			✓		

Telstra

MT. KING WILLIAM

TAS GRN SITE 079

ADDRESS: FRANKLIN-GORDON WILD RIVERS NATIONAL PARK
SOUTHWEST
TAS 7139

APD GLOBAL

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
TASGRN079	JM	HG	FOR CONSTRUCTION - SP30091946WO050DOWN - TASGRN	DP	GRW	25.11.21	1
TASGRN079	SR	MB	FOR CONSTRUCTION - SP80005737WO001APD-TASGRN	RC	PR	15.05.25	2

Telstra

TAS GRN SITE 079
MT. KING WILLIAM
DRAWING INDEX AND DOCUMENT CONTROL - SHEET 1 OF 2
FRANKLIN-GORDON WILD RIVERS NATIONAL PARK, SOUTHWEST, TAS 7139

DWG NO. T113006 SHT NO. DC

Cad file: T113006.dwg A3

DO NOT SCALE

DRAWING DESCRIPTION	DRAWING NUMBER	SHEET NO.	ISSUE NO.	ISSUE DATE	DRAWING STATUS				
					CANCELLED	PRELIMINARY	FOR CONSTRUCTION	AS BUILT	REFERENCE ONLY
GENSET PLATFORM DETAILS - SHEET 1	T113006	T8-5	2	15/05/25			✓		
GENSET PLATFORM DETAILS - SHEET 2	T113006	T8-5A	1	15/05/25			✓		
GENSET PLATFORM DETAILS - SHEET 3	T113006	T8-6	2	15/05/25			✓		
GENSET PLATFORM DETAILS - SHEET 4	T113006	T8-6A	1	15/05/25			✓		
GENSET PLATFORM DETAILS - SHEET 5	T113006	T8-7	2	15/05/25			✓		
GENSET PLATFORM DETAILS - SHEET 6	T113006	T8-8	2	15/05/25			✓		
BATTERY BANK PLATFORM DETAILS - SHEET 1	T113006	T8-9	2	15/05/25			✓		
BATTERY BANK PLATFORM DETAILS - SHEET 2	T113006	T8-10	2	15/05/25			✓		
BATTERY BANK PLATFORM DETAILS - SHEET 3	T113006	T8-11	2	15/05/25			✓		
BATTERY BANK PLATFORM DETAILS - SHEET 4	T113006	T8-12	2	15/05/25			✓		
STANDARD REFERENCE DRAWINGS									
STANDARD CONSTRUCTION NOTES	017866P05	1	2	19/11/10			✓		
CIRCULAR U BOLTS GALVANISED MILD STEEL	017866P70	4	3	27/06/18			✓		
COLD BENT ANGULAR BOLTS	017866P71	23	1	20/11/17			✓		
COLD BENT SQUARE U BOLT TO SUIT PFC DIAMETER 16 STAINLESS STEEL	017866P71	53	1	30/05/18			✓		
EQUIPMENT ALARM CONFIGURATION	017866P123	1	2	29/09/20			✓		
DC POWER LINE DIAGRAM ICS MK 3.2 SHELTER-FLATPACK 2 POWER SYSTEM	017866P124	2	6	07/03/12			✓		
ELECTRICAL SPECIFICATION	017866P160	1	4	30/09/20			✓		
MOBILE NETWORK SITE EARTHING STANDARDS DETAILS & CONNECTIONS GALVANISED STEEL BASED SYSTEM	017866P200	1	3	28/08/12			✓		
DETAILS & CONNECTIONS GALVANISED STEEL BASED SYSTEM	017866P201	1	2	14/04/15			✓		
TYPICAL ENHANCEMENT COMPOUND INSTALLATION TO EARTH ELECTRODE & EARTH STRAP	017866P201	5	1	15/03/11			✓		
FEEDER EARTHING DETAILS	017866P201	11	2	13/05/15			✓		
ICS SHELTER AND FITOUT ROOM INTERNAL EARTHING DETAIL	017866P201	13	4	09/06/16			✓		
STEEL POLE EARTHING DETAIL	017866P205	1	2	14/04/15			✓		
GENERIC GREENFIELD SITE STEEL POLE PIER BORE 2 x 10 METRE DEEP ELECTRODES	017866P205	10	3	13/04/16			✓		
3.0m x 2.5m SHELTER (STEEL BASEFRAME) FLOOR PLAN	TEL.BS2.BA-A001-A	1	A	20/02/17			✓		
3.0m x 2.5m SHELTER (STEEL BASEFRAME) REFLECTED CEILING	TEL.BS2.BA-A002-A	1	A	20/02/17			✓		
3.0m x 2.5m SHELTER (STEEL BASEFRAME) EXTERNAL ELEVATIONS	TEL.BS2.BA-A101-A	1	A	20/02/17			✓		
3.0m x 2.5m SHELTER (STEEL BASEFRAME) INTERNAL ELEVATIONS	TEL.BS2.BA-A102-A	1	A	20/02/17			✓		
3.0m x 2.5m SHELTER (STEEL BASEFRAME) BASEFRAME	TEL.BS2.BA-A201-A	1	A	20/02/17			✓		
BDM CUBE TANK 450L	-	1	1	04/09/18			✓		

Telstra

MT. KING WILLIAM

TAS GRN SITE 079

ADDRESS: FRANKLIN-GORDON WILD RIVERS NATIONAL PARK
SOUTHWEST
TAS 7139

APD GLOBAL

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
TASGRN079	JM	HG	FOR CONSTRUCTION - SP30091946WO050DOWN - TASGRN	DP	GRW	25.11.21	1
TASGRN079	SR	MB	FOR CONSTRUCTION - SP80005737WO001APD-TASGRN	RC	PR	15.05.25	2

Telstra

TAS GRN SITE 079
MT. KING WILLIAM
DRAWING INDEX AND DOCUMENT CONTROL - SHEET 2 OF 2
FRANKLIN-GORDON WILD RIVERS NATIONAL PARK, SOUTHWEST, TAS 7139

DWG NO. T113006 SHT NO. DC-1

Cad file: T113006.dwg A3

DO NOT SCALE

SITE SPECIFIC NOTES

EQUIPMENT SHELTER

TYPE: PROPOSED TAS GRN SHELTER (3.0m x 2.5m)
(MUST BE DELIVERED FLATPACK)
FEEDER ENTRY WINDOW: REAR RIGHT SIDE
DC FAN CAGE: YES
REFERENCE DRAWING: SHEET E1.
COLOUR: DISRUPTIVE PATTERN CAMOUFLAGE

STRUCTURE

TYPE: PROPOSED 7.0m HIGH MAST
MODEL No.: N/A
HEIGHT: 7.0m
COLOUR: N35 LIGHT GREY
MUST CONTAIN LESS THAN 40% LIGHT REFLECTING VALUE (LRV)
REFERENCE DRAWING: SHEETS T4 TO T4-3

ANTENNAS

TYPE: REFER TO ANTENNA CONFIGURATION TABLE ON SHEET S3-1.
COLOUR: N/A

ANTENNA ACCESS

TELSTRA: CLIMBING PEGS VIA QUALIFIED RIGGER

ANTENNA MOUNTS

TYPE: PROPOSED FACE MOUNT
COLOUR: N35 LIGHT GREY
REFERENCE DRAWING: SHEETS T3 TO T3-3

FEEDERS

TYPE: LCF78-50JA
QUANTITY: (2 OFF)

EARTHING

ALL EARTHING SHALL BE AS PER TELSTRA EARTHING MANUAL 017866a07.

PROPOSED 3 x 2.88m EARTH ELECTRODE.

REFER TO TELSTRA STANDARD DRAWING 017866P206 SHEET 1 FOR TOWER EARTHING & SHEET G4 FOR SITE SPECIFIC EARTHING DETAILS.

ENVIRONMENTAL ISSUES

REFER TO ENVIRONMENTAL RISK ASSESSMENT PROCEDURE DOCUMENT NUMBER: 018502

POWER SUPPLY

NO MAINS SUPPLY AVAILABLE. PROPOSED TAS GRN INSTALLATION SHALL BE POWERED VIA SOLAR HYBRID SYSTEM TO INCLUDE PV ARRAY AND DUAL ONSITE GENERATORS. REFER TO SHEETS E0, E2 AND E4 FOR DETAILS.

PROPERTY SIGNAGE

SPECIFY PROPERTY SIGNAGE AS PER DOCUMENT 017866A12. PROPERTY SIGN INCLUDES RFNSA SITE NUMBER. SITE NAME: BRANDED SITE IDENTIFICATION REGULAR (BSr). TELSTRA S/I NUMBER 187/00929. JABAC PART NUMBER TFMS929-M.

ALL SIGNAGE TO BE MAXIMUM 2m ABOVE GROUND LEVEL, SIGNAGE TO BE BLACK BACKGROUND WITH WHITE TEXT TO REDUCE VISIBILITY AT A DISTANCE.

SITE ACCESS

SITE ACCESS VIA HELICOPTER ONLY.
STAGING LOCATION:
STAGING AREA NOMINATED TO BE PWS HELIPAD LOCATED AT DERWENT BRIDGE - 12.3km NORTH EAST FROM SITE.
GPS: -42.133251° , 146.22263°
CONTACT TAS PARKS AND WILDLIFE FOR UTILIZATION

SITE SIGNAGE

ALL EME SIGNAGE IS REFERENCED ON DRAWINGS S1-1 & S3. REFER TO DOCUMENT 005486 FOR DETAILS.

6 EME TELSTRA #6 SIGN
PROPOSED EME SIGN TO BE SECURED ON MAST LEG AT 1.5m AGL

#13 EME TELSTRA #13 SIGN
PROPOSED EME SIGN TO BE SECURED TO PROPOSED SHELTER GATE AND STAMPED WITH RFNSA No.: 7139005

ALL SIGNAGE TO BE MAXIMUM 2m ABOVE GROUND LEVEL, SIGNAGE TO BE BLACK BACKGROUND WITH WHITE TEXT TO REDUCE VISIBILITY AT A DISTANCE.

WORKPLACE HEALTH & SAFETY

THE PRESENCE ASBESTOS HAS NOT BEEN CONFIRMED BUT IS ASSUMED TO BE PRESENT ON SITE. REVIEW OF SUSPECTED ASBESTOS WITHIN EXISTING INFRASTRUCTURE ON SITE TO BE COMPLETE PRIOR TO CONSTRUCTION AND INCLUDED IN CEMP.

GENERAL NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SPECIFIED OTHERWISE.
2. BIRD PROOFING - CABLES AND ALL ACCESS POINTS ON THE STRUCTURE MUST BE BIRD PROOFED IN ACCORDANCE WITH THE METHODS SPECIFIED IN DOCUMENT NO. 003615 EXTERNAL PLANT STANDARDS FOR MOBILE BASE STATIONS, SECTION 6.3.3. FOR QUEENSLAND, ALL FEEDERS ARE TO BE BIRD PROOFED WHEN INSTALLED.
3. SERVICES, WHERE SHOWN ARE INDICATIVELY ONLY. LOCATION OF ALL RELEVANT EXISTING SERVICES SHALL BE IDENTIFIED AND CONFIRMED PRIOR TO COMMENCING WORK. THE CONTRACTOR TO LIAISE WITH RELEVANT AUTHORITIES FOR DIRECTIONS AND PERMITS REQUIRED. DIAL BEFORE YOU DIG 1100 AND LOCATE ALL UNDERGROUND SERVICES PRIOR TO ANY EXCAVATION WORK.
4. FEEDER CONNECTION DETAILS, ELECTRICAL AND MECHANICAL TILTS ARE TO BE OBTAINED FROM CANRAD REPORTS.
5. CONSTRUCTORS ARE TO BE AWARE OF TELSTRA DOCUMENT 007338-C8-11 AND IN PARTICULAR CLAUSE 7.3 & 10.3 WHICH DESCRIBES REQUIREMENTS PERSONNEL MUST UNDERTAKE IN RESPECT TO ASBESTOS MANAGEMENT AT TELSTRA FACILITIES.

SPECIAL NOTES

1. PROPOSED SHELTER TO BE INSTALLED VIA FLAT PACK INSTALLATION DUE TO INSTALLATION AND ACCESS LIMITATIONS. ENSURE MAXIMUM WEIGHT PER LOAD IS 800KG FOR SAFE HELICOPTER TRANSPORTATION.
2. SOLAR PANEL FRAMES TO BE ALUMINIUM DUE TO WEIGHT LIMITATION. TO BE PREASSEMBLED IN SECTIONS PRIOR AND LIMITED TO 800KG.
3. PROPOSED TOWER & GENERATOR TO BE PREASSEMBLED IN SECTIONS LIMITED TO MAXIMUM 800KG TO MEET THE LIFTING CAPACITY OF HELICOPTER TRANSPORTATION.
4. GENERATOR COLOUR TO BE DISRUPTIVE PATTERN CAMOUFLAGE.
5. REFER COMMSTAR CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN (CEMP REV X DATED XX/XX/XX)

TO BE READ IN CONJUNCTION WITH SHEETS S1, S1-1, S1-2, S3 & S3-1.

SITE REFERENCE DETAILS

OCCUPIER	SITE NAME	SITE CODE
TELSTRA	MT. KING WILLIAM	357320
TAS GRN	MT. KING WILLIAM	079
RFNSA SITE NUMBER - 7139005 STRUCTURE OWNER - TAS GRN		

SERVICES LEGEND

- OPTICAL FIBRE ABOVE GROUND
- OPTICAL FIBRE BELOW GROUND
- ABOVE GROUND ELECTRICAL SUPPLY
- BELOW GROUND ELECTRICAL SUPPLY
- GAS SUPPLY BELOW GROUND
- HIGH VOLTAGE ELECTRICAL SUPPLY
- WATER SUPPLY ABOVE GROUND
- WATER SUPPLY BELOW GROUND
- SEWER LINE
- STORM WATER
- ABOVE GROUND FEEDER CABLES
- BELOW GROUND FEEDER CABLES

(X) AX — EXISTING TELSTRA ANTENNA SECTOR

(X) AX ---------- PROPOSED TELSTRA ANTENNA SECTOR

COMPLIANCE BOX
COMPLETED AS PER DESIGN ☐
ALTERATIONS IN RED ☐
NAME (PRINT)
SIGNATURE DATE

2 FOR CONSTRUCTION

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
TASGRN079	JM	HG	FOR CONSTRUCTION - SP30091946WO050DOWN - TASGRN	DP	GRW	25.11.21	1
TASGRN079	SR	MB	FOR CONSTRUCTION - SP80005737WO001APD-TASGRN	RC	PR	15.05.25	2

APD GLOBAL

Telstra

TAS GRN SITE 079
MT. KING WILLIAM
SITE SPECIFIC NOTES - SHEET 1 OF 2
FRANKLIN-GORDON WILD RIVERS NATIONAL PARK, SOUTHWEST, TAS 7139

DWG NO. T113006 SHT NO. S0

Cad file: T113006.dwg A3

DO NOT SCALE

EQUIPMENT NOTES - PROJECT NO. TASGRN079

ITEM	EQUIPMENT	EQUIPMENT DETAILS	EXISTING	PROPOSED	TOTAL	REFERENCE DWG
1	RFS LCF78-50JA FEEDERS (TAS GRN)	COAXIAL CABLE (70m)	0	2	2	-
2	RFS LCF12-50J FEEDERS (MW DISH)	COAXIAL FEEDER (70m)	0	4	4	-
3	ENATEL SY-FLEXI7 SYSTEM RACK (PSU) WITH DUAL GENERATOR SETUP	600 x 600 x 2200mm (W,D,H)	0	1	1	SHEETS E1, E4
4	RM3048 RECTIFIER MODULES	-	0	8	8	SHEET E4
5	SM1848HE SOLAR REGULATOR MODULES	-	0	4	4	SHEET E4
6	2SGU595 BATTERIES	29.5kg PER BATTERY. 11 STRINGS OF 24 BATTERIES	0	264	264	SHEET E4
7	CM612-48 DC/DC CONVERTER MODULES	-	0	4	4	SHEET E4
8	LIGHTNING SURGE ARRESTOR	POLYPHASER VHF50HD POWER COMBINER PROTECTOR	0	2	2	SHEET A2
9	ONSITE GENERATOR	HYW-17 M5 230V (14.1kVA) WITH INTEGRATED FUEL TANK AND FITTED EXHAUST SPARK ARRESTOR	0	2	2	-
10	BLUE DIAMOND FUEL CUBE	450L - 1020 X 1210 X 840mm (W,D,H)	0	2	2	-
11	MOTOROLA - GTR8000 PREASSEMBLED RACK	VHF - 6 CHANNELS	0	1	1	SHEET A2
12	SOLAR PANELS	QCELL 400W	0	36	36	-
13	BATTCUBE - HELI PODS	BATTCUBE BE-1699-01 (900 x 630 x 1094)	0	11	11	-

EQUIPMENT COLOUR:

BATTERY CUBES, GENERATORS AND SHELTER TO BE PAINTED USING DISRUPTIVE PATTERN CAMOUFLAGE PAINTING TECHNIQUES SUCH AS THE LIGHT GREY, MED GREY, DARK GREY AND OLIVE GREEN ON A VERY LIGHT GREY BACKGROUND COLOURATIONS.

ALL STEELWORK TO BE PAINTED OR DULL GALVANIZED FINISH TO REDUCE REFLECTIVITY.

ALL VISIBLE CONCRETE ELEMENTS TO BE PAINTED USING COLOUR STAIN TO TONE DOWN REFLECTIVITY USING ONE OF THE FOLLOWING METHOD: DARK COLOUR ADDITIVE TO GP CONCRETE MIX, OR APPLICATION OF SURFACE COLOUR TREATMENT SUCH AS AN OXIDIZING COMPOUND OR SPRAY BITUMEN.

COMPLIANCE BOX
COMPLETED AS PER DESIGN ☐
ALTERATIONS IN RED ☐
NAME (PRINT)
SIGNATURE DATE

2 FOR CONSTRUCTION

TO BE READ IN CONJUNCTION WITH SHEETS S1, S1-1, S1-2, S3 & S3-1.

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
TASGRN079	JM	HG	FOR CONSTRUCTION - SP30091946WO050DOWN - TASGRN	DP	GRW	25.11.21	1
TASGRN079	SR	MB	FOR CONSTRUCTION - SP80005737WO001APD-TASGRN	RC	PR	15.05.25	2

APD GLOBAL

Telstra

TAS GRN SITE 079
MT. KING WILLIAM
SITE SPECIFIC NOTES - SHEET 2 OF 2
FRANKLIN-GORDON WILD RIVERS NATIONAL PARK, SOUTHWEST, TAS 7139

DWG NO. T113006 SHT NO. S0-1

Cad file: T113006.dwg A3

TN

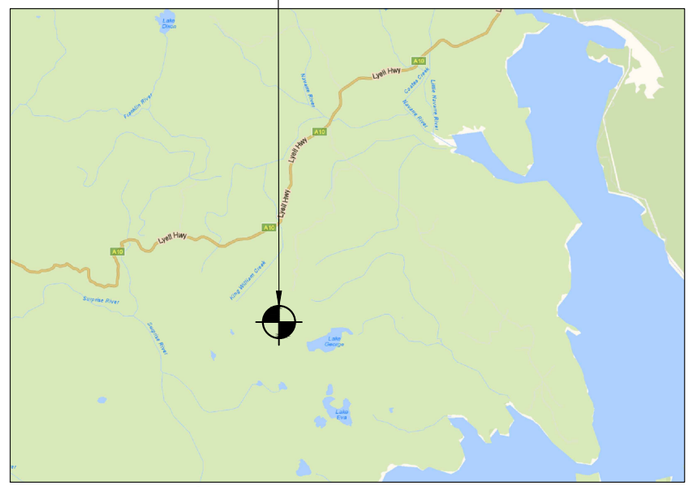
MT KW1 WALKING TRACK (NOT FOR CONSTRUCTION ACCESS - APPROX 5.0km TO HARBACK ROAD)

EXISTING HELICOPTER PAD AND WALKWAY

PROPOSED SITE WITH TAS GRN EQUIPMENT. REFER TO SHEET S1-1 FOR SITE SETOUT 2

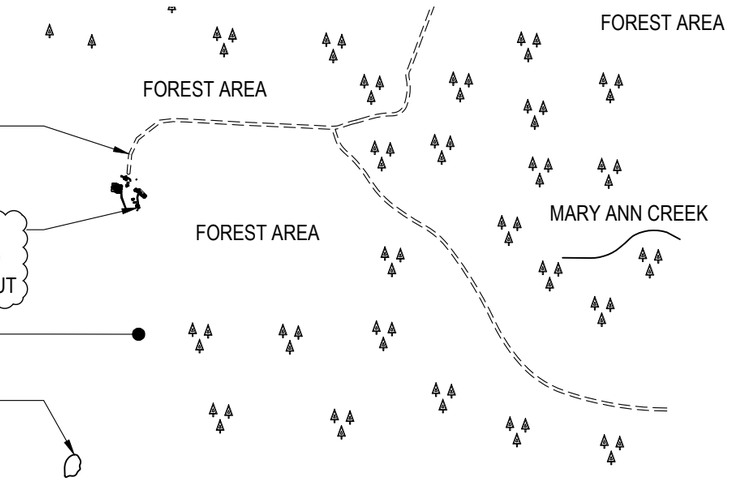
1320
1310
1300
1290
1290
1280
1270
1260
1250
1240
1230
1220
1210
1200

RFNSA SITE No. 7139005



LOCALITY PLAN

NOT TO SCALE



COMPLIANCE BOX

COMPLETED AS PER DESIGN ☐

ALTERATIONS IN RED ☐

NAME (PRINT)

SIGNATURE DATE

SITE LAYOUT

SCALE 1:1000

10m 0 10m 20m 30m 40m 50m SCALE 1:1000

SITE ACCESS

SCALE 1:10000

100m 0 100m 200m 300m 400m 500m SCALE 1:10000

NOTES:

1. ALL EXTERNAL FEEDERS AND TAILS MUST BE BIRD PROOFED AS PER EXTERNAL PLANT POLICY 003615.
2. FOR SITE SPECIFIC NOTES REFER TO SHEETS S0 & S0-1.
3. FOR EME SIGNS NOTED THUS #X REFER TO 005486 FOR DETAILS.

PROPERTY DESCRIPTION

CROWN LAND

SITE STRUCTURE CO-ORDINATES (GDA94) GPS READING ACCURACY: ± 10m CENTRE OF MAST	
LATITUDE	-42.22421° (GDA 94)
LONGITUDE	146.13885° (GDA 94)

APD GLOBAL

DO NOT SCALE

2 FOR CONSTRUCTION

TO BE READ IN CONJUNCTION WITH SHEETS S1-1, S1-2, S3 & S3-1.

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
TASGRN079	JM	HG	FOR CONSTRUCTION - SP30091946WO050DOWN - TASGRN	DP	GRW	25.11.21	1
TASGRN079	SR	MB	FOR CONSTRUCTION - SP80005737WO001APD-TASGRN	RC	PR	15.05.25	2

Telstra

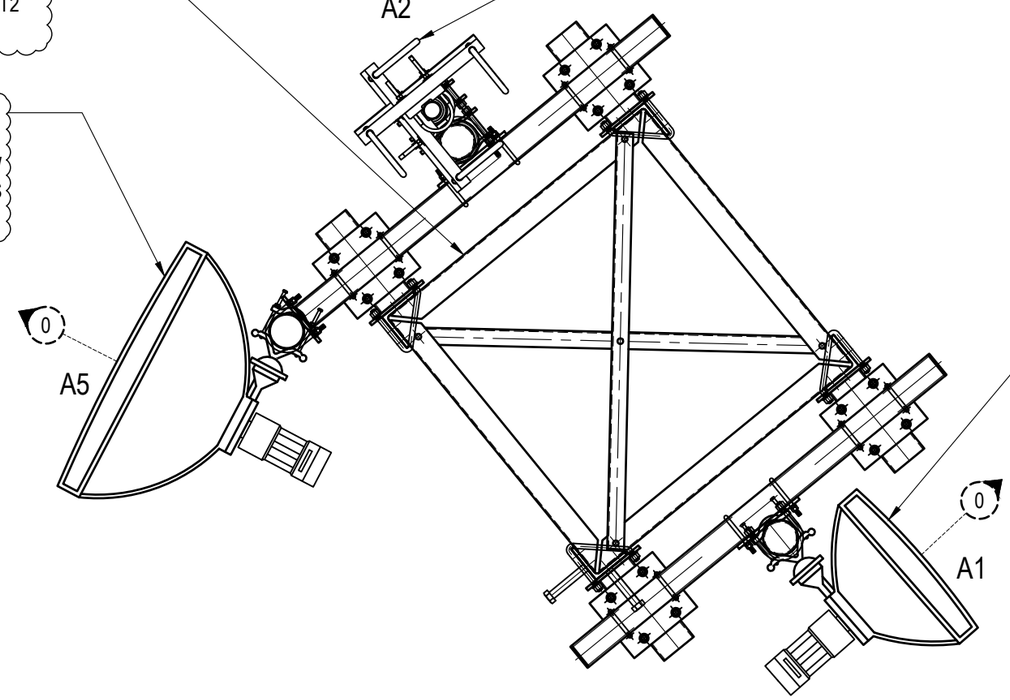
TAS GRN SITE 079
MT. KING WILLIAM
SITE LAYOUT AND ACCESS
FRANKLIN-GORDON WILD RIVERS NATIONAL PARK, SOUTHWEST, TAS 7139

DWG NO. T113006 SHT NO. S1

Cad file: T113006.dwg A3

TN

MAST ORIENTATION
49° TN



2 PROPOSED TAS GRN VHF BA4040-41-P-ICE DIPOLE ON MOUNTING POLE (1 OFF A2) TO BE INSTALLED ON NEW LEG MOUNT. REFER TO SHEETS T3 & T3-1 FOR DETAILS

2 PROPOSED TAS GRN 7.0m HIGH CLIMBABLE MAST TO BE INSTALLED ON PROPOSED ROCK ANCHORED PAD FOOTING. REFER TO SHEETS T4 TO T4-3 FOR MAST DETAILS, T2 & T2-1 FOR FOOTING DETAILS.

2 PROPOSED TAS GRN Ø600 M/W DISH (1 OFF A5) (TO SITE DOLLY HILL) TO BE INSTALLED ON NEW LEG MOUNT. REFER TO SHEETS T3 & T3-1 FOR DETAILS

2 PROPOSED TAS GRN Ø600 M/W DISH (1 OFF A1) (TO SITE DERWENT BRIDGE) TO BE INSTALLED ON NEW LEG MOUNT. REFER TO SHEETS T3-2 & T3-3 FOR DETAILS

ANTENNA LAYOUT AT E.L. 6.0m & 7.1m

SCALE 1:20

200 0 1000 SCALE 1:20

COMPLIANCE BOX
COMPLETED AS PER DESIGN ☐
ALTERATIONS IN RED ☐
NAME (PRINT)
SIGNATURE DATE

2 FOR CONSTRUCTION

TO BE READ IN CONJUNCTION WITH SHEETS S1, S1-1, S3 & S3-1.

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
TASGRN079	JM	HG	FOR CONSTRUCTION - SP30091946WO050DOWN - TASGRN	DP	GRW	25.11.21	1
TASGRN079	SR	MB	FOR CONSTRUCTION - SP80005737WO001APD-TASGRN	RC	PR	15.05.25	2

NOTES:
1. ALL EXTERNAL FEEDERS AND TAILS MUST BE BIRD PROOFED AS PER EXTERNAL PLANT POLICY 003615.
2. FOR SITE SPECIFIC NOTES REFER TO SHEETS S0 & S0-1.
3. FOR EME SIGNS NOTED THUS #X REFER TO 005486 FOR DETAILS.

APD GLOBAL

Telstra

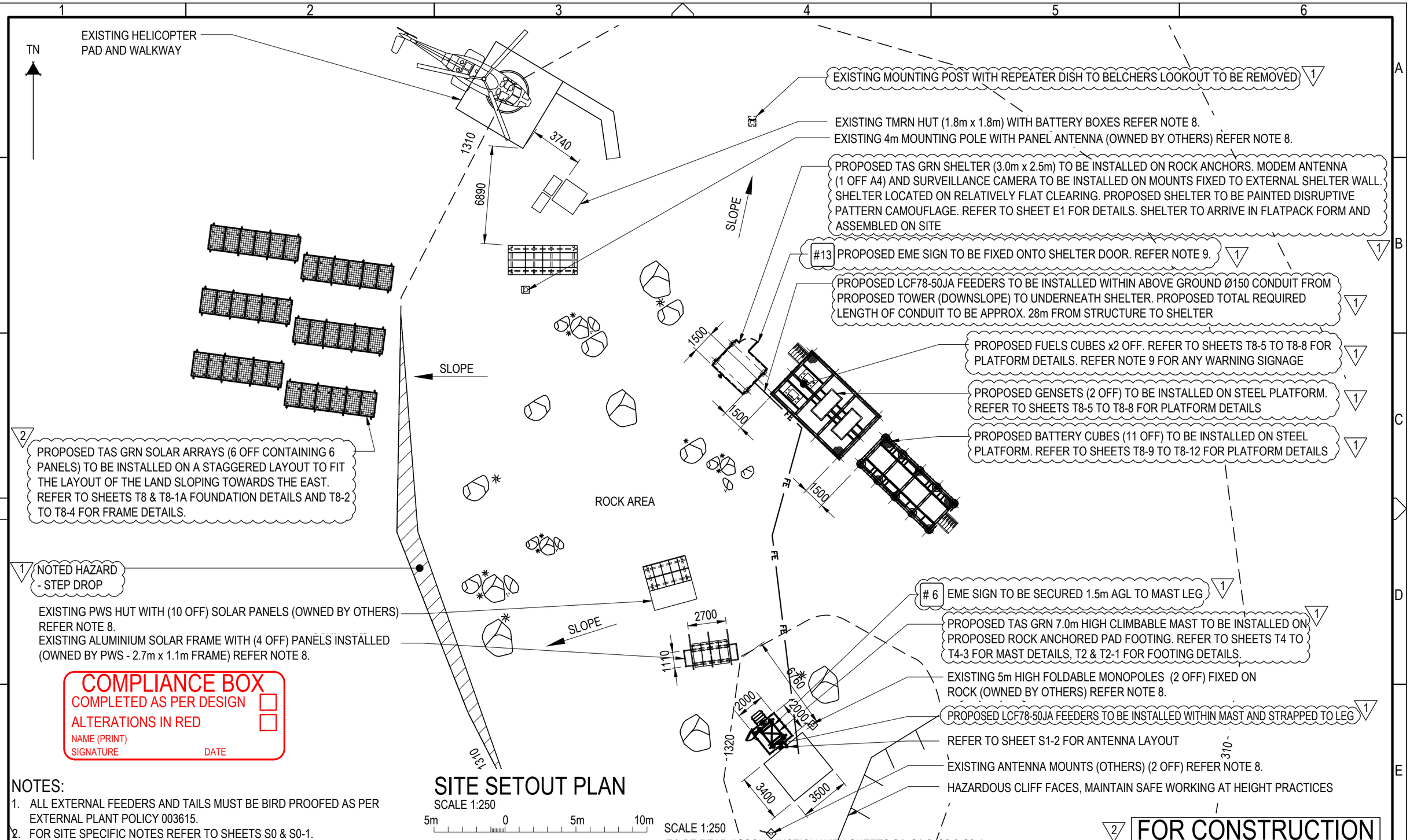
TAS GRN SITE 079
MT. KING WILLIAM
ANTENNA LAYOUT PLAN
FRANKLIN-GORDON WILD RIVERS NATIONAL PARK, SOUTHWEST, TAS 7139

DWG NO. T113006 SHT NO. S1-2

Cad file: T113006.dwg

DO NOT SCALE

A3



SITE SETOUT PLAN

SCALE 1:250

5m 0 5m 10m

SCALE 1:250

TO BE READ IN CONJUNCTION WITH SHEETS S1, S1-2, S3 & S3-1.

COMPLIANCE BOX

COMPLETED AS PER DESIGN ☐

ALTERATIONS IN RED ☐

NAME (PRINT)

SIGNATURE DATE

NOTES:

1. ALL EXTERNAL FEEDERS AND TAILS MUST BE BIRD PROOFED AS PER EXTERNAL PLANT POLICY 003615.
2. FOR SITE SPECIFIC NOTES REFER TO SHEETS S0 & S0-1.
3. FOR EME SIGNS NOTED THUS #X REFER TO 005486 FOR DETAILS.
4. #6 EME SIGN TO BE SECURED TO MAST LEG AT 1.5m AGL.
5. #13 EME SIGN TO BE SECURED TO PROPOSED SHELTER STAMPED WITH RFNSA No. 7139005.
6. TELSTRA MAST, ANTENNA MOUNTS AND ANTENNAS TO BE PAINTED N35 LIGHT GREY USING SCHEDULE 202.
7. REDUNDANT TMRN EQUIPMENT TO BE REMOVED BY TELSTRA IN ACCORDANCE WITH BEST PRACTICE PRINCIPLES AND THE TWWHA MANAGEMENT PLAN.
8. ALL SIGNAGE TO BE MAXIMUM 2m ABOVE GROUND LEVEL, SIGNAGE TO BE BLACK BACKGROUND WITH WHITE TEXT TO REDUCE VISIBILITY AT A DISTANCE

APD GLOBAL

2 FOR CONSTRUCTION

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
TASGRN079	JM	HG	FOR CONSTRUCTION - SP30091946WO050DOWN - TASGRN	DP	GRW	25.11.21	1
TASGRN079	SR	MB	FOR CONSTRUCTION - SP80005737WO001APD-TASGRN	RC	PR	15.05.25	2

Telstra

TAS GRN SITE 079

MT. KING WILLIAM

SITE SETOUT PLAN

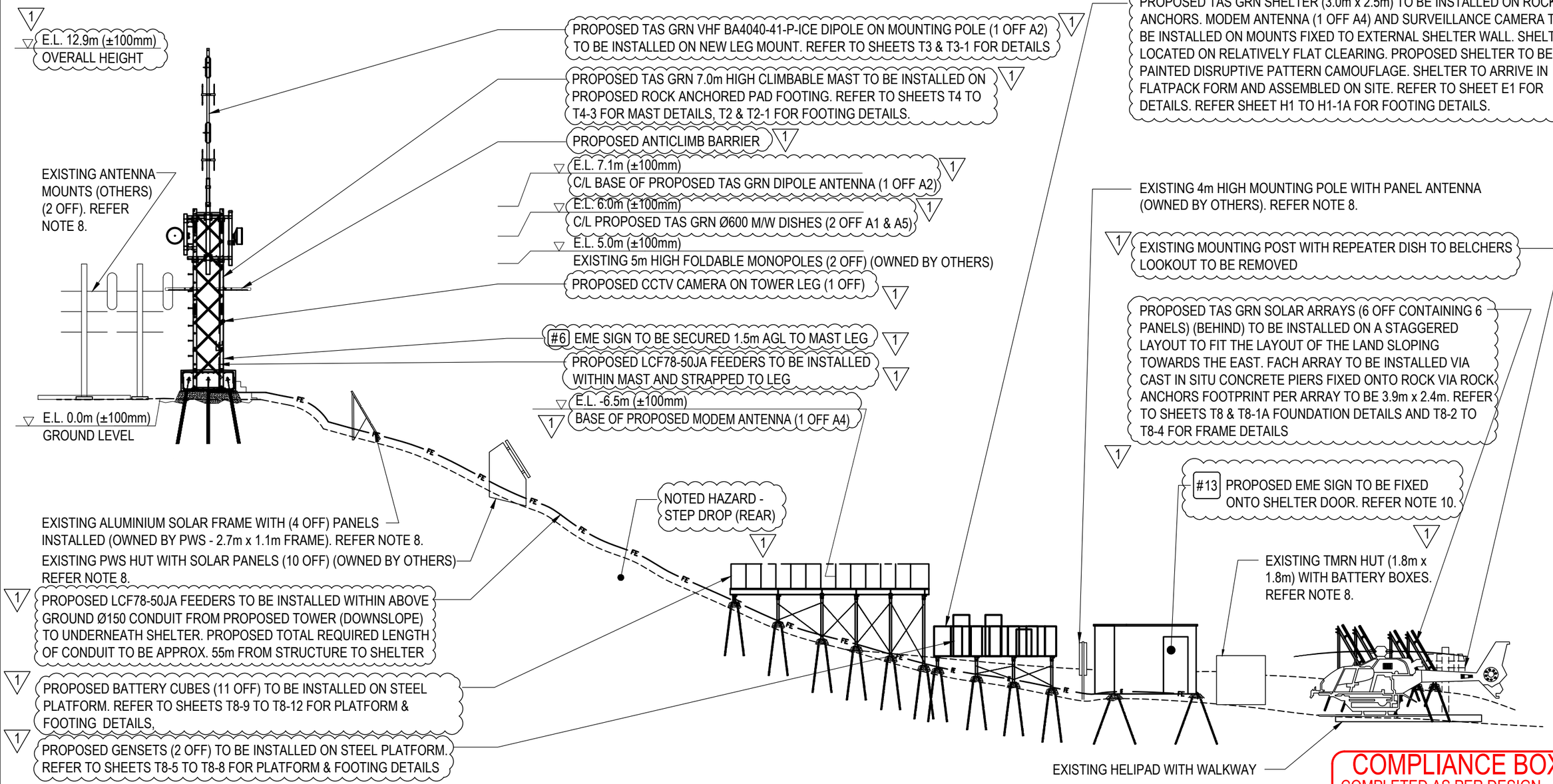
FRANKLIN-GORDON WILD RIVERS NATIONAL PARK, SOUTHWEST, TAS 7139

DWG NO. T113006 SHT NO. S1-1

Cad file: T113006.dwg

DO NOT SCALE

A3



NORTH WEST ELEVATION

SCALE 1:150

3m 0 3m 6m SCALE 1:150

NOTES:

1. ALL EXTERNAL FEEDERS AND TAILS MUST BE BIRD PROOFED AS PER EXTERNAL PLANT POLICY 003615.
2. FOR SITE SPECIFIC NOTES REFER TO SHEETS S0 & S0-1.
3. FOR EME SIGNS NOTED THUS #X REFER TO 005486 FOR DETAILS.
4. #2 EME SIGN TO BE SECURED BELOW DIPOLE ANTENNA (1 OFF).
5. #6 EME SIGN TO BE SECURED TO MAST LEG AT 1.5m AGL.
6. #13 EME SIGN TO BE SECURED TO PROPOSED SHELTER STAMPED WITH RFNSA No. 7139005.
7. TELSTRA MAST, ANTENNA MOUNTS AND ANTENNAS TO BE PAINTED N35 LIGHT GREY USING SCHEDULE 202.
8. REDUNDANT TMRN EQUIPMENT TO BE REMOVED BY TELSTRA IN ACCORDANCE WITH BEST PRACTICE PRINCIPLES AND THE TWWHA MANAGEMENT PLAN.
9. THE HEIGHT OF INSTALLATION ABOVE GROUND LEVEL TO BE MINIMISED AS MUCH AS POSSIBLE TO ADHERE TO LVIA RECOMMENDATION.
10. ALL SIGNAGE TO BE MAXIMUM 2m ABOVE GROUND LEVEL, SIGNAGE TO BE BLACK BACKGROUND WITH WHITE TEXT TO REDUCE VISIBILITY AT A DISTANCE

COMPLIANCE BOX
COMPLETED AS PER DESIGN ☐
ALTERATIONS IN RED ☐
NAME (PRINT)
SIGNATURE DATE

2 FOR CONSTRUCTION

TO BE READ IN CONJUNCTION WITH SHEETS S1, S1-1, S1-2 & S3-1.

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
TASGRN079	JM	HG	FOR CONSTRUCTION - SP30091946WO050DOWN - TASGRN	DP	GRW	25.11.21	1
TASGRN079	SR	MB	FOR CONSTRUCTION - SP80005737WO001APD-TASGRN	RC	PR	15.05.25	2

APD GLOBAL

Telstra

TAS GRN SITE 079
MT. KING WILLIAM
EAST ELEVATION
FRANKLIN-GORDON WILD RIVERS NATIONAL PARK, SOUTHWEST, TAS 7139

DWG NO. T113006 SHT NO. S3

Cad file: T113006.dwg A3

DO NOT SCALE

TAS GRN ANTENNA CONFIGURATION TABLE

ANTENNA No	ANTENNA TYPE & SIZE H x W x D	ANTENNA ACTION REQUIRED	ANTENNA HEIGHT C/L A.G.L.	PHYSICAL ANTENNA BEARING (°T)	SECTOR NO. & TECHNOLOGY
A1	RFS SC2-W71BSIA1 Ø600mm MICROWAVE DISH	INSTALL	6.0m	47°	S0: MICROWAVE LINK TO SITE DERWENT BRIDGE
A2	RFI-BA4040-41-P ICE DIPOLE 5800mm x Ø88.9mm	INSTALL	7.1m (BASE OF DIPOLE)	0°	S0: VHF TAS GRN
A4	MODEM ANTENNA RFI LTE-XPOL-002-5G 255mm x 2555mm x 80mm	INSTALL	-6.5m (BASE OF XPOL)	0°	-
A5	RFS SCX3-190ASIA1	INSTALL	6.0m	315°	MICROWAVE LINK TO DOLLY HILL

NOTES: ALL ANTENNAS TO BE PAINTED N35 LIGHT GREY

2

COMPLIANCE BOX
COMPLETED AS PER DESIGN ☐
ALTERATIONS IN RED ☐
NAME (PRINT)
SIGNATURE DATE

2 FOR CONSTRUCTION

TO BE READ IN CONJUNCTION WITH SHEETS S1, S1-1, S1-2 & S3.

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
TASGRN079	JM	HG	FOR CONSTRUCTION - SP30091946WO050DOWN - TASGRN	DP	GRW	25.11.21	1
TASGRN079	SR	MB	FOR CONSTRUCTION - SP80005737WO001APD-TASGRN	RC	PR	15.05.25	2

APD GLOBAL

Telstra

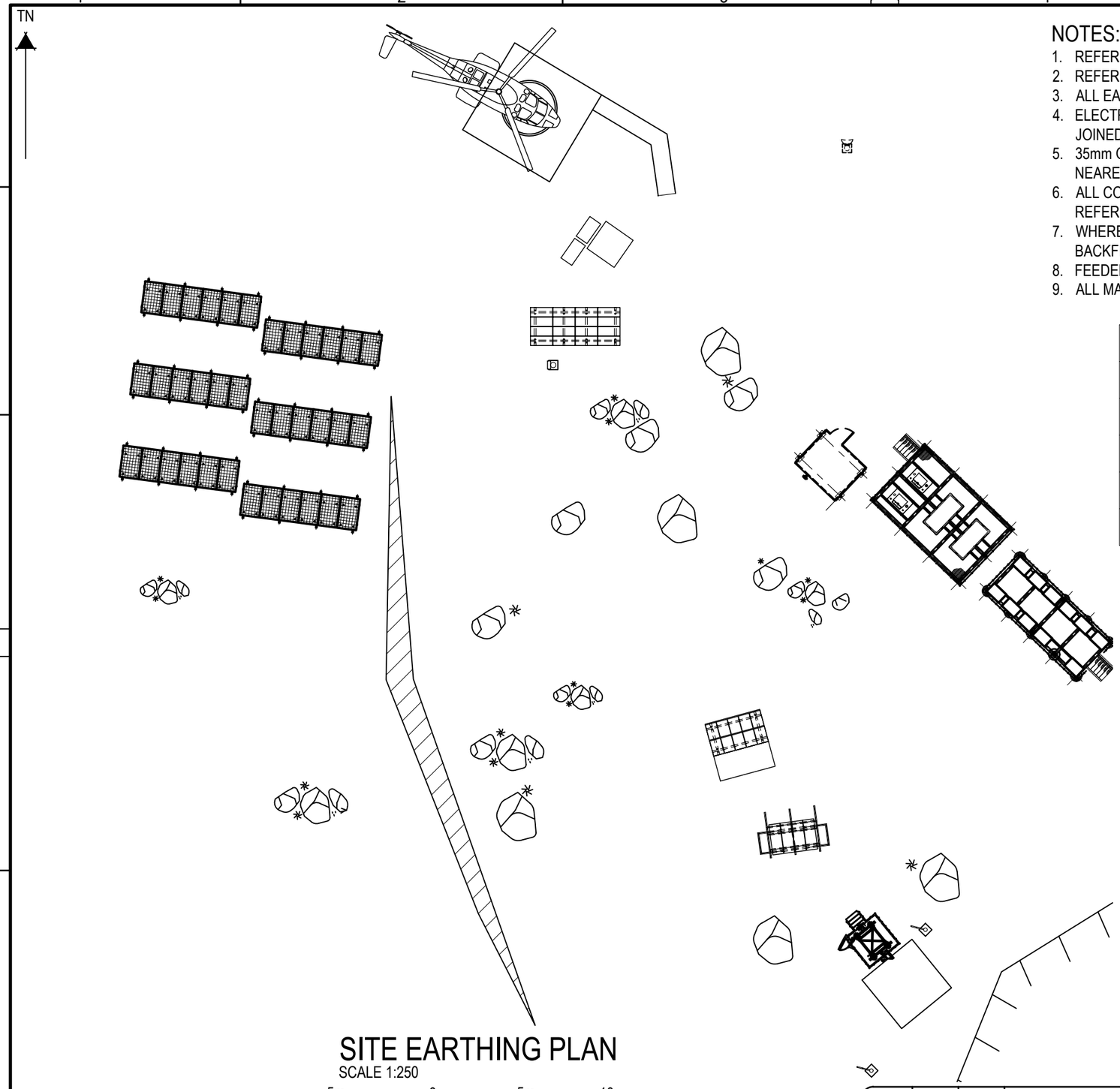
TAS GRN SITE 079
MT. KING WILLIAM
ANTENNA CONFIGURATION TABLE
FRANKLIN-GORDON WILD RIVERS NATIONAL PARK, SOUTHWEST, TAS 7139

DWG NO. T113006 SHT NO. S3-1

Cad file: T113006.dwg

DO NOT SCALE

A3



NOTES:

1. REFER TO DRAWING 017866P201 SHEET 1 FOR ADDITIONAL CONNECTION DETAILS.
2. REFER TO DRAWING 017866P206 SHEET 1 FOR TOWER EARTHING.
3. ALL EARTH STRAPS TO BE 50 x 3mm HOT DIPPED GAL MS FLAT AND LAID TO A MINIMUM DEPTH OF 500mm.
4. ELECTRODES TO BE SOLID STAINLESS STEEL 1440mm LONG, TWO OF THESE RODS TO BE UTILISED AND JOINED TOGETHER TO GAIN MINIMUM DEPTH OF 2.88m.
5. 35mm G/Y EARTH CABLE SHALL RUN FROM THE ANTENNA STRUCTURE AND TERMINATE AT ELECTRODE NEAREST TO STRUCTURE AND THEN CONTINUE TO SEB IN TAS GRN SHELTER VIA SECONDARY ELECTRODES.
6. ALL CONNECTIONS TO EARTH ELECTRODES AND JOINTS ARE TO BE TREATED WITH DENSO PASTE AND TAPE. REFER TO DRAWING 017866P201 SHEET 1.
7. WHERE ELECTRODES CAN NOT BE DRIVEN, DEEP DRILLED ELECTRODES MAY NEED TO BE INSTALLED AND BACKFILL WITH EARTH ENHANCING COMPOUND.
8. FEEDERS TO BE EARTHED AS PER TELSTRA REQUIREMENTS.
9. ALL MAJOR EARTH BONDS TO BE LABELLED AT BOTH ENDS INDICATING THE CABLE ORIGIN.

EARTHING ELECTRODE SCHEDULE			
TYPE	DIAMETER	QUANTITY	DEPTH
STAINLESS STEEL CLAD ROD	14mm	4	2.88m

EARTH GRID SCHEDULE	
TYPE	DIMENSIONS
HOT DIPPED GALVANISED MS FLAT	50 x 3mm

LEGEND:

- EA — EARTH STRAP
- 35mm² G/Y INSULATED CABLE (19/1.53)
- 70mm² G/Y INSULATED CABLE
- EARTHING BOND
- EARTH ELECTRODE
- EARTH INSPECTION PIT
- SEB — SERVICE EARTH BAR
- FEB — FEEDER EARTH BAR

SITE EARTHING PLAN

SCALE 1:250

5m 0 5m 10m SCALE 1:250

COMPLIANCE BOX
COMPLETED AS PER DESIGN ☐
ALTERATIONS IN RED ☐
NAME (PRINT)
SIGNATURE DATE

1 FOR CONSTRUCTION

Downer
Relationships creating success

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
TASGRN079	JM	HG	FOR CONSTRUCTION - SP30091946WO050DOWN - TASGRN	DP	GRW	25.11.21	1

Telstra

TAS GRN SITE 079
MT. KING WILLIAM
SITE EARTHING
FRANKLIN-GORDON WILD RIVERS NATIONAL PARK, SOUTHWEST, TAS 7139

DWG NO. T113006 SHT NO. G4

Cad file: T113006.dwg A3

DO NOT SCALE

ESS 1 - Basestation Rack – GD/xx/xx

RFI RX 1617-1862-TASGRN

Rx Preselector Filter
169.6-173.0

RFI RX 1317-3408-31-48

Exp Port

Rx Multicoupler

RX1	GTR-8000 - #1 Tx 165.3125 Rx 169.9125	TX1	A1
RX2	GTR-8000 - #2 Tx 165.4625 Rx 170.0625	TX2	A2
RX3	GTR-8000 - #3 Tx 165.6125 Rx 170.2125	TX3	A3
RX4	GTR-8000 - #4 Tx 165.7625 Rx 170.3625	TX4	A4
RX5	GTR-8000 - #5 Tx 165.9125 Rx 170.5125	TX5	A5
RX6	GTR-8000 - #6 Tx 166.0625 Rx 170.6625	TX6	A6

RFI T-Pass TP 1317-1612-BI

RFI SP1318-2440-43FF1RU

Antenna
Line Coupler 1

To ASM

RX
Mon

ASM

To
ALC 1

To
ALC 2

RFI ASM1317-48-4.3

Txx

Jxx

Fxx

Upper Stack

Txx

Jxx

Fxx

Lower Stack

2 x Lightning Arrestor
VHF50B43-PGR-BD

VHF Antenna
RFI BA4040-41-P-ICE

Axx

Transmitter	Cable	Cavity
ESS1 TX1	Cable 1	A6
ESS1 TX2	Cable 2	A5
ESS1 TX3	Cable 3	A4
ESS1 TX4	Cable 4	A3
ESS1 TX5	Cable 5	A2
ESS1 TX6	Cable 6	A1
ESS2 TX1		
ESS2 TX2		
ESS2 TX3		
ESS2 TX4		
ESS2 TX5		
ESS2 TX6		
ESS3 TX1		
ESS3 TX2		
ESS3 TX3		
ESS3 TX4		
ESS3 TX5		
ESS3 TX6		

RG-223
RG-214
SCF12-50
LCF78-50

FOR CONSTRUCTION

DO NOT SCALE

COMPLIANCE BOX
COMPLETED AS PER DESIGN ☐
ALTERATIONS IN RED ☐
NAME (PRINT)
SIGNATURE DATE

Downer
Relationships creating success

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
TASGRN079	JM	HG	FOR CONSTRUCTION - SP30091946WO050DOWN - TASGRN	DP	GRW	25.11.21	1

Telstra

TAS GRN SITE 079
MT. KING WILLIAM
RADIO CONNECTION SCHEMATIC
FRANKLIN-GORDON WILD RIVERS NATIONAL PARK, SOUTHWEST, TAS 7139

DWG NO. T113006

SHT NO. A2

Cad file: T113006.dwg

A3

ELECTRICAL SPECIFICATION

1. GENERAL

ELECTRICAL INSTALLATION SHALL BE IN ACCORDANCE WITH:

- THESE SPECIFICATION
- TELSTRA CIVIL DESIGN MANUAL
- TELSTRA EARTHING MANUAL
- ALL REFERENCED TELSTRA STANDARD DOCUMENTATION
- AS/NZS3000
- AS/NZS3008
- AS/NZS3015
- AS/NZS3017
- AS/NZS1768
- AS/ACIF S006
- RELEVANT STATE/TERRITORY SPECIFIC INSTALLATION RULES AND ALL OTHER RELEVANT AUSTRALIAN STANDARDS AS APPLICABLE TO PROPOSED WORKS.

2. STANDARD OF WORK & WORKMANSHIP

ALL LOW VOLTAGE AC POWER WORKS SHALL BE COMPLETED BY LICENSED ELECTRICIAN IN ACCORDANCE WITH INSTALLATION RULES AND RELEVANT SAFETY PRACTICES APPLICABLE TO SITE.
ALL WORKS SHALL BE LIAISED AND COORDINATED WITH RELEVANT PERSONNEL, SITE REPRESENTATIVES, LANDOWNER, SITE PROVIDER AND/OR POWER AUTHORITY AS APPLICABLE.
ALL WORKS SHALL BE AS PER TELSTRA SPECIFICATIONS AND APPROVED MOPS INCLUDING LABELLING.
CONTRACTOR SHALL MAKE THEMSELVES AWARE OF ALL SITE CONDITIONS AND SAFETY REQUIREMENTS PRIOR TO COMMENCING ANY WORK ON SITE.

3. OUTAGES AND PERMITS

CONTRACTOR TO VALIDATE ALL APPROVALS AND OUTAGES REQUIRED TO CONDUCT PROPOSED WORKS. THIS INCLUDES BUT IS NOT LIMITED TO ANY DONOR SITES AND/OR FAR END SITES WHICH MAY BE IMPACTED DUE TO PROPOSED WORKS. ALL CONTRACTORS WORKING ON TELSTRA FACILITIES SHALL BE TELSTRA ACCREDITED AS PER TELSTRA PROTOCOLS.

4. MAINS SUPPLY

NO MAINS SUPPLY AVAILABLE ON SITE. PROPOSED TAS GRN INSTALLATION SHALL BE POWERED VIA SOLAR HYBRID POWER SYSTEM INCLUDING PV ARRAY AND ONSITE GENERATORS.
OFF GRID HYBRID SYSTEM SHALL INCLUDE:

- SOLAR PANELS - QCELL 400W (36 OFF)
- BATTERY CUBES - HELIPODS (11 OFF)
- SUNGEL BATTERIES - 2SGU595 (15 x 24 = 360)
- ENATEL FLEXI HYBRID RACK CONFIGURED FOR DUAL ONSITE GENERATORS (1 OFF)
- DC DISTRIBUTION INTEGRATED IN ENATEL FLEX RACK (1 OFF)
- SOLAR REGULATORS - SM1848HE SOLAR REGULATORS (6 OFF)
- RECTIFIERS - GENERATOR INPUT 1 - RM3048HE (4 OFF)
- RECTIFIERS - GENERATOR INPUT 2 - RM3048HE (4 OFF)
- DC-DC CONVERTERS (12V) - CM512-48 (48V TO 12 V CONVERTERS) (4 OFF) - TWO CONVERTERS PER ONSITE GENERATOR
- ONSITE GENERATOR - HYW-17 M5 230 (13.1kVA) (2 OFF)
- 500L PORTABLE FUEL TANKS (2 OFF)

5. BATTERY CUBES - HELIPODS

PROPOSED HELIPODS (11 OFF) TO HOST BATTERIES. EACH BATTERY STRINGS SHALL BE EQUIPPED WITH CELL BALANCING MODULE TO AVOID ANY VOLTAGE DIFFERENCE AMONG BATTERY STRINGS.
CONTRACTOR TO KEEP ALL CABLING FROM BATTERY CUBES TO BATTERY BUS IN HYBRID FLEXI RACK OF SAME LENGTH AS POSSIBLE.
ALL CABLING SHALL BE INSTALLED IN STEEL CONDUITS TO BE SURFACE MOUNTED.

6. ON-SITE PERMANENT GENERATORS

PROPOSED TWO SEPARATELY INDEPENDENT ONSITE GENERATORS. EACH GENERATOR TO BE 13.1kVA WITH INTEGRATED FUEL TANK.
ENATEL HYBRID RACK SHALL BE CONFIGURED FOR DUAL GENERATOR SETUP WITH SEPARATE SET OF RECTIFIERS FOR EACH GENERATOR INPUT.
ENATEL HYBRID RACK SHALL BE CONFIGURED TO CYCLE BOTH GENERATORS TO ENSURE UNIFORM OPERATION OF BOTH ONSITE GENERATORS.
STARTER BATTERY CHARGER SHALL BE WIRED FROM 12V DC OUTPUT OF ENATEL FLEXI RACK. TWO DC-DC CONVERTERS SHALL BE USED FOR EACH ONSITE GENERATOR.
ALL CABLING TO AND FROM SHELTER TO BE INSTALLED IN EITHER A SURFACE MOUNTED CABLE TRAY OR STEEL CONDUITS.

7. HEAT LOAD

PROPOSED INSTALL ECONOMY FAN (DC POWERED) (1 OFF) IN PROPOSED TAS GRN SHELTER TO CATER FOR PROPOSED HEAT LOAD. ALL WORKS SHALL BE COMPLETED AS PER TELSTRA SPECIFICATIONS AND MOPS.

8. RBS

REFER TO SHEETS E1 & E5 FOR LOCATION AND DETAILED RACK LAYOUTS.

9. EARTHING

ALL EARTHING SHALL BE IN ACCORDANCE WITH TELSTRA EARTHING MANUAL (017866A07) AND TAS GRN SPECIFICATIONS.
EQUIPMENT INSTALLED IN PROPOSED RACKS SHALL BE EARTHED TO RACK EARTH BAR AS PER TELSTRA, TAS GRN AND MANUFACTURER'S SPECIFICATIONS.
ALL PROPOSED RACKS SHALL BE CONNECTED TO PROPOSED SPC/SEB AS PER TELSTRA & TAS GRN SPECIFICATIONS.
PROPOSED SEB SHALL BE BONDED TO SERVICE EARTH ELECTRODE VIA 70mm² G/Y PVC EARTH CABLE.
PROPOSED FEEDER CABLES SHALL BE BONDED TO EARTHING SYSTEM. REFER TO TELSTRA STANDARD DRAWING 017866P201 SHEET 11 FOR DETAILS. SURGE ARRESTERS SHALL BE INSTALLED AS PER TAS GRN REQUIREMENTS.

- PROPOSED EARTH GRID ELECTRODES: 4 OFF
- PROPOSED EARTH GRID ELECTRODES LENGTH: 2.88m
- INSTALLATION METHOD: DRILLED IN PRE-DRILLED HOLES AND BACKFILL WITH EARTH ENHANCING COMPOUND

REFER TO SHEET G4 FOR SITE SPECIFIC EARTHING DETAILS.

10. FEEDER EARTH BAR

PROPOSED FEEDER EARTH BAR (FEB) ABOVE FEEDER EXIT INSIDE SHELTER.
PROPOSED FEB SHALL BE CONNECTED DIRECTLY TO SERVICE EARTH ELECTRODE VIA 35mm² G/Y EARTH CABLE.

FOR CONSTRUCTION

COMPLIANCE BOX
COMPLETED AS PER DESIGN ☐
ALTERATIONS IN RED ☐
NAME (PRINT)
SIGNATURE DATE

APD GLOBAL

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
TASGRN079	JM	HG	FOR CONSTRUCTION - SP30091946WO050DOWN - TASGRN	DP	GRW	25.11.21	1
TASGRN079	SR	MB	FOR CONSTRUCTION - SP80005737WO001APD-TASGRN	RC	PR	15.05.25	2

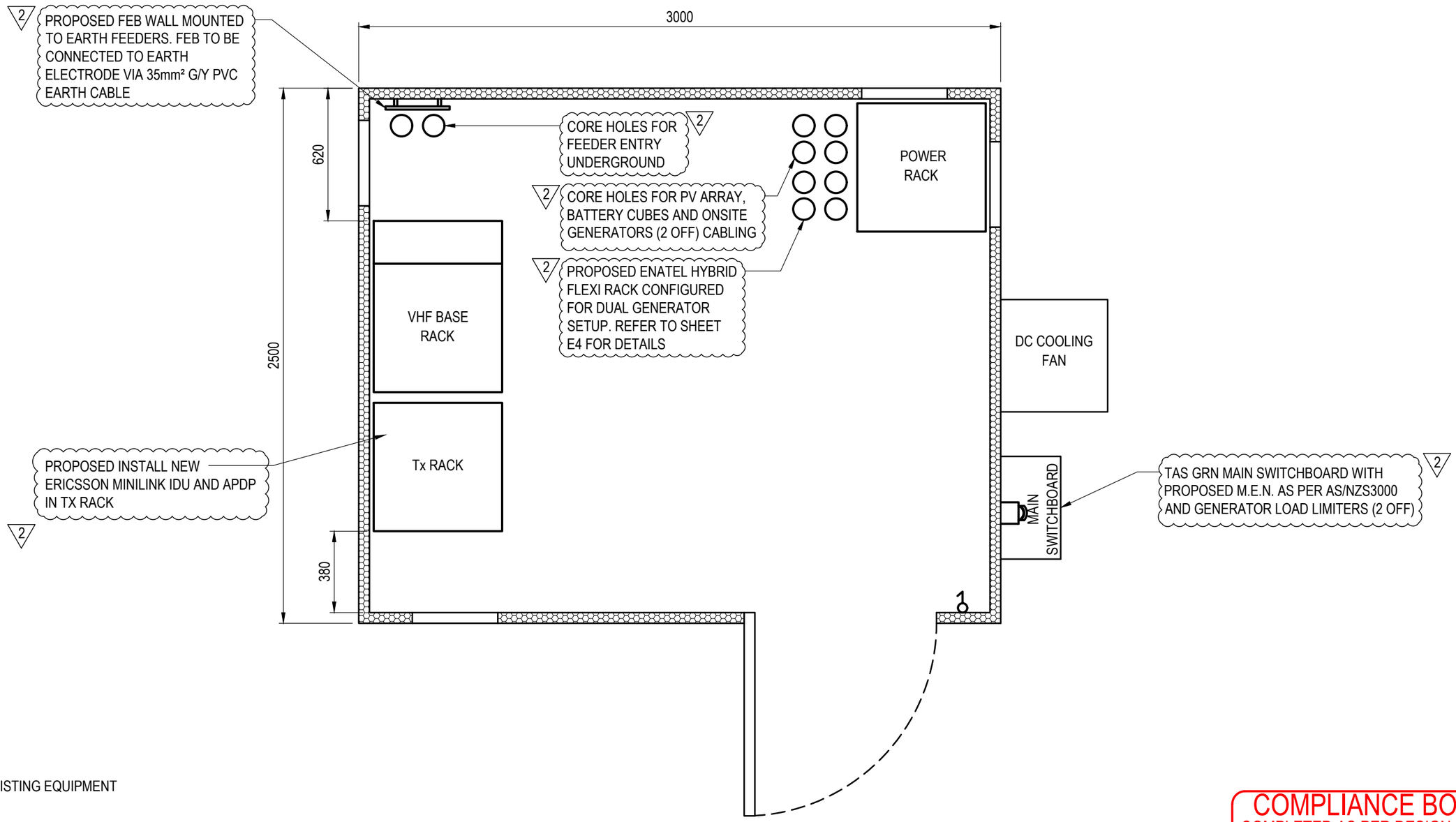
Telstra

TAS GRN SITE 079
MT. KING WILLIAM
ELECTRICAL SPECIFICATION
FRANKLIN-GORDON WILD RIVERS NATIONAL PARK, SOUTHWEST, TAS 7139

DWG NO. T113006 SHT NO. E0

Cad file: T113006.dwg A3

DO NOT SCALE



LEGEND

- EXISTING EQUIPMENT
- PROPOSED EQUIPMENT
- RESERVED EQUIPMENT
- LIGHT SWITCH

TAS GRN 3.0m x 2.5m SHELTER (VHF OPTION 3)

SCALE 1:20

200 0 1000 SCALE 1:20

NOTES :

1. FOR SITE SPECIFIC NOTES REFER TO SHEETS S0 & S0-1.
2. REFER TO ICS-3-2 DRAWINGS IN CADLINK NATIONAL DATABASE.
3. MITS POSITIONS IN FORMAT XX/X/XX WHERE SHELTER ON GROUND PREFIX GD/1/01 AND SHELTER ON ROOFTOP PREFIX RT/1/01. REFERENCE SP000511 NUMBERING, LABELLING AND DATA ENTRY REQUIREMENTS OF NETWORK INVENTORY.

APD GLOBAL

COMPLIANCE BOX
COMPLETED AS PER DESIGN ☐
ALTERATIONS IN RED ☐
NAME (PRINT)
SIGNATURE DATE

2 FOR CONSTRUCTION

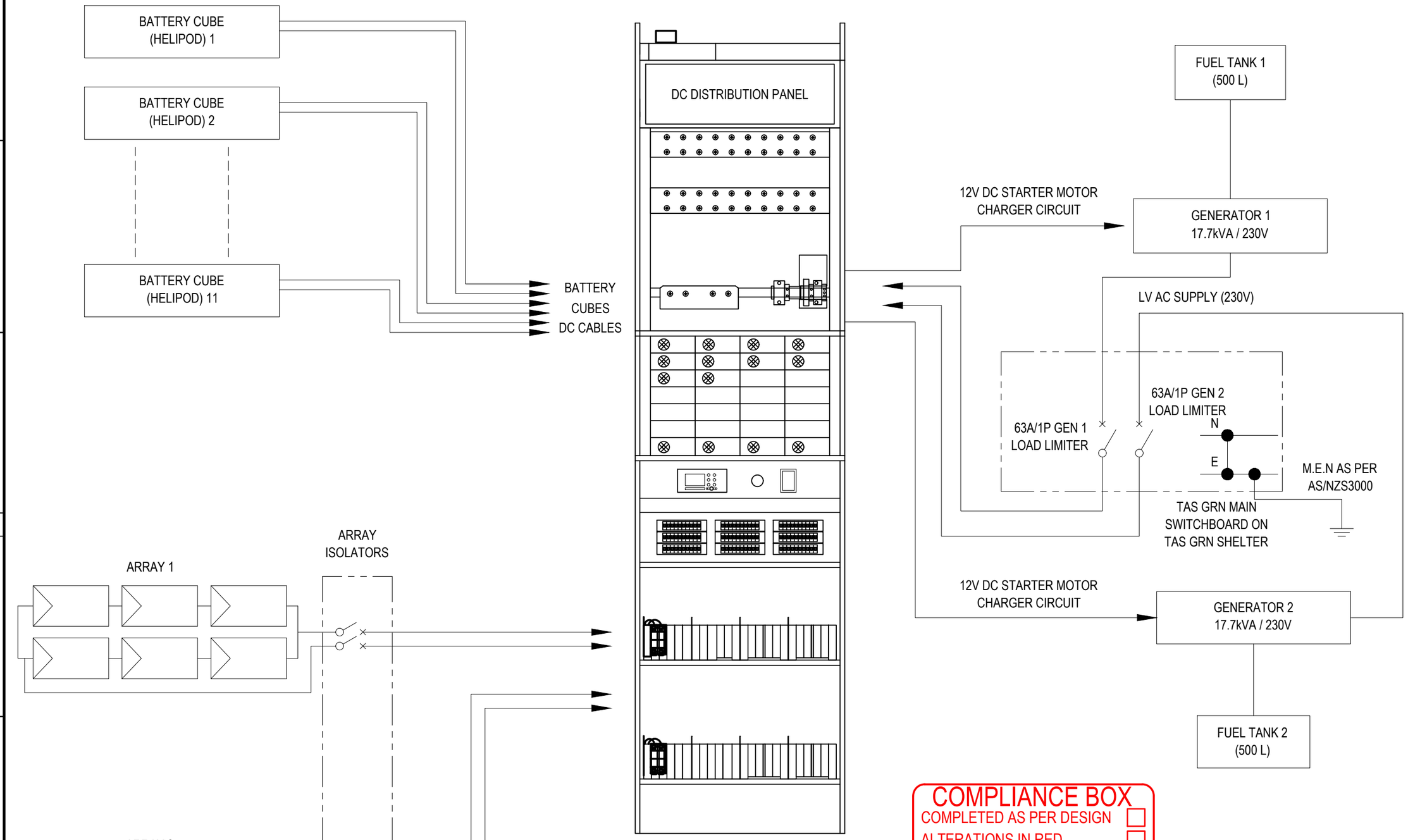
ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
TASGRN079	JM	HG	FOR CONSTRUCTION - SP30091946WO050DOWN - TASGRN	DP	GRW	25.11.21	1
TASGRN079	SR	MB	FOR CONSTRUCTION - SP80005737WO001APD-TASGRN	RC	PR	15.05.25	2

Telstra

TAS GRN SITE 079
MT. KING WILLIAM
EQUIPMENT LAYOUT
FRANKLIN-GORDON WILD RIVERS NATIONAL PARK, SOUTHWEST, TAS 7139

DWG NO. T113006 SHT NO. E1

Cad file: T113006.dwg A3



SOLAR HYBRID SYSTEM
NOT TO SCALE

COMPLIANCE BOX
COMPLETED AS PER DESIGN ☐
ALTERATIONS IN RED ☐
NAME (PRINT)
SIGNATURE DATE

▽2 FOR CONSTRUCTION

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
TASGRN079	JM	HG	FOR CONSTRUCTION - SP30091946WO050DOWN - TASGRN	DP	GRW	25.11.21	1
TASGRN079	SR	MB	FOR CONSTRUCTION - SP80005737WO001APD-TASGRN	RC	PR	15.05.25	2

APD GLOBAL

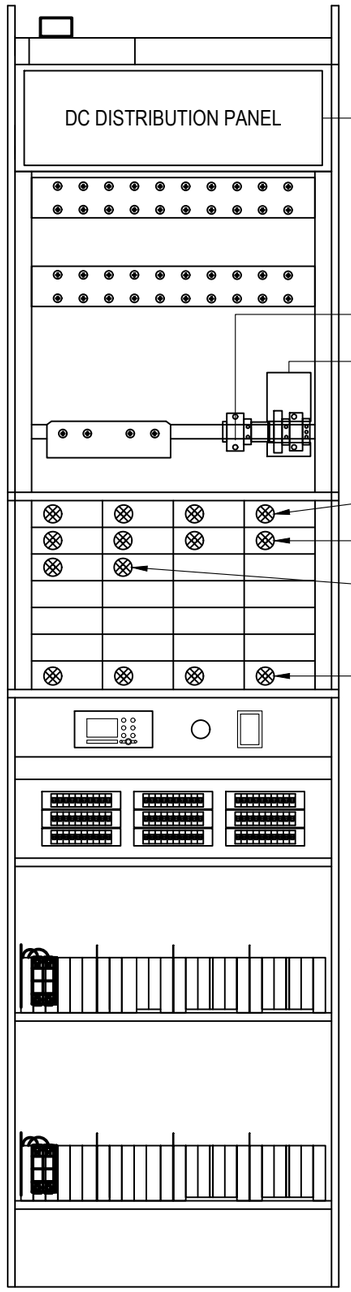
Telstra

TAS GRN SITE 079
MT. KING WILLIAM
SOLAR HYBRID SYSTEM - BLOCK DIAGRAM
FRANKLIN-GORDON WILD RIVERS NATIONAL PARK, SOUTHWEST, TAS 7139

DWG NO. T113006 SHT NO. E2

Cad file: T113006.dwg A3

DO NOT SCALE



DC DISTRIBUTION PANEL

80A 80A 10A 4A 10A 20A 20A

RACK 1 PLANE A
RACK 1 PLANE B
DC FAN
PLC
DC LIGHTS
TX RACK PLANE A
TX RACK PLANE B

ONSITE GENERATORS (2 OFF)
STARTER MOTOR CHARGERS

GENERATOR 2 INPUT 2C + E 16mm^2 Cu/XLPE MULTICORE

GENERATOR 1 INPUT 2C + E 16mm^2 Cu/XLPE MULTICORE

RECTIFIERS GENERATOR 1 - RM3048HE (4 OFF) 1

RECTIFIERS GENERATOR 2 - RM3048HE (4 OFF) 1

PROPOSED SOLAR REGULATORS - SM1848HE (2 OFF) 1

48V TO 12V DC/DC CONVERTERS (4 OFF) 1

SOLAR ARRAY INPUTS AND ASSOCIATED SURGE PROTECTION DEVICES 1

1 FOR CONSTRUCTION

FOR SITE SPECIFIC NOTES REFER TO SHEET S0.

DO NOT SCALE

COMPLIANCE BOX
COMPLETED AS PER DESIGN ☐
ALTERATIONS IN RED ☐
NAME (PRINT)
SIGNATURE DATE

Downer
Relationships creating success

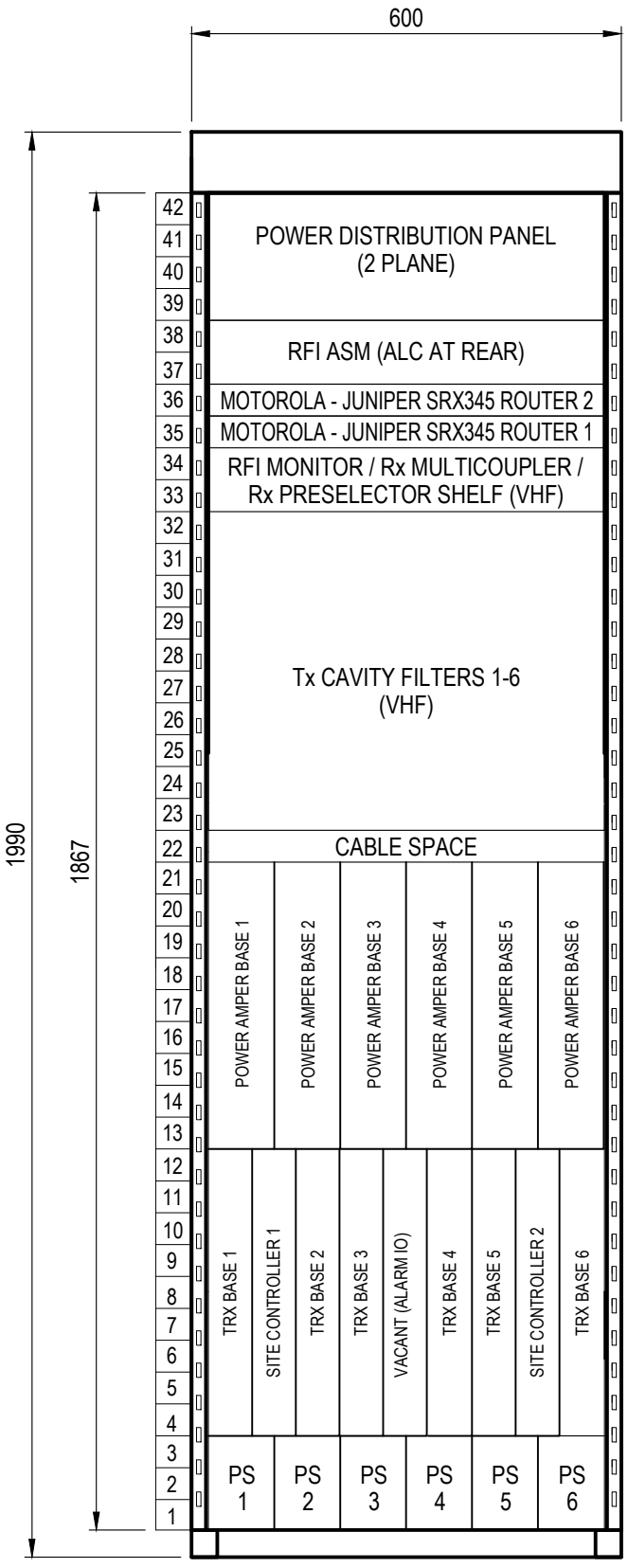
ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
TASGRN079	JM	HG	FOR CONSTRUCTION - SP30091946WO050DOWN - TASGRN	DP	GRW	25.11.21	1

Telstra

TAS GRN SITE 079
MT. KING WILLIAM
DC POWER LINE DIAGRAM
FRANKLIN-GORDON WILD RIVERS NATIONAL PARK, SOUTHWEST, TAS 7139

DWG NO. T113006 SHT NO. E4

Cad file: T113006.dwg A3



VHF 1-6 CH

ELEVATION

SCALE 1:10

COMPLIANCE BOX
COMPLETED AS PER DESIGN ☐
ALTERATIONS IN RED ☐
NAME (PRINT)
SIGNATURE DATE

FOR CONSTRUCTION

DO NOT SCALE

Downer
Relationships creating success

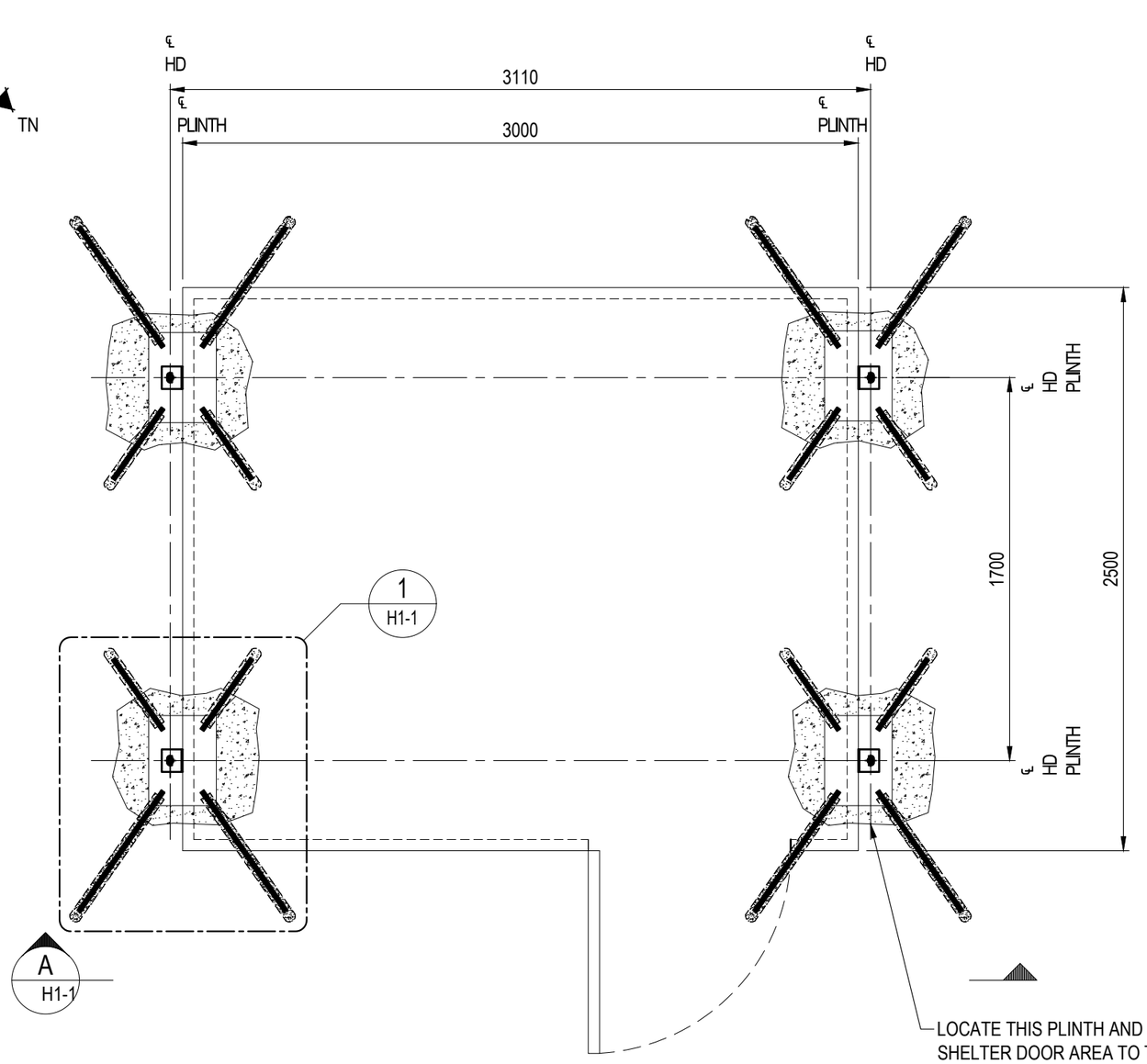
ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
TASGRN079	JM	HG	FOR CONSTRUCTION - SP30091946WO050DOWN - TASGRN	DP	GRW	25.11.21	1

Telstra

TAS GRN SITE 079
MT. KING WILLIAM
RACK LAYOUT
FRANKLIN-GORDON WILD RIVERS NATIONAL PARK, SOUTHWEST, TAS 7139

DWG NO. T113006 SHT NO. E5

Cad file: T113006.dwg A3V



EQUIPMENT SHELTER FOOTING LAYOUT

SCALE 1:25

CONSTRUCTION PROCEDURE:

1. STRIP GROUND LOOSE MATERIAL AND VEGETATION, SLIGHTLY LEVEL THE SUBGRADE.
2. BASED ON RUGGED CONDITION OF PREPARED GROUND SURFACE IN THE WHOLE FRAME AREA, DETERMINE AND MARK THE FINISHED CONCRETE PLINTH LEVEL OF THE 4 PLINTHS.
3. CARRY OUT ROCK ANCHOR WORKS AND APPLY SIKAGROUT - 212 HP NON-SHRINK FLOWABLE GROUT.
4. UPON ROCK ANCHOR POURING COMPLETION, REMOVE LOOSE MATERIALS, APPLY SIKADUR-33 EPOXY ADHESIVE TO OBVIOUS GAPS/CRACKS IN SURFACE ROCKS WITHIN EACH PLINTH BASE AREA.
5. ALLOW 2 HOUR CURING PRIOR TO PLINTH REINFORCEMENT PLACING.
6. PLACE PLINTH REINFORCING MESH .
7. POUR PLINTH CONCRETE
8. ALLOW 2 HOURS MINIMUM CURING PRIOR TO REMOVING FORMWORK.
9. ALLOW 3 DAYS MINIMUM CURING PRIOR TO INSTALLING ANY CHEMICAL ANCHORS AND INSTALLING SHELTER.

NOTES:

1. FOR SITE SPECIFIC NOTES REFER SHEETS S0, S0-1 & S0-2.
2. FOR STANDARD CONSTRUCTION NOTES REFER TELSTRA STANDARD DRAWING 017866P05.
3. ALL BOLTS TO BE SUPPLY WITH HOT DIP GALVANISED NUT, LOCK NUT & FLAT WASHER.
4. DRILLED STEEL ON SITE, REMOVE ALL SWARF, BURRS & SHARP EDGES. APPLY 2 COATS OF ZINC RICH PAINT TO ALL SITE CUTS, WELDS.
5. GEOTECHNICAL REPORT BY INTRAX CONSULTING ENGINEERS (SITE NUMBER: 167549, DATED 30/07/2021).
6 REFERENCE MUST BE MADE TO GEOTECHNICAL REPORT PRIOR TO SCHEDULING OF CONSTRUCTION.
7. PLINTH CONCRETE IS TO BE N32, ROCK ANCHOR COVER TO BE 75mm, STEEL MESH SL81 COVER 50mm.

THIS DRAWING IS SUBJECT TO CHANGE UPON THE RECEIVING THE FINAL DETAILED DRAWINGS OF THE SHELTER. CONTRACTOR SHALL CHECK WITH APD GLOBAL TO CONFIRM THE REQUIRED CHANGES BEFORE ORDERING MATERIALS AND CONSTRUCTION.

FOR CONSTRUCTION

DO NOT SCALE

APD GLOBAL

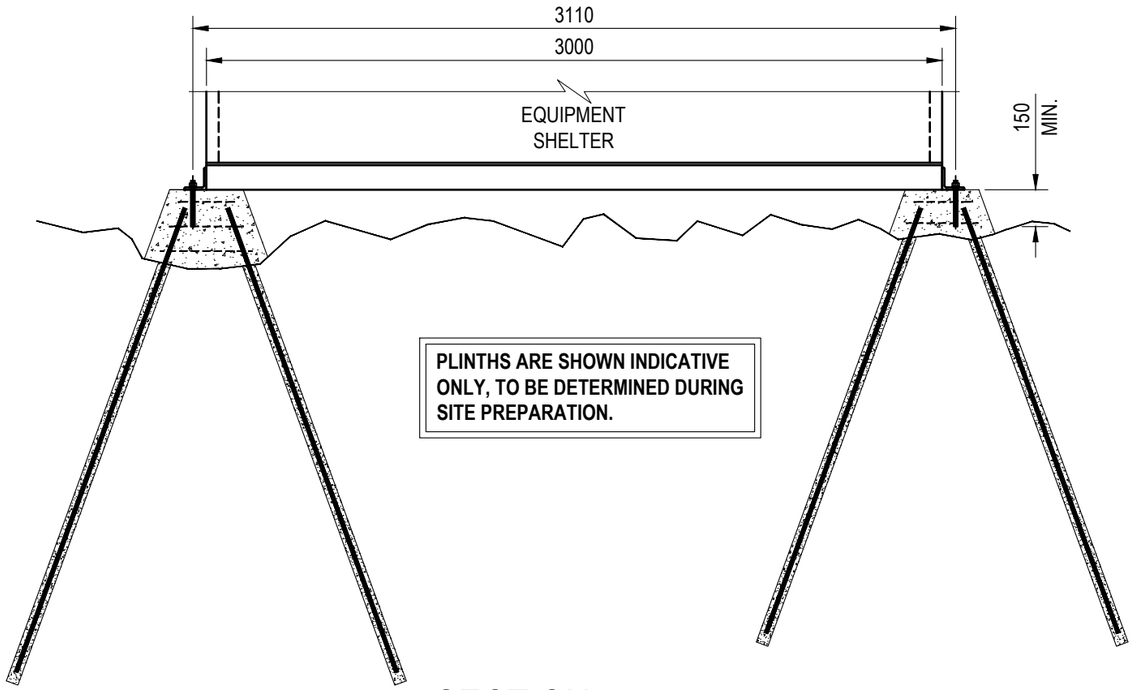
ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
TASGRN079	JM	HG	FOR CONSTRUCTION - SP30091946WO050DOWN - TASGRN	DP	GRW	25.11.21	1
TASGRN079	SR	MB	FOR CONSTRUCTION - SP80005737WO001APD-TASGRN	RC	PR	15.05.25	2

Telstra

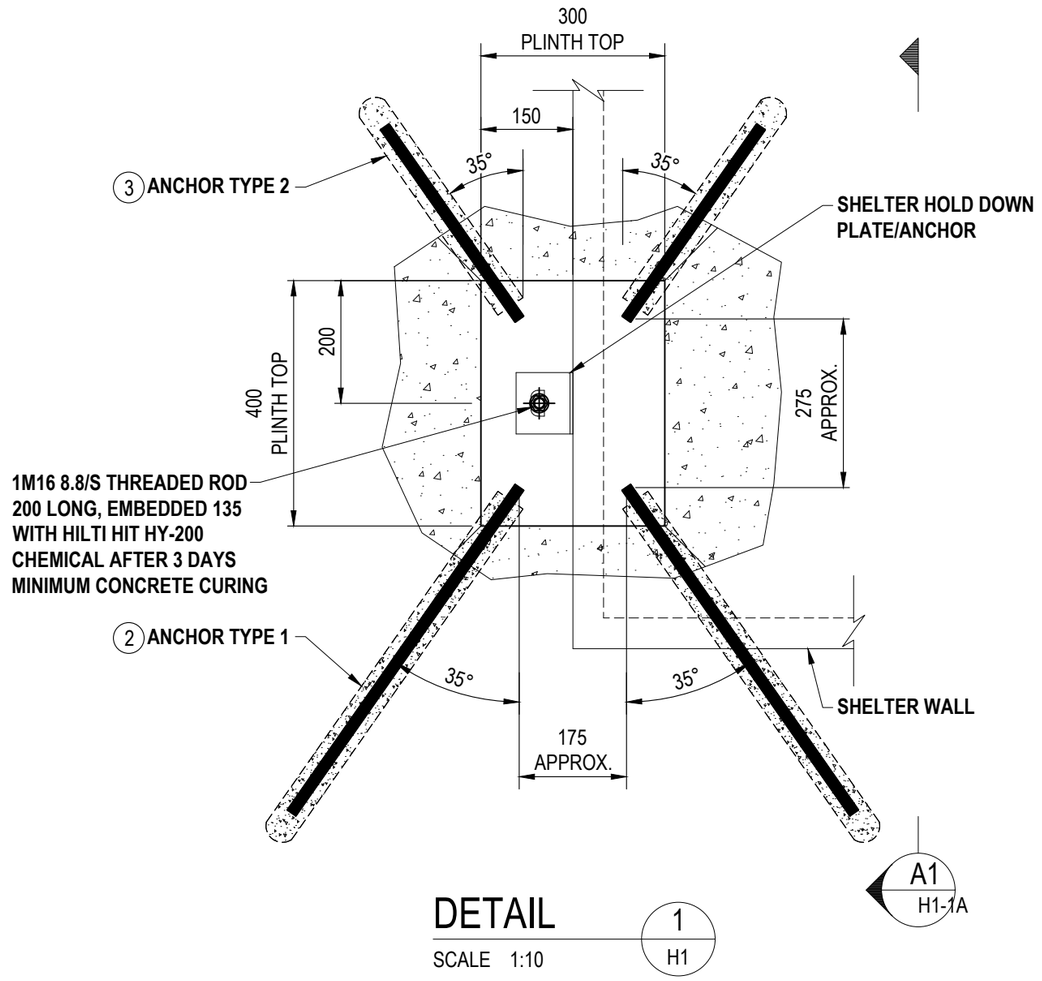
TAS GRN SITE 079
MT. KING WILLIAM
EQUIPMENT SHELTER FOOTINGS - TAS GRN - SHEET 1
FRANKLIN-GORDON WILD RIVERS NATIONAL PARK, SOUTHWEST, TAS 7139

DWG NO. T113006 SHT NO. H1

Cad file: T113006.dwg A3



SECTION A
SCALE 1:25 H1



DETAIL 1
SCALE 1:10 H1

REINFORCEMENT SCHEDULE									
SHAPE	PART	DIM 'A' (mm)	DIM 'B' (mm)	DIM 'C' (mm)	MATERIAL	CUT LENGTH (mm)	No. OFF	TOTAL MASS (Kg.)	DESCRIPTION
A	1	-	-	-	SL81 MESH	1.5m² APPROX TOTAL	-	11	TOP & BOTTOM REINFORCING MESH
B A	2	1950	50	-	N16	2030	8	29	ROCK ANCHOR 1
B A	3	1150	50	-	N16	1230	8	18	ROCK ANCHOR 2
					TOTAL WEIGHT STEEL			58 kg	
					TOTAL WEIGHT CONCRETE			0.4m³/1.0t	

FOR CONSTRUCTION

APD GLOBAL

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
TASGRN079	JM	HG	FOR CONSTRUCTION - SP30091946WO050DOWN - TASGRN	DP	GRW	25.11.21	1
TASGRN079	SR	MB	FOR CONSTRUCTION - SP80005737WO001APD-TASGRN	RC	PR	15.05.25	2

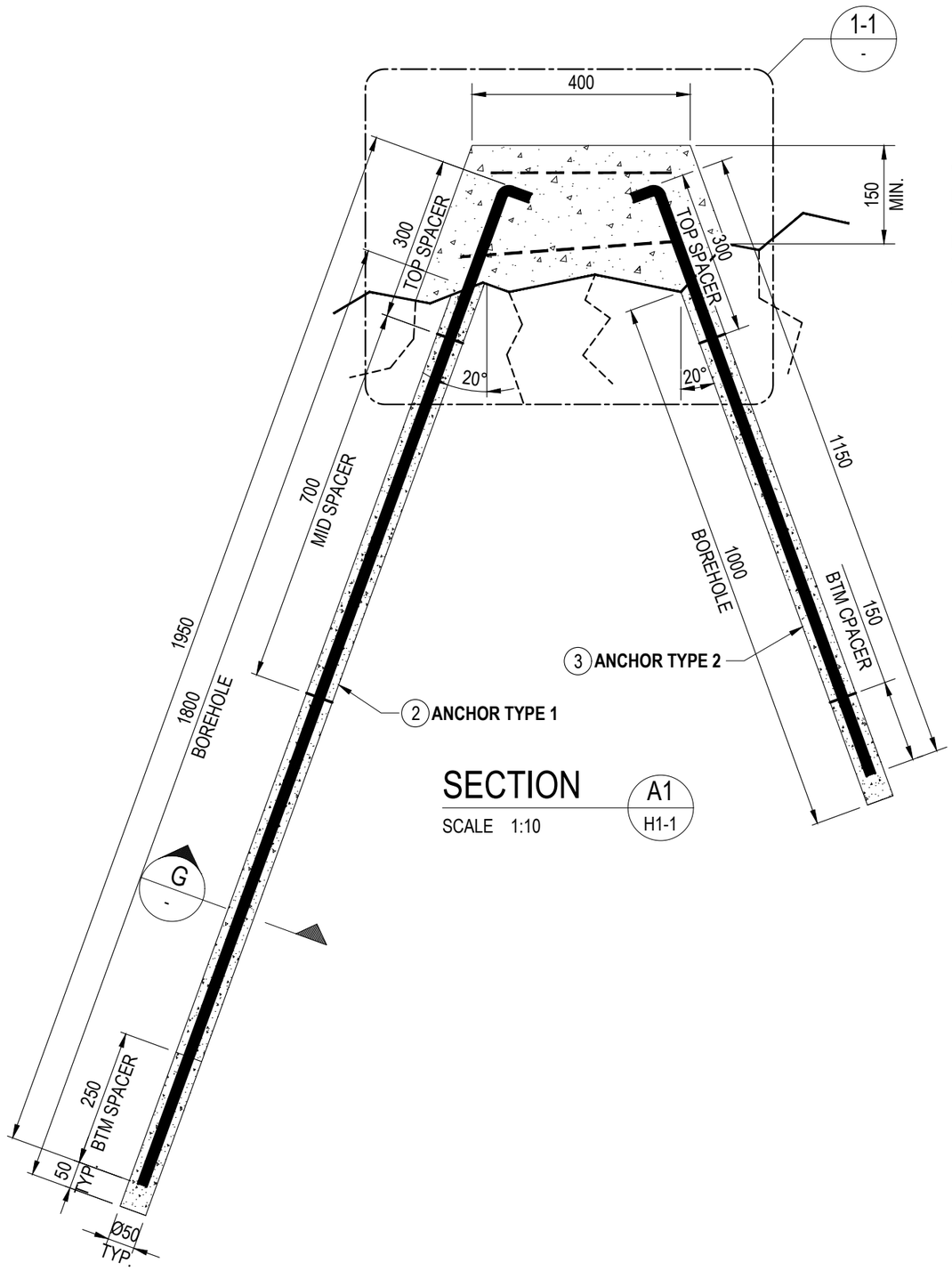
Telstra

TAS GRN SITE 079
MT. KING WILLIAM
EQUIPMENT SHELTER FOOTINGS - TAS GRN - SHEET 2
FRANKLIN-GORDON WILD RIVERS NATIONAL PARK, SOUTHWEST, TAS 7139

DWG NO. T113006 SHT NO. H1-1

Cad file: T113006.dwg A3

DO NOT SCALE

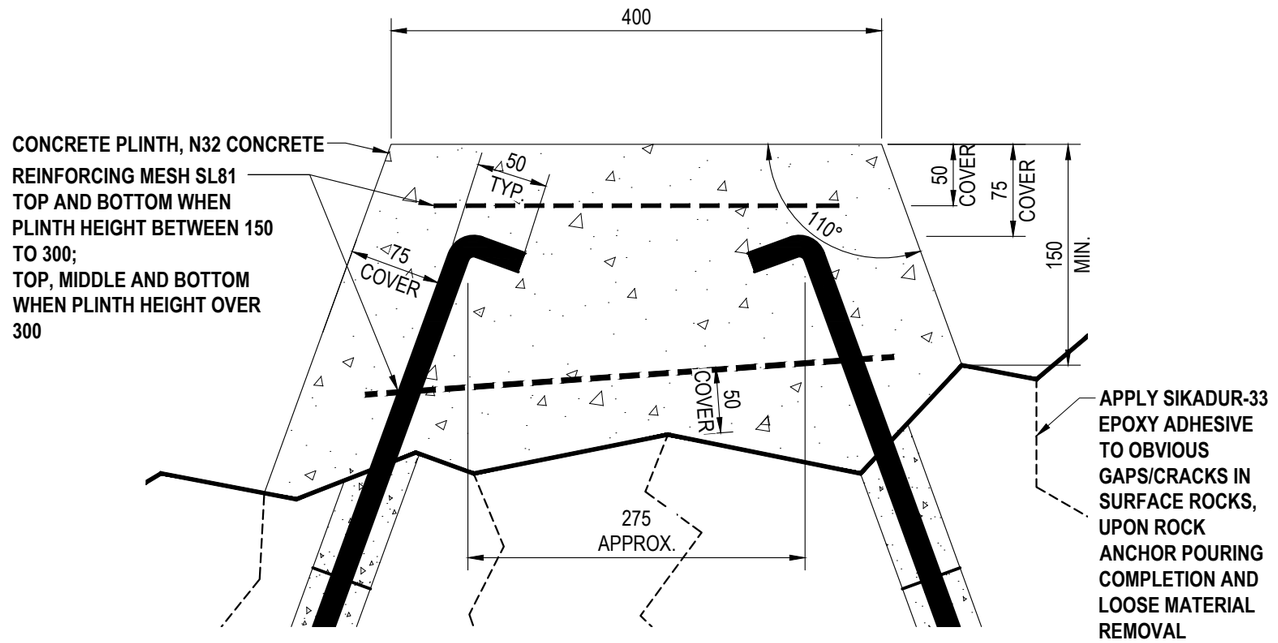


SECTION

SCALE 1:10

A1

H1-1

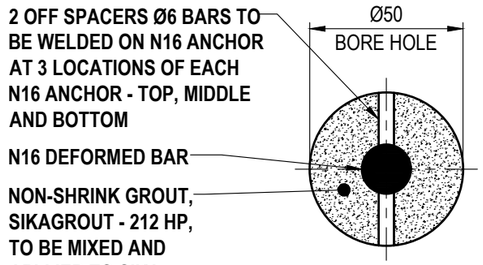


DETAIL

SCALE 1:5

1-1

-



SECTION

SCALE 1:2

G

-

TYPICAL ROCK ANCHOR

FOR CONSTRUCTION

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
TASGRN079	SR	MB	FOR CONSTRUCTION - SP80005737WO001APD-TASGRN	RC	PR	15.05.25	1

APD GLOBAL

Telstra

TAS GRN SITE 079
MT. KING WILLIAM
EQUIPMENT SHELTER FOOTINGS - TAS GRN - SHEET 3
FRANKLIN-GORDON WILD RIVERS NATIONAL PARK, SOUTHWEST, TAS 7139

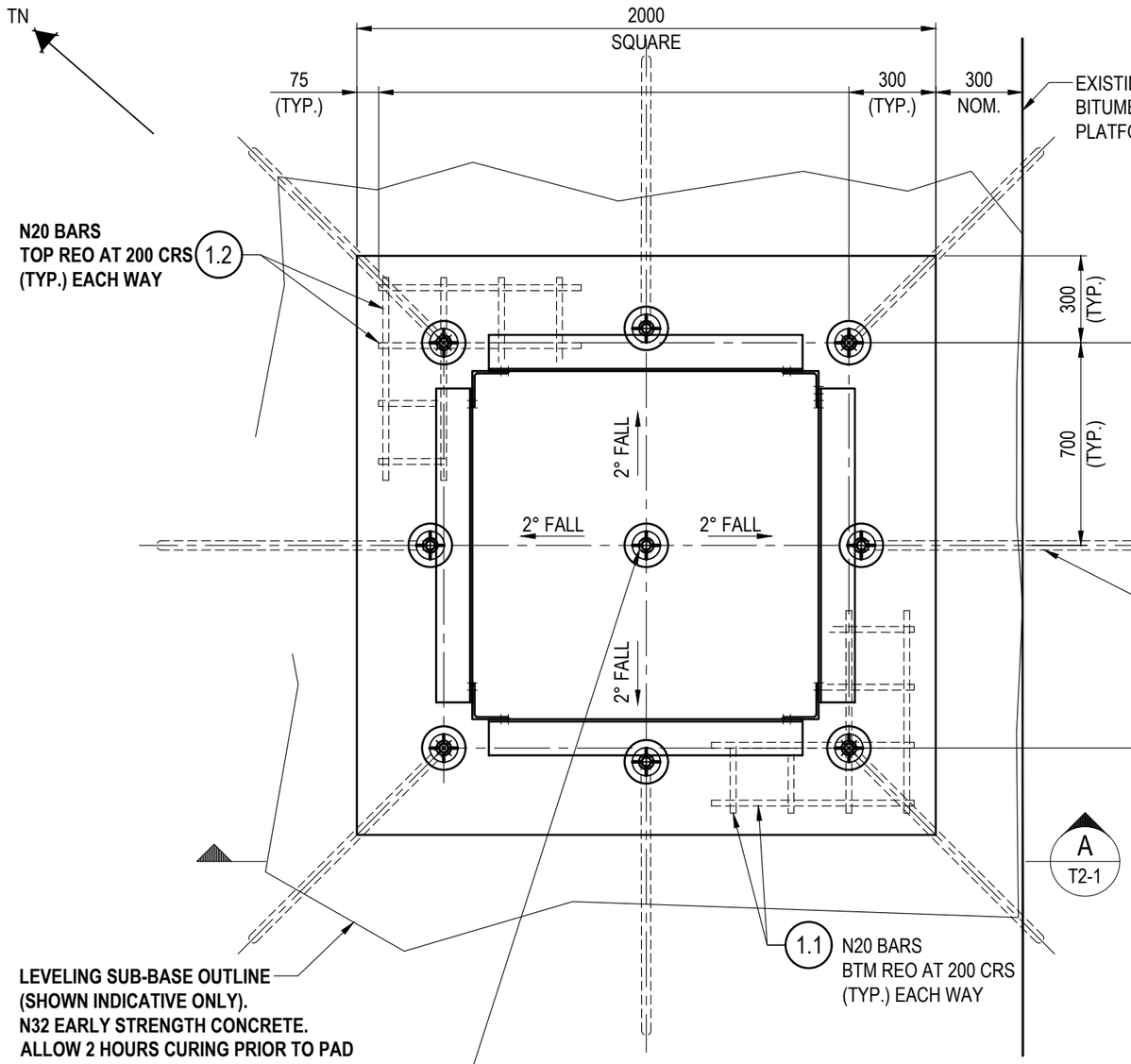
DWG NO. T113006

SHT NO. H1-1A

Cad file: T113006.dwg

A3

DO NOT SCALE



FOOTING PLAN
SCALE 1:20

REINFORCEMENT SCHEDULE

SHAPE	PART	DIM 'A' (mm)	DIM 'B' (mm)	DIM 'C' (mm)	MATERIAL	CUT LENGTH (mm)	No. OFF	TOTAL MASS (Kg.)	DESCRIPTION
B, C, A	1.1	1850	450	450	N20	2800	22	155	BOTTOM BARS BOTH WAY
	1.2	1850	450	450	N20	2800	22	155	TOP BARS BOTH WAY
A	2	5500	-	-	REIDBAR RB25	5500	9	195	ROCK ANCHOR
C, B, A	3	200	300	50	N12	400	40	15	SUB-BASE CONNECTING BARS

TOTAL WEIGHT STEEL	520 kg
TOTAL WEIGHT CONCRETE	4.0m³/9.6t
FOOTING SLAB	3.0m³/7.2t
SUB-BASE	1.0m³/2.4t

CONSTRUCTION PROCEDURE:

1. STRIP GROUND LOOSE MATERIAL AND VEGETATION, SLIGHTLY LEVEL THE SUBGRADE.
2. CARRY OUT MIDDLE PROOF LOAD TEST ANCHOR AND ALLOW 5 DAYS MINIMUM CURING PRIOR TO TEST.
3. CARRY OUT PROOF LOAD TEST AND VERIFY THE RESULTS.
4. CARRY OUT THE OTHER ANCHORING WORKS AFTER PROOF LOAD TEST IS VERIFIED
5. ALLOW 2 HOUR CURING PRIOR TO LEVELLING SUB-BASE WORKS.
6. PLACE THE N12 "Z" SHAPE SUB-BASE CONNECTING BARS AROUND PAD SLAB OUTLINE AND THE INNER AREAS IF ANY EXCESSIVE BARS ARE LEFT.
7. POUR SUB-BASE. ALLOW 2 HOUR CURING PRIOR TO PAD REINFORCEMENT PLACING AND TOWER CAST IN PLACEMENT.
8. POUR PAD FOOTING
9. ALLOW 2 HOURS MINIMUM CURING PRIOR TO REMOVING FORMWORK.
10. ALLOW 3 DAYS MINIMUM CURING PRIOR TO INSTALLING ANY CHEMICAL ANCHORS.

THE OTHER ROCK ANCHORS THAN THE TEST ANCHOR TO BE CONSTRUCTED AFTER PROOF LOAD TEST IS COMPLETED AND VERIFIED.

THE SHAPE OF SUB-BASE IS INDICATIVE ONLY. ACCURATE SHAPE TO BE DETERMINED ON SITE BASED ON ACTUAL GROUND CONDITIONS

NOTES:

1. FOR SITE SPECIFIC NOTES REFER SHEETS S0 & S0-1.
2. FOR STANDARD CONSTRUCTION NOTES REFER TELSTRA STANDARD DRAWING 017866P05.
3. ALL BOLTS TO BE SUPPLIED WITH STRUCTURAL NUT, LOCK NUT & FLAT WASHER.
4. DRILLED STEEL ON SITE, REMOVE ALL SWARF, BURRS & SHARP EDGES. APPLY 2 COATS OF ZINC RICH PAINT TO ALL SITE CUTS, WELD.
5. SUB-BASE AND FOOTING SLAB TO BE N32 CONCRETE. SUB-BASE TO BE EARLY STRENGTH CONCRETE. FOOTING SLAB COVER TO 50mm ALL SIDES.

FOR CONSTRUCTION

DESIGN SPECIFICATIONS

FOOTING HAS BEEN DESIGNED TO BASE REACTION AS BELOW:

- MOMENT 900kN.m
- SHEAR 200kN

APD GLOBAL

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
TASGRN079	JM	HG	FOR CONSTRUCTION - SP30091946WO050DOWN - TASGRN	DP	GRW	25.11.21	1
TASGRN079	SR	MB	FOR CONSTRUCTION - SP80005737WO001APD-TASGRN	RC	PR	15.05.25	2

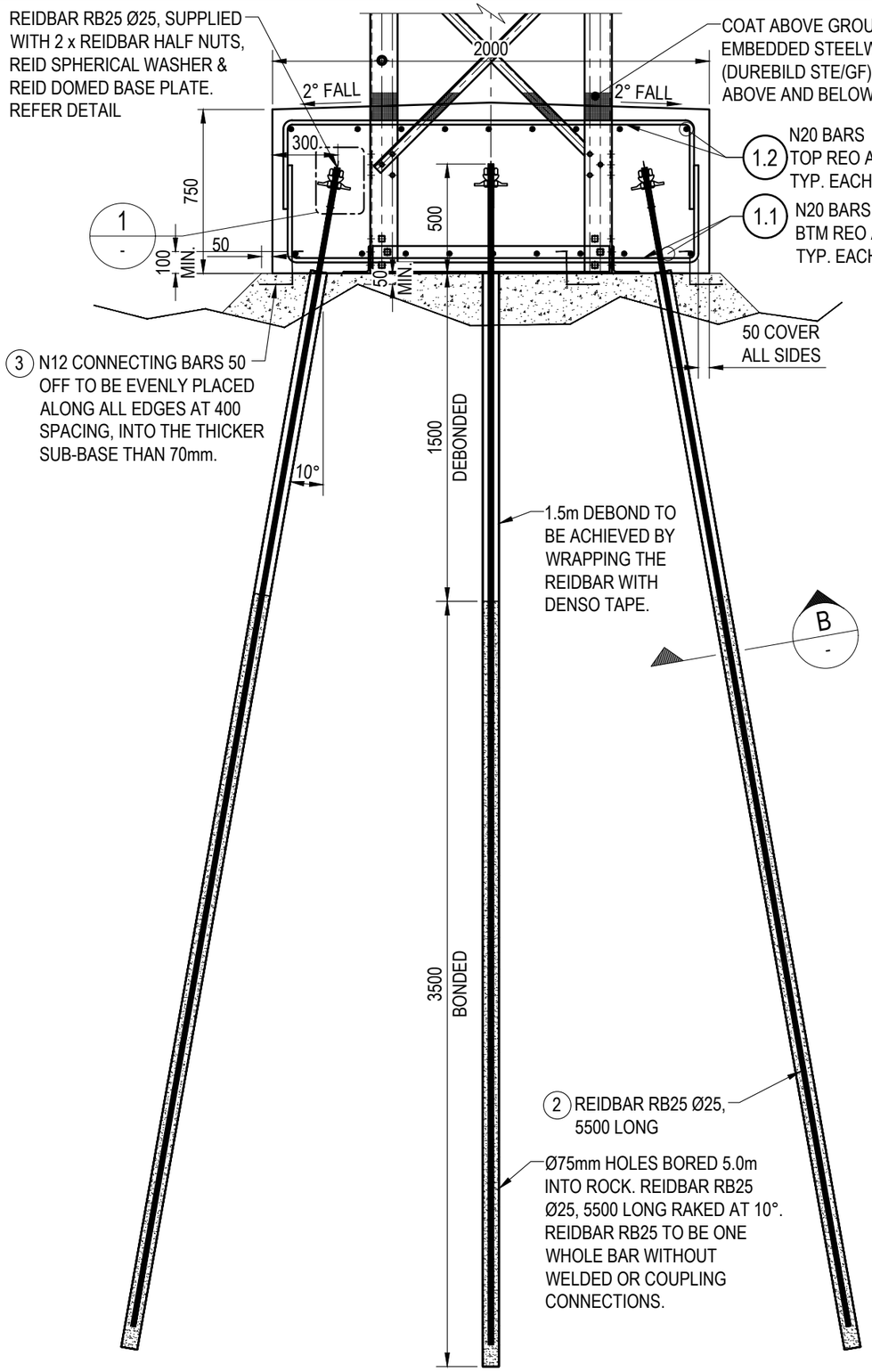
Telstra

TAS GRN SITE 079
MT. KING WILLIAM
FOOTING DETAILS - SHEET 1
FRANKLIN-GORDON WILD RIVERS NATIONAL PARK, SOUTHWEST, TAS 7139

DWG NO. T113006 SHT NO. T2

Cad file: T113006.dwg A3

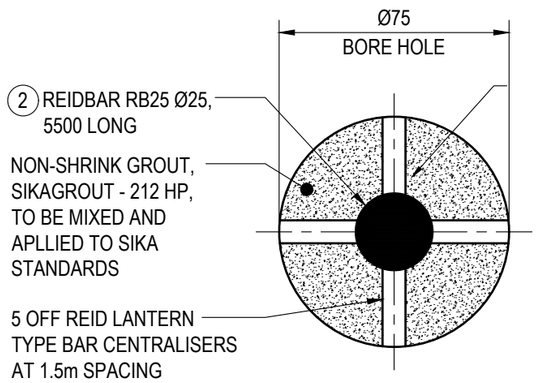
DO NOT SCALE



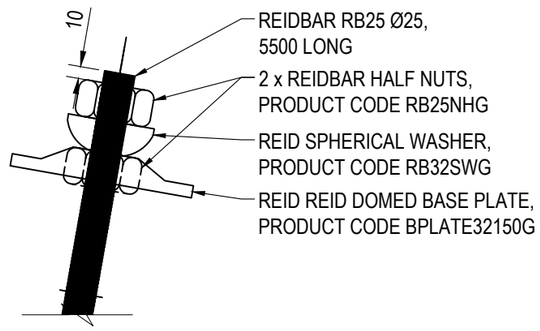
SECTION A - T2
SCALE 1:25

ROCK ANCHOR GROUTING:
GR1. ANCHOR HOLES SHOULD BE THOROUGHLY FLUSHED OUT AND WATER TESTED FOR LEAKAGE AT A LOSS RATE LESS THEN 0.5 LITRE/MIN OVER A PERIOD OF NOT LESS THAN 10 MINUTES. GREATER LOSS RATES MAY REQUIRE DRIER GROUT MIXTURE OF PRE-GROUTING.
GR2. ALL ANCHOR HOLES TO BE PRE-GROUTED.
GR3. GROUT TO BE INJECTED UNDER PRESSURE TO ENSURE HOLES AND ANY FISSURES IN ROCK ARE FILLED.
GR4. NON-SHRINK GROUT, SIKAGROUT - 212 HP, OR OTHER SUITABLE NON SHRINKING GROUT APPROVED BY TELSTRA. (MIN. GROUT STRENGTH 40MPa).

REPORTED SOIL CONDITIONS:
S1. GEOTECHNICAL REPORT BY INTRAX CONSULTING ENGINEERS (SITE NUMBER: 167549, DATED 30/07/2021).
S2. REFERENCE MUST BE MADE TO GEOTECHNICAL REPORT PRIOR TO SCHEDULING OF CONSTRUCTION.
S3. APD GLOBAL SHALL BE INFORMED IF THE GROUND CONDITIONS DIFFER FROM WHAT IS MENTIONED IN THE SOIL REPORT.



SECTION B - -
SCALE 1:2



DETAIL 1 - -
SCALE 1:5

DO NOT SCALE

FOR CONSTRUCTION

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
TASGRN079	JM	HG	FOR CONSTRUCTION - SP30091946WO050DOWN - TASGRN	DP	GRW	25.11.21	1
TASGRN079	SR	MB	FOR CONSTRUCTION - SP80005737WO001APD-TASGRN	RC	PR	15.05.25	2

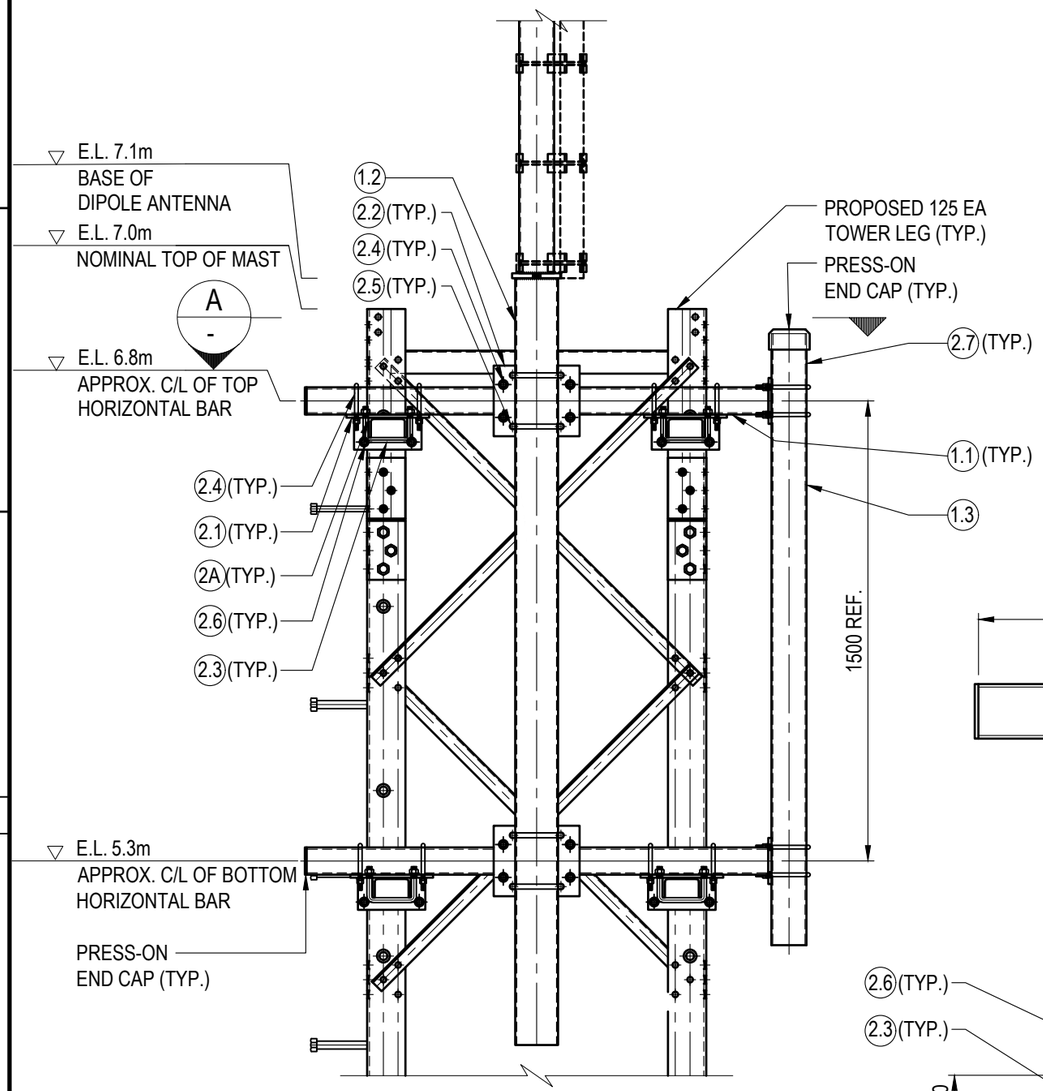
APD GLOBAL

Telstra

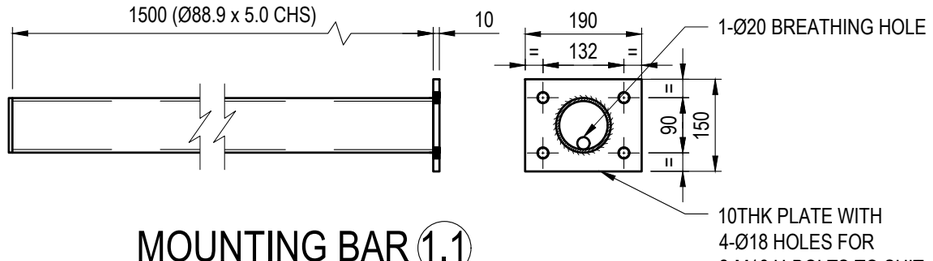
TAS GRN SITE 079
MT. KING WILLIAM
FOOTING DETAILS - SHEET 2
FRANKLIN-GORDON WILD RIVERS NATIONAL PARK, SOUTHWEST, TAS 7139

DWG NO. T113006
SHT NO. T2-1

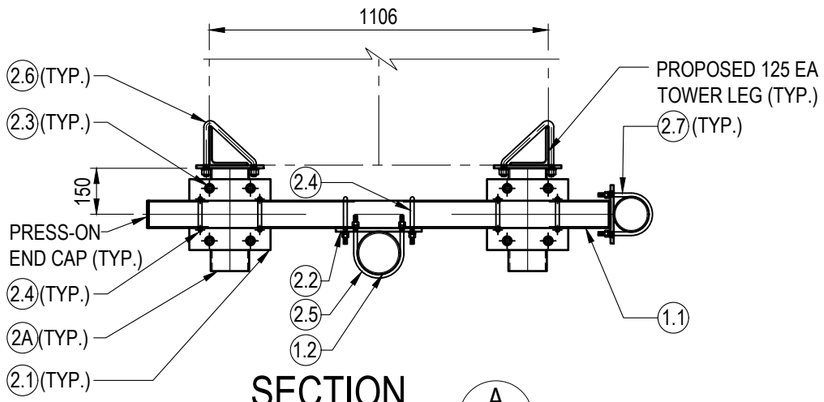
Cad file: T113006.dwg
A3



ELEVATION @ TOP
SCALE 1:20



MOUNTING BAR 1.1
SCALE 1:10



SECTION A-A
SCALE 1:20

PART LIST

ITEM	DESCRIPTION	QTY
1.1	Ø88.9 x 5.0 CHS (x 1500 LONG) MOUNTING BAR (GRADE C250L0) WITH END PLATE (PROVIDE GALVANISED PRESSED METAL END CAPS AFTER GALVANISING)	2
1.2	Ø139.7 x 5.0 CHS (x 2500 LONG) MOUNTING PIPE (GRADE C250L0) WITH Ø114.3 x 4.5 CHS (x 1000 LONG) EXTENSION (PROVIDE GALVANISED PRESSED METAL END CAPS AFTER GALVANISING)	1
1.3	Ø114.3 x 4.5 CHS (x 2000 LONG) MOUNTING PIPE (GRADE C250L0) (PROVIDE GALVANISED PRESSED METAL END CAPS AFTER GALVANISING)	1
2A	SEE DETAIL ON SHEET T3-1- LEG BRACKET (SUB-ASSEMBLY)	4
2.1	SEE DETAIL ON SHEET T3-1 - FIXING PLATE	4
2.2	SEE DETAIL ON SHEET T3-1 - FIXING PLATE	2
2.3	Ø16 U-BOLT TO SUIT 125 PFC - REFER TO 017866P71 - SHEET 63	8
2.4	Ø16 U-BOLT TO SUIT Ø88.9 CHS - REFER TO 017866P70 - SHEET 4	12
2.5	Ø16 U-BOLT TO SUIT Ø139.7 CHS - REFER TO 017866P70 - SHEET 4	4
2.6	Ø16 V-BOLT TO SUIT 125 EA - REFER TO 017866P71- SHEET 23	8
2.7	Ø16 U-BOLT TO SUIT Ø114.3 CHS - REFER TO 017866P70 - SHEET 4	8

NOTE FOR MANUFACTURER INSTALLER
TRIAL ASSEMBLE PRIOR TO GALVANISING AND DELIVERY TO SITE TO ENSURE CORRECT FIT AND NUMBER OF PARTS

NOTES:
1. FOR SITE SPECIFIC NOTES REFER TO SHEET S0.
2. REFER TO DRAWING 017866P05 FOR TELSTRA'S STANDARD CONSTRUCTION NOTES.
3. REFER TO DRAWING 017866P70 SHEET 4 FOR CIRCULAR U-BOLT DETAILS.
4. REFER TO DRAWING 017866P71 SHEET 23 FOR ANGULAR BOLT DETAILS.
5. ALL WELDING TO BE CATEGORY SP TO AS1554.
   ALL WELDS TO BE 5mm CFW, U.N.O.
6. ALL HOLLOW SECTIONS TO AS1163 GRADE C250L0 U.N.O..
   ALL HOT ROLLED STEEL TO AS3678 & AS3679.1 (GRADE 300) U.N.O.
7. REFER TO DRAWING 017866P71 SHEET 53 FOR SQUARE U-BOLT DETAILS.

FOR CONSTRUCTION

DO NOT SCALE

COMPLIANCE BOX
COMPLETED AS PER DESIGN ☐
ALTERATIONS IN RED ☐
NAME (PRINT)
SIGNATURE DATE

Downer
Relationships creating success

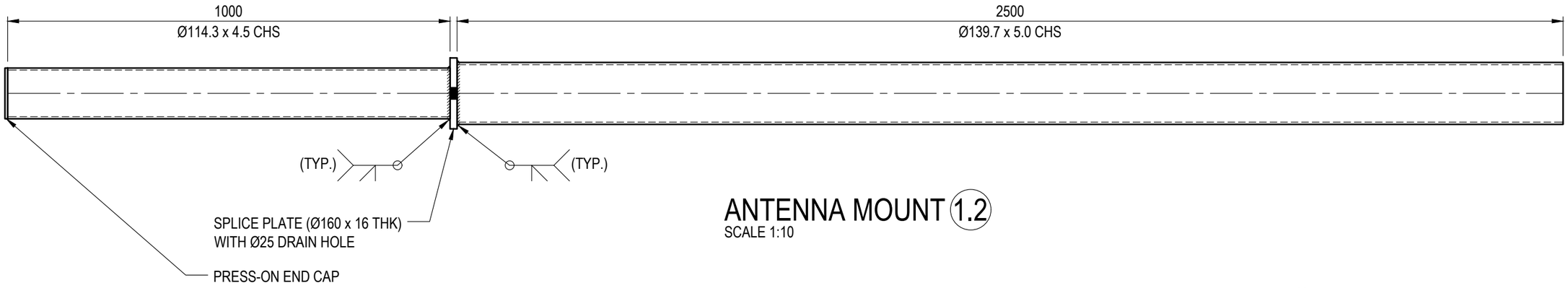
ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
TASGRN079	JM	HG	FOR CONSTRUCTION - SP30091946WO050DOWN - TASGRN	DP	GRW	25.11.21	1

Telstra

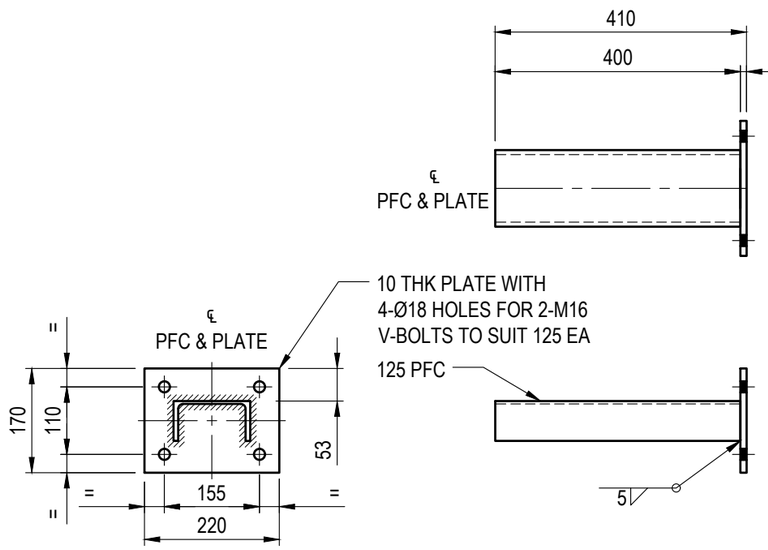
TAS GRN SITE 079
MT. KING WILLIAM
ANTENNAS A1 & A5 MOUNT DETAILS - SHEET 1
FRANKLIN-GORDON WILD RIVERS NATIONAL PARK, SOUTHWEST, TAS 7139

DWG NO. T113006
SHT NO. T3
Cad file: T113006.dwg
A3

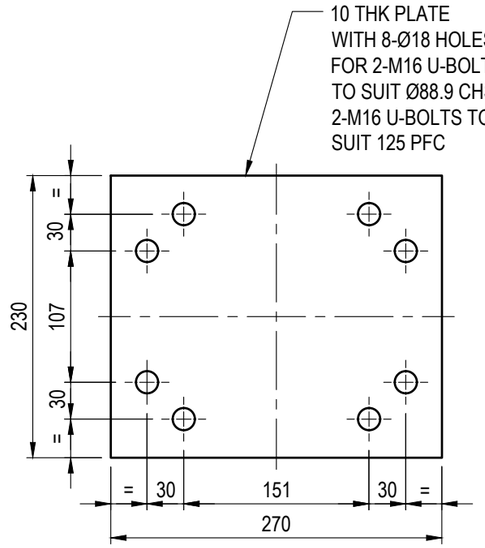
COMPLIANCE BOX
COMPLETED AS PER DESIGN ☐
ALTERATIONS IN RED ☐
NAME (PRINT)
SIGNATURE DATE



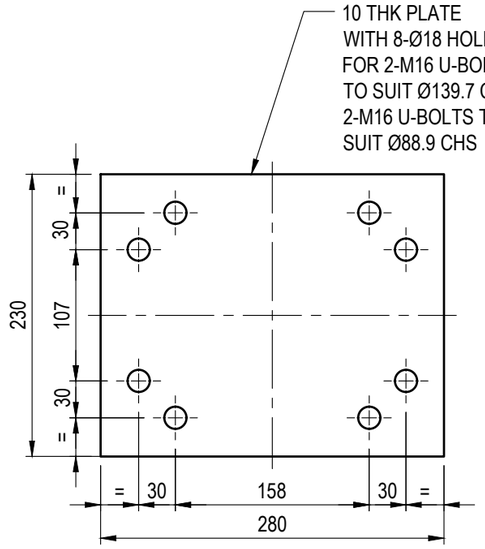
ANTENNA MOUNT 1.2
SCALE 1:10



LEG BRACKET (SUB ASSEMBLY) 2A
SCALE 1:10



FIXING PLATE 2.1
SCALE 1:5



FIXING PLATE 2.2
SCALE 1:5

FOR CONSTRUCTION

Downer
Relationships creating success

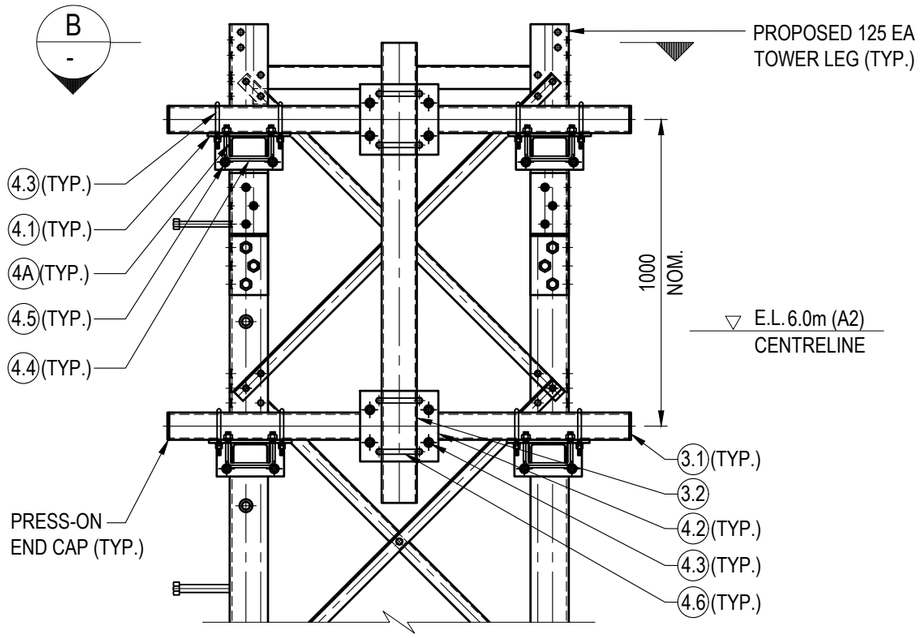
ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
TASGRN079	JM	HG	FOR CONSTRUCTION - SP30091946WO050DOWN - TASGRN	DP	GRW	25.11.21	1

Telstra

TAS GRN SITE 079
MT. KING WILLIAM
ANTENNAS A1 & A5 MOUNT DETAILS - SHEET 2
FRANKLIN-GORDON WILD RIVERS NATIONAL PARK, SOUTHWEST, TAS 7139

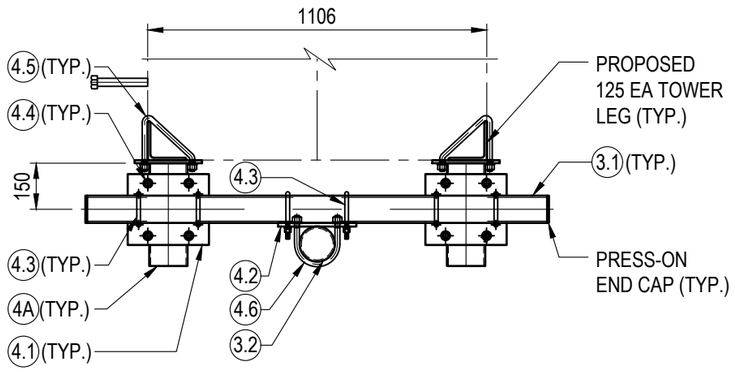
DWG NO. T113006
SHT NO. T3-1
Cad file: T113006.dwg
A3

DO NOT SCALE



ELEVATION A2 (EL 6.0m)

SCALE 1:20



SECTION B-

SCALE 1:20

PART LIST

ITEM	DESCRIPTION	QTY
3.1	Ø88.9 x 5.0 CHS (x 1500 LONG) MOUNTING BAR (GRADE C250L0) (PROVIDE GALVANISED PRESSED METAL END CAPS AFTER GALVANISING)	2
3.2	Ø114.3 x 5.4 CHS (x 1500 LONG) MOUNTING PIPE (GRADE C250LO) (PROVIDE GALVANISED PRESSED METAL END CAPS AFTER GALVANISING)	1
4A	SEE DETAIL ON SHEET T3-3 - LEG BRACKET (SUB-ASSEMBLY)	4
4.1	SEE DETAIL ON SHEET T3-3 - FIXING PLATE	4
4.2	SEE DETAIL ON SHEET T3-3 - FIXING PLATE	2
4.3	Ø16 U-BOLT TO SUIT Ø88.9 CHS - REFER TO 017866P70 - SHEET 4	12
4.4	Ø16 U-BOLT TO SUIT 125 PFC - REFER TO 017866P70 - SHEET 63	8
4.5	Ø16 V-BOLT TO SUIT 125 EA - REFER TO 017866P71- SHEET 23	8
4.6	Ø16 U-BOLT TO SUIT Ø114.3 CHS - REFER TO 017866P70 - SHEET 4	4

COMPLIANCE BOX
COMPLETED AS PER DESIGN ☐
ALTERATIONS IN RED ☐
NAME (PRINT)
SIGNATURE DATE

NOTE FOR MANUFACTURER INSTALLER

TRIAL ASSEMBLE PRIOR TO GALVANISING AND DELIVERY TO SITE TO ENSURE CORRECT FIT AND NUMBER OF PARTS

NOTES:

1. FOR SITE SPECIFIC NOTES REFER TO SHEET S0.
2. REFER TO DRAWING 017866P05 FOR TELSTRA'S STANDARD CONSTRUCTION NOTES.
3. REFER TO DRAWING 017866P70 SHEET 4 FOR CIRCULAR U-BOLT DETAILS.
4. REFER TO DRAWING 017866P71 SHEET 23 FOR ANGULAR BOLT DETAILS.
5. ALL WELDING TO BE CATEGORY SP TO AS1554.
   ALL WELDS TO BE 5mm CFW, U.N.O.
6. ALL HOLLOW SECTIONS TO AS1163 GRADE C250L0 U.N.O..
   ALL HOT ROLLED STEEL TO AS3678 & AS3679.1 (GRADE 300) U.N.O.
7. REFER TO DRAWING 017866P71 SHEET 53 FOR SQUARE U-BOLT DETAILS.

FOR CONSTRUCTION

DO NOT SCALE

Downer
Relationships creating success

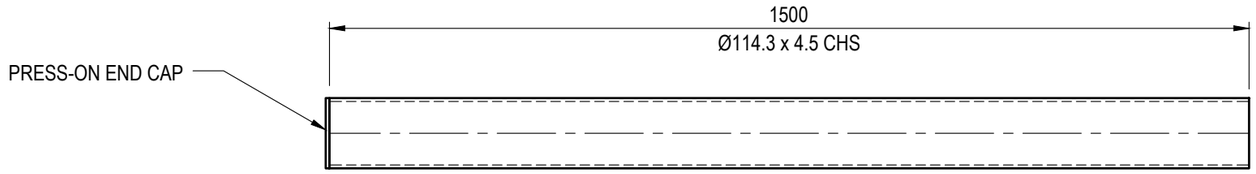
ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
TASGRN079	JM	HG	FOR CONSTRUCTION - SP30091946WO050DOWN - TASGRN	DP	GRW	25.11.21	1

Telstra

TAS GRN SITE 079
MT. KING WILLIAM
ANTENNA A2 MOUNT DETAILS - SHEET 1
FRANKLIN-GORDON WILD RIVERS NATIONAL PARK, SOUTHWEST, TAS 7139

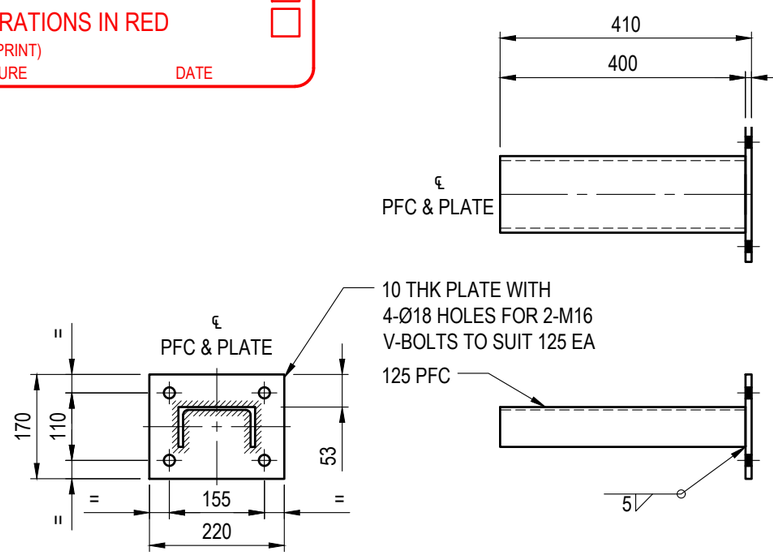
DWG NO. T113006
SHT NO. T3-2

Cad file: T113006.dwg
A3

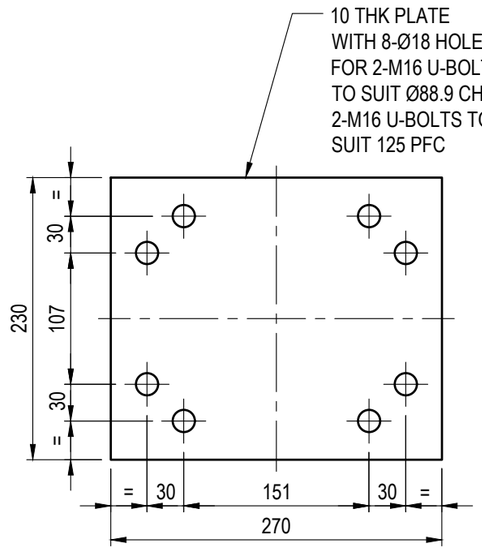


PARABOLIC ANTENNA MOUNT 3.1
SCALE 1:10

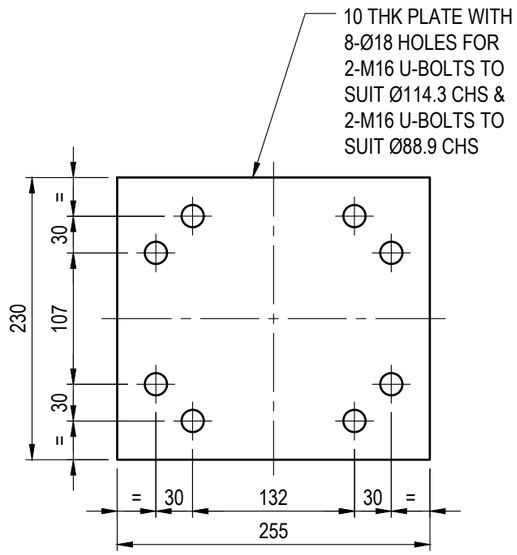
COMPLIANCE BOX
COMPLETED AS PER DESIGN ☐
ALTERATIONS IN RED ☐
NAME (PRINT)
SIGNATURE DATE



LEG BRACKET (SUB ASSEMBLY) 4A
SCALE 1:10



FIXING PLATE 4.1
SCALE 1:5



FIXING PLATE 4.2
SCALE 1:5

FOR CONSTRUCTION

Downer
Relationships creating success

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
TASGRN079	JM	HG	FOR CONSTRUCTION - SP30091946WO050DOWN - TASGRN	DP	GRW	25.11.21	1

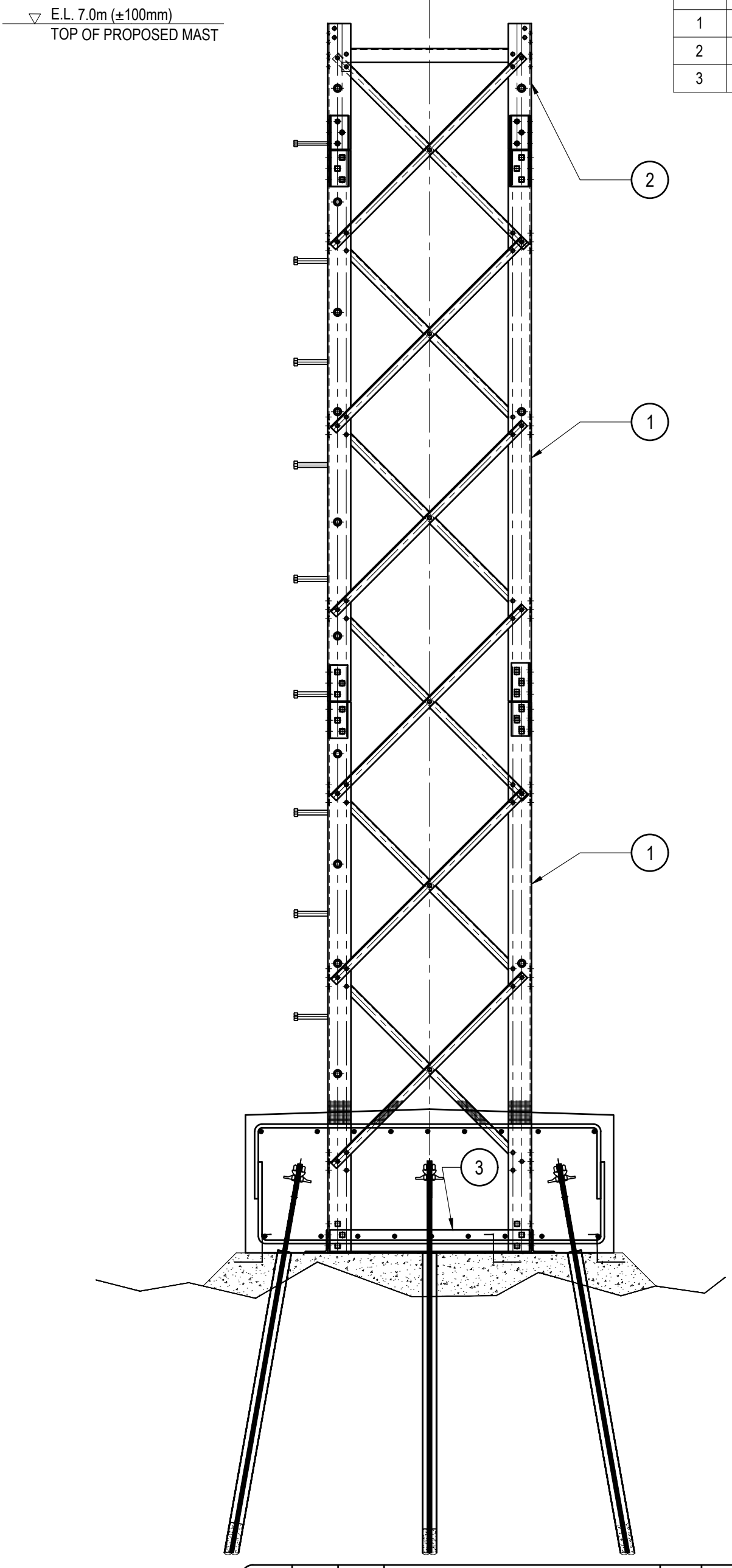
Telstra

TAS GRN SITE 079
MT. KING WILLIAM
ANTENNA A2 MOUNT DETAILS - SHEET 2
FRANKLIN-GORDON WILD RIVERS NATIONAL PARK, SOUTHWEST, TAS 7139

DWG NO. T113006 SHT NO. T3-3

Cad file: T113006.dwg A3

DO NOT SCALE



PART LIST		
ITEM	MODULE SCHEDULE	QTY
1	MAST SEGMENT MODULE. REFER TO SHEET T4-1	3
2	TOP SEGMENT MAST MODULE. REFER TO SHEET T4-2	1
3	HORIZONTAL BOTTOM BRACE. REFER TO SHEET T4-3	4

TOWER CONSTRUCTION SEQUENCE:

1. DRILL HOLES IN ROCK AND INSTALL ROCK ANCHORS PER T2 DRAWINGS.
2. ALLOW MINIMUM 3 DAYS OF CURING TIME FOR GROUT.
3. FORMWORK FOR CONCRETE FOOTING TO BE ERECTED.
4. BOLT CAGE AND MAST SEGMENT (1 OFF) TO BE PREASSEMBLED OFFSITE AND LIFTED INTO POSITION AND SECURED TO ROCK ANCHORS.
5. POUR CONCRETE AND ALLOW FOR 7 DAYS CURING TIME PRIOR TO FURTHER WORKS.
6. PREASSEMBLE EVERY MAST SEGMENT, LIFT IT AND ATTACH IT TO PARTIALLY ERECTED TOWER.
7. PREASSEMBLE TOP SEGMENT AND ATTACH IT TO PARTIALLY ERECTED TOWER.
8. MAKE GOOD TOWER INSTALLATION.

NOTES:

1. FOR TELSTRA STANDARD CONSTRUCTION NOTES REFER TO DRAWING 017866P05.
2. TOWER INSTALLATION WORKS TO BE CARRIED ON A DAY OF FAIR WIND CONDITIONS (LESS THAN 28m/s).
3. REFER TO TELSTRA STANDARD 017866P05 SHEET No. 1 ISSUE 2 FOR STRUCTURAL STEEL NOTES.
4. ALL BOLTS SUPPLIED COMPLETE WITH CORRESPONDING NUTS & SPRING WASHERS.
5. TRIAL ASSEMBLE PRIOR TO GALVANISING AND DELIVERY TO SITE TO ENSURE CORRECT FIT AND NUMBER OF PARTS.
6. APPLY 2 COATS OF ZINC RICH PAINT TO ALL FRESHLY CUT, WELDED OR DRILLED STEEL ON SITE, REMOVE ALL SWARF, BURRS & SHARP EDGES.
7. THE CLASS OF STEEL, UNLESS NOTED OTHERWISE, SHALL BE:
- WB, WC, UB, UC, PFC, TFB, EA, UA SECTIONS - GRADE 300
- SHS, RHS, CHS SECTIONS - GRADE 350
- OTHER STEEL - GRADE 250
8. BOLTS NOT DESIGNED SHALL BE GRADE 8.8/S BOLTS TO AS1252 TIGHTENED TO A SNUG TIGHT FIT. BOLTS DESIGNED HS SHALL BE HIGH STRENGTH STEEL BOLTS TO AS1252 TIGHTENED TO A SNUG TIGHT FIT.
9. DARK COLOUR ADDITIVE TO GENERAL PURPOSE CONCRETE MIX OR APPLY SURFACE COLOUR TREATMENT TO MATCH SURROUNDING ENVIRONMENTAL COLOURS.

COMPLIANCE BOX
COMPLETED AS PER DESIGN ☐
ALTERATIONS IN RED ☐
NAME (PRINT)
SIGNATURE DATE

FREE STANDING MAST - ELEVATION

SCALE 1:25

FOR CONSTRUCTION

DO NOT SCALE

APD GLOBAL

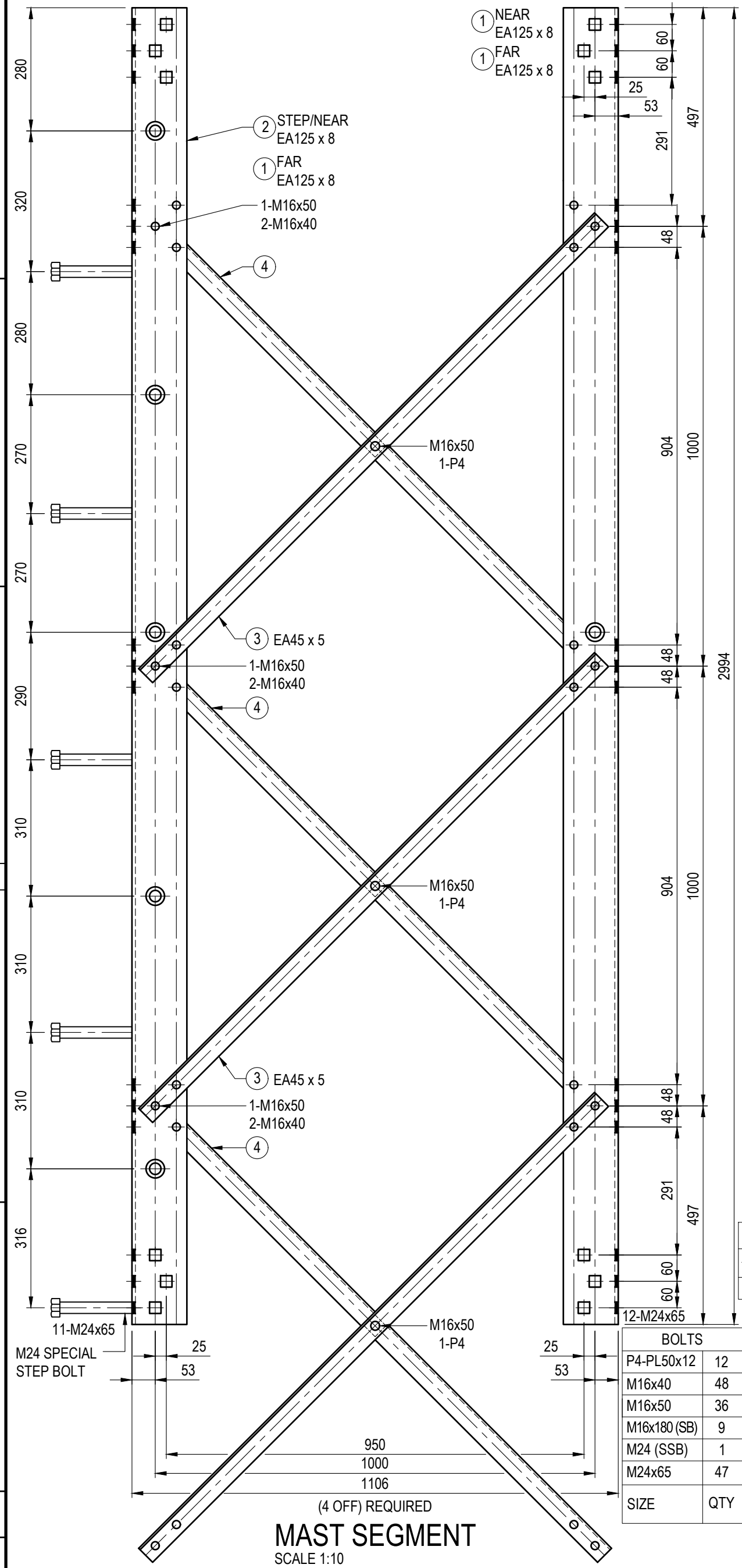
ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
TASGRN079	JM	HG	FOR CONSTRUCTION - SP30091946WO050DOWN - TASGRN	DP	GRW	25.11.21	1
TASGRN079	SR	MB	FOR CONSTRUCTION - SP80005737WO001APD-TASGRN	RC	PR	15.05.25	2

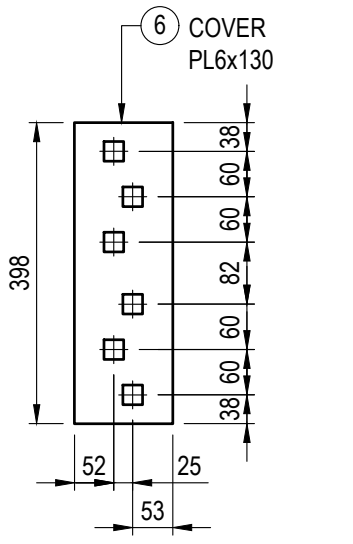
Telstra

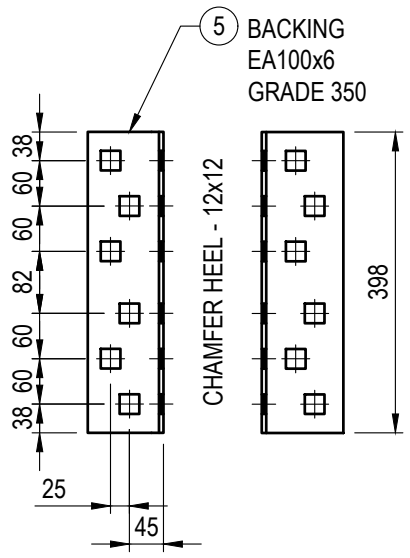
TAS GRN SITE 079
MT. KING WILLIAM
MAST GENERAL ARRANGEMENT
FRANKLIN-GORDON WILD RIVERS NATIONAL PARK, SOUTHWEST, TAS 7139

DWG NO. T113006 SHT NO. T4

Cad file: T113006.dwg A3V







NOTES:

1. THIS DRAWING IS A DESIGN DRAWING. IT IS THE FABRICATOR'S RESPONSIBILITY TO PREPARE FABRICATION DRAWING (IF REQUIRED) TO ENSURE ACCURACY OF PARTS AND CORRECT FIT.
2. REFER TO SHEET T4-2 FOR COMPLETE NOTES.

NOTE FOR MANUFACTURER INSTALLER

TRIAL ASSEMBLE PRIOR TO GALVANISING AND DELIVERY TO SITE TO ENSURE CORRECT FIT AND NUMBER OF PARTS

COMPLIANCE BOX

COMPLETED AS PER DESIGN ☐

ALTERATIONS IN RED ☐

NAME (PRINT)

SIGNATURE DATE

⊕	DENOTES Ø17.5 HOLE FOR M16 BOLT WITH 26mm MIN END GAUGE
●	DENOTES Ø22.0 HOLE FOR M20 BOLT WITH 32mm MIN END GAUGE
⊞	DENOTES Ø26.0 HOLE FOR M24 BOLT WITH 38mm MIN END GAUGE

MAST SEGMENT (MASS = 321.2kg)

ITEM NO.	NO. OFF	DESCRIPTION	LENGTH	UNIT WEIGHT	MATERIAL
6	8	PL6x130 GRADE 250	398	2.5	3678-250
5	4	EA100x6 GRADE 350	398	3.7	3679-350
4	12	EA45x5 GRADE 350	1466	4.5	3679-350
3	12	EA45x5 GRADE 350	1466	4.5	3679-350
2	1	EA125x8 GRADE 350	2994	44.6	3679-350
1	3	EA125x8 GRADE 350	2994	44.6	3679-350

SIZE	QTY
P4-PL50x12	12
M16x40	48
M16x50	36
M16x180 (SB)	9
M24 (SSB)	1
M24x65	47

MAST SEGMENT

SCALE 1:10

FOR CONSTRUCTION

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
TASGRN079	JM	HG	FOR CONSTRUCTION - SP30091946WO050DOWN - TASGRN	DP	GRW	25.11.21	1
TASGRN079	SR	MB	FOR CONSTRUCTION - SP80005737WO001APD-TASGRN	RC	PR	15.05.25	2

APD GLOBAL

Telstra

TAS GRN SITE 079

MT. KING WILLIAM

MAST SEGMENT DETAILS

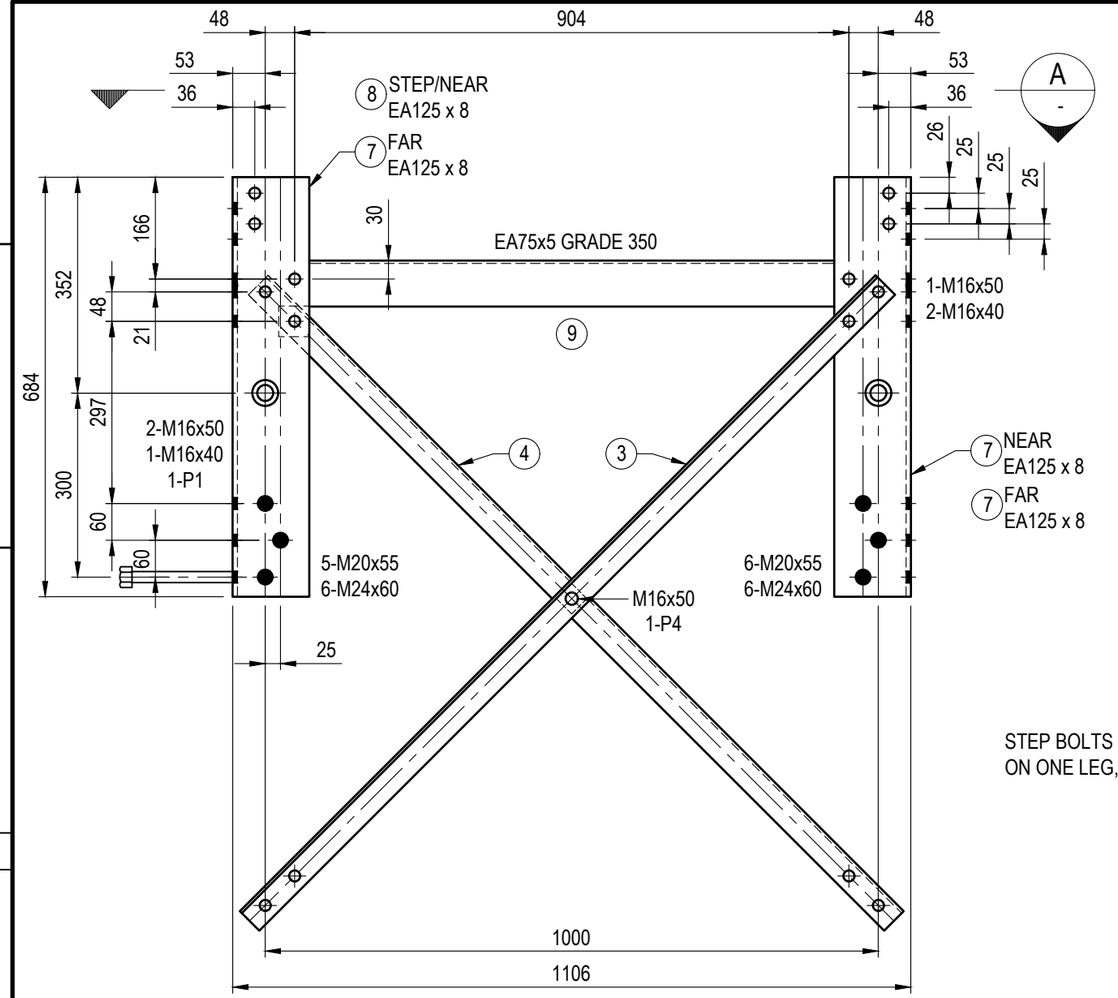
FRANKLIN-GORDON WILD RIVERS NATIONAL PARK, SOUTHWEST, TAS 7139

DWG NO. T113006

SHT NO. T4-1

Cad file: T113006.dwg A3V

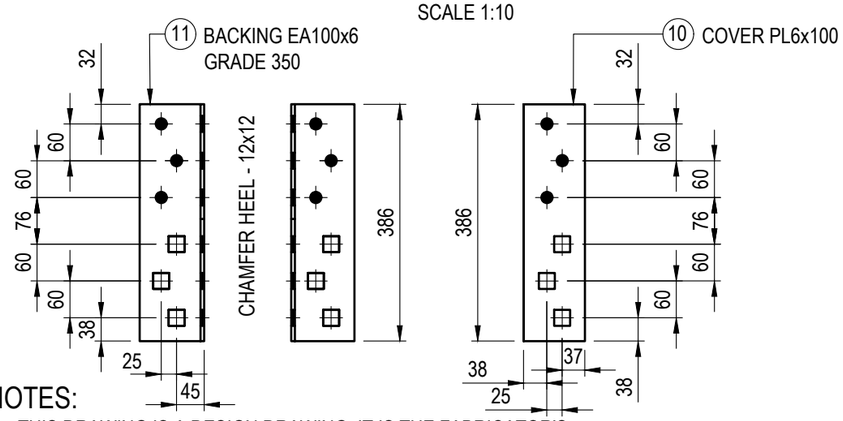
DO NOT SCALE



(1 OFF) REQUIRED

TOP SEGMENT

SCALE 1:10

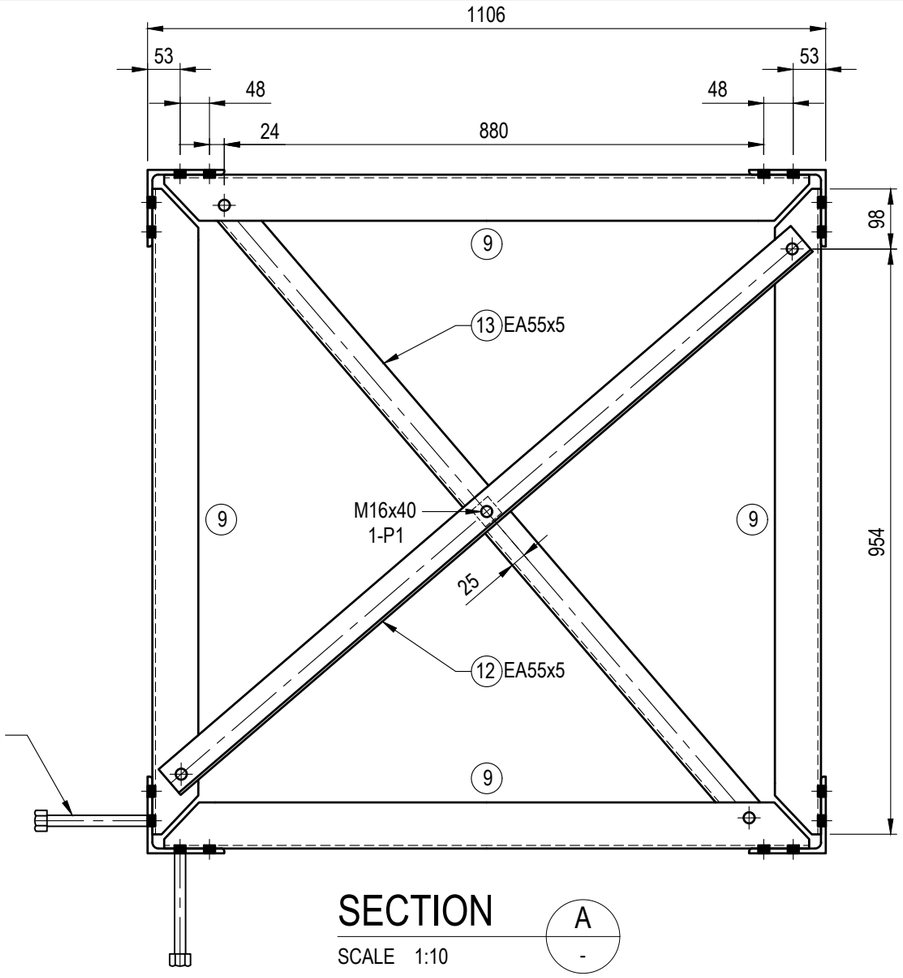


NOTES:

1. THIS DRAWING IS A DESIGN DRAWING. IT IS THE FABRICATOR'S RESPONSIBILITY TO PREPARE FABRICATION DRAWING (IF REQUIRED) TO ENSURE ACCURACY OF PARTS AND CORRECT FIT.
2. REFER TO SHEET T4-2 FOR COMPLETE NOTES.

NOTE FOR MANUFACTURER INSTALLER

TRIAL ASSEMBLE PRIOR TO GALVANISING AND DELIVERY TO SITE TO ENSURE CORRECT FIT AND NUMBER OF PARTS



SECTION

SCALE 1:10

A -

COMPLIANCE BOX

COMPLETED AS PER DESIGN ☐

ALTERATIONS IN RED ☐

NAME (PRINT)

SIGNATURE DATE

⊕	DENOTES Ø17.5 HOLE FOR M16 BOLT WITH 26mm MIN END GAUGE
●	DENOTES Ø22.0 HOLE FOR M20 BOLT WITH 32mm MIN END GAUGE
⊞	DENOTES Ø26.0 HOLE FOR M24 BOLT WITH 38mm MIN END GAUGE

BOLTS	
P4-PL50x12	4
P1-PL50x6	5
M16x35	4
M16x40	13
M16x50	16
M16x180 (SB)	1
M20 (SSB)	1
M20x55	23
M24x60	24
SIZE	QTY

TOP SEGMENT (MASS = 142.4kg)

ITEM NO.	NO. OFF	DESCRIPTION	LENGTH	UNIT WEIGHT	MATERIAL
13	1	EA55x5 GRADE 350	1359	5.2	3679-350
12	1	EA55x5 GRADE 350	1359	5.2	3679-350
11	4	EA100x6 GRADE 350	386	3.5	3679-250
10	8	PL6x130 GRADE 250	386	2.4	3678-250
9	4	EA75x5 GRADE 350	1052	5.5	3679-350
8	1	EA125x8 GRADE 350	684	10.2	3679-350
7	3	EA125x8 GRADE 350	684	10.2	3679-350
4	4	EA45x5 GRADE 350	1466	4.5	3679-350
3	4	EA45x5 GRADE 350	1466	4.5	3679-350

FOR CONSTRUCTION

APD GLOBAL

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
TASGRN079	JM	HG	FOR CONSTRUCTION - SP30091946WO050DOWN - TASGRN	DP	GRW	25.11.21	1
TASGRN079	SR	MB	FOR CONSTRUCTION - SP80005737WO001APD-TASGRN	RC	PR	15.05.25	2

Telstra

TAS GRN SITE 079

MT. KING WILLIAM

TOP SEGMENT DETAILS

FRANKLIN-GORDON WILD RIVERS NATIONAL PARK, SOUTHWEST, TAS 7139

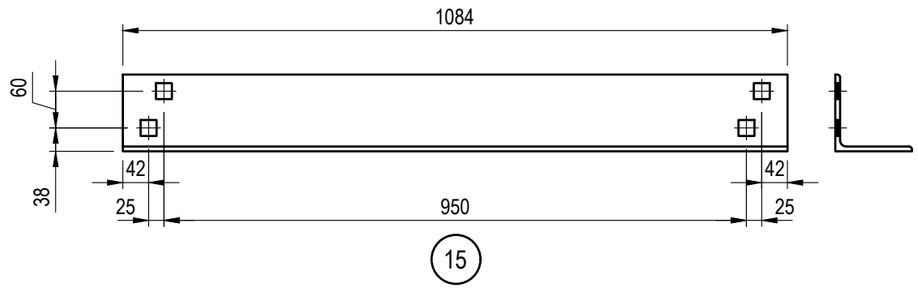
DWG NO. T113006

SHT NO. T4-2

Cad file: T113006.dwg

DO NOT SCALE

A3



15

BRACE (EA 125x8)
SCALE 1:10

NOTES:

1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS4100 (CURRENT EDITIONS WITH AMENDMENTS) AND OTHER RELEVANT AUSTRALIAN STANDARDS.
2. THE CLASS OF STEEL, UNLESS NOTED OTHERWISE, SHALL BE:
   - WB, WC, UB, UC, PFC, TFB, EA, UA SECTIONS - GRADE 300.
   - SHS, RHS, CHS SECTIONS - GRADE 350.
   - OTHER STEEL - GRADE 250.

   & IN ACCORDANCE WITH AS3679 & AS1163 GRADE 350.
3. WELDING SHALL BE PERFORMED BY AN EXPERIENCED OPERATOR IN ACCORDANCE WITH AS1554.
4. BOLTS NOT DESIGNATED SHALL BE GRADE 8.8/8 BOLTS T0 AS1252 TIGHTENED TO A SNUG TIGHT FIT. BOLTS DESIGNATED HS SHALL BE HIGH STRENGTH STEEL BOLTS TO AS1252 TIGHTENED TO A SNUG TIGHT FIT.
5. ALL BOLTS SHALL BE HOT DIP GALVANISED UNLESS NOTED OTHERWISE.
6. ALL EXTERNAL STEELWORK TO BE HOT DIPPED GALVANISED, INCLUDING STRUCTURAL SECTIONS, HOLDING DOWN & ERECTION BOLTS. ZINC COATING THICKNESS SHALL CONFORM WITH AS/NZS 4680, AS/NZS 4791 & AS/NZS 4792 OR AN AVERAGE COATING THICKNESS OF 85 MICRONS. FABRICATOR TO LEAVE VENTING HOLES AS REQUIRED.
7. ALL WELDS SHALL BE 6mm CONTINUOUS FILLET AND ALL GUSSET PLATES 10mm THICK, UNLESS NOTED OTHERWISE.

BASE SEGMENT (MASS = 68.4kg)

FIELD BOLTS	
M24x50	16
SIZE	QTY

ITEM NO.	NO. OFF	DESCRIPTION	LENGTH	UNIT WEIGHT	MATERIAL
15	4	EA125 x 8 GRADE 350	1084	16.2	3679-350

⊕	DENOTES Ø17.5 HOLE FOR M16 BOLT WITH 26mm MIN END GAUGE
●	DENOTES Ø22.0 HOLE FOR M20 BOLT WITH 32mm MIN END GAUGE
⊞	DENOTES Ø26.0 HOLE FOR M24 BOLT WITH 38mm MIN END GAUGE

COMPLIANCE BOX
COMPLETED AS PER DESIGN ☐
ALTERATIONS IN RED ☐
NAME (PRINT)
SIGNATURE DATE

FOR CONSTRUCTION

DO NOT SCALE

APD GLOBAL

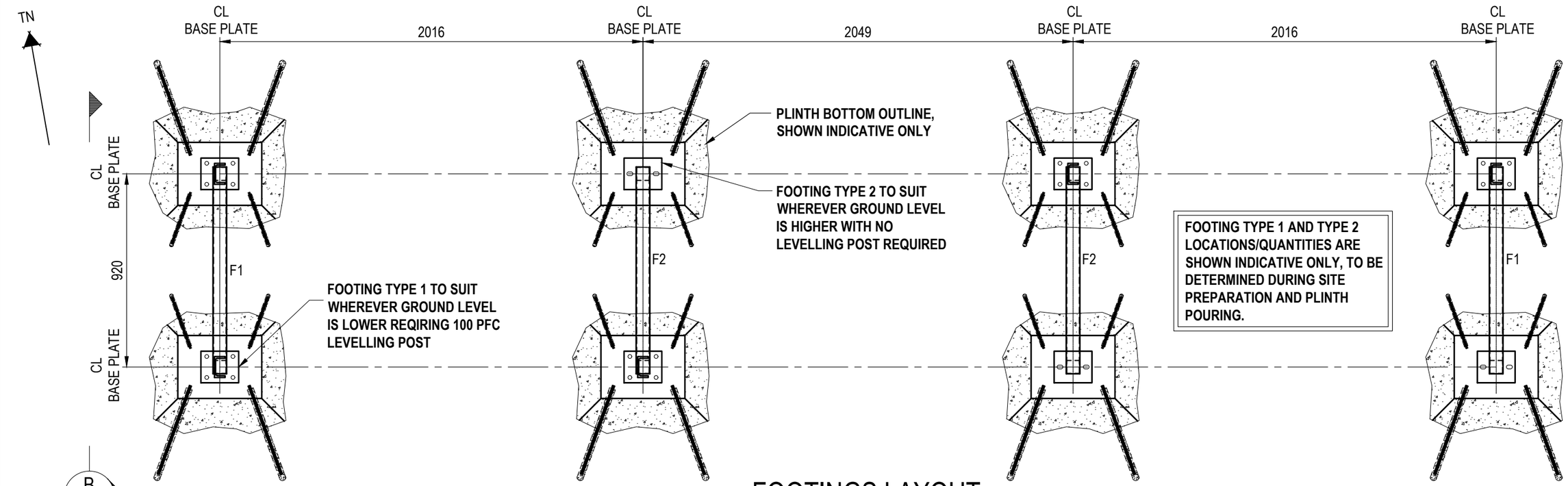
ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
TASGRN079	JM	HG	FOR CONSTRUCTION - SP30091946WO050DOWN - TASGRN	DP	GRW	25.11.21	1
TASGRN079	SR	MB	FOR CONSTRUCTION - SP80005737WO001APD-TASGRN	RC	PR	15.05.25	2

Telstra

TAS GRN SITE 079
MT. KING WILLIAM
HORIZONTAL BOTTOM BRACE DETAIL
FRANKLIN-GORDON WILD RIVERS NATIONAL PARK, SOUTHWEST, TAS 7139

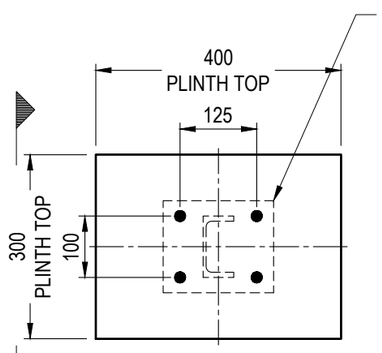
DWG NO. T113006
SHT NO. T4-3

Cad file: T113006.dwg
A3



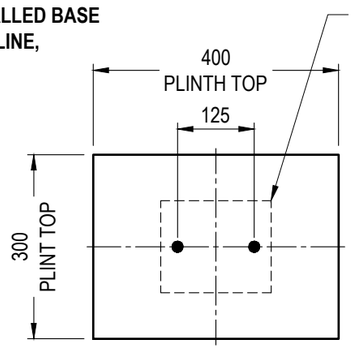
FOOTINGS LAYOUT
SCALE 1:20

SECTION A (T8-1)
SCALE 1:20

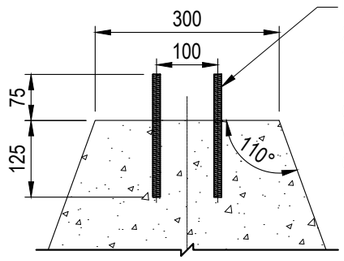


B1
-

FOOTING TYPE 1 CAST IN ANCHOR
SCALE 1:10



FOOTING TYPE 2 CAST IN ANCHOR
SCALE 1:10



SECTION B1 (-) FOOTING TYPE 1
SCALE 1:10

FOOTING TYPE 2 SIMILAR

NOTES:
1. FOR SITE SPECIFIC NOTES REFER SHEETS S0, S0-1 & S0-2.
2. FOR STANDARD CONSTRUCTION NOTES REFER TELSTRA STANDARD DRAWING 017866P05.
3. ALL BOLTS TO BE SUPPLY WITH HOT DIP GALVANISED NUT, LOCK NUT & FLAT WASHER.
4. DRILLED STEEL ON SITE, REMOVE ALL SWARF, BURRS & SHARP EDGES. APPLY 2 COATS OF ZINC RICH PAINT TO ALL SITE CUTS, WELDS.
5. PLINTH CONCRETE IS TO BE N32, ROCK ANCHOR COVER TO BE 75mm, STEEL MESH SL81 COVER 50mm.
6. DARK COLOUR ADDITIVE TO GENERAL PURPOSE CONCRETE MIX OR APPLY SURFACE COLOUR TREATMENT TO MATCH SURROUNDING ENVIRONMENTAL COLOURS.

CONSTRUCTION PROCEDURE:

1. STRIP GROUND LOOSE MATERIAL AND VEGETATION, SLIGHTLY LEVEL THE SUBGRADE.
2. BASED ON RUGGED CONDITION OF PREPARED GROUND SURFACE IN THE WHOLE FRAME AREA, DETERMINE AND MARK THE FINISHED CONCRETE PLINTH LEVELS OF ALL THE 8 PLINTHS.
3. CARRY OUT ROCK ANCHOR WORKS AND APPLY SIKAGROUT - 212 HP NON-SHRINK FLOWABLE GROUT.
4. UPON ROCK ANCHOR POURING COMPLETION, REMOVE LOOSE MATERIALS, APPLY SIKADUR-33 EPOXY ADHESIVE TO OBVIOUS GAPS/CRACKS IN SURFACE ROCKS WITHIN EACH PLINTH BASE AREA.
5. ALLOW 2 HOUR CURING PRIOR TO PLINTH REINFORCEMENT PLACING.
6. PLACE PLINTH REINFORCING MESH .
7. PLACE CAST-IN HOLD DOWN ANCHORS IF APPLICABLE.
8. POUR PLINTH CONCRETE
9. ACCURATELY MEASURE/DETERMINE THE REQUIRED LENGTHS OF 100 PFC LEVELLING POSTS AND REQUEST FABRICATION.
10. ALLOW 2 HOURS MINIMUM CURING PRIOR TO REMOVING FORMWORK.
11. ALLOW 2 DAYS MINIMUM CURING PRIOR TO INSTALLING STEELWORKS.
12. ALLOW 3 DAYS MINIMUM CURING PRIOR TO INSTALLING ANY CHEMICAL ANCHORS.

FOR CONSTRUCTION

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
TASGRN079	JM	HG	FOR CONSTRUCTION - SP30091946WO050DOWN - TASGRN	DP	GRW	25.11.21	1
TASGRN079	SR	MB	FOR CONSTRUCTION - SP80005737WO001APD-TASGRN	RC	PR	15.05.25	2

APD GLOBAL

Telstra

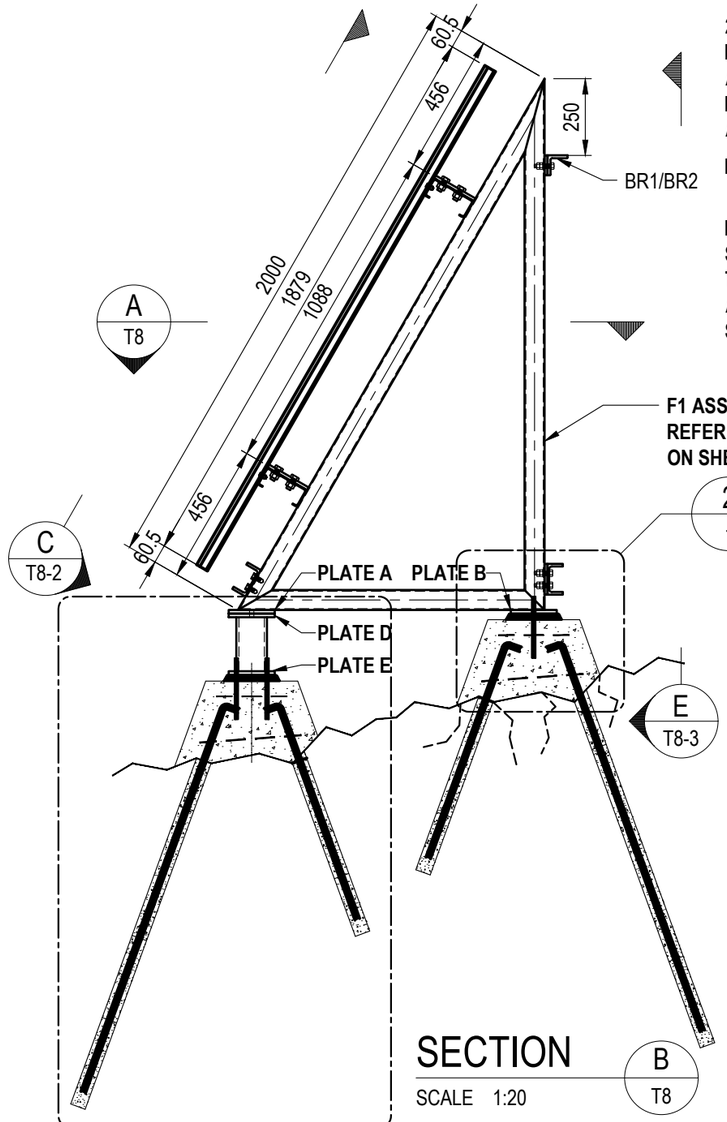
TAS GRN SITE 079
MT. KING WILLIAM
SOLAR FRAME & FOOTING DETAILS - SHEET 1
FRANKLIN-GORDON WILD RIVERS NATIONAL PARK, SOUTHWEST, TAS 7139

DWG NO. T113006 | SHT NO. T8

Cad file: T113006.dwg

DO NOT SCALE

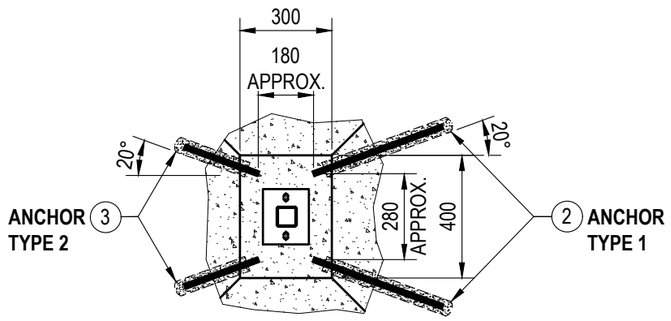
A3



SECTION

SCALE 1:20

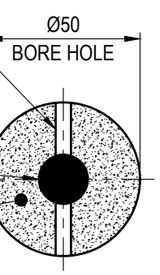
B T8



SECTION

SCALE 1:20

D -



2 OFF SPACERS Ø6 BARS TO BE WELDED ON N16 ANCHOR AT 3 LOCATIONS OF EACH N16 ANCHOR - TOP, MIDDLE AND BOTTOM

N16 DEFORMED BAR

NON-SHRINK GROUT, SIKAGROUT - 212 HP, TO BE MIXED AND APLLIED TO SIKA STANDARDS

SECTION

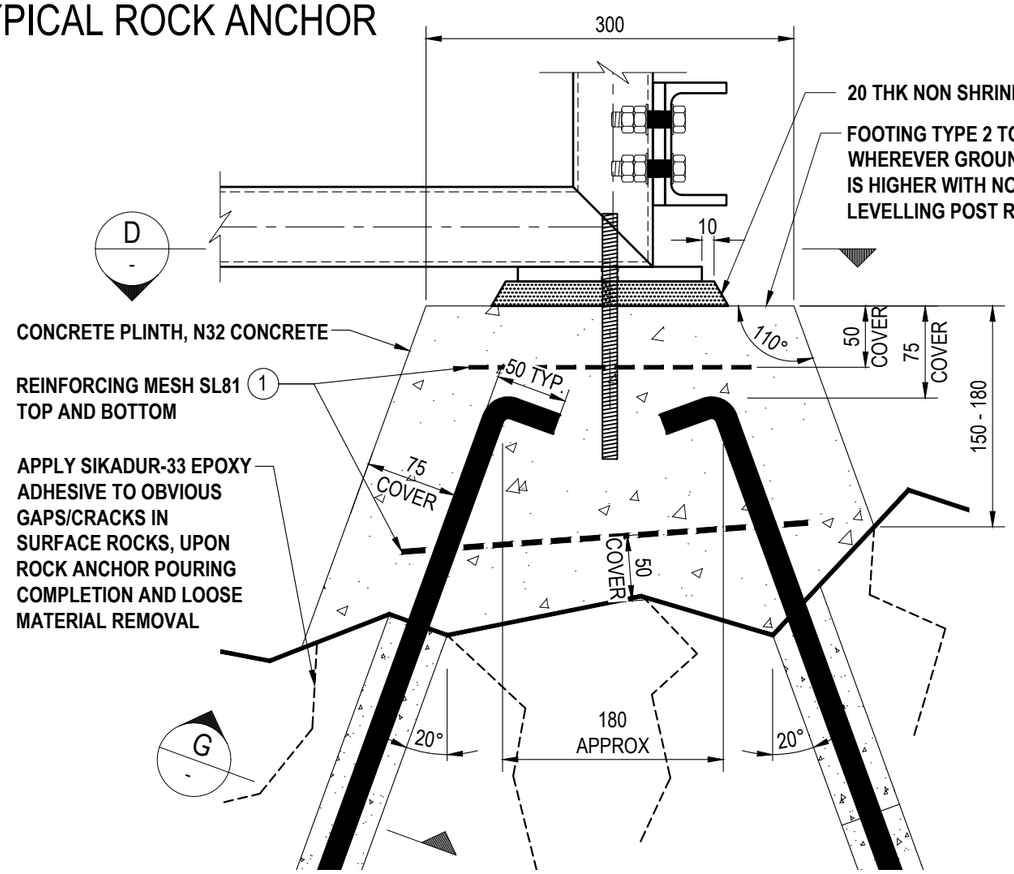
SCALE 1:2

G -

REINFORCEMENT SCHEDULE (PER SOLAR ARRAY)

SHAPE	PART	DIM 'A' (mm)	DIM 'B' (mm)	DIM 'C' (mm)	MATERIAL	CUT LENGTH (mm)	No. OFF	TOTAL MASS (Kg.)	DESCRIPTION
A	1	-	-	-	SL81 MESH	3.0m² APPROX TOTAL	-	22	TOP & BOTTOM REINFORCING MESH
B A	2	1350	50	-	N16	1430	16	40	ROCK ANCHOR 1
B A	3	750	50	-	N16	830	16	23	ROCK ANCHOR 2
TOTAL WEIGHT STEEL								85 kg	
TOTAL WEIGHT CONCRETE								0.5m³/1.2t	

TYPICAL ROCK ANCHOR



DETAIL

SCALE 1:5

2 -

FOR CONSTRUCTION

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
TASGRN079	JM	HG	FOR CONSTRUCTION - SP30091946WO050DOWN - TASGRN	DP	GRW	25.11.21	1
TASGRN079	SR	MB	FOR CONSTRUCTION - SP80005737WO001APD-TASGRN	RC	PR	15.05.25	2

APD GLOBAL

Telstra

TAS GRN SITE 079

MT. KING WILLIAM

SOLAR FRAME & FOOTING DETAILS - SHEET 2

FRANKLIN-GORDON WILD RIVERS NATIONAL PARK, SOUTHWEST, TAS 7139

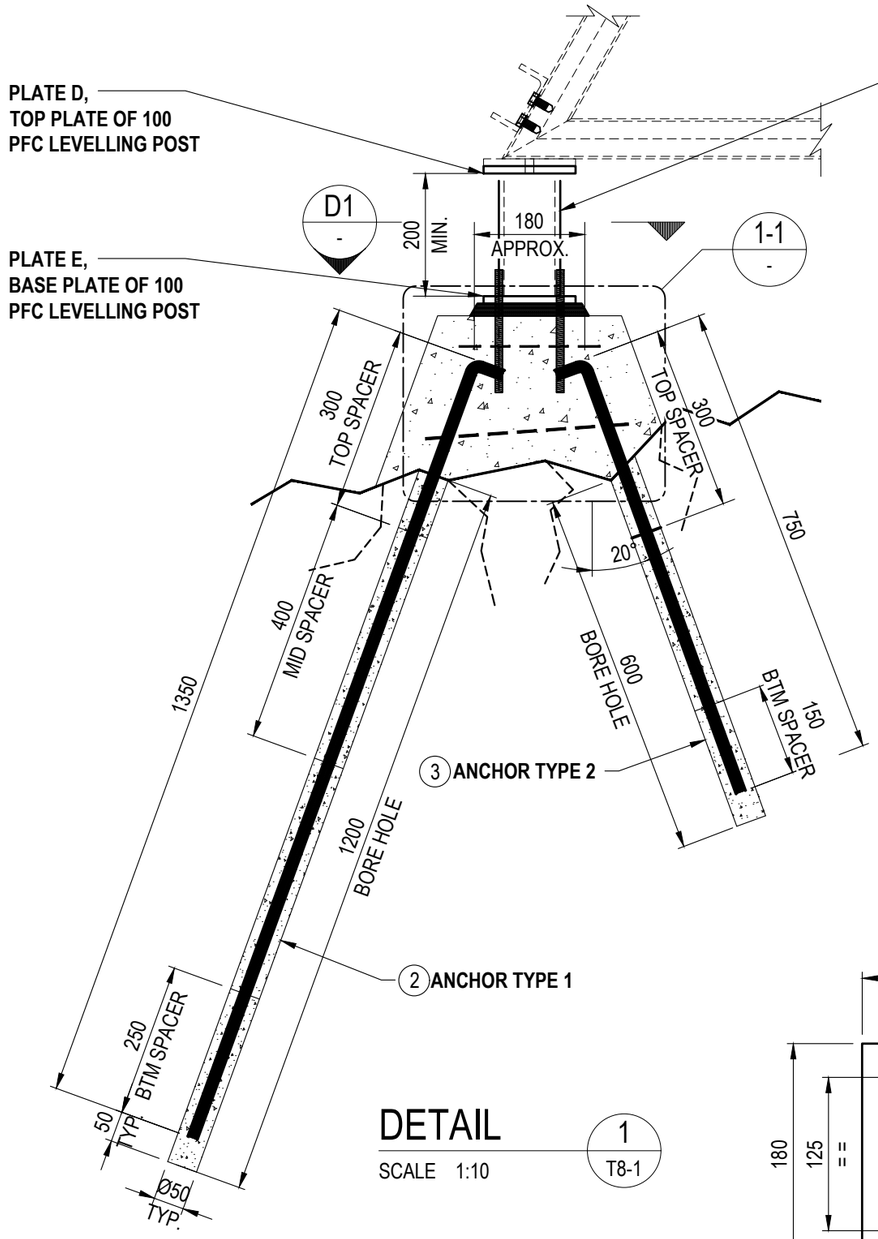
DWG NO. T113006

SHT NO. T8-1

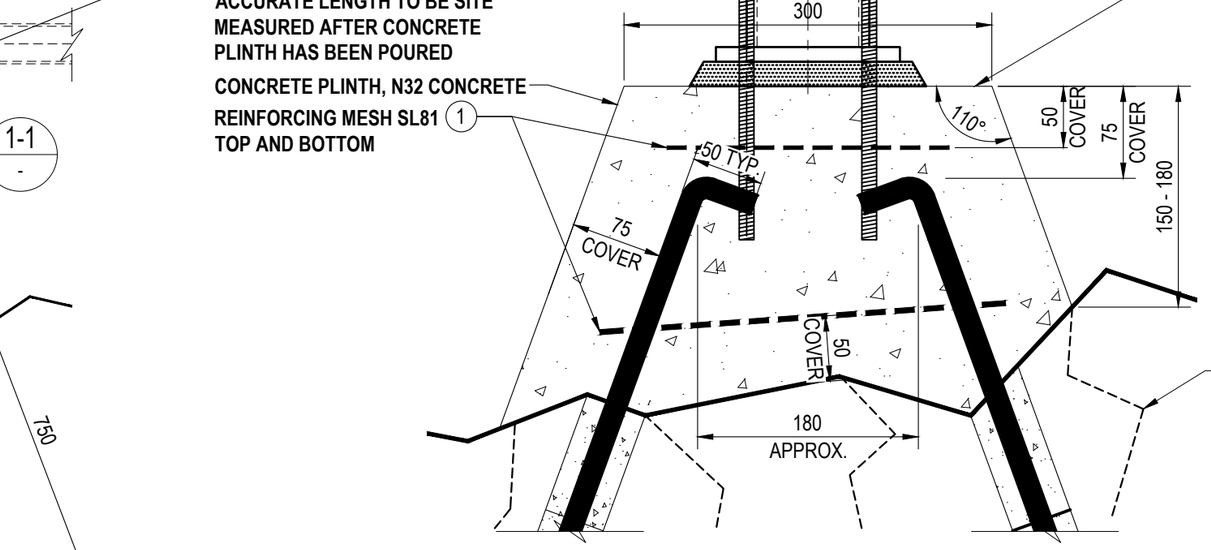
Cad file: T113006.dwg

DO NOT SCALE

A3



DETAIL 1
SCALE 1:10 — T8-1



DETAIL 1-1
SCALE 1:5 — -

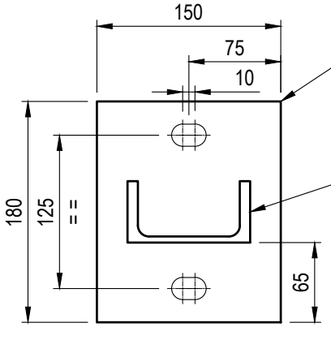


PLATE D
SCALE 1:5

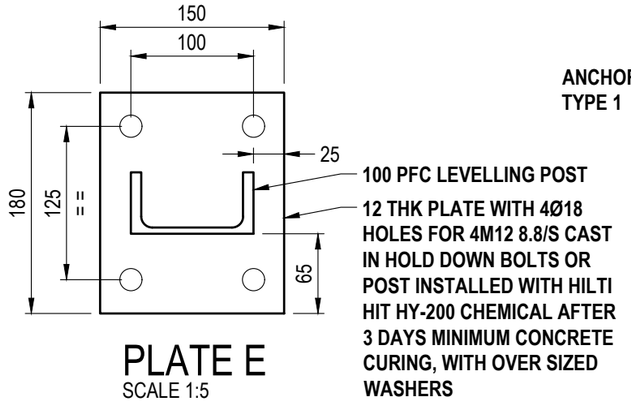
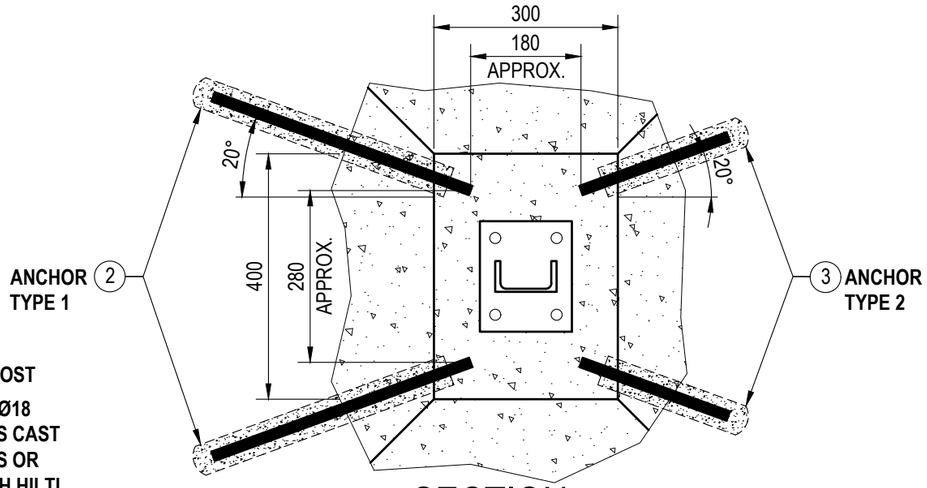


PLATE E
SCALE 1:5



SECTION D1
SCALE 1:10 — -

FOR CONSTRUCTION

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
TASGRN079	SR	MB	FOR CONSTRUCTION - SP80005737WO001APD-TASGRN	RC	PR	15.05.25	1

APD GLOBAL

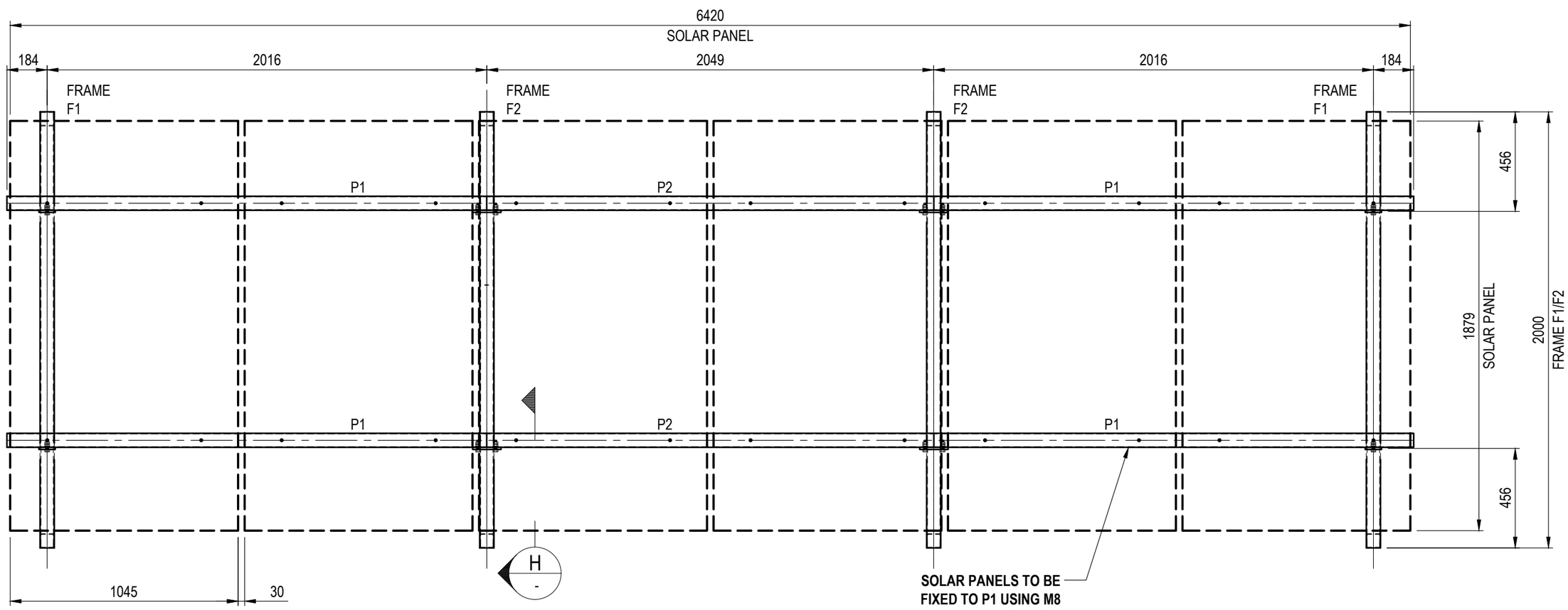
Telstra

TAS GRN SITE 079
MT. KING WILLIAM
SOLAR FRAME & FOOTING DETAILS - SHEET 3
FRANKLIN-GORDON WILD RIVERS NATIONAL PARK, SOUTHWEST, TAS 7139

DWG NO. T113006 — SHT NO. T8-1A

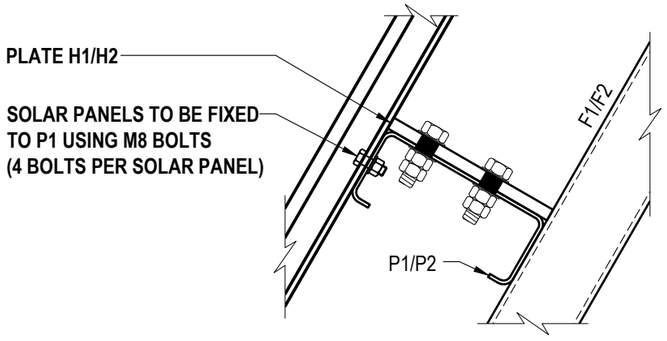
Cad file: T113006.dwg — A3

DO NOT SCALE



SECTION C
SCALE 1:20
T8-1

MEMBER SCHEDULE (PER SOLAR ARRAY)					
MARK	MEMBER	QTY	LENGTH	TOTAL WEIGHT	REMARKS
F1	65 x 4 SHS FRAME	2	-	97.0kg	FULLY WELDED FRAME
F2	65 x 4 SHS FRAME	2	-	97.0kg	FULLY WELDED FRAME
BR1	65 x 10 EA	2	2015	37.0kg	BRACE
BR2	65 x 10 EA	1	2050	19.0kg	BRACE
BBR1	100 PFC	2	2015	35.0kg	FRONT BRACE
BBR2	100 PFC	1	2050	18.0kg	FRONT BRACE
BBR1	100 PFC	2	2015	35.0kg	BACK BRACE
BBR2	100 PFC	1	2050	18.0kg	BACK BRACE
P1	LYSAGHT C15024	4	2200	50.0kg	PURLINS
P2	LYSAGHT C15024	2	2050	23.0kg	PURLINS



SECTION H
SCALE 1:5
-

FOR CONSTRUCTION

DO NOT SCALE

COMPLIANCE BOX
COMPLETED AS PER DESIGN ☐
ALTERATIONS IN RED ☐
NAME (PRINT)
SIGNATURE DATE

APD GLOBAL

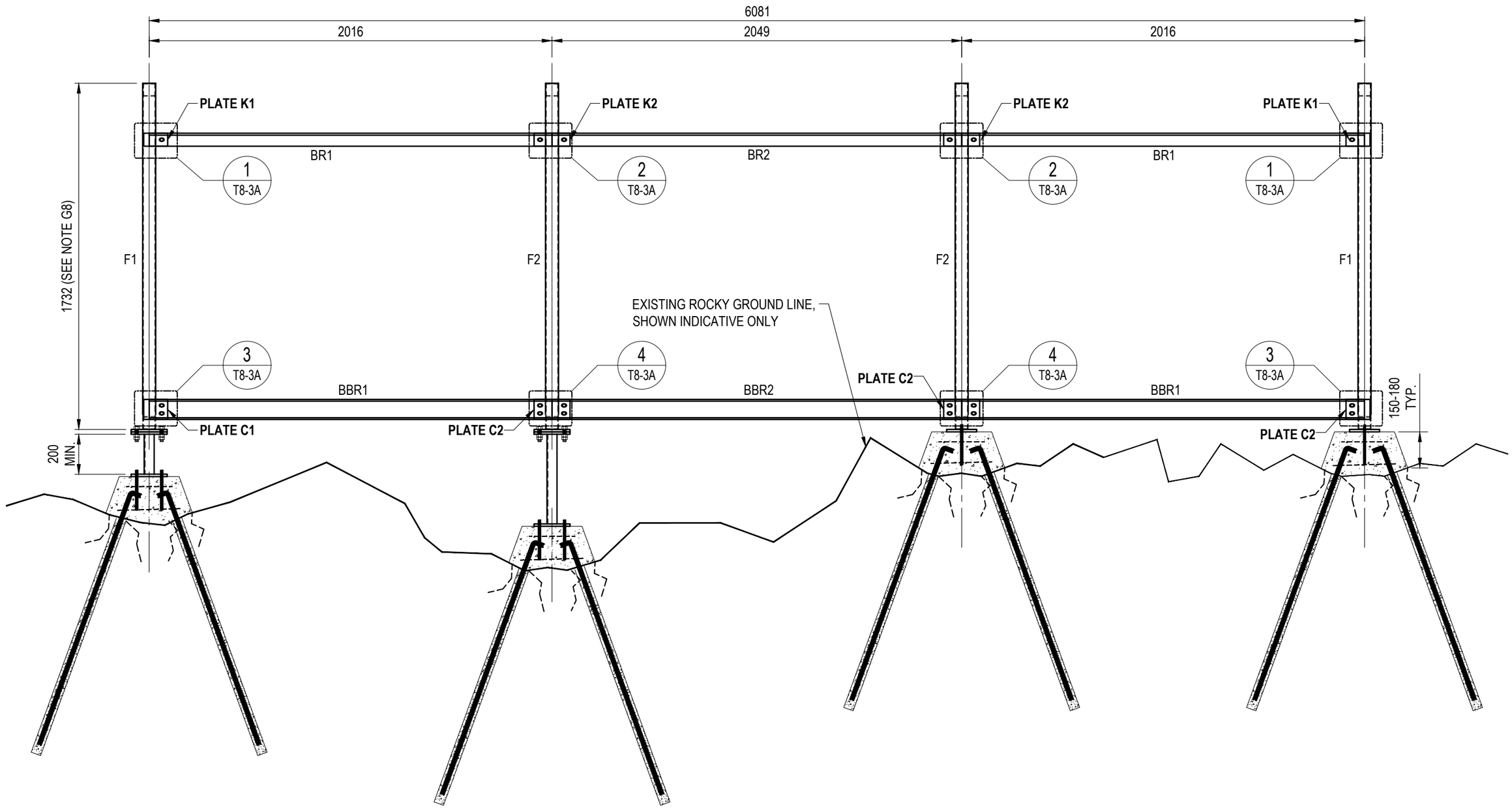
ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
TASGRN079	JM	HG	FOR CONSTRUCTION - SP30091946WO050DOWN - TASGRN	DP	GRW	25.11.21	1
TASGRN079	SR	MB	FOR CONSTRUCTION - SP80005737WO001APD-TASGRN	RC	PR	15.05.25	2

Telstra

TAS GRN SITE 079
MT. KING WILLIAM
SOLAR FRAME & FOOTING DETAILS - SHEET 4
FRANKLIN-GORDON WILD RIVERS NATIONAL PARK, SOUTHWEST, TAS 7139

DWG NO. T113006
SHT NO. T8-2

Cad file: T113006.dwg
A3



CONCRETE PLINTH TO BE 150mm - 180mm THICK AT THINNEST SPOT.
100 PFC LEVELLING POSTS TO BE 200mm LONG MINIMUM. WHERE LESS THAN 200mm, CONCRETE PLINTH TO BE POURED TO SOLAR FRAME BASE PLATE LEVEL.

SECTION E
T8-1

SCALE 1:20

FOR CONSTRUCTION

APD GLOBAL

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
TASGRN079	JM	HG	FOR CONSTRUCTION - SP30091946WO050DOWN - TASGRN	DP	GRW	25.11.21	1
TASGRN079	SR	MB	FOR CONSTRUCTION - SP80005737WO001APD-TASGRN	RC	PR	15.05.25	2

Telstra

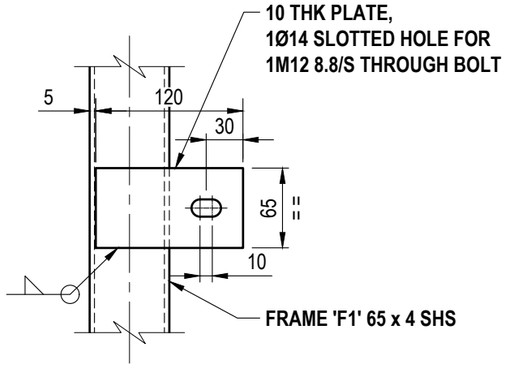
TAS GRN SITE 079
MT. KING WILLIAM
SOLAR FRAME & FOOTING DETAILS - SHEET 5
FRANKLIN-GORDON WILD RIVERS NATIONAL PARK, SOUTHWEST, TAS 7139

DWG NO. T113006
SHT NO. T8-3

Cad file: T113006.dwg

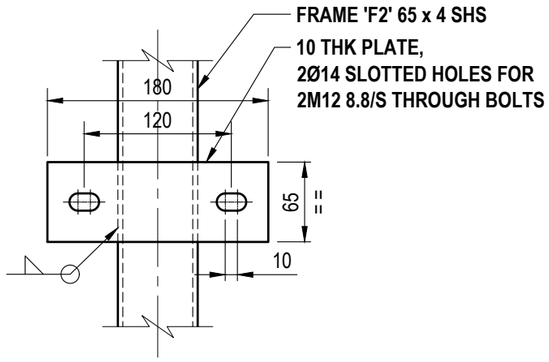
A3

DO NOT SCALE



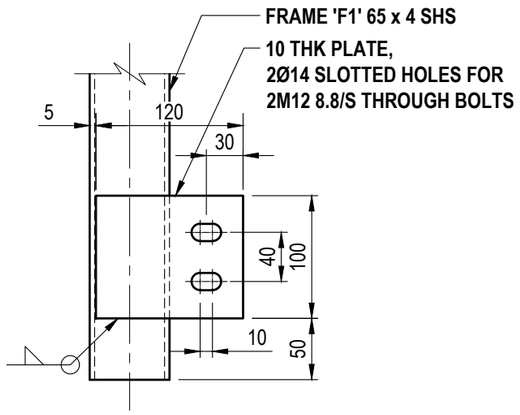
DETAIL 1 T8-3
SCALE 1:5

PLATE K1
ON FRAME F1



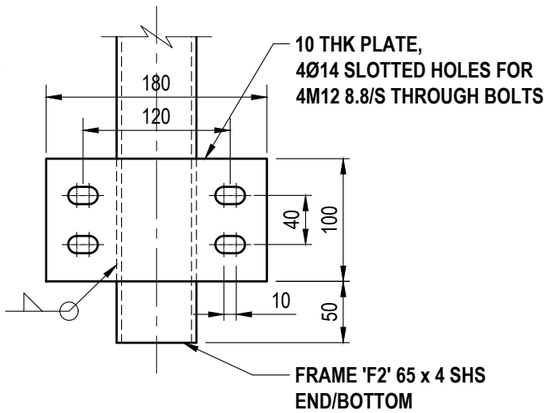
DETAIL 2 T8-3
SCALE 1:5

PLATE K2
ON FRAME F2



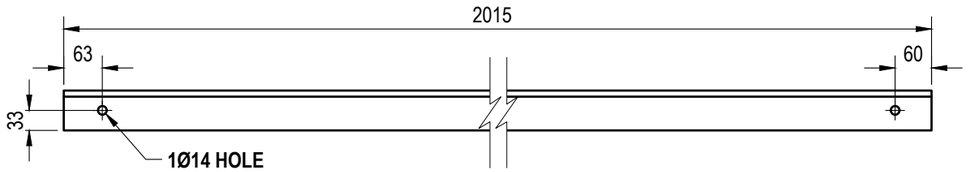
DETAIL 3 T8-3
SCALE 1:5

PLATE C1
ON FRAME F1

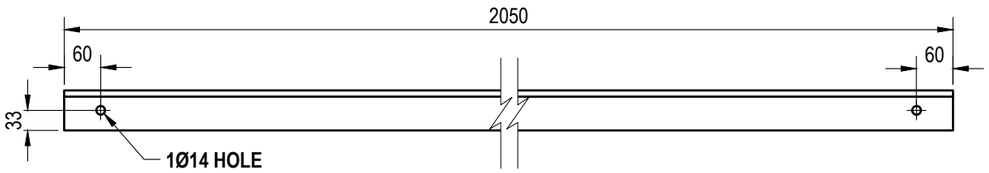


DETAIL 4 T8-3
SCALE 1:5

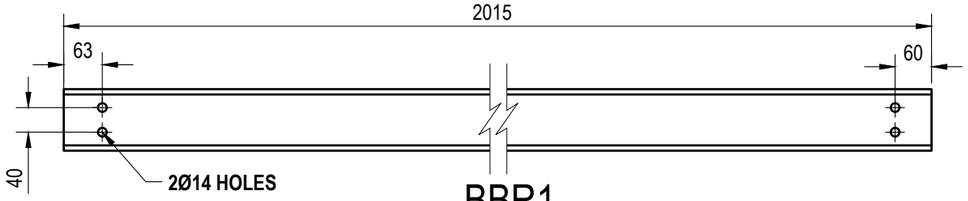
PLATE C2
ON FRAME F2



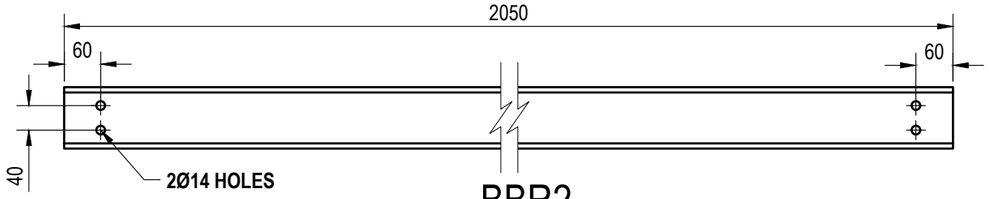
BR1
SCALE 1:10
65 x 10 EA



BR2
SCALE 1:10
65 x 10 EA



BBR1
SCALE 1:10
100 PFC



BBR2
SCALE 1:10
100 PFC

FOR CONSTRUCTION

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
TASGRN079	SR	MB	FOR CONSTRUCTION - SP80005737WO001APD-TASGRN	RC	PR	15.05.25	1

APD GLOBAL

Telstra

TAS GRN SITE 079
MT. KING WILLIAM

SOLAR FRAME & FOOTING DETAILS - SHEET 6

FRANKLIN-GORDON WILD RIVERS NATIONAL PARK, SOUTHWEST, TAS 7139

DWG NO. T113006

SHT NO. T8-3A

Cad file: T113006.dwg

DO NOT SCALE

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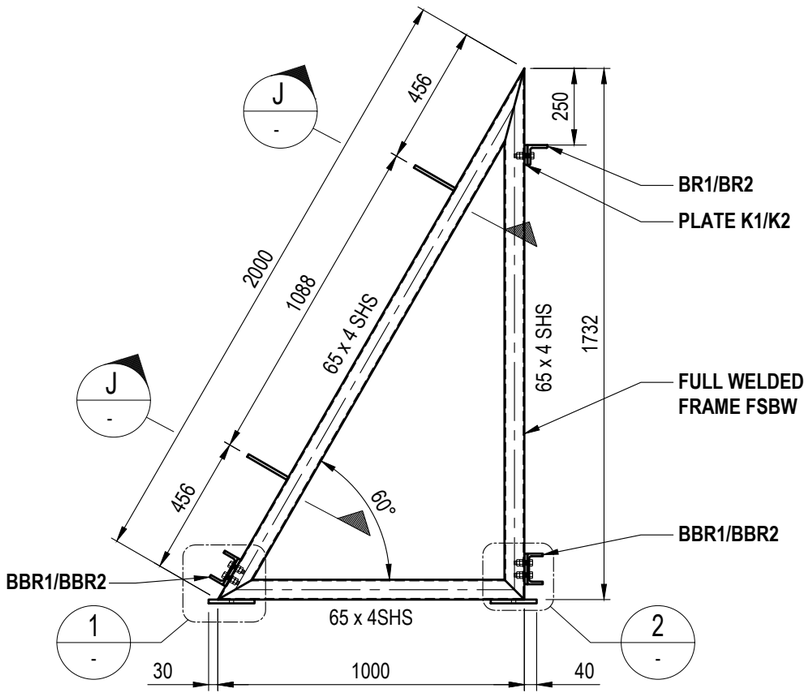
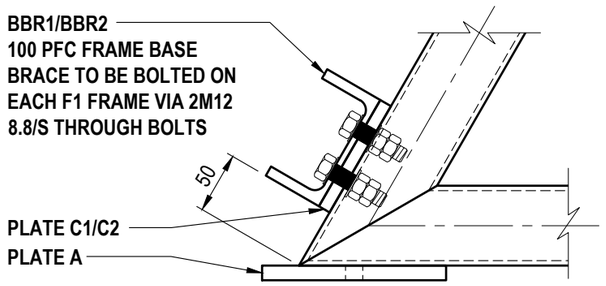
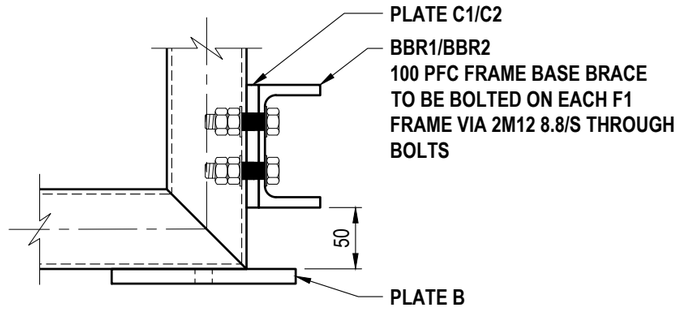


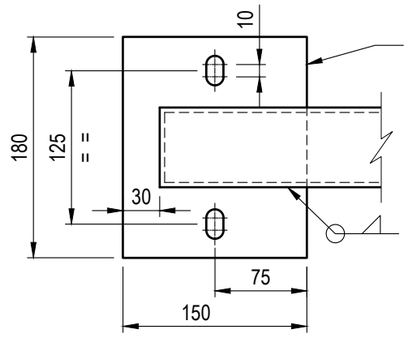
FRAME 'F1' / 'F2'
SCALE 1:20



DETAIL 1 / -
SCALE 1:5



DETAIL 2 / -
SCALE 1:5



18 THK PLATE WITH 2Ø14 SLOTTED HOLES FOR 2M12 8.8/S THROUGH BOLTS TO BE FIXED TO LEVELLING POST VIA PLATE D; OR FOR 2M12 CAST IN OR POST INSTALLED HOLD DOWN BOLTS WHERE NO LEVELLING POSTS

PLATE 'A'
SCALE 1:5

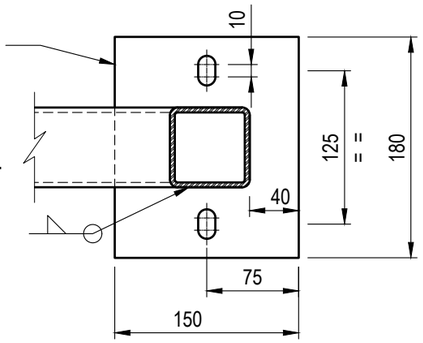


PLATE 'B'
SCALE 1:5

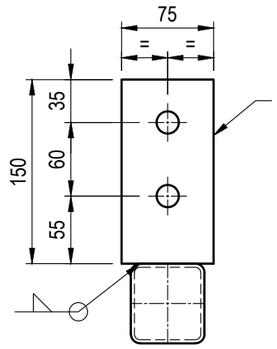


PLATE H1
10 THK PLATE WITH
2Ø14 HOLES FOR 2M12 8.8/S
THROUGH BOLTS

SECTION J / - ON FRAME F1
SCALE 1:5

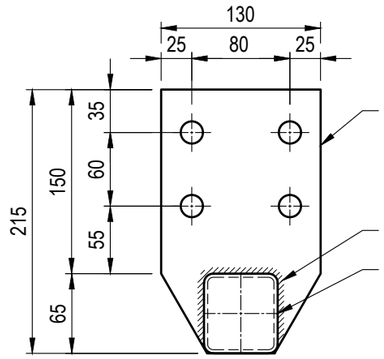


PLATE H2
10 THK PLATE WITH
4Ø14 HOLES FOR 4M12 8.8/S
THROUGH BOLTS
6 CFW ALL AROUND
FRAME 'F1' 65 x 4 SHS

SECTION J / - ON FRAME F2
SCALE 1:5

FOR CONSTRUCTION

DO NOT SCALE

APD GLOBAL

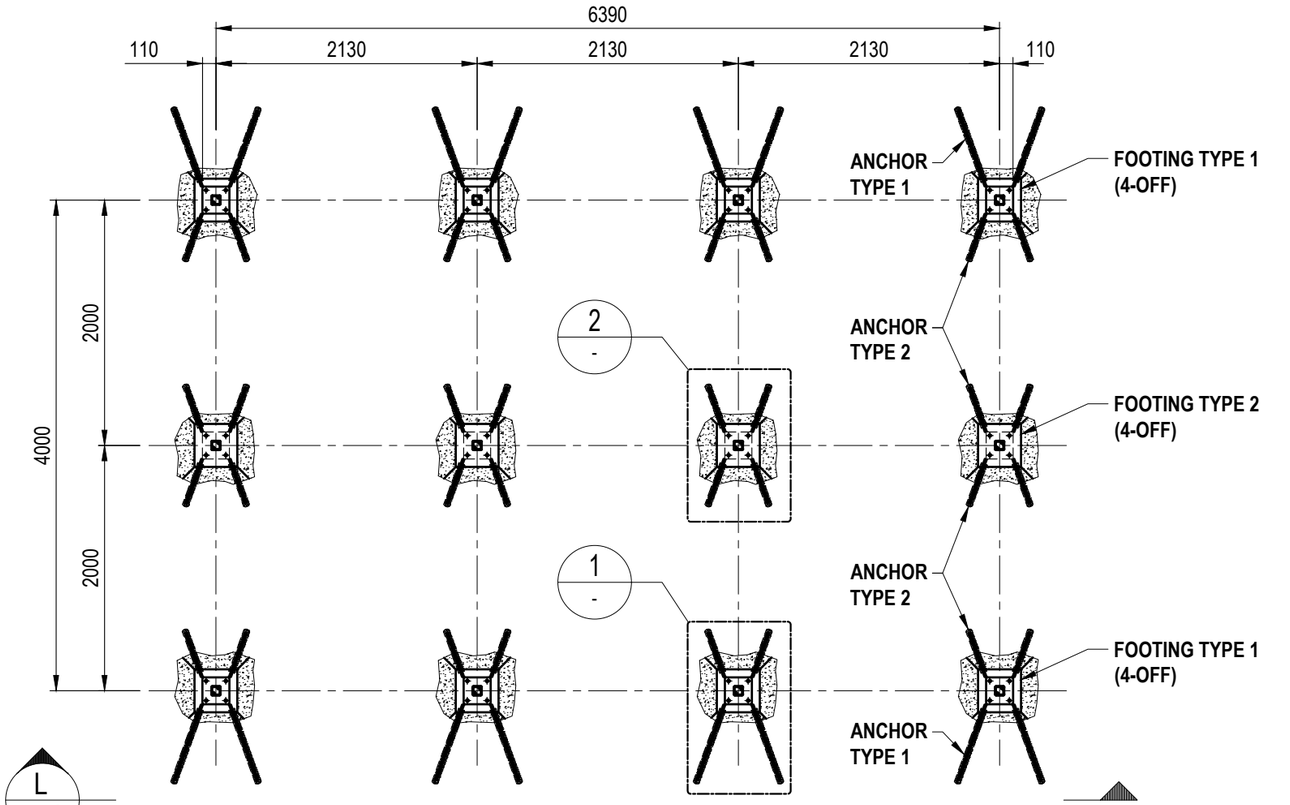
ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
TASGRN079	JM	HG	FOR CONSTRUCTION - SP30091946WO050DOWN - TASGRN	DP	GRW	25.11.21	1
TASGRN079	SR	MB	FOR CONSTRUCTION - SP80005737WO001APD-TASGRN	RC	PR	15.05.25	2

Telstra

TAS GRN SITE 079
MT. KING WILLIAM
SOLAR FRAME & FOOTING DETAILS - SHEET 7
FRANKLIN-GORDON WILD RIVERS NATIONAL PARK, SOUTHWEST, TAS 7139

DWG NO. T113006
SHT NO. T8-4

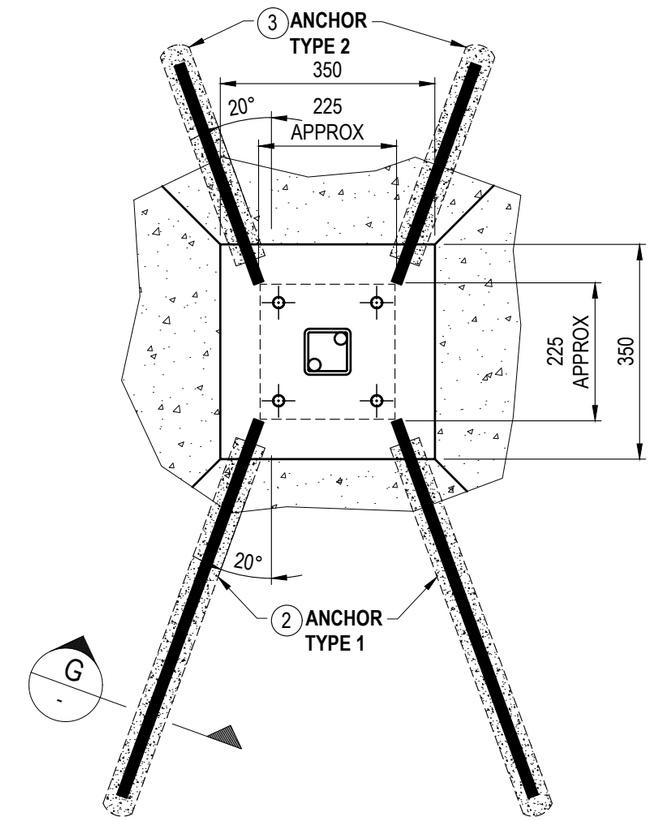
Cad file: T113006.dwg
A3



L
T8-7

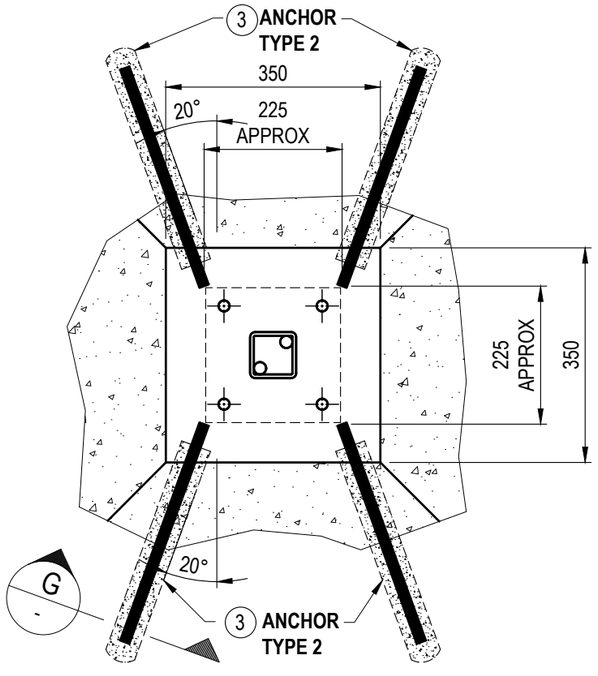
GENSET PLATFORM FOOTING PLAN

SCALE 1:50



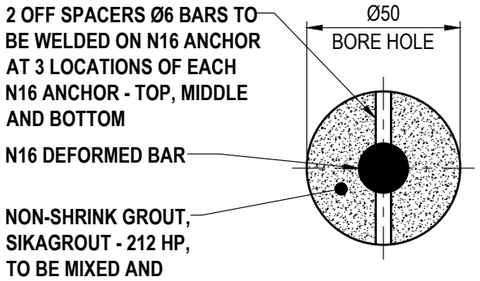
DETAIL 1 - FOOTING TYPE 1

SCALE 1:10



DETAIL 2 - FOOTING TYPE 2

SCALE 1:10



SECTION G

SCALE 1:2

TYPICAL ROCK ANCHOR

REINFORCEMENT SCHEDULE (PER SOLAR ARRAY)

SHAPE	PART	DIM 'A' (mm)	DIM 'B' (mm)	DIM 'C' (mm)	MATERIAL	CUT LENGTH (mm)	No. OFF	TOTAL MASS (Kg.)	DESCRIPTION
A	1	-	-	-	SL81 MESH	4.5m² APPROX TOTAL	-	33	TOP & BOTTOM REINFORCING MESH
B A	2	1950	50	-	N16	2030	24	85	ROCK ANCHOR 1
B A	3	1150	50	-	N16	1230	24	52	ROCK ANCHOR 2
TOTAL WEIGHT STEEL								170 kg	
TOTAL WEIGHT CONCRETE								0.75m³/1.8t	

FOR CONSTRUCTION

APD GLOBAL

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
TASGRN079	JM	HG	FOR CONSTRUCTION - SP30091946WO050DOWN - TASGRN	DP	GRW	25.11.21	1
TASGRN079	SR	MB	FOR CONSTRUCTION - SP80005737WO001APD-TASGRN	RC	PR	15.05.25	2

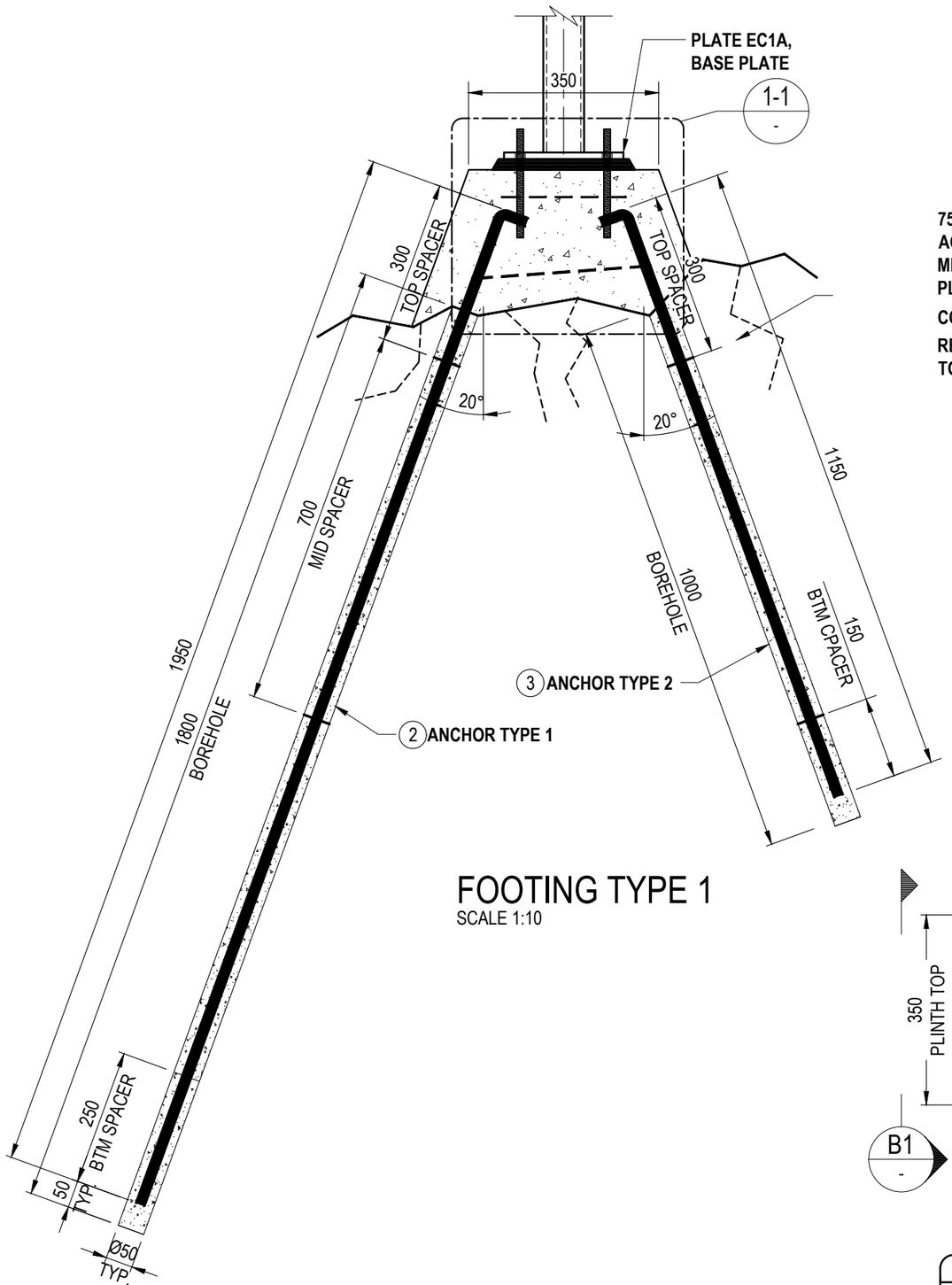
Telstra

TAS GRN SITE 079
MT. KING WILLIAM
GENSET PLATFORM DETAILS - SHEET 1
FRANKLIN-GORDON WILD RIVERS NATIONAL PARK, SOUTHWEST, TAS 7139

DWG NO. T113006
SHT NO. T8-5

Cad file: T113006.dwg
A3

DO NOT SCALE



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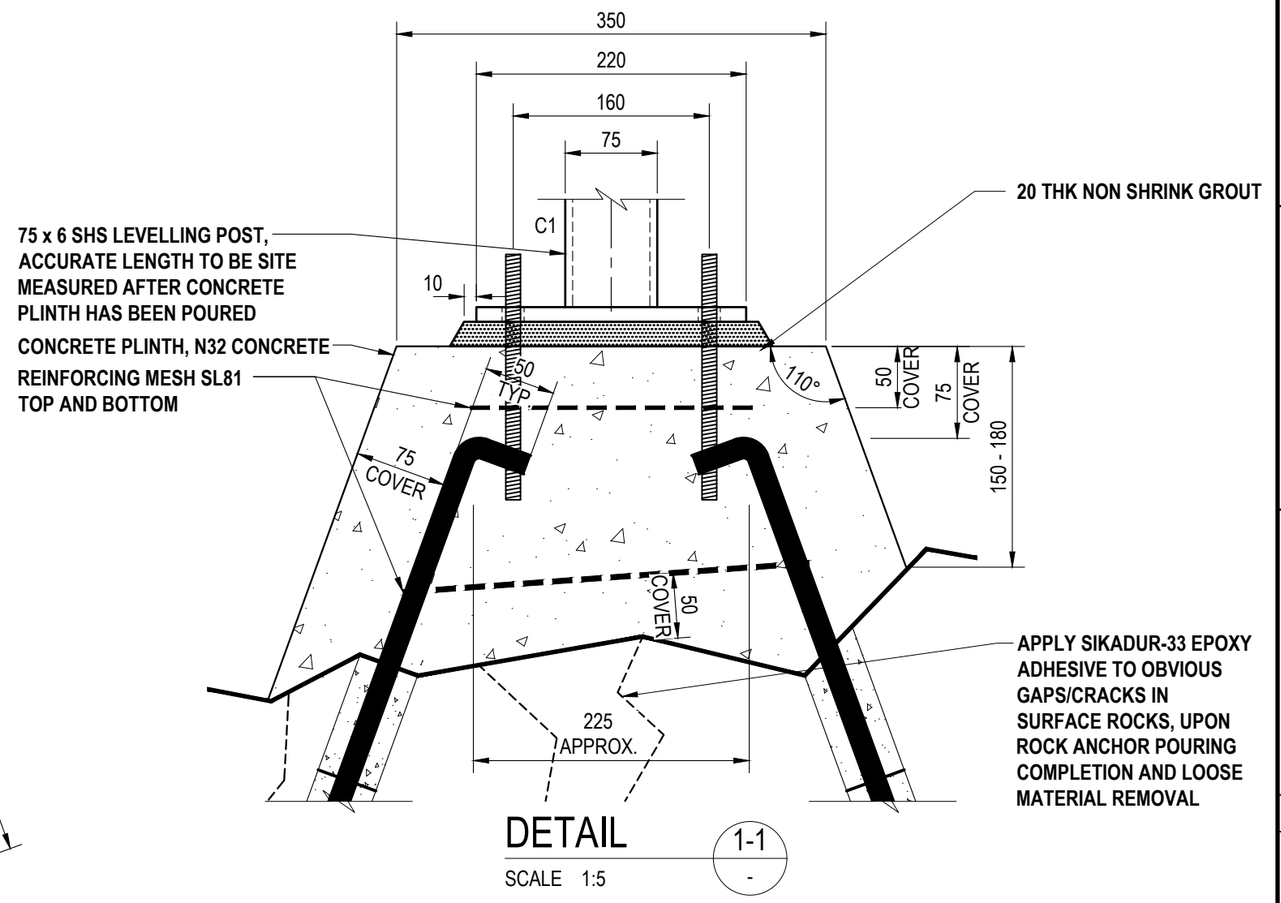
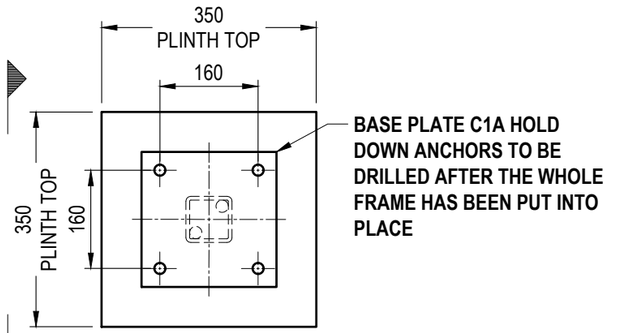
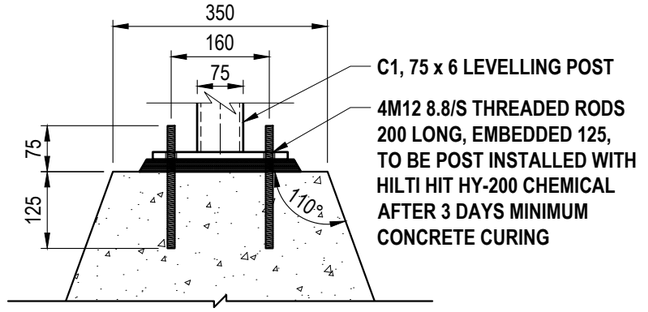


DETAIL
1-1
-
SCALE 1:5



B1
-

FOOTING TYPE 1 / TYPE 2
POST INSTALLED ANCHOR
SCALE 1:10



SECTION
B1
-
SCALE 1:10

FOR CONSTRUCTION

DO NOT SCALE

APD GLOBAL

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
TASGRN079	SR	MB	FOR CONSTRUCTION - SP80005737WO001APD-TASGRN	RC	PR	15.05.25	1

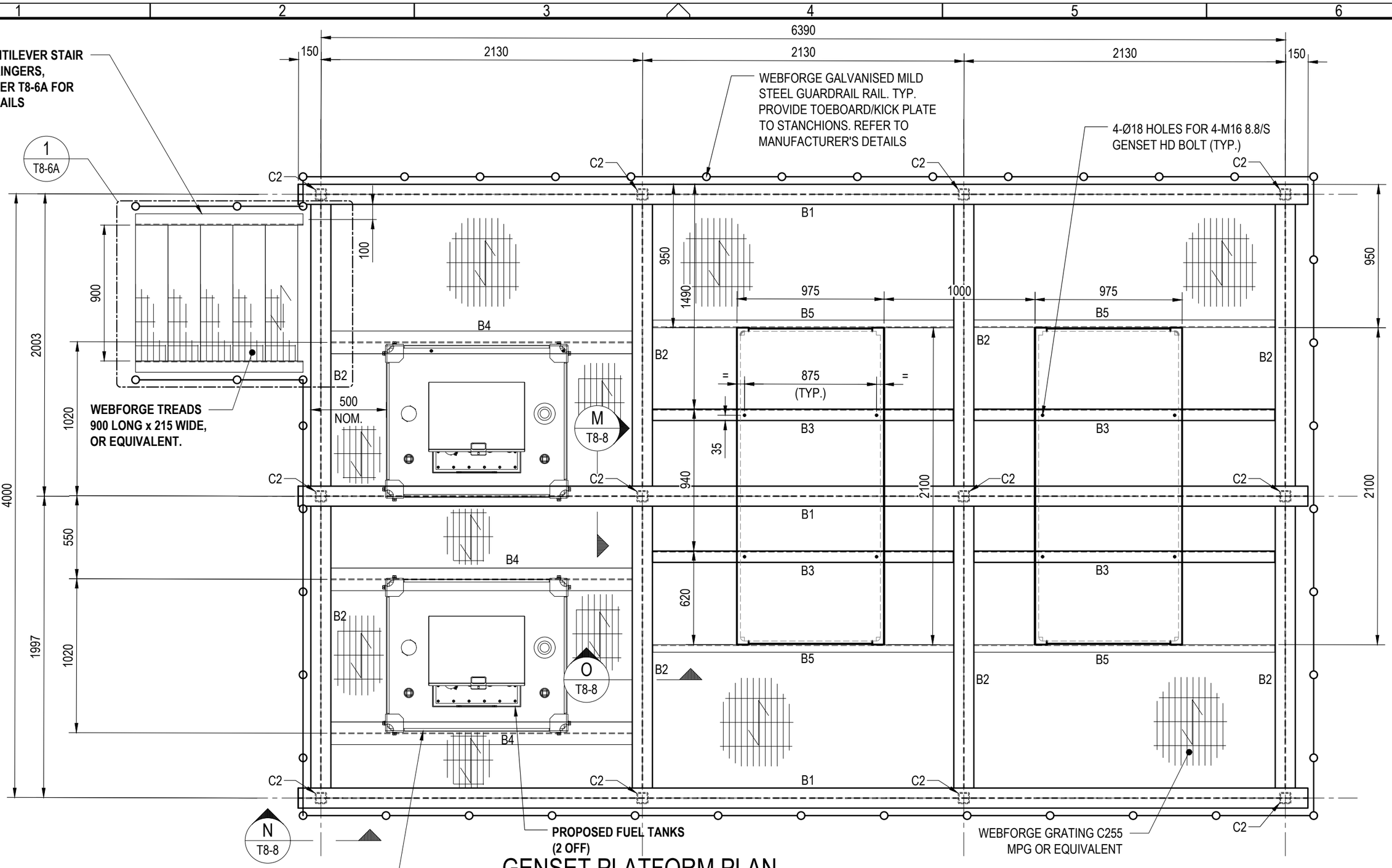
Telstra

TAS GRN SITE 079
MT. KING WILLIAM
GENSET PLATFORM DETAILS - SHEET 2
FRANKLIN-GORDON WILD RIVERS NATIONAL PARK, SOUTHWEST, TAS 7139

DWG NO. T113006
SHT NO. T8-5A

Cad file: T113006.dwg

A3



GENSET PLATFORM PLAN

SCALE 1:25

FUEL TANK HOLD DOWN CHAIN ANCHOR HOLES TO BE DRILLED ON SITE IN ANY BEAM TOP FLANGES TO SUIT.
1Ø18 HOLE FOR 1M16 EYE BOLT.
EYE BOLT HOT DIP GALVANISED OR STAINLESS STEEL

FOR CONSTRUCTION

DO NOT SCALE

APD GLOBAL

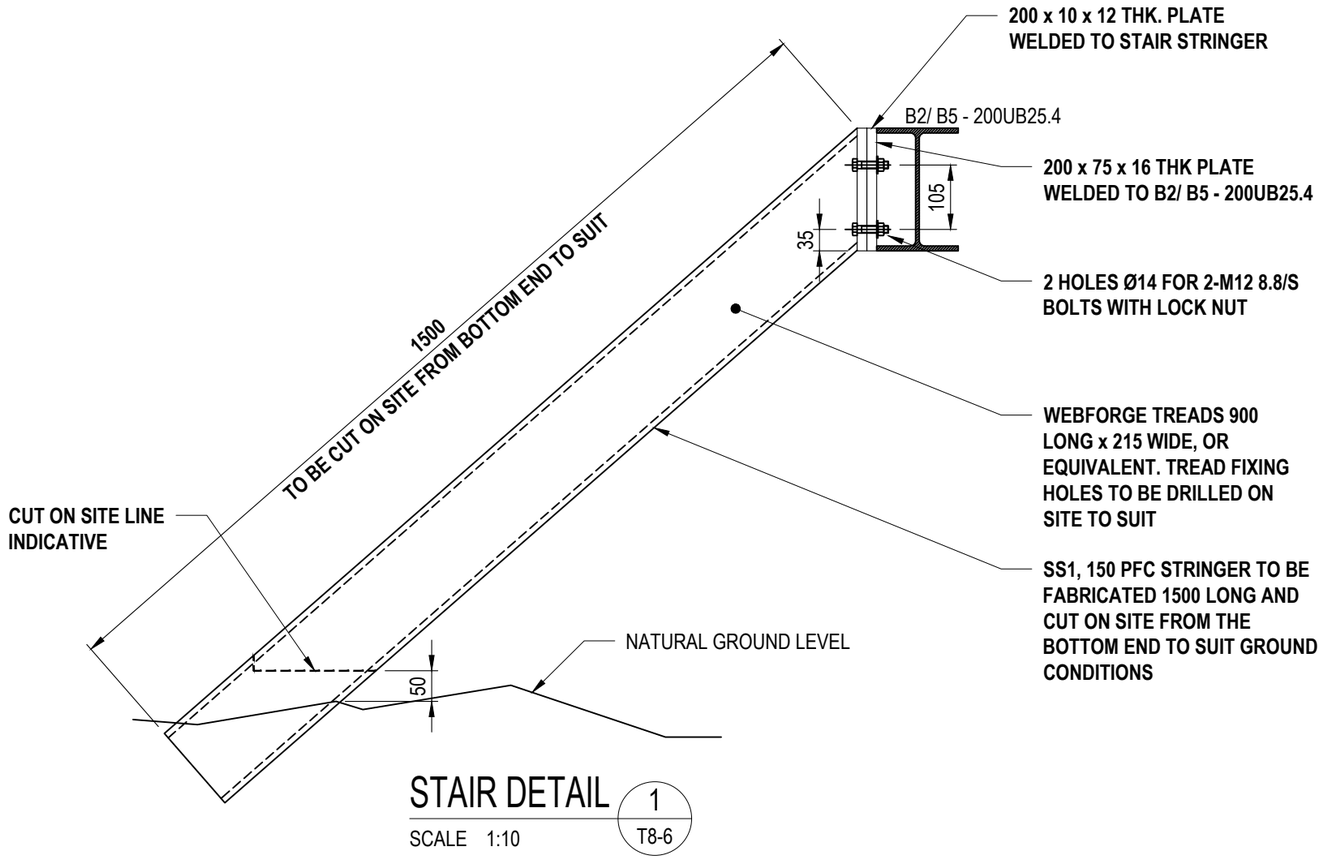
ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
TASGRN079	JM	HG	FOR CONSTRUCTION - SP30091946WO050DOWN - TASGRN	DP	GRW	25.11.21	1
TASGRN079	SR	MB	FOR CONSTRUCTION - SP80005737WO001APD-TASGRN	RC	PR	15.05.25	2

Telstra

TAS GRN SITE 079
MT. KING WILLIAM
GENSET PLATFORM DETAILS - SHEET 3
FRANKLIN-GORDON WILD RIVERS NATIONAL PARK, SOUTHWEST, TAS 7139

DWG NO. T113006
SHT NO. T8-6

Cad file: T113006.dwg
A3



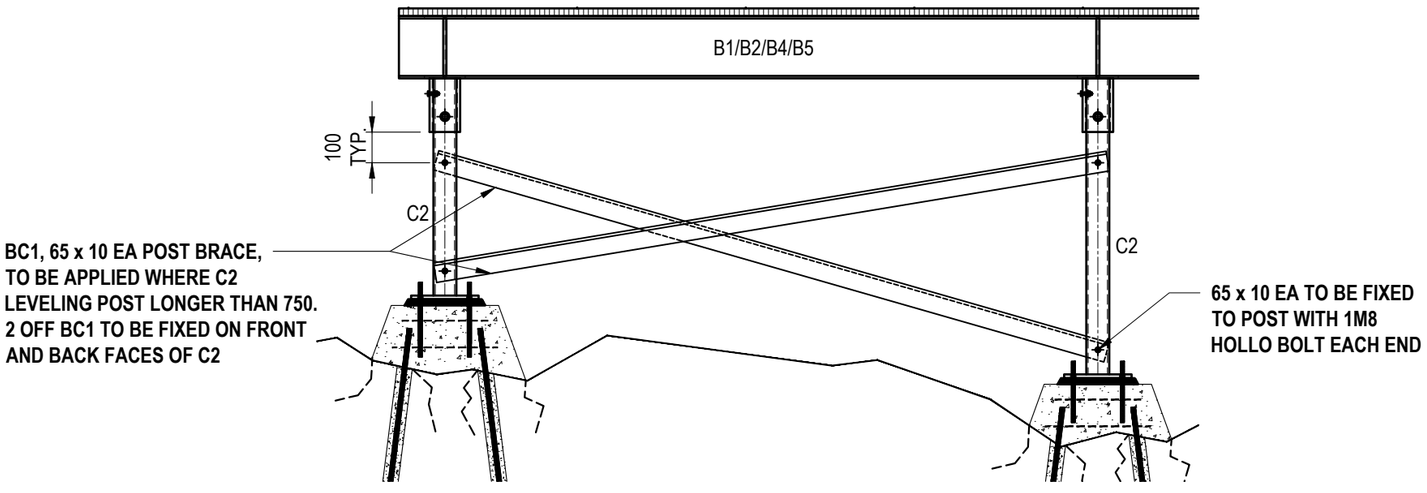
STAIR DETAIL 1

SCALE 1:10 T8-6

MEMBER SCHEDULE				
MARK	MEMBER	QTY	LENGTH	TOTAL WEIGHT
B1	200UB25.4	3	6690	510kg
B2	200UB25.4	8	1987	404kg
B3	150 PFC	4	2117	150kg
B4	150UC23.4 TANK & GRATING SUPPORT	3	2117	151kg
B5	100 PFC GRATING SUPPORT	4	2117	71kg
SS1	150 PFC STAIR STRINGER	2	1500	60kg
C1	100 x 9 SHS SLEEVE POST	12	150	43kg
C2	75 x 6 SHS LEVELLING POST	12	LOCATION SPECIFIC	TBC
BC1	65 x 10 EA LEVELING POST BRACE	TBC	LOCATION SPECIFIC	TBC
GRATING	WEBFORGE C255 MPG	-	-	-

NOTES:

1. FOR SITE SPECIFIC NOTES REFER SHEETS S0, S0-1 & S0-2.
2. FOR STANDARD CONSTRUCTION NOTES REFER TELSTRA STANDARD DRAWING 017866P05.
3. ALL BOLTS TO BE SUPPLY WITH HOT DIP GALVANISED NUT, LOCK NUT & FLAT WASHER.
4. DRILLED STEEL ON SITE, REMOVE ALL SWARF, BURRS & SHARP EDGES. APPLY 2 COATS OF ZINC RICH PAINT TO ALL SITE CUTS, WELDS.
5. DARK COLOUR ADDITIVE TO GENERAL PURPOSE CONCRETE MIX OR APPLY SURFACE COLOUR TREATMENT TO MATCH SURROUNDING ENVIRONMENTAL COLOURS.



LONG LEVELING POST BRACE

SCALE 1:20

FOR CONSTRUCTION

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
TASGRN079	SR	MB	FOR CONSTRUCTION - SP80005737WO001APD-TASGRN	RC	PR	15.05.25	1

APD GLOBAL

Telstra

TAS GRN SITE 079
MT. KING WILLIAM
GENSET PLATFORM DETAILS - SHEET 4
FRANKLIN-GORDON WILD RIVERS NATIONAL PARK, SOUTHWEST, TAS 7139

DWG NO. T113006 SHT NO. T8-6A

Cad file: T113006.dwg A3

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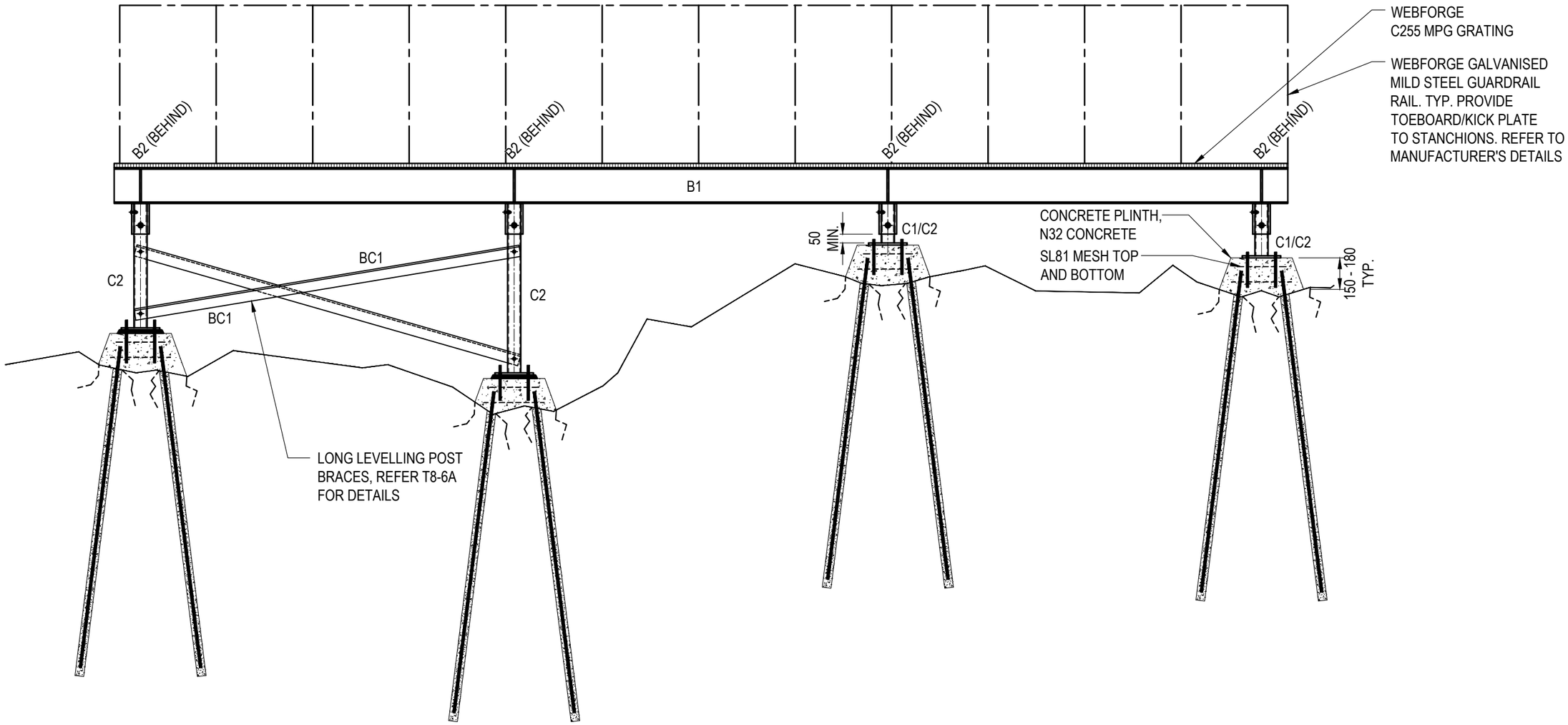


SECTION L

SCALE 1:25

T8-5

C2 - 75 SHS LEVELLING POST LENGTHES ARE SHOWN INDICATIVE ONLY, TO BE DETERMINED DURING SITE PREPARATION AND PLINTH POURING.

COMPLIANCE BOX
COMPLETED AS PER DESIGN ☐
ALTERATIONS IN RED ☐
NAME (PRINT)
SIGNATURE DATE

APD GLOBAL

FOR CONSTRUCTION

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
TASGRN079	JM	HG	FOR CONSTRUCTION - SP30091946WO050DOWN - TASGRN	DP	GRW	25.11.21	1
TASGRN079	SR	MB	FOR CONSTRUCTION - SP80005737WO001APD-TASGRN	RC	PR	15.05.25	2

Telstra

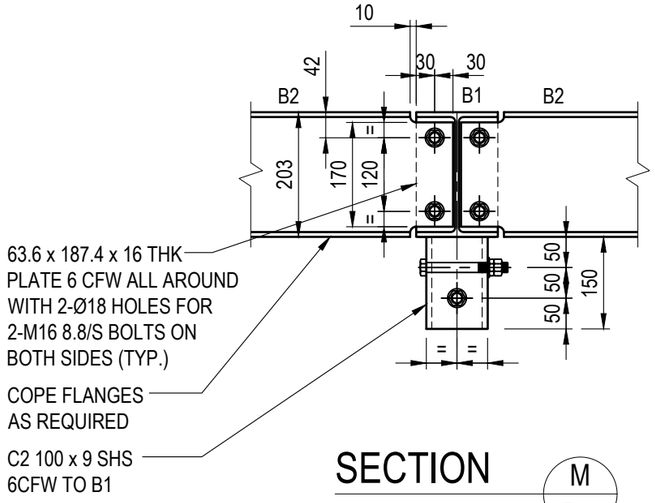
TAS GRN SITE 079
MT. KING WILLIAM
GENSET PLATFORM DETAILS - SHEET 5
FRANKLIN-GORDON WILD RIVERS NATIONAL PARK, SOUTHWEST, TAS 7139

DWG NO. T113006
SHT NO. T8-7

Cad file: T113006.dwg

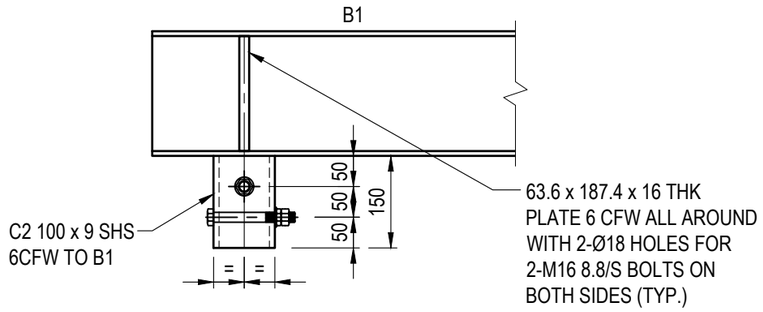
DO NOT SCALE

A3



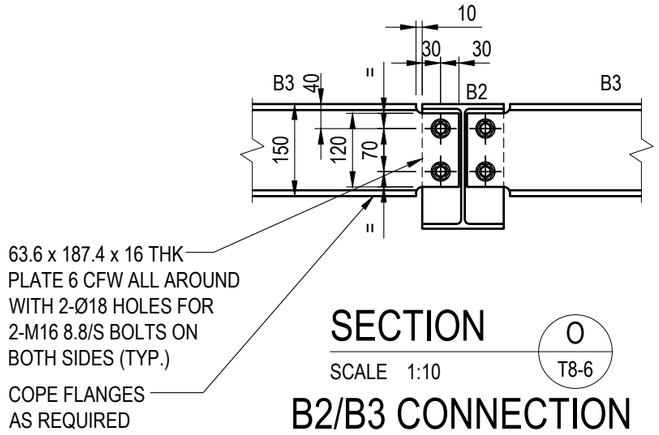
SECTION M
SCALE 1:10 T8-6

B1/B2/C2 CONNECTION - INNER



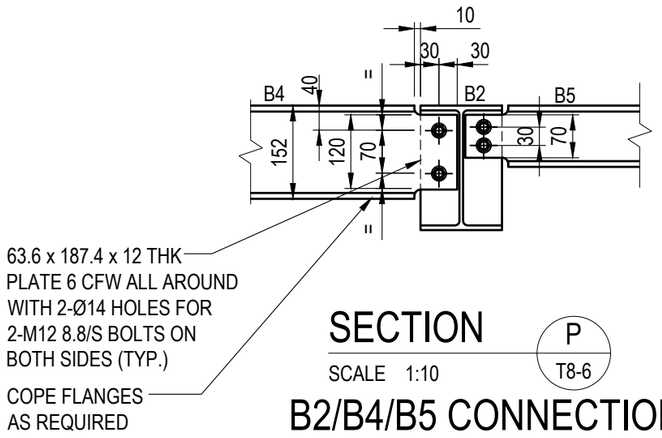
SECTION N
SCALE 1:10 T8-6

B1/C2 CONNECTION - EDGE



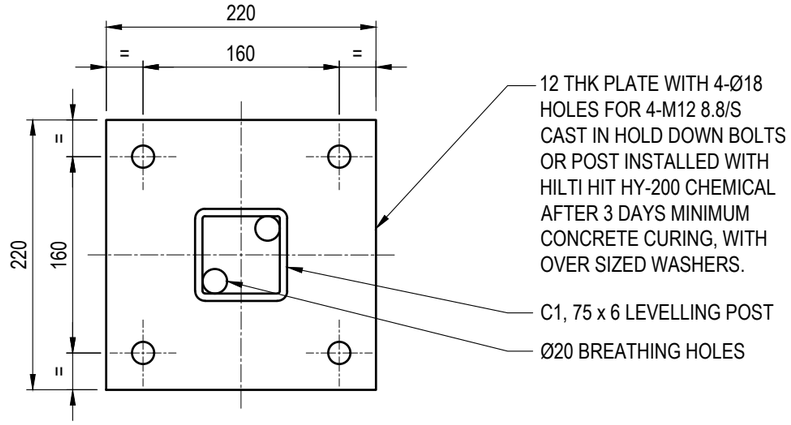
SECTION O
SCALE 1:10 T8-6

B2/B3 CONNECTION



SECTION P
SCALE 1:10 T8-6

B2/B4/B5 CONNECTION



C1 TYPICAL BASEPLATE DETAIL - PLATE C1A

SCALE 1:5

COMPLIANCE BOX
COMPLETED AS PER DESIGN ☐
ALTERATIONS IN RED ☐
NAME (PRINT)
SIGNATURE DATE

FOR CONSTRUCTION

DO NOT SCALE

APD GLOBAL

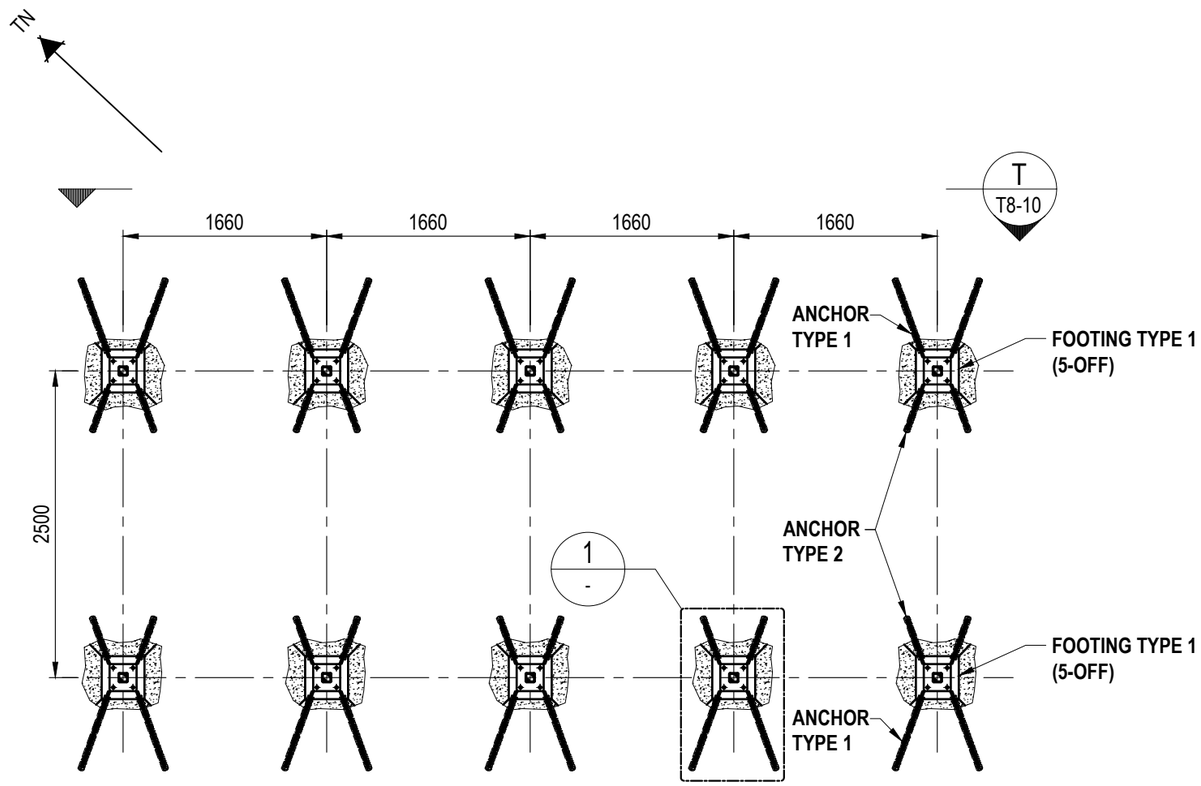
ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
TASGRN079	JM	HG	FOR CONSTRUCTION - SP30091946WO050DOWN - TASGRN	DP	GRW	25.11.21	1
TASGRN079	SR	MB	FOR CONSTRUCTION - SP80005737WO001APD-TASGRN	RC	PR	15.05.25	2

Telstra

TAS GRN SITE 079
MT. KING WILLIAM
GENSET PLATFORM DETAILS - SHEET 6
FRANKLIN-GORDON WILD RIVERS NATIONAL PARK, SOUTHWEST, TAS 7139

DWG NO. T113006
SHT NO. T8-8

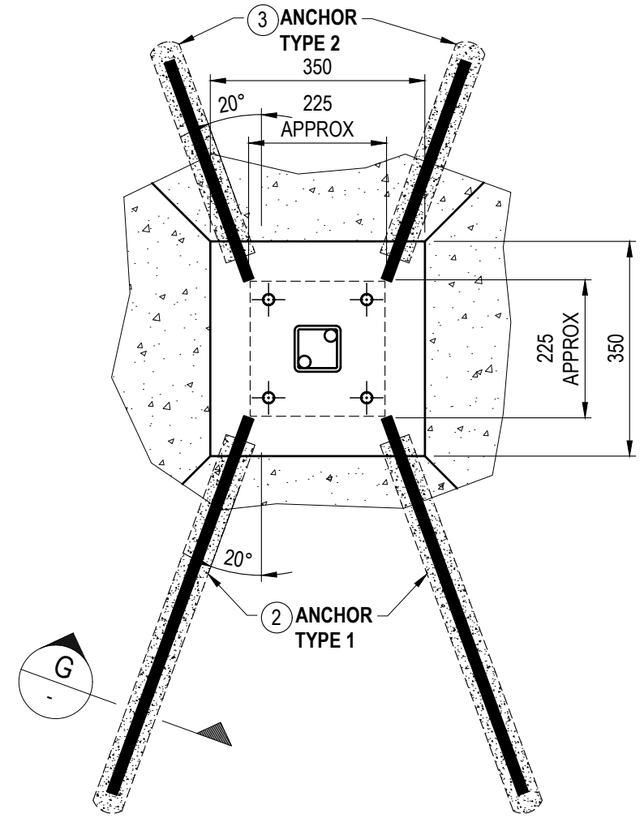
Cad file: T113006.dwg A3



FOOTING FOR BATTERY BANK PLATFORM - PLAN

SCALE 1:50

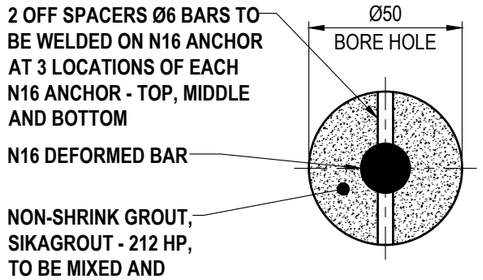
500 0 2500 SCALE 1:50



DETAIL 1/- FOOTING TYPE 1

SCALE 1:10

FOR CONCRETE PLINTH AND ROCK ANCHOR DETAILS, REFER SHEET T8-5A



SECTION G/- TYPICAL ROCK ANCHOR

SCALE 1:2

REINFORCEMENT SCHEDULE

SHAPE	PART	DIM 'A' (mm)	DIM 'B' (mm)	DIM 'C' (mm)	MATERIAL	CUT LENGTH (mm)	No. OFF	TOTAL MASS (Kg.)	DESCRIPTION
A	1	-	-	-	SL81 MESH	3.8m² APPROX TOTAL	-	28	TOP & BOTTOM REINFORCING MESH
B A	2	1950	50	-	N16	2030	20	71	ROCK ANCHOR 1
B A	3	1150	50	-	N16	1230	20	44	ROCK ANCHOR 2
					TOTAL WEIGHT STEEL			143 kg	
					TOTAL WEIGHT CONCRETE			0.63m³/1.5t	

FOR CONSTRUCTION

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
TASGRN079	JM	HG	FOR CONSTRUCTION - SP30091946WO050DOWN - TASGRN	DP	GRW	25.11.21	1
TASGRN079	SR	MB	FOR CONSTRUCTION - SP80005737WO001APD-TASGRN	RC	PR	15.05.25	2

APD GLOBAL

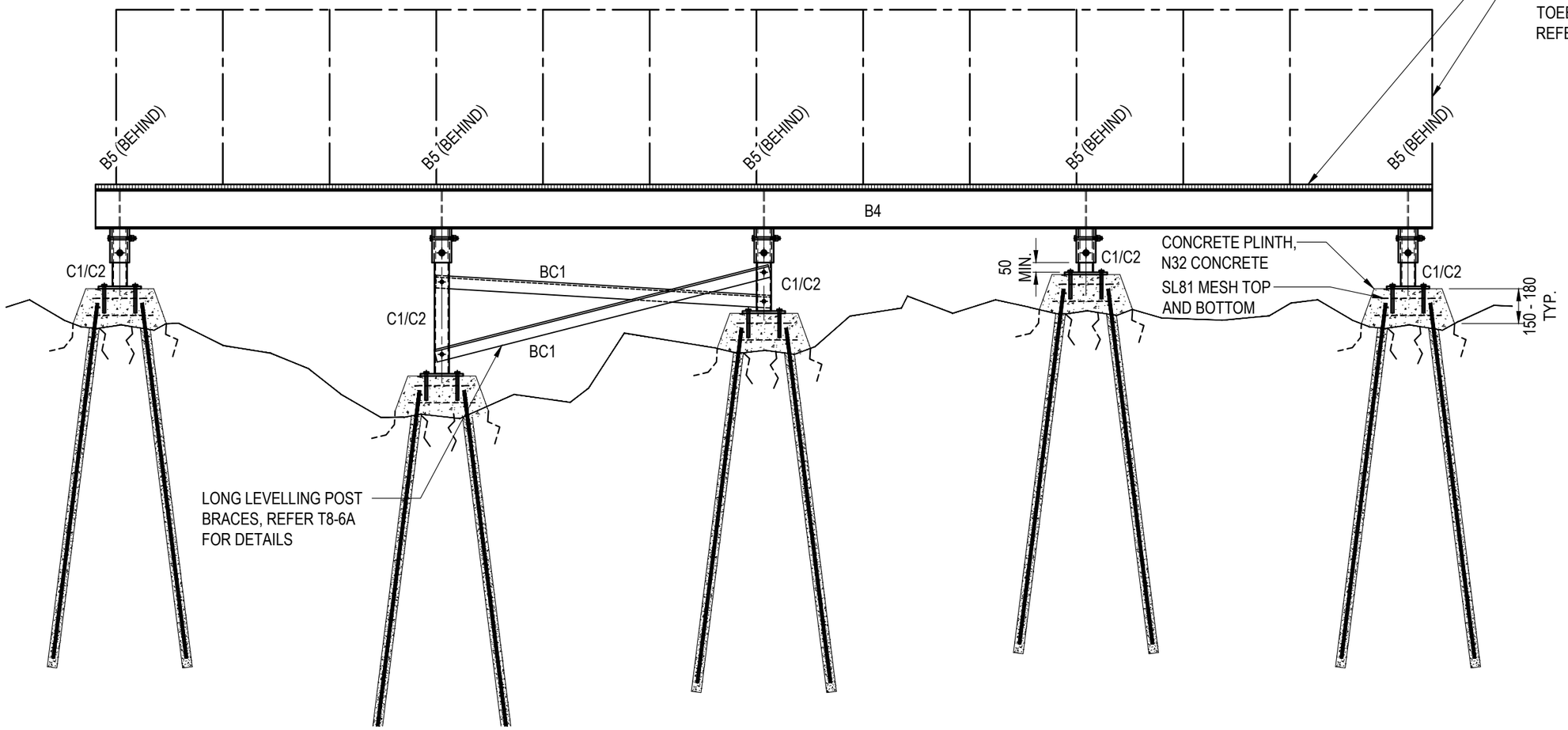
Telstra

TAS GRN SITE 079
MT. KING WILLIAM
BATTERY BANK PLATFORM DETAILS - SHEET 1
FRANKLIN-GORDON WILD RIVERS NATIONAL PARK, SOUTHWEST, TAS 7139

DWG NO. T113006 SHT NO. T8-9

Cad file: T113006.dwg A3

DO NOT SCALE



SECTION

SCALE 1:25

T8-9

C2 - 75 SHS LEVELLING POST LENGTHES ARE SHOWN INDICATIVE ONLY, TO BE DETERMINED DURING SITE PREPARATION AND PLINTH POURING.

COMPLIANCE BOX
COMPLETED AS PER DESIGN ☐
ALTERATIONS IN RED ☐
NAME (PRINT)
SIGNATURE DATE

FOR CONSTRUCTION

APD GLOBAL

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
TASGRN079	JM	HG	FOR CONSTRUCTION - SP30091946WO050DOWN - TASGRN	DP	GRW	25.11.21	1
TASGRN079	SR	MB	FOR CONSTRUCTION - SP80005737WO001APD-TASGRN	RC	PR	15.05.25	2

Telstra

TAS GRN SITE 079
MT. KING WILLIAM
BATTERY BANK PLATFORM DETAILS - SHEET 2
FRANKLIN-GORDON WILD RIVERS NATIONAL PARK, SOUTHWEST, TAS 7139

DWG NO. T113006
SHT NO. T8-10

Cad file: T113006.dwg
A3

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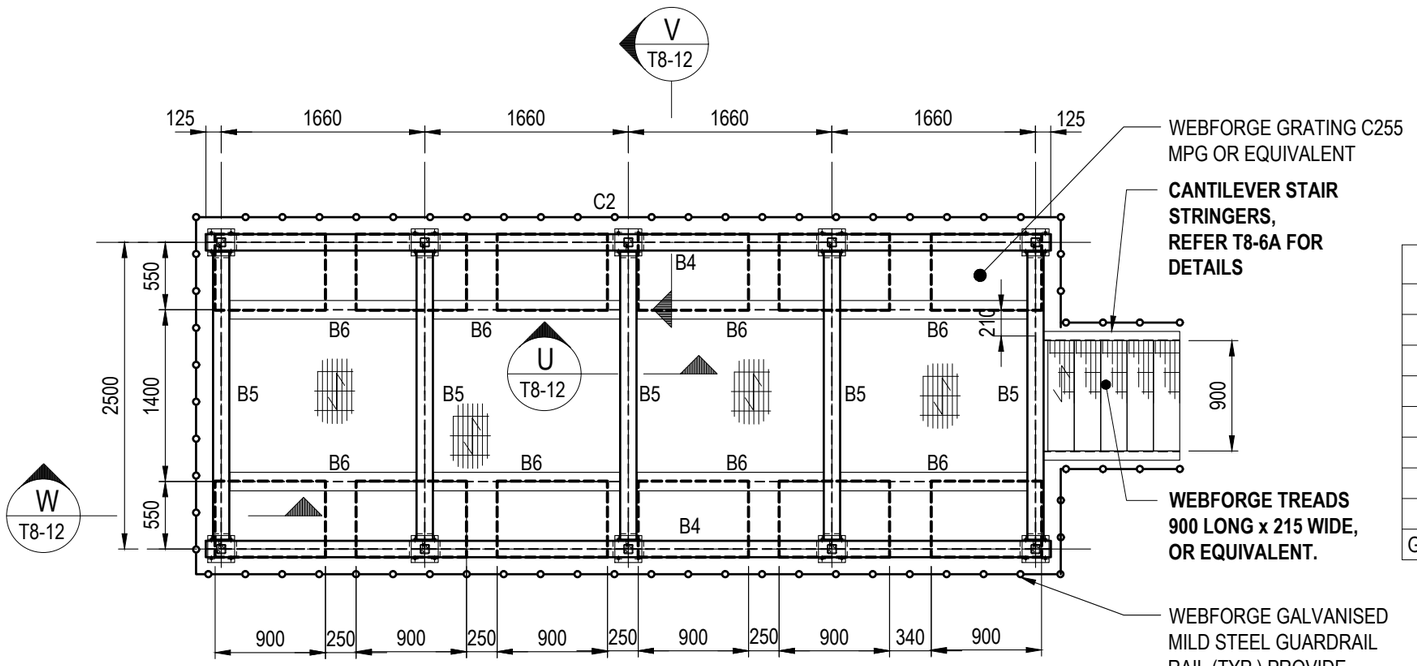

BATTERY BANK PLATFORM - PLAN

SCALE 1:50

500 0 2500 SCALE 1:50

MEMBER SCHEDULE				
MARK	MEMBER	QTY	LENGTH	TOTAL WEIGHT
B4	200 UB 25.4	2	6890	350kg
B5	200 UB 25.4	5	2487	316kg
B6	150UC23.4 BATTERY & GRATING SUPPORT	8	1647	310kg
SS1	150 PFC STAIR STRINGER	2	1500	60kg
C1	100 x 9 SHS SLEEVE POST	10	150	36kg
C2	75 x 6 SHS LEVELLING POST	10	LOCATION SPECIFIC	TBC
BC1	65 x 10 EA LEVELING POST BRACE	TBC	LOCATION SPECIFIC	TBC
GRATING	WEBFORGE C255 MPG	-	-	-

NOTES:

1. FOR SITE SPECIFIC NOTES REFER SHEETS S0, S0-1 & S0-2.
2. FOR STANDARD CONSTRUCTION NOTES REFER TELSTRA STANDARD DRAWING 017866P05.
3. ALL BOLTS TO BE SUPPLY WITH HOT DIP GALVANISED NUT, LOCK NUT & FLAT WASHER.
4. DRILLED STEEL ON SITE, REMOVE ALL SWARF, BURRS & SHARP EDGES. APPLY 2 COATS OF ZINC RICH PAINT TO ALL SITE CUTS, WELDS.
5. DARK COLOUR ADDITIVE TO GENERAL PURPOSE CONCRETE MIX OR APPLY SURFACE COLOUR TREATMENT TO MATCH SURROUNDING ENVIRONMENTAL COLOURS.

COMPLIANCE BOX
COMPLETED AS PER DESIGN ☐
ALTERATIONS IN RED ☐
NAME (PRINT)
SIGNATURE DATE

FOR CONSTRUCTION

DO NOT SCALE

APD GLOBAL

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
TASGRN079	JM	HG	FOR CONSTRUCTION - SP30091946WO050DOWN - TASGRN	DP	GRW	25.11.21	1
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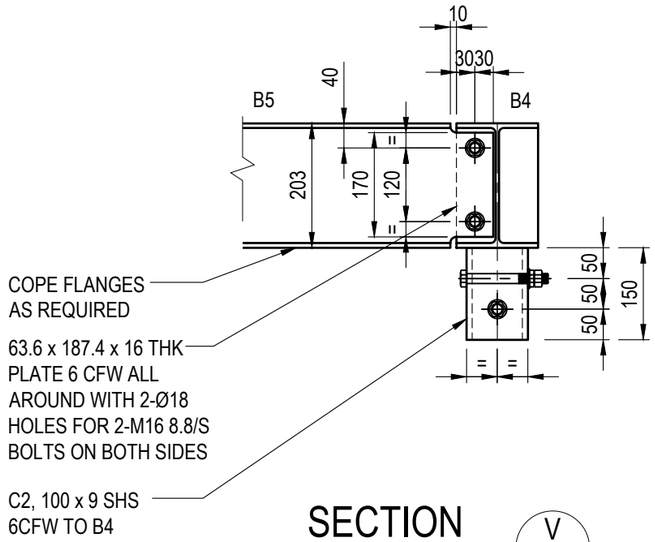
Telstra

TAS GRN SITE 079
MT. KING WILLIAM
BATTERY BANK PLATFORM DETAILS - SHEET 3
FRANKLIN-GORDON WILD RIVERS NATIONAL PARK, SOUTHWEST, TAS 7139

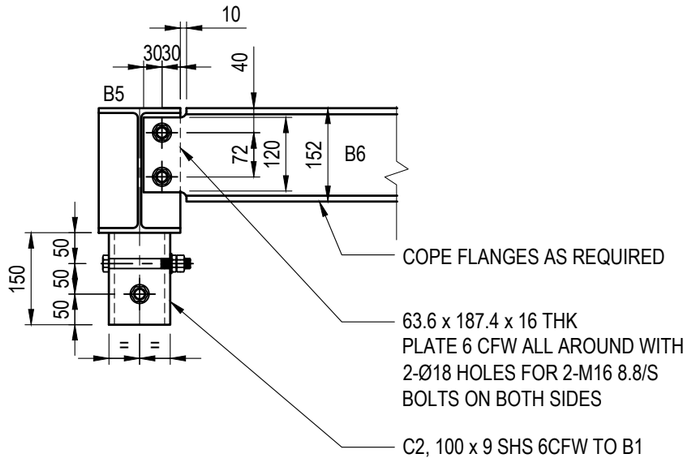
DWG NO. T113006 SHT NO. T8-11

Cad file: T113006.dwg A3



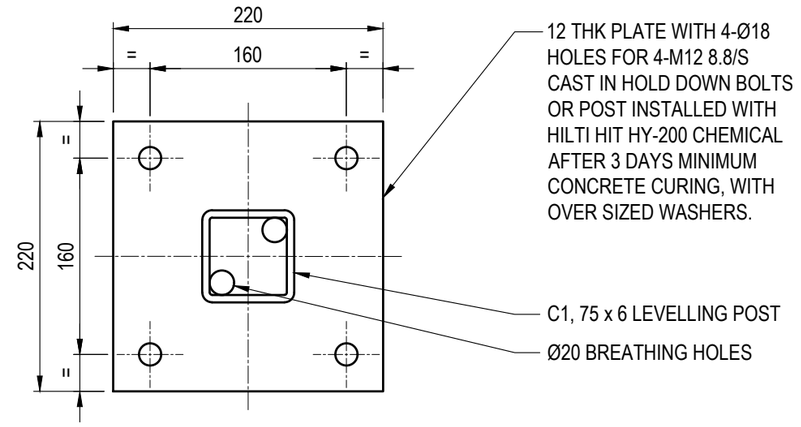
SECTION V
SCALE 1:10 T8-11

B4/B5/C2 CONNECTION

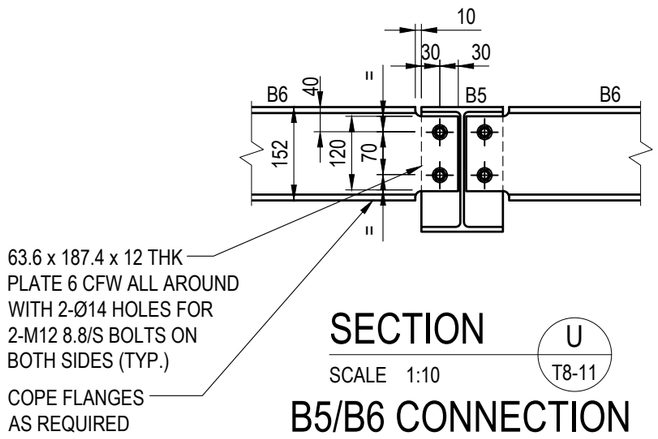


SECTION W
SCALE 1:10 T8-11

B5/B6/C2 CONNECTION



C1 TYPICAL BASEPLATE DETAIL - PLATE C1A
SCALE 1:5



SECTION U
SCALE 1:10 T8-11

B5/B6 CONNECTION

FOR CONSTRUCTION

COMPLIANCE BOX
COMPLETED AS PER DESIGN ☐
ALTERATIONS IN RED ☐
NAME (PRINT)
SIGNATURE DATE

APD GLOBAL

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
TASGRN079	JM	HG	FOR CONSTRUCTION - SP30091946WO050DOWN - TASGRN	DP	GRW	25.11.21	1
TASGRN079	SR	MB	FOR CONSTRUCTION - SP80005737WO001APD-TASGRN	RC	PR	15.05.25	2

Telstra

TAS GRN SITE 079
MT. KING WILLIAM
BATTERY BANK PLATFORM DETAILS - SHEET 4
FRANKLIN-GORDON WILD RIVERS NATIONAL PARK, SOUTHWEST, TAS 7139

DWG NO. T113006
SHT NO. T8-12

DO NOT SCALE

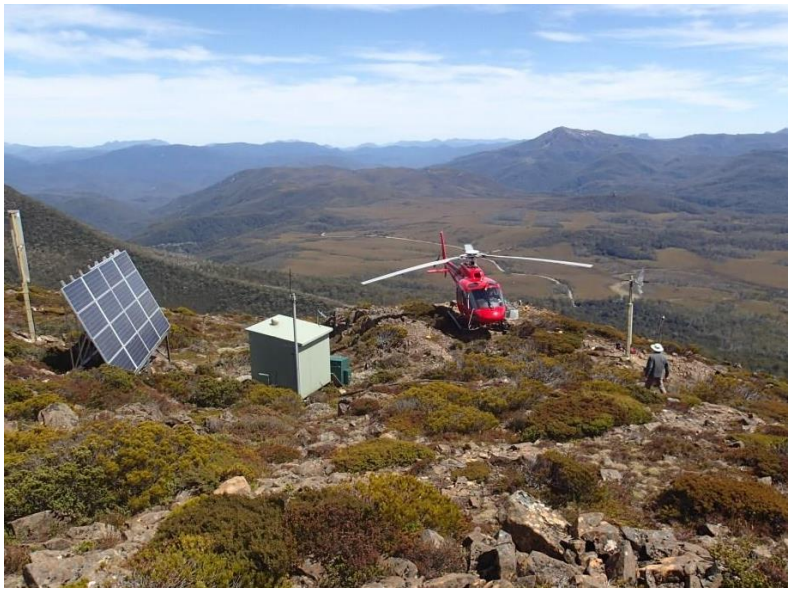
Cad file: T113006.dwg A3

Appendix C Geotech Report

Geotechnical Desktop Assessment

TASGRN079 – Mount King William

Mount King Willian, Butlers Gorge, Tas, 7140



Submitted To

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Level 4
480 Victoria Rd
Gladesville NSW 2111

Site Number
167549

Date
30/07/2021

Author
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Published
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Template Name: Master with Cover

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Table of Contents

Table of Figures and Tables

List of Appendices

REFERENCED STANDARDS:

AS 1726-2017, Geotechnical site investigations, Standards Australia, Sydney, Retrieved from SAI Global

AS 2159-2009, Piling-Design and Installation, Standards Australia, Sydney, Retrieved from SAI Global

AS 2870-2011, Residential slabs and footings, Standards Australia, Sydney, Retrieved from SAI Global

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Document Revision History

Date	Rev	Author	Approved by	Comments
30-Jul-21	1	Anton Wu	Scott Emmett	First Edition
29-Sep-21	2	Anton Wu	Scott Emmett	Reviewed bearing values

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Intrax Consulting Engineers Pty Ltd

Geotechnical Consultants

Unit 13/19 Radnor Drive

Deer Park 3023

1 Introduction

Intrax Consulting Engineers has completed a geotechnical investigation for the proposed tower structure at Mount King William, Butlers Gorge, Tas, 7140.

The geotechnical desktop assessment was carried out in accordance with the sales order SO1151599 requested by Downer EDI Engineering Pty Ltd.

The intention of this assessment is to provide preliminary geotechnical advice for the site, the likely material properties, and site characteristics for optioneering purposes. The assessment includes:

- Site classification in accordance with AS2870-2011
- Geotechnical recommendations and design parameters for foundations
- Empirical soil and rock properties
- Construction and precautions and recommendations

It is expected that site investigations/visual inspection conducted by a suitably qualified engineering geologist/geotechnical engineer prior to finalising design to confirm design parameters and highlight additional risks associated to site.

2 Project Description and Site Details

2.1 Project Description

The proposed development would comprise of a new tower construction.

2.2 Site Properties

The investigated site is located at Mount King William, Butlers Gorge, Tas, 7140 (-42.22394 , 146.13876).

Table 1: Site Properties

Elevation (m):	1280m
Slope (North):	27%
Slope (South):	15%
Slope (East):	27%
Slope (West):	15%
Slope (across site):	Flatter with stepped increases
Existing Structures:	Generator, helicopter pad, solar panels, two towers, small shed
Vegetation:	Dense scrub and grassy patches
Other comments:	Accessible only by helicopter

The proposed site has an existing generator, helicopter pad, solar panels, two telecommunication towers, and a small wooden shed. The proposed siting is on the peak of a mountain, with steep drops. The site is covered with rock outcrops, with scrub growing between the fissures and fragments. The rocks are the size of boulders, and the cliff faces are composed entirely of rock. Some soil material is evident between the boulders, and it is strewn with small twigs and plant material. The ground is highly uneven due to the protruding rocks. Lake George is located South-East of the siting.

Site conditions on the date of inspection are visible in the attached photography in Appendix B with the site features indicated in the site plan, refer Appendix A.

2.3 Aerial Photography

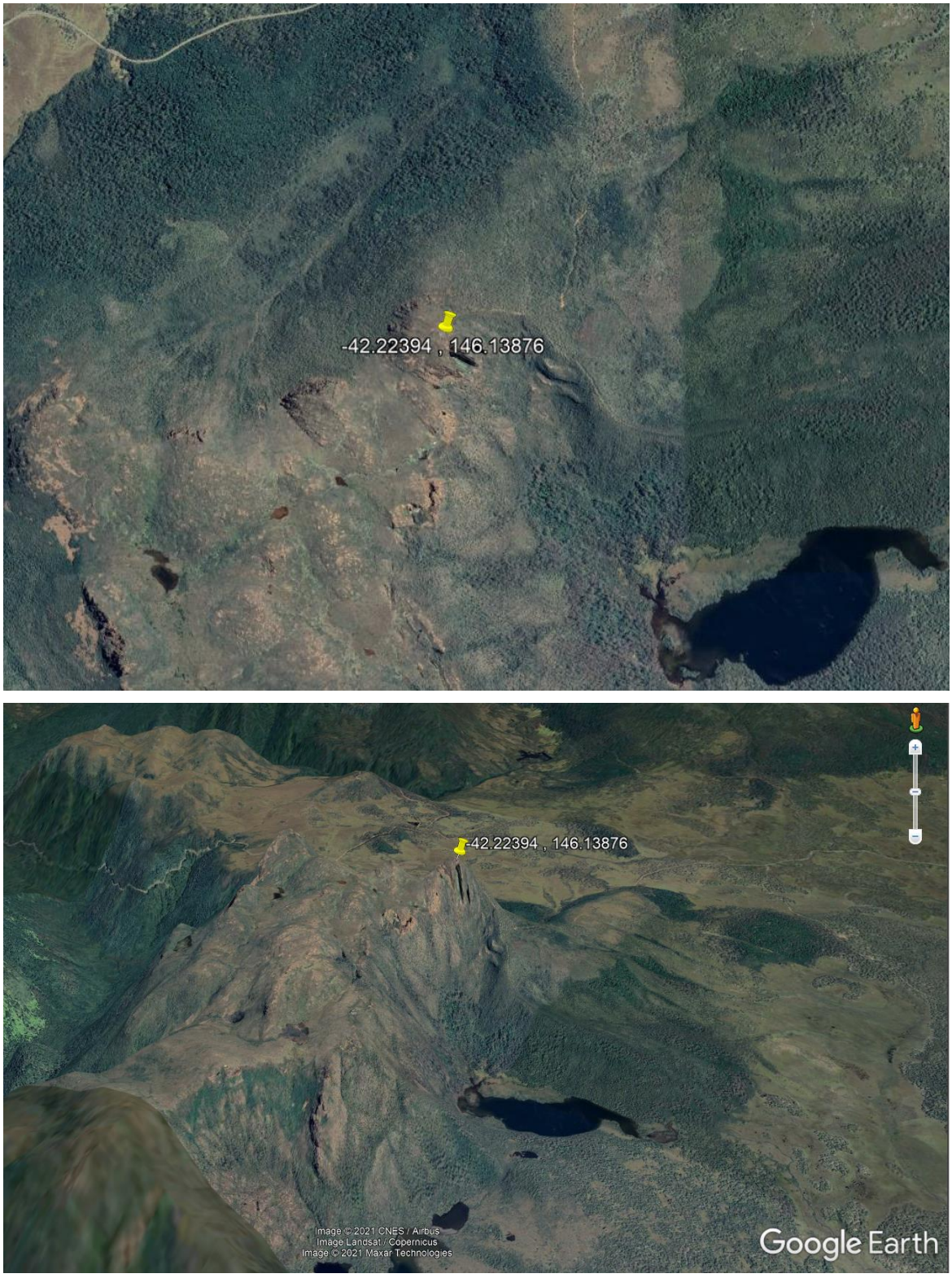


Figure 1: Aerial photography of the proposed siting (Source: Google Earth Pro)

The aerial image shows the site location at the top of Mount King William, surrounded by sparse scrub and rocky outcrops The siting is located on the top of the mountain.

2.4 Site Constraints

Due to the geological and geomorphological situations a number of potential site constraints that may impact development plans and costs, they are as follows;

- Due to the expected geology onsite, shallow bedrock is likely to be encountered. The use of rock breaking machinery or different excavation techniques may be required as part of the foundation construction.
- Site access is hindered and creating an access track to the proposed area should be required to delivery of materials.
- Construction profile may include fractured zones within the existing rock might result in extensive bentonite or concrete use due to the material lost within fractures. Using a proper additives recommended by a qualified structural engineer can be used to control the setting time.
- Due to the proposed condition, wind loading on the proposed tower structure should be assessed properly.
- Due to the location and existing slope in the proximity, possible stability issues need to be assessed.
- Due to nature of the site, a suitably qualified engineering geologist/geotechnical engineer shall assess the rock joints and potential failure wedges prior to construction

3 Method of Investigation

3.1 Desktop Assessment

Geological maps from the Geological Survey of TAS, aerial photography and our local experience were used to assess the anticipated site conditions and the area geology.

Photos provided by the client, and groundwater information from government websites were also used.

4 Results of Desktop Investigation

4.1 Geology and Geological Constraints

Investigation of geological maps from the Geological Survey of Tasmania has identified the expected site geology is Jurassic aged Dolerite. An extract of the local geological map is provided below.

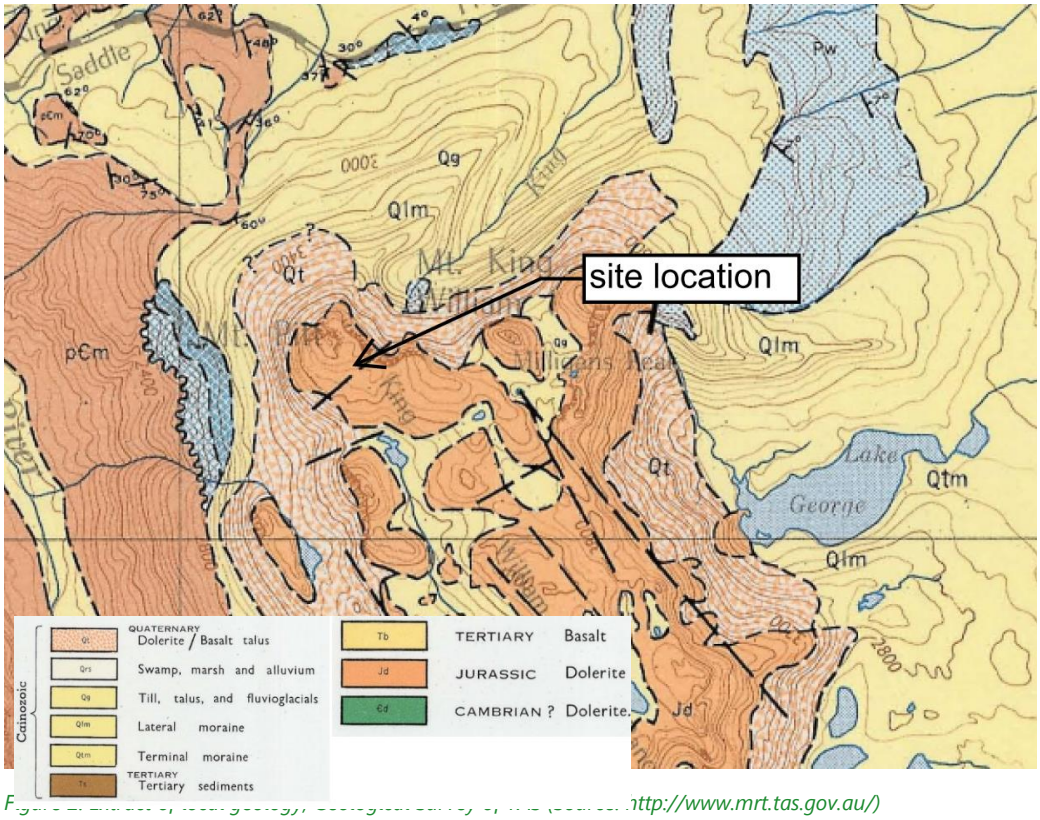


Figure 2: Extract of local geology, Geological Survey of TAS (Source: http://www.mrt.tas.gov.au/)

The visibly protruding rocks are most likely dolerite. There may be some clayey material present however it is expected that the dolerite rock is predominant.

4.2 Groundwater

There is limited groundwater data available for the proposed siting. With reference to Department of Primary Industries, Parks, Water and Environment of Tasmania, the following approximate information was deduced.

Table 2: Groundwater information (Source: https://dpipwe.tas.gov.au/)

Perspectivity of aquifers:	Low to Moderate, existing in fractured rock
Water Quality [Salinity] mg/L:	70 – 11200mg/L TDS (Total Dissolved Solids)
Existing water source in proximity-comments:	Lake King William is to the East of the siting and there are many smaller lakes and rivers at valleys and skirt of the mountain

5 Discussion and Recommendations

5.1 Site Reactivity – AS 2870

After considering the area geology, the soil profile encountered in the bores, and the climatic zone of the area, this site has been classified as Class A with respect to foundation construction (Australian Standard 2870-2011 Residential Slabs and Footings). It is anticipated that the seasonal surface movement under normal moisture conditions will be negligible. Note that, this classification is only applicable to Class 1 and 10a structures in accordance with the Building Code of Australia, for other structures this classification should be used as a guide only.

5.2 Tower Foundation

It is understood that the project scope is to construct a new tower. Following bearing pressures and soil strength parameters can be adopted in assessing the structural integrity of footing to be constructed. The geological profile is assumed and outline in Section 4.1.

5.2.1 Isolated Pad (Mass Pad) Footings

The pad footings can be considered a suitable foundation option in the scope of the development project. These pads footings can be supported within Dolerite.

The pad should be sufficiently sized such that the self-weight of the concrete pad is able to restrain against overturning moments and lateral shear; determination of overturning moments, lateral shear and pad sizing should be completed by a suitably qualified structural engineer. It should be noted no lateral restraint is to be adopted within any filling or possibly encountered natural silt soils.

The below table illustrates the ultimate bearing capacity for the conservatively assumed layers, where the design engineer can adopt them during design stages. However, considering the absence of any fieldwork performance on-site, the presented capacities should be evaluated as generic values for the material expected to be encountered.

Table 3: Ultimate bearing capacity for pad footing [FoS: 2.5 (B x L: 2m x 2m)]

Material	Depth BSL (m)	Ultimate Bearing Capacity (kPa)
DW - SW [Distinctly weathered]	Up to 4.0m	3,600
SW – FR [slightly weathered to Fresh] Dolerite	>4.0m	6,000

The ultimate bearing pressures provided in the report are the maximum values. Ultimate bearing capacity values provided within this report should result in a total settlement of less than 15mm, should accurate settlement calculations be required, specific loading values and further laboratory testing of the soil characteristics will be required.

5.2.2 Rock Anchor Foundations

The rock anchor foundation may have been adopted to support the proposed tower structure. Bond stress for rock/grout interface value listed in the table below is considered suitable for this site.

Table 4: Rock Anchor – Bond strength values

Material	Weathering Degree	Ultimate Bond strength (kPa)
Dolerite	DW - SW [Distinctly weathered]	1200
	SW – FR [slightly weathered to Fresh] Dolerite	2,000

The embedded depth of rock anchors shall be engineered considering the possible eccentric loading combinations.

*Note: The capacities given can be adopted to the design processes however, no rock anchor design details shall be finalised until the weathering properties of underlying granite rock is confirmed by this office. Therefore, this office must be contacted during the geotechnical site investigation stages and construction/ excavation stage with additional pictorial information to confirm the integrity of the dolerite rock.

Table 5: Material strength properties

Material Description	Unit weight, γ (kN/m^3)	Effective Cohesion, c' (kPa)	Effective Friction angle, ϕ (^{0})	Young's Modulus (MPa)
DW - SW Dolerite	22	1,000	34	1,000
SW – FR Dolerite	26	3,000	36	8,000

5.2.3 General Conditions- Foundation

Where footings are founded in different soil groups (especially reactive and non-reactive soils), the designer should provide articulation for the structure to accommodate to for potential damages which could be caused by differential movement of the soil due to seasonal moisture variation.

Note it is our preference that the design engineer adopt the same founding material across the structure where possible. After excavation for the footings has been completed if there is any doubt as to the bearing capacity of the founding soil and rock, then Intrax should be contacted and an inspection of the sites founding conditions carried out.

5.3 Inspections (Hold Points)

Intrax **must** be engaged at the following stages:

1. In the event soil conditions encountered differ significantly from those described within this report.
2. If project design is altered significantly from drawings reviewed and outlined or project described within this report
3. To confirm founding materials and allowable bearing pressures.
4. To confirm rock strength and weathering profile encountered on-site.

6 Limitations of Report

1. The recommendations in this report are based on the following:
    a. Information about the site & its history, proposed site treatment and building type conveyed to us by the client and or their agent
    b. Professional judgements and opinions using the most recent information in soil testing practice that is available to us.
    c. The location of our test sites and the information gained from this and other investigations.

    Should the client or their agent neglect to supply us with correct or relevant information, including information about previous buildings, trees or past activities on the site, or should changes be made to the building type, size and or/position, this report may be made obsolete, irrelevant or unsuitable. In such cases, Intrax will not accept any liability for the consequences and Intrax reserves the right to make an additional charge if more testing or a change to the report is necessary.
2. The recommendations made in this report may need to be reviewed should any site works disturb any soil 200mm below the proposed founding depth.
3. The descriptions of the soils encountered in the boreholes follow those outlined in AS1726-2017; Geotechnical Site Investigations. Colour descriptions can vary with soil moisture content and individual interpretation.
4. If the site conditions at the time of construction differ from those described in this report, then Intrax must be contacted so a site inspection can be carried out prior to any footing being poured. The owner/builder will be responsible for any fees associated with this additional work.
5. This report assumes that the soil profile observed in the boreholes are representative of the entire site. If the soil profile and site conditions appear to differ substantially from those reported herein, then Intrax should be contacted immediately and this report may need to be reviewed and amended where appropriate. The owner/builder will be responsible for any fees associated with this additional work.
6. The user of this report must consider the following limitations. Soil and drilling depths are given to a tolerance of +/- 200mm.

    It must be understood and a condition of acceptance of this report is that whilst every effort is made to identify fill material across the site, difficulties exist in determining fill material, in particular, for example, well compacted site or area derived fill, when utilising a small diameter auger. Consequently, Intrax emphasises that we will not be responsible for any financial losses, consequential or otherwise, that may occur as a result of not accurately determining the fill profile across the site.
7. Finally, no responsibility will be taken for this report if it is altered in any way or is not reproduced in full.

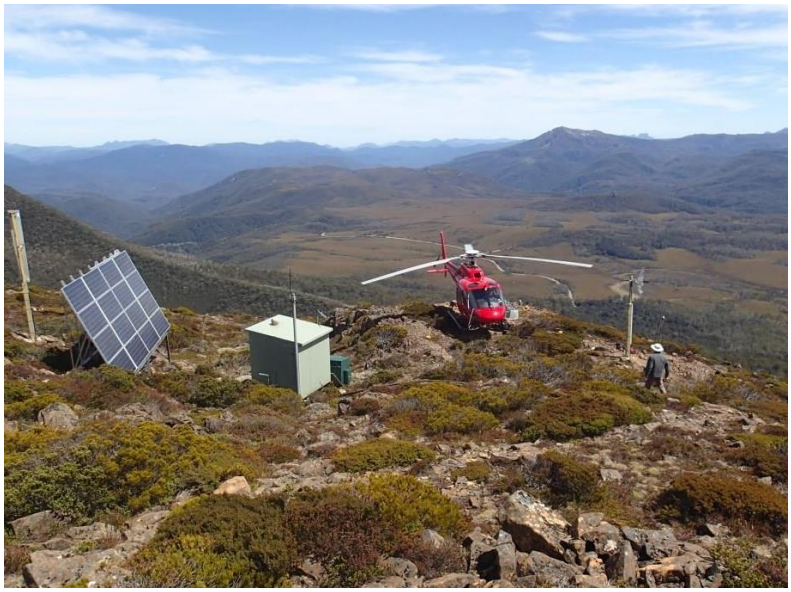
Appendix A

Site Photography

Geotechnical Desktop Assessment

TASGRN089 – Mt Wedge

Mount Wedge, Florentine, Tas, 7140



Submitted To

Downer EDI Engineering Pty Ltd
Level 4
480 Victoria Rd
Gladesville NSW 2111

Site Number
167549

Date
16/08/2021

Author
Gamze Yilmaz

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Table of Figures and Tables

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APPENDIX A: Site Photography

REFERENCED STANDARDS:

AS 1726-2017, Geotechnical site investigations, Standards Australia, Sydney, Retrieved from SAI Global

AS 2870-2011, Residential slabs and footings, Standards Australia, Sydney, Retrieved from SAI Global

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Direct Contact

Any questions or queries regarding this report should be directed to the Geotechnical Department, Engineering Team on 03 8371 0100 or gamze.yilmaz@intrax.com.au.

Document Revision History

Date	Rev	Author	Approved by	Comments
16-Aug-21	1	Gamze Yilmaz	Scott Emmett	First Edition

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Intrax Consulting Engineers Pty Ltd

Geotechnical Consultants

Unit 13/19 Radnor Drive

Deer Park 3023

1 Introduction

Intrax Consulting Engineers has completed a geotechnical investigation for the proposed tower structure at Mount Wedge, Florentine, Tas, 7140.

The investigation was carried out in accordance with the sales order SO1195949 requested by Downer EDI Engineering Pty Ltd.

This report outlines the geotechnical desktop assessment carried out on 22.7.21. This report includes:

- Site classification in accordance with AS2870-2011
- Geotechnical recommendations and design parameters for foundations
- Empirical soil and rock properties
- Construction and precautions and recommendations

2 Project Description and Site Details

2.1 Project Description

The proposed development would comprise of a new tower construction.

2.2 Site Properties

The investigated site is located at Mount Wedge, Florentine, Tas (-42.84538, 146.29654).

Table 1: Site Properties

Elevation (m):	1121m
Slope (North):	20%
Slope (South):	20%
Slope (East):	20%
Slope (West):	20%
Slope (across site):	Flatter with stepped increases
Existing Structures:	Helicopter pad, solar panels, two towers, and a small shed
Vegetation:	Scrub and grassy patches
Other comments:	Accessible only by helicopter

The proposed site has an existing helicopter pad, solar panels, two telecommunications towers, and a small hut containing controls and batteries for the solar panels. The site is located at the top of a mountain ridge, which runs North to South. The site is covered with rock outcrops, with some scrub and grasses growing in between. There are trees further down the mountain ridge, but none close to the site. There is a walking track called Mount Wedge track that runs up to the site from Gordon River Road. Lake Gordon is located to the North of the site and Wedge River towards the South-West.

Site conditions on the date of inspection are visible in the attached photography in Appendix B with the site features indicated in the site plan, refer Appendix A.

2.3 Aerial Photography

*Figure 1: a) Aerial photography of the proposed siting (Source: **Google Earth Pro**) – b) site photo*

The aerial image and the site photo show the site location at the top of Mount Wedge, surrounded by sparse scrub and rock outcrops and the siting is located on the top of the mountain.

2.4 Site Constraints

Due to the geological and geomorphological situations a number of potential site constraints that may impact development plans and costs, they are as follows;

- Shallow bedrock is likely to be encountered. The use of rock breaking machinery or different excavation techniques may be required as part of the foundation construction.
- Construction profile may include fractured zones within the existing rock might result in extensive bentonite or concrete use due to the material lost within fractures. Using a proper additives recommended by a qualified structural engineer can be used to control the setting time.
- Site access is hindered and creating a suitable access track for to be used machineries to the proposed area should be required to delivery of materials.
- Due to the proposed condition, wind loading on the proposed tower structure should be assessed properly.
- Due to the location and existing slope in the proximity, possible stability issues need to be assessed.
- Due to nature of the site, capacities of the rock are likely controlled by the jointing within the rock mass. As such a suitably qualified engineering geologist/geotechnical engineer shall assess the rock joints and potential failure wedges prior to construction.

3 Method of Investigation

3.1 Desktop Assessment

Geological maps from the Geological Survey of TAS, aerial photography and our local experience were used to assess the anticipated site conditions and the area geology.

Photos provided by the client, and groundwater information from government websites were also used.

4 Results of Desktop Investigation

4.1 Geology and Geological Constraints

Investigation of geological maps from the Geological Survey of Tasmania has identified the expected site geology is Jurassic aged Dolerite. An extract of the local geological map is provided below.

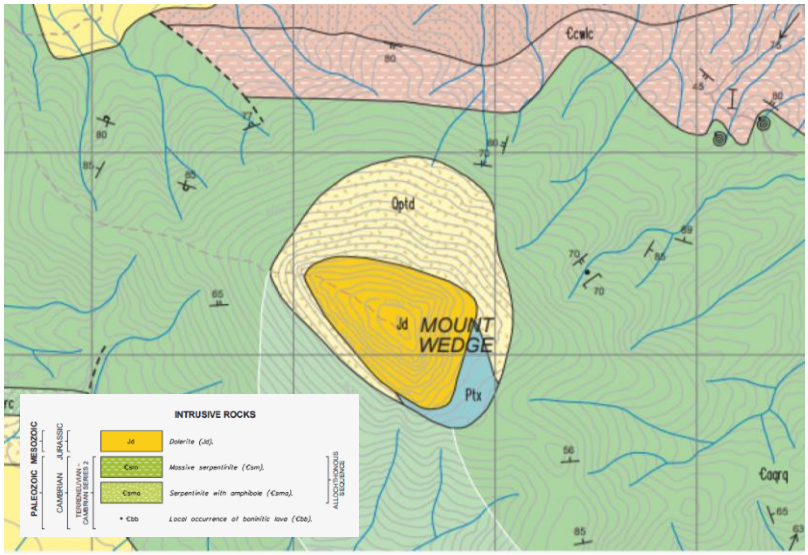

*Figure 2: Extract of local geology, Geological Survey of **TAS** (Source: **http://www.mrt.tas.gov.au/**)*

The siting is most likely covered by dolerite and is likely overlain with a thin layer of residual soil at the surface between rocks.

4.2 Groundwater

There is limited groundwater data available for the proposed siting. With reference to Department of Primary Industries, Parks, Water and Environment of Tasmania, the following approximate information was deduced.

Table 2: Groundwater information (Source: https://dpipwe.tas.gov.au/)

Perspectivity of aquifers:	Low to Moderate, existing in fractured rock
Water Quality [Salinity] mg/L:	70 – 11200mg/L TDS (Total Dissolved Solids)
Existing water source in proximity-comments:	Lake Gordon is to the North and Wedge Lake to the South.

5 Discussion and Recommendations

5.1 Site Reactivity – AS 2870

After considering the area geology, the soil profile encountered in the bores, and the climatic zone of the area, this site has been classified as Class A with respect to foundation construction (Australian Standard 2870-2011 Residential Slabs and Footings) due to rock outcrops at the surface.

Note that, this classification is only applicable to Class 1 and 10a structures in accordance with the Building Code of Australia, for other structures this classification should be used as a guide only.

5.2 Tower Foundation

It is understood that the project scope is to construct a new tower. Following bearing pressures and soil strength parameters can be adopted in assessing the structural integrity of footing to be constructed. The geological profile is assumed and outline in Section 4.1.

5.2.1 Isolated Pad (Mass Pad) Footings

The pad footings can be considered a suitable foundation option in the scope of the development project. These pads footings can be supported within DOLERITE.

The pad should be sufficiently sized such that the self-weight of the concrete pad is able to restrain against overturning moments and lateral shear; determination of overturning moments, lateral shear and pad sizing should be completed by a suitably qualified structural engineer. It should be noted no lateral restraint is to be adopted within any filling or possibly encountered natural silt soils.

The below table illustrates the ultimate bearing capacity for the conservatively assumed layers, where the design engineer can adopt them during design stages. However, considering the absence of any fieldwork performance on-site, the presented capacities should be evaluated as generic values for the material expected to be encountered.

Table 3: Ultimate bearing capacity for pad footing [FoS: 2.5 (B x L: 2m x 2m)]

Material	Weathering Degree	Depth BSL (m)	Ultimate Bearing Capacity (kPa)
SW Dolerite	SW [slightly weathered]	Up to 4.0m	5,000
FR Dolerite	FR [Fresh]	>4.0m	10,000

The ultimate bearing pressures provided in the report are the maximum values. Ultimate bearing capacity values provided within this report should result in a total settlement of less than 15mm, should accurate settlement calculations be required, specific loading values and further laboratory testing of the soil characteristics will be required.

5.2.2 Rock Anchor Foundations

After considering the investigated site conditions the office assumed that the rock anchor foundation may have been adopted to support existing tower loading. Bond stress for rock/grout interface value listed in the table below is considered suitable for this site.

Table 4: Rock Anchor – Bond strength values [FoS:1.8]

Material	Weathering Degree	Depth BSL (m)	Ultimate Bond strength (kPa)
Dolerite	SW [slightly weathered]	Up to 4.0m	1,500
	FR [Fresh]	>4.0m	2,500

**The fractured behaviour of the encountered Dolerite should be considered and to avoid excessive material usage during construction, precautions (i.e. bentonite agents) shall be taken.*

The embedded depth of rock anchors shall be engineered considering the possible eccentric loading combinations.

*Note: no rock anchor design details shall be finalised until the weathering properties of underlying dolerite rock is confirmed by this office. Therefore, this office must be contacted during the excavation stage with additional pictorial information to confirm the integrity of the dolerite rock.

5.2.3 Material Properties

Table 5: Material strength properties

Material Description	Unit weight, γ (kN/m^3)	Effective Cohesion, c' (kPa)	Effective Friction angle, ϕ (^{0})	Young's Modulus (MPa)
SW Dolerite	22	1,000	34	1,000
FR Dolerite	26	5,000	36	10,000

5.2.4 General Conditions- Foundation

Where footings are founded in different soil groups (especially reactive and non-reactive soils), the designer should provide articulation for the structure to accommodate to for potential damages which could be caused by differential movement of the soil due to seasonal moisture variation.

Note it is our preference that the design engineer adopt the same founding material across the structure where possible. After excavation for the footings has been completed if there is any doubt as to the bearing capacity of the founding soil, then Intrax should be contacted and an inspection of the sites founding conditions carried out.

5.3 Inspections (Hold Points)

Intrax **must** be engaged at the following stages:

1. In the event soil conditions encountered differ significantly from those described within this report.
2. If project design is altered significantly from drawings reviewed and outlined or project described within this report
3. To confirm founding materials and allowable bearing pressures.
4. To confirm rock strength and weathering profile encountered on-site.

6 Limitations of Report

1. The recommendations in this report are based on the following:
    a. Information about the site & its history, proposed site treatment and building type conveyed to us by the client and or their agent
    b. Professional judgements and opinions using the most recent information in soil testing practice that is available to us.
    c. The location of our test sites and the information gained from this and other investigations.

    Should the client or their agent neglect to supply us with correct or relevant information, including information about previous buildings, trees or past activities on the site, or should changes be made to the building type, size and or/position, this report may be made obsolete, irrelevant or unsuitable. In such cases, Intrax will not accept any liability for the consequences and Intrax reserves the right to make an additional charge if more testing or a change to the report is necessary.
2. The recommendations made in this report may need to be reviewed should any site works disturb any soil 200mm below the proposed founding depth.
3. The descriptions of the soils encountered in the boreholes follow those outlined in AS1726-2017; Geotechnical Site Investigations. Colour descriptions can vary with soil moisture content and individual interpretation.
4. If the site conditions at the time of construction differ from those described in this report, then Intrax must be contacted so a site inspection can be carried out prior to any footing being poured. The owner/builder will be responsible for any fees associated with this additional work.
5. This report assumes that the soil profile observed in the boreholes are representative of the entire site. If the soil profile and site conditions appear to differ substantially from those reported herein, then Intrax should be contacted immediately and this report may need to be reviewed and amended where appropriate. The owner/builder will be responsible for any fees associated with this additional work.
6. The user of this report must consider the following limitations. Soil and drilling depths are given to a tolerance of +/- 200mm.

    It must be understood and a condition of acceptance of this report is that whilst every effort is made to identify fill material across the site, difficulties exist in determining fill material, in particular, for example, well compacted site or area derived fill, when utilising a small diameter auger. Consequently, Intrax emphasises that we will not be responsible for any financial losses, consequential or otherwise, that may occur as a result of not accurately determining the fill profile across the site.
7. Finally, no responsibility will be taken for this report if it is altered in any way or is not reproduced in full.

Appendix A

Site Photography

Appendix D AHT Search and Response

AHR Instrument: AHA 532

Applicant: Emily Wardlaw (Acquirecomm Pty Ltd)

Date: 16 February 2023

RECORD OF ADVICE FROM ABORIGINAL HERITAGE TASMANIA ON AN ABORIGINAL HERITAGE ASSESSMENT REPORT

This document provides a record of advice relating to an assessment undertaken in accordance with the *Aboriginal Heritage Standards and Procedures*, as adopted by the Guidelines issued under section 21A of the *Aboriginal Heritage Act 1975*.

Report title: TasGRN Project - Mount King William 1 Central Highlands Region, Tasmania, Aboriginal Cultural Heritage Assessment. Stuart Huys & Rocky Sainty. Draft V2

Advice: Please see next page.

All Aboriginal heritage is protected under the *Aboriginal Heritage Act 1975*. It is an offence to destroy, damage, deface, conceal, or otherwise interfere with a relic (Aboriginal heritage) without a permit granted by the Minister. If at any time Aboriginal heritage is suspected, the process outlined in the Unanticipated Discovery Plan should be followed as there is an obligation to report findings of Aboriginal heritage as soon as practicable.

As explained in the Guidelines, obtaining this record of advice does not exempt a person from their obligations under the Act but is an important element of the actions summarised in the Guidelines. To be sure that you have "in so far as is practicable … complied with the guidelines" (s.21(1) of the *Aboriginal Heritage Act 1975*), be sure to read the relevant part and take any other action that may be relevant to your situation.

This advice is valid for two years and only for the activity as described in the Aboriginal Heritage Assessment Report specified above.

Please contact Aboriginal Heritage Tasmania on 1300 487 045 or aboriginal@dpac.tas.gov.au if you require further information.

Disclaimer *The advice contained within this document is based on information available to Aboriginal Heritage Tasmania at the time of its preparation and is provided in good faith. It does not constitute legal advice, is not intended to be a substitute for legal advice and should not be relied upon as such. Proponents should seek specialist legal advice, if required, regarding the Aboriginal Heritage Act 1975 when applying the information to their specific needs.*

BL12008

Further advice or comments:

AHT acknowledge the findings and recommendations of the assessment. For the purposes of the Aboriginal Heritage Act 1975 the report conforms to the assessment standards outlined in the Aboriginal Heritage Standards and Procedures. All works should proceed in accordance with the recommendations made within the report.

AHT would like it noted that (as for Mt Wedge TasGRN assessment AHA 531):

1. While changes and improvements have been made to the report and Aboriginal community consultation for the Mt King William 1 assessment (following AHT comments on the Redan Hill TasGRN assessment), the main issue regarding the aesthetics/visual impact in an Aboriginal cultural landscape of tall towers/masts is still not presented to Aboriginal community organisations. The letters to the north and south do not outline the height of the tower/mast on a prominent landscape feature, the fact that there are multiple such tower/masts going through the TWWHA, and as such the Aboriginal community are not given the opportunity to consider whether this impact on their cultural values is problematic or not.
2. Recommendation 4 suggests it may be necessary to have ongoing communications with Aboriginal organisations - and AHT believes this is necessary (especially with those organisations who did comment on this project) to raise the above aesthetics/visual impact issue with greater clarity.
3. This assessment report refers to 'Visual and Wilderness' impact assessment reports undertaken by Inspiring Place, who found that the mast/tower will have a 'moderate' impact. The Huys and the Inspiring Place reports would seem to, therefore, almost contradict one-another - with Huys stating visual impacts are likely 'not major' (again, untested from an Aboriginal community point-of-view). It is unclear whether the Aboriginal community were consulted during the Inspiring Place reporting process.
4. This assessment report also raises the issue of cumulative impacts in the TWWHA - and this still needs to be addressed by the proponents regarding Aboriginal cultural landscapes and cultural values. As these towers/masts are being placed in the TWWHA, direct and indirect and cumulative impacts on World Heritage values are part of the TWWHA Management Plan's Reserve Activity Assessment Process - and Aboriginal heritage and values are part of the Outstanding Universal Values for the TWWHA. Huys quotes Inspiring Place to state that there won't be an impact to OUVs, but then states that '...the Aboriginal community may still have concerns regarding the possible impacts of another built structure within the highly significant Aboriginal cultural landscape of the TWWHA' (p. 49). This remains undetermined.

Acquirecomm
CONNECTING TRANSFORMING DELIVERING.

Appendix E Natural Values Assessment, North Barker

Provided via link due to file size

v

Tasmanian Government Radio Network (TasGRN)
Mt King William

Natural Values Assessment

14th December 2022

For Telstra (TEL030)

313 Macquarie Street, Hobart Tasmania, 7000
03 62319788
admin@northbarker.com.au www.northbarker.com.au

Summary

The Tasmanian State Government have engaged Telstra to deliver upgrades to the State's radio network. Acquirecomm has engaged North Barker Ecosystem Services (NBES) to complete a natural values assessment of the Mt King William summit area for assisting with precise infrastructure location, limiting impacts to natural values and demonstrating compliance with environmental legislation.

The proposed works at Mt King William include:

- Installation of a TasGRN 7 m high climbable mast – total tower height of 12.9 m (to be installed on existing bitumen pad);
- Ten lightweight aluminium solar frames, installed via rock anchors (~11 m^2 per frame);
- A new TasGRN shelter, installed on rock anchors (~7.5 m^2);
- Installation of 11 battery cubes, to be installed on steel platform (20 m^2);
- Two gensets to be installed on a steel platform (~15 m^2).
- Landing area for spare generator or refuelling cells (~7.5 m^2);
- Power cabling to be installed within 150 mm conduit, above ground (~28 m);
- Relocation of an existing mounting post with repeater dish (setback 10 m) to allow for safer helicopter access (0.4 m^2).
- Onsite staging area

Vegetation

None of the units recorded in our investigation accord to communities listed as threatened under the Tasmanian *Nature Conservation Act 2002* (NCA) or the Commonwealth *Environment Protection and Biodiversity Conservation Act 2000* (EPBCA).

Threatened Flora

No threatened flora species were observed nor are considered to be at risk.

Weeds and Plant Pathogens

No declared weeds were observed.

Appropriate construction hygiene should be applied to avoid the spread/introduction of weeds or introduction of pathogens. These should be included in any Construction Environment Management Plan.

Threatened Fauna

No threatened fauna or potential threatened fauna habitat was observed within the direct works impact area.

There is however the potential for disturbance of eagle nesting activities should viable habitat within 500 m and 1 km line of sight support a currently undocumented nest – recommendations are thus provided to limit this likelihood.

World Heritage Values

Our assessment concluded that the proposed works will not have significant impacts to any outstanding universal values pertaining to the natural environment, as defined in the Tasmanian Wilderness World Heritage Management Plan 2016.

Conclusion and Recommendations

Our field investigation has established that the potential impact to natural values associated with the proposed TasGRN installation will be relatively minor regardless of the precise siting of infrastructure, which will provide the proponent with a degree of flexibility should factors such as micro-topography, geomorphology, and access influence the final design within the general area. Some mitigation is however recommended in relation to avoiding potential disturbance of eagle nesting activities.

With our recommendations followed, the proposal is not considered likely to result in significant impacts to any Matter of National Environmental Significance listed under the EPBCA. It is also expected that the requirements of relevant natural values legislation under the State and local schedules can be met.

<u>Vegetation</u>

- Any temporary lay down areas must be carefully selected to avoid permanent impacts to native vegetation. This may include utilising sites that will be permanently cleared for temporary lay downs, setting platforms in rocky areas largely free of vegetation, or cutting back shrubs and laying materials on top. The latter method is the least desirable and efforts should be made to adopt the former vegetation impact mitigation methods. Areas containing herbfields and cushion plants must be avoided.
- Construction workers must utilise existing tracks as much as is practical, and in cases where this cannot be achieved, workers must 'fan out' to reduce the risk of new tracks forming. As above, the delicate herbfield and cushion plant vegetation must be avoided. Conforming to tracked areas also applies to any routine maintenance that is proposed in the future.
- Any temporary clearance areas within or on the edge of native vegetation should be targeted for revegetation post works, using propagules sourced from the local area and comprised of native species (with the corresponding species lists in Appendix B to be used as guidance).

<u>Weeds</u>

- Consider a project specific *Weed and Hygiene Management Plan* to detail weed and hygiene prescriptions for contractors and outline their requirements.
- The following should be followed for best practice prescriptions:
    - *Weed and Disease Planning and Hygiene Guidelines - Preventing the spread of weeds and diseases in Tasmania* (DPIPWE, Stewart and Askey-Doran, 2015)
- A follow-up weed inspection of the project area is recommended to establish if treatment is warranted for the proliferation of weeds due to the project disturbance – this should be undertaken in spring or summer and at least 6 months after works are completed (but no longer than 2 years).

<u>Geomorphology</u>

- Glacial and Periglacial landforms are present on Mt King William I, however; neither suite of landforms are likely to be significantly impacted by the infrastructure works at the communications tower site.

Threatened Fauna

- A pre-clearance survey of the project area (including a 50 m buffer) consistent with the Tasmanian Devil Survey Guidelines and Management Advice for Development Proposals[1] must be conducted, adhering to the protocol provided.
- As no viable nests are present within an area potentially subject to disturbance (500 m or 1 km line of sight), the breeding season constraints do not apply for the 2022/23 season.
- Ongoing helicopter use for maintenance and other needs will also require the same consideration of potential eagle nest locations and seasonal activity. Given it can be expected that this type of helicopter use will be required going forward within the eagle breeding season, it is advisable prior to such activities commencing to undertake a search for eagle nests within 1 km. Should nests be found, annual activity assessments (or a frequency proportional to the requirement to fly through the area in breeding season) are likely to be required, unless viewshed analyses indicate nests are not at risk of disturbance and can be avoided with flight paths. With respect to nest searches, it is noted that survey results are typically treated as valid for two years only; repeat surveys would thus be required even in the absence of nests in the first survey.
    - Nest activity assessments are undertaken annually from the air in October/November. Thus, constraints invariably apply each season from 1st July up until a point where a nest is concluded to be inactive for that season. If a nest is deemed inactive, the constraints will be lifted for the remainder of the breeding season (only to commence again 1st July the following year). If a nest is found to be active, constraints will continue until the end of the season (either January or February depending on the season).

[1] Available at https://nre.tas.gov.au/Documents/Devil%20Survey%20Guidelines%20and%20Advice.pdf

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Project Details

Field Survey and Photos: Jared Parry, 7th July 2021

Report: Jared Parry

Mapping: Jared Parry

Project Management and Review:

Grant Daniels (correspondence – gdaniels@northbarker.com.au)

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1. Background

The Tasmanian State Government have engaged Telstra to deliver upgrades to the State's radio network. The Tasmanian Government Radio Network (TasGRN) project aims to transition eight core user organisations, which currently operate over five separate radio networks, into one unified digital and interoperable radio network. The project will see upgrades to infrastructure on 6 mountains, and one greenfield site. All sites are located within reserved areas, two of which are within the Tasmanian Wilderness World Heritage Area (TWWHA).

Acquirecomm has engaged North Barker Ecosystem Services (NBES) to complete a natural values assessment of the Mt King William summit area for assisting with precise infrastructure location, limiting impacts to natural values and demonstrating compliance with environmental legislation.

The proposed works at Mt King William include:

- Installation of a TasGRN 7 m high climbable mast – total tower height of 12.9 m (to be installed on existing bitumen pad);
- Ten lightweight aluminium solar frames, installed via rock anchors (~11 m^2 per frame);
- A new TasGRN shelter, installed on rock anchors (~7.5 m^2);
- Installation of 11 battery cubes, to be installed on steel platform (20 m^2);
- Two gensets to be installed on a steel platform (~15 m^2).
- Landing area for spare generator or refuelling cells (~7.5 m^2);
- Power cabling to be installed within 150 mm conduit, above ground (~28 m);
- Relocation of an existing mounting post with repeater dish (setback 10 m) to allow for safer helicopter access (0.4 m^2).
- Onsite staging area

On off-site staging area for this site is proposed to be near Lake St Clair, as well as an on-site staging area. Design drawings are shown in Appendix A.

1.1 Methods

The site was accessed via helicopter, piloted by Andrew Harrison of Helicopter Resources Pty Ltd. Three engineers from Downer Group, and a drone pilot were present to define the proposed location of the infrastructure. Draft plans were supplied to NBES for use as general reference. The survey area (Figure 1) was defined by the 1300 m contour, targeted surveys around the proposed impact areas was prioritised.

Mt King William is located within the Franklin – Gordon Wild Rivers National Park. The survey area is a cleared area atop Mt King William 1, with alpine heath and rocky outcrops surrounding it on all sides. A rough foot track enters the site from the north. Several existing structures are spread across the summit area (Plate 1-2). Elevation in the survey area is between 1300 m and 1324 m above sea level. The geology is comprised of Jurassic dolerite. Mean annual rainfall at the nearby Derwent Bridge is 1301 mm[2]

1.2 Biological Values

The following sources were used for biological records for the region:

- TASVEG version 4.0 digital layer[3]

[2] Station details: Derwent Bridge, 42.13°S, 146.22°E, 727 m asl, commenced 1942
[3] Kitchener and Harris (2013)

- Natural Values Atlas (NVA) - all threatened species records within 500m and 5 km of the survey area and threatened fauna considered possible to occur in suitable habitat[4]
- Various thematic layers from LISTmap

The survey of plant species composition consisted of a meandering area search[5], with the level of survey effort proportional to the local values and the likelihood of the habitat supporting conservation significant species. Vegetation was classified according to TASVEG 4.0 units[6].

Plant species lists were taken in representative sections of each TASVEG unit mapped, with species classified according to the latest census of Tasmanian plants[7]. Species with threatened or declared status under the Tasmanian *Threatened Species Protection Act 1995* (TSPA), the Commonwealth *Environment Protection Biodiversity Conservation Act 2000* (EPBCA), or the Tasmanian *Weed Management Act 1999* (WMA) were noted, and GPS located as encountered.

The survey area was searched for the potential presence, habitat, and signs (e.g. scats, tracks, nests) of threatened fauna concurrently with the botanical survey.

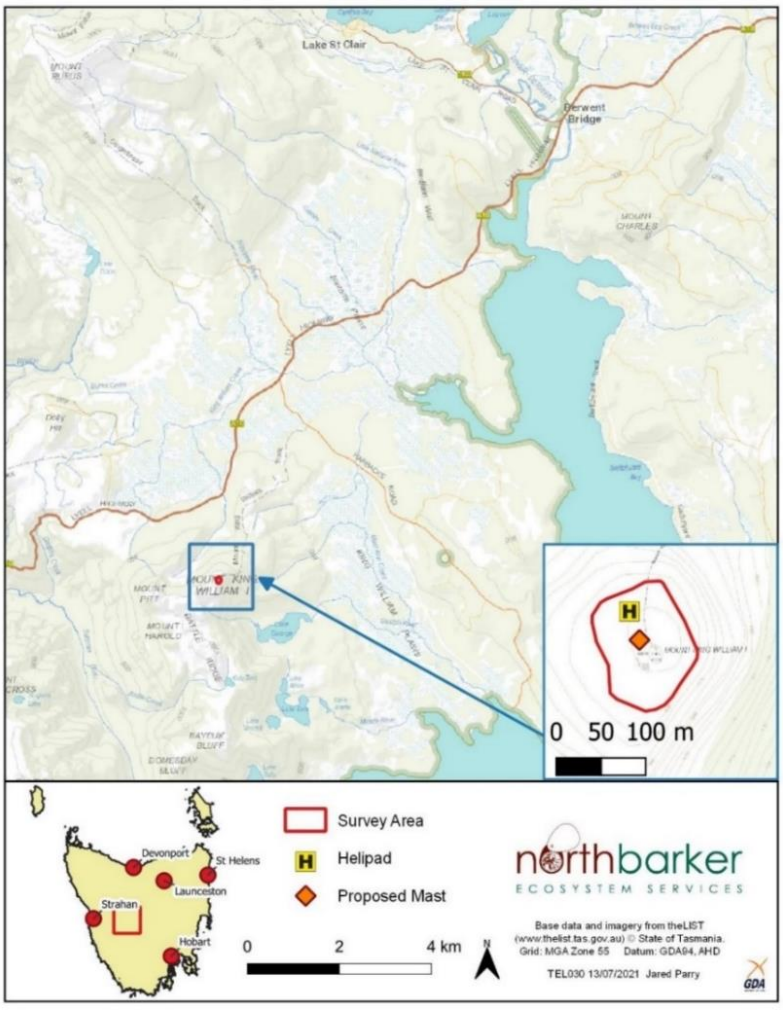

Figure 1: Location of the survey area, existing helipad, and proposed mast location

[4] DPIPWE (2021a) nvr_2_06-Jul-2021
[5] Goff *et al.* (1982)
[6] DPIPWE (2020)
[7] de Salas and Baker (2021)

1.3 Limitations

Data points were recorded on a handheld GPS with an average accuracy < 10 m.

The field survey was undertaken in winter. The summit of Mt King William was subject to snow and ice cover on the day of the survey, and thus some small plants were not detectable at this particular time. Values that are seasonal or require particular germination triggers may have been absent or undetectable. Fauna habitat, including the presence of hollows and nests, was assessed from ground level only. We compensate for survey limitations in part by considering all listed threatened species from data from the Tasmanian *Natural Values Atlas* (NVA). These data include records of all threatened species known to occur, or with the potential to occur, up to 5 km from the study area.

2. Site Values

2.1 Vegetation Communities

In terms of existing mapping within the TASVEG 4.0 (and Live) database, the survey area is indicated as containing alpine coniferous heath (HCH). Our field assessment found that coniferous plants were present, but not in a high enough concentration to justify a coniferous heath community. The vegetation in the survey area is best represented by the eastern alpine heathland (HHE) community (Plate 1). A full species list is in Appendix B.

The community is dominated by low shrubs such as *Richea sprengelioides*, *Leptospermum rupestre*, *Ozothamnus rodwayi*, *Orites revolutus*, *Persoonia gunnii* and *Microcachrys tetragona*. Prostrate shrubs and small herbs such as *Pentachondra pumila*, *Euphrasia collina*, *Scapisenecio pectinatus* var. *pectinatus*, and *Rubus gunnianus* also occurred frequently. Sedges and grasses such as *Carex breviculmis* and *Poa gunnii* were present, but not abundant due to the rocky landscape.

The HHE community is not listed as threatened under the Tasmanian *Nature Conservation Act 2002* (NCA) nor the EPBCA.

2.2 Threatened Flora

The survey identified 36 vascular plant taxa within the potential impact area of the infrastructure (Appendix B), with 22 of these being endemic to Tasmania. No species being listed as rare or threatened under the TSPA and/or EPBCA were observed.

Records of two threatened flora are listed within 5 kilometres of the survey area from the Natural Values Atlas search (Appendix C). Neither species is considered to be likely to occur within the survey area due to being outside of their altitudinal range.

2.3 Weeds and Plant Pathogens

No species listed as a 'declared' weed under the Tasmanian *Weed Management Act 1999* (WMA) were observed during the survey.

No cinnamon root rot fungus, *Phytophthora cinnamomi* (PC), was recorded in the natural values search and no symptomatic evidence was observed. The survey area is outside the altitudinal range for PC[8].

[8] Schahinger, Rudman & Wardlaw (2003)

2.4 Threatened Fauna and Threatened Fauna Habitat

No threatened fauna species were observed during the survey, and potential habitat for threatened fauna is very limited due to the high altitude of the survey area.

Devils and quolls are recorded from within 5 km according to the Natural Values Atlas (Appendix C); however, these records occur mostly along the Lyell Highway which is approximately 500 m lower in elevation. It is not uncommon to observe devils and quolls in alpine environments, however it is extremely unlikely that they would den and forage to any meaningful degree within the habitat on site.

Raptors such as the Tasmanian wedge-tailed eagle and the grey goshawk have been observed within 5 km of the survey area (Appendix C). These birds may visit the area on occasion, but there are no trees in the survey area that are capable of supporting nests, and foraging suitability is very limited.

In the broader area, Wedge-tailed eagle nesting habitat suitability mapping modelling (Appendix D) suggests nesting habitat is limited but shows an area of moderate to high nesting habitat suitability in a gully to the south-east (the potential suitability of nesting habitat elsewhere within 1 km is lower or nil.)

Aerial searches for eagle nests were conducted on the 11th of March 2022. No nests were recorded within 1 km of the project area. Full eagle nest search results in relation to Mt King William are in Appendix D.

Plate 1: Summit area, existing infrastructure, and general vegetation on Mt King William

Plate 2: Existing infrastructure and helipad on Mt King William

3. Impact Assessment, Scope for Mitigation, and Recommendations

Overall, our field investigation has established that the potential direct impact to natural values associated with the proposed infrastructure upgrades will be relatively minor regardless of the precise locations, which will provide the proponent with a degree of flexibility should factors such as micro-topography, geomorphology, and access influence the final designs. Nonetheless, specific recommendations are provided below for components of the assessment that may benefit from mitigation or require some action.

3.1 Vegetation Communities

The proposed works are not expected to have meaningful impacts on native vegetation due to much of the proposed infrastructure aiming to utilise existing modified areas (Figure 2), in addition to the community that may require some clearance not being threatened.

Alpine and sub-alpine areas are recognised as particularly vulnerable to the impacts of climate change due to the effects of climate warming and increased bushfire risk[9]. Some alpine environments are more susceptible than others to these risks. The eastern alpine heath is particularly susceptible to the increased risk of bushfire, as many of the species are fire sensitive and do not resprout after fire[10]. With appropriate bushfire hazard management strategies in place, the current proposal does not present a significant risk to this vegetation community.

[9] DPIPWE (2021b). Tasmanian Wilderness World Heritage Area Natural Values Climate Change Adaptation Strategy 2021-2031. Department of Primary Industries, Parks, Water and Environment, Hobart
[10] Kirkpatrick and Bridle (2013)

This community is well reserved both at all levels, and is not considered to be at risk in terms of vegetation clearance in the broader region (Table 1).

Table 1: Extent and reservation status of eastern alpine heath (HHE) in the context of the proposal

Total Within Central Highlands Council	Total Reserved Within Central Highlands Council	Total Within Central Highlands Bioregion	Total Reserved Within Central Highlands Bioregion	Total Within Tasmania	Total Reserved in Tasmania	Status[11]
43,000 ha	38,200 ha (89 %) Adequately Reserved	59,400 ha	54,800 ha (92 %) Adequately Reserved	71,900 ha	66,800 ha (93 %) Adequately Reserved	Not Threatened

The proposed mast location intends to utilise an existing bitumen pad, which is located upon the rocky summit block. Vegetation here is sparse. Installation of two gensets will impact upon 15 m^2, and the landing area for spare generator and refuelling cells will impact ~7.5 m^2 in total. Installation of ten solar arrays may impact up to 110 m^2 of vegetation, but it is anticipated that some vegetation will be retained here by installing using rock anchors rather than concrete pads. Battery cubes will be installed on a steel platform, impacting ~20 m^2. A new Tas GRN shelter will impact on ~7.5 m^2. Relocation of a mounting pole with a repeater dish for safer helicopter access will have negligible impacts to vegetation. In total, it is anticipated that up to 160 m^2 of HHE will require removal.

Alpine vegetation is generally very slow growing, and any recovery post disturbance could take several years/decades. Any temporary lay down areas must be carefully selected to avoid permanent impacts to native vegetation. This may include utilising sites that will be permanently cleared for temporary lay downs, setting platforms in rocky areas largely free of vegetation, or cutting back shrubs (i.e. *Leptospermum rupestre*, *Orites milliganii*, *Orites revolutus*) and laying materials on top. These shrubs are known to recover from minor disturbance. The latter method is the least desirable and efforts should be made to adopt the former vegetation impact mitigation methods. Areas containing herbfields and cushion plants must be avoided.

Construction workers must utilise existing tracks as much as is practical, and in cases where this cannot be achieved, workers must 'fan out' to reduce the risk of new tracks forming. As above, the delicate herbfield and cushion plant vegetation must be avoided. Conforming to tracked areas also applies to any routine maintenance that is proposed in the future.

Should any temporary clearance be unavoidable, impacted areas should be targeted for revegetation post works using propagules sourced from the local area and comprised of native species (with the corresponding species lists in Appendix B to be used as guidance).

3.2 Threatened Flora

The proposed works are not expected to impact on any threatened species and thus no specific mitigation is required.

3.3 Weeds and Plant Pathogens

Appropriate construction weed and hygiene management plan should be applied to avoid the spread/introduction of weeds, or introduction of pathogens (Appendix E). These should be included in

[11] Tasmanian *Nature Conservation Act 2002*; Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*

any Construction Environmental Management Plan. These standards must also be applied to any routine maintenance visits.

The principles of the Tasmanian *Weed Management Act 1999* should be met with best practice construction hygiene that prevents the introduction of contaminated material from beyond the survey area, such as tool and machinery/equipment wash-down before entry, and sourcing materials, if required, from verified weed and PC free locations. The following should be consulted for guidance:

- *Weed and Disease Planning and Hygiene Guidelines - Preventing the spread of weeds and diseases in Tasmania* (DPIPWE, Stewart and Askey-Doran, 2015)

A follow-up weed inspection of the project area is recommended to establish if treatment is warranted for the proliferation of weeds due to the project disturbance. This should be undertaken in spring or summer and at least 6 months after works are completed (but no longer than 2 years).

3.4 Threatened Fauna Habitat and Trees

Surveys and desktop assessments have identified that there is a low-moderate potential for Tasmanian devils and quolls, and wedge-tailed eagle nests to occur in the vicinity of the project area. Specific mitigation recommendations for these species are described below.

No specific mitigation is warranted for other threatened fauna.

3.4.1 Tasmanian wedge-tailed eagle

Wedge-tailed eagles (*Aquila audax* subsp. *fleayi*) are highly sensitive to nesting disturbance. To protect from nest desertions and/or brood failure, seasonal constraints are typically applied within radii of 500 m direct distance and/or 1 km line of sight around active nests (noting this is only enforced through legislation under the *Forest Practices Act 1985* or when specified in permit conditions, project guidelines, *etc*.). Key factors for avoiding nest disturbance are thus the identification of nest locations and determining annual activity within a nest.

Although viable habitat for wedge-tailed eagle nesting is limited within 500 m and/or potential 1 km line of sight, no nests were recorded within 1 km of the project area. Due to this result, recommended mitigation measures (*i.e*. seasonal constraints on works) do not require application to this site.

Ongoing helicopter use for maintenance and other needs will also require consideration of potential eagle nest locations and seasonal activity. Given it can be expected that this type of helicopter use will be required going forward within the eagle breeding season, it is advisable prior to such activities commencing to undertake a search for eagle nests within 1 km. Should nests be found, annual activity assessments (or a frequency proportional to the requirement to fly through the area in breeding season) are likely to be required, unless viewshed analyses indicate nests are not at risk of disturbance and can be avoided with flight paths. With respect to nest searches, it is noted that survey results are typically treated as valid for two years only; repeat surveys would thus be required even in the absence of nests in the first survey.

During construction and maintenance activities, flight paths must also consider the proximity to recorded nest locations. Efforts should be made to avoid these locations during the breeding season, and low-level flying must be avoided in these areas.

3.4.2 Tasmanian devil and quolls

Although it is unlikely that project area supports dens for Tasmanian devils, a pre-clearance survey of the project area (including a 50 m buffer) consistent with the Tasmanian Devil Survey Guidelines and Management Advice for Development Proposals[12] must be conducted, adhering to the following protocol.

Pre-Clearance Survey and Den Discovery Protocol

Application of this protocol (sections A through D) will require approval to decommission dens under a permit to take products of wildlife, issued under the Tasmanian *Nature Conservation Act 2002* (NCA) by the Department of Natural Resources and Environment Tasmania.

The protocol can largely be undertaken by the civil contractors, with input on specific aspects of the den assessment and management by suitably qualified ecologists (the Ecologist). Some oversight and control of hold-points will be required by either regulators or the proponent and in that case linked to contract requirements for the contractor.

A- Pre-clearance check for potential dens

(i) Approximately two weeks prior to any vegetation clearance and/or ground-breaking works, the contractor must undertake a walkover of the impact area (including a 50 m buffer) and systematically search for potential dens.

(ii) Any potential den sites[13] will be investigated and recorded for consulting with the Ecologist. Potential dens are mostly soil burrows/holes in the substrate with an appropriate entrance hole, but also include clusters of boulders with cavities, dense clumps of vegetation with visible animal use, rock outcrops, and dry hollow logs.

(iii) To assist the Ecologist in assessing likelihood of use, the general quality of each potential den will be inspected in relation to factors such as soil warmth (sunlight), proneness to inundation, landscape position, etc. Factors including spider webs, delicate fungi, wear marks, hairs, scats, and footprints at potential den entrances will be noted as potential indicators of activity (or non-activity). On receipt of this information and photographs, the Ecologist may advise if the burrow is not being used (i.e. definitively inactive and vacant), in which case it can be decommissioned under a permit to destroy a product of wildlife under the NCA. (Note, if the potential den is not within the necessary clearance area, i.e. is within the survey buffer, it should not be decommissioned.)

(iv) If no potential dens are found that require application of Section B, the application of the protocol can proceed to Section C.

(v) Section B, the 'den monitoring assessment' will be applied to any potential den that the Ecologist concludes has evidence of use by a devil or quoll, or evidence of use by a species that cannot be determined, and any den that is considered to be highly suitable for devil or quoll occupation but does not have definitive evidence of being vacant at the time of assessment. An exclusion zone of a 50 m radius will be established around any potential den that warrants application of Section B and will remain in place until the requirements of Section B are completed. Note, if the potential

[12] Available at https://nre.tas.gov.au/Documents/Devil%20Survey%20Guidelines%20and%20Advice.pdf

[13] As devils and quolls are known to opportunistically occupy burrows dug by other species (principally wombats), the protocol manages any burrow as potential habitat for a listed threatened species.

den is not within the necessary clearance area, i.e. is within the survey buffer, it will simply be treated as an exclusion zone for the duration of works.

(vi) Clearance will not commence (or any other soil disturbance) in the exclusion zone until that den or burrow is confirmed vacant and the exclusion zone can be lifted as per Section C.

B – Den monitoring assessment

The den monitoring assessment involves the following:

(i) At least two infra-red motion sensor cameras will be installed at each entrance of each burrow. Camera settings will be - sensitivity: high; capture method: video; capture length > 20 sec; capture delay interval: 0 seconds.

(ii) Cameras will remain in place for at least 7 nights.

(iii) After this time, footage will be inspected to identify captures[14], with the following possible outcomes (with input from the Ecologist if devils or quolls are captured).

a. If a pouch-laden devil or quoll, an imp (young devil) or a kitten (young quoll) are recorded using a den, or if an individual devil or quoll is recorded using a den for two or more nights and displaying natal characteristics, then the den will be treated as a likely maternal den.

For a likely maternal den, cameras and the 50 m exclusion zone will remain in place until:

- the den is no longer necessary for the rearing of young and it is confirmed that the mother and young have discontinued use of the den;
- or continued monitoring definitively establishes that the den is in fact not a maternal den (e.g. pouch-laden females may visit multiple dens before dropping their young in one location, and some females may be observed showing natal characteristics [such as lactating and scent marking] around dens in which they have not dropped their young).

Following either of these scenarios the den can be decommissioned while vacant.

b. If any devil or quoll is using a den regularly (i.e. almost every night) outcome 'a' will apply. If a den is found to be in regular use to this degree by a species other than a devil or quoll, a one-way gate will be installed, and monitoring will continue until a time when the den is definitively vacant and can be decommissioned.

c. If a den is found to be in opportunistic use only by any species (i.e. not occupied for several consecutive nights; in which scenario there are usually several different animals and species frequenting the burrow), the footage from the night and morning immediately prior to the inspection will be used to determine occupancy at that time. If the burrow is conclusively vacant at the time of inspection, it will be decommissioned at that time. If an animal is within the burrow at that time, either a one-way gate will be

[14] If this is done in the field, outcomes a, b, c or d may apply immediately. If memory cards are collected for desktop analysis, cards (and batteries if necessary) will be replaced, and camera(s) will remain in place for continued monitoring until action can be informed by the footage. In other words, monitoring will always continue up until the point of decommissioning, which will only be undertaken when an assessment of all footage up until that time has established the den is vacant at the time. A one-way gate may be used in any of the different outcomes to facilitate vacancy (only if the 7 nights of footage has sufficiently informed the action).

installed to aid eviction, or the burrow will be revisited the following day and occupancy re-determined based on the footage from the previous night and morning. Monitoring of the burrow (with or without a gate) will continue until a time when it is conclusively vacant at the time of inspection and can be decommissioned.

d. If a den is found to be inactive (no evidence of use), it can be decommissioned.

Following either of these scenarios the den can be decommissioned while vacant.

C - Reporting and regulation

(i) If Section B does not apply, the contractor can advise the proponent (or regulator) of the area searched and seek approved clearance (release of hold point) within the designated area.
(ii) If Section B applies, the area approved for clearance may be conditional upon the maintenance of exclusion zones around active dens or dens still under assessment. Once the monitoring requirements of Section B are completed and dens have been decommissioned, the contractor can request exclusion zones are lifted and un-conditional clearance granted for the designated area.
(iii) Approval to clear in a designated area should only be valid for up to 8 weeks, after which time a new den check and assessment will be required unless an extension to this window is approved by the proponent/regulator (noting an extension may be considered sufficiently low risk in some scenarios, as informed by Section A and B results).
(iv) If the works area is divided into coupes, the process must be repeated until surveying of the entire footprint is complete.

D- Unanticipated discoveries

(i) Notwithstanding Section C (i) and (ii), should a previously unidentified or unanticipated discovery of a potential den be found by the contractor (or other parties) during works, an assessment as per Section A (iii) and (v) is to be undertaken, and, if necessary, the den monitoring assessment as per Section B adopted.

3.5 Geomorphology

Geoconservation values were assessed by an independent consultant. The findings of this assessment are in Appendix F. In summary, the geomorphology report identifies:

- Glacial and Periglacial landforms are present on Mt King William I, however; neither suite of landforms are likely to be significantly impacted by the infrastructure works at the communications tower site.

3.6 Tasmanian Wilderness World Heritage Area

Mount King William is located within the Tasmanian Wilderness World Heritage Area (TWWHA), the values of which are globally significant. These values are described as Outstanding Universal Values (UOV). These are defined in the TWWHA management plan as:

"According to the Operational Guidelines for the Implementation of the World Heritage Convention, Outstanding Universal Value 'means cultural and/or natural significance which is so exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity'. The EPBCA outlines the way Australia implements the World Heritage Convention. The Act provides for the protection and management of 'World Heritage

values' of World Heritage properties. These values are derived from the statement of OUV or from the nomination dossier for those properties where there is not yet a statement of OUV. World Heritage values of the TWWHA can change over time as new information comes to light."

The TWWHA Management Plan 2016 highlights several key desired outcomes (KDO's) in the management objectives for cultural and natural values. Section 5 of the management plan details the management objectives for natural values, giving reference to OUV's within the TWWHA. The KDO's relevant to this proposal are:

KDO 5.5 - A comprehensive suite of strategies is in place that minimises biosecurity risks to the natural values of the TWWHA.

This KDO can be satisfied by adhering to the construction weed and hygiene management plan that is provided in Appendix E.

KDO 5.8 - The aesthetic qualities of the TWWHA are maintained or improved.

Although beyond our scope as ecologists, it is our understanding that new facilities will be painted using colours that will blend into the natural environment to minimise the visual impact of proposed infrastructure. Several existing infrastructure elements, including solar panels and shelters, are already present at the site (Plates 1 and 2). The installation of 10 solar arrays will have some impact to the aesthetic qualities of the site, however this decision has been made to reduce the far greater environmental risk that is presented by requiring on-site fuel storage for generators. The installation of solar arrays reduces the sites reliance on diesel fuels, and as a result, eliminates a substantial fire risk to the site.

KDO 5.9 - Threatened species and ecosystems remain at least stable or increase in population or extent.

No threatened flora species, or threatened vegetation communities are present on the site.

KDO 5.10 - Priority areas that require restoration of their natural biological and geological processes are identified and monitored, and rehabilitation plans are developed and implemented.

Measures to minimise impacts and to restore areas of temporary impacts are addressed in Section 3.1. The proposal is to utilise some areas of existing disturbance as much as is practical.

KDO 8.5 - Wilderness is managed for the protection of the integrity and the natural and cultural values of the TWWHA and the quality of the recreational experience it provides.

Measures to minimise impacts and to restore areas of temporary impacts are addressed in Section 3.1. The proposal is to utilise some areas of existing disturbance as much as is practical.

3.6.1 Wilderness quality

The wilderness quality layer is a coverage that represents the level of naturalness and remoteness based on the proximity of physical intrusions and infrastructure. In the TWWHA Management Plan 2016, the quality of wilderness was determined to range between 0 – 20. The "High Quality Wilderness" means an area larger than 8,000 hectares having National Wilderness Inventory (NWI) ratings 12 or larger, estimated

by the method used in the NWI[15]. The wilderness values within the management plan are calculated using a modified version of the NWI model, taking into consideration the remoteness from settlement, apparent naturalness, biophysical naturalness, and time remoteness.

The survey area has a wilderness value rating between 10 and 12 (Figure 3), placing it at the lower end of the index. This can be largely attributed to the proximity of the study area to the boundary of the TWWHA, as well as the existence of man-made structures in the vicinity (i.e. Lyell Highway, Burns Dam, Lake King William), as well as the short access time, and proximity to Derwent Bridge.

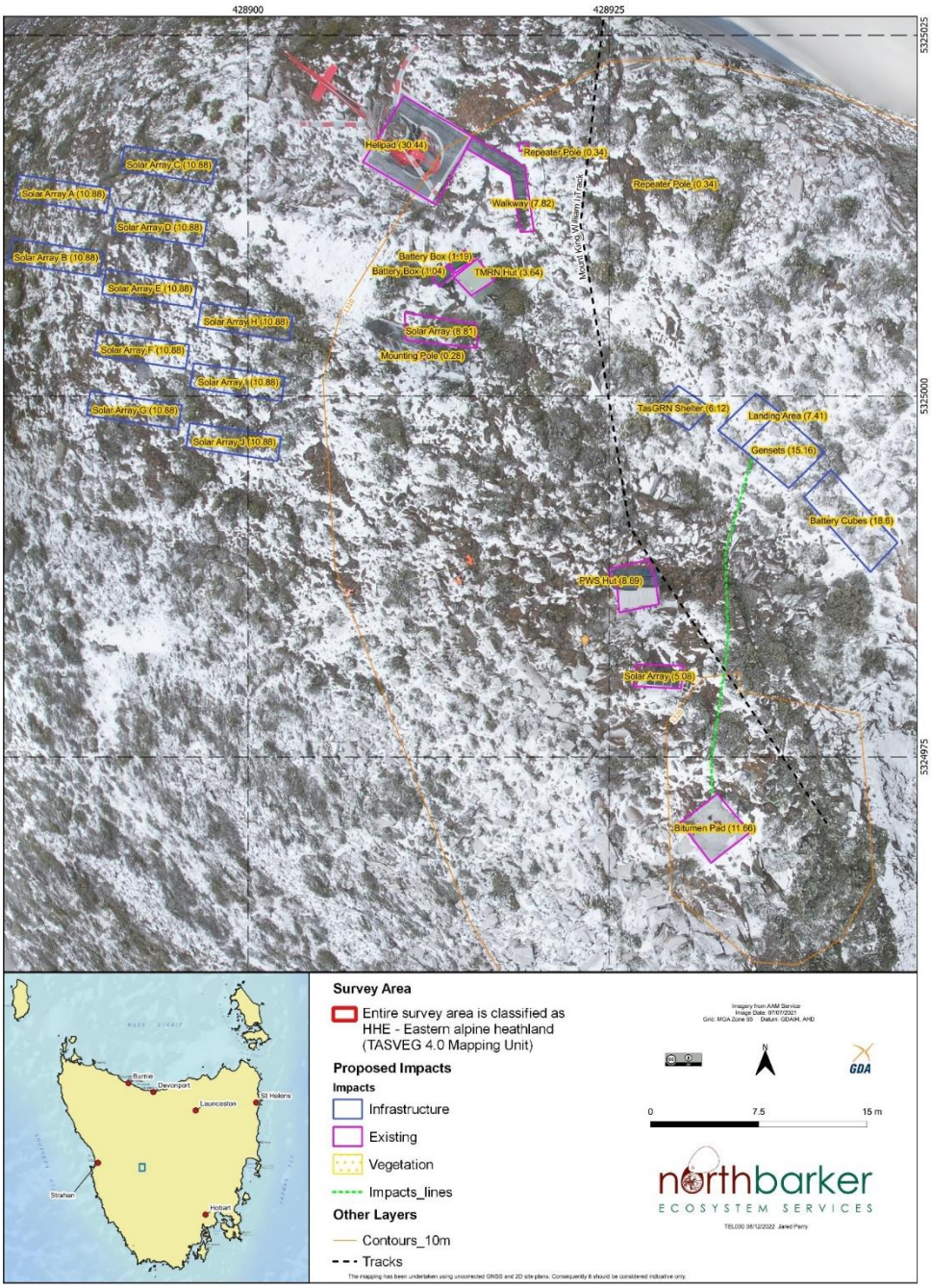

Figure 2: Areas of proposed impacts due to infrastructure

[15] Lesslie and Maslen (1995)

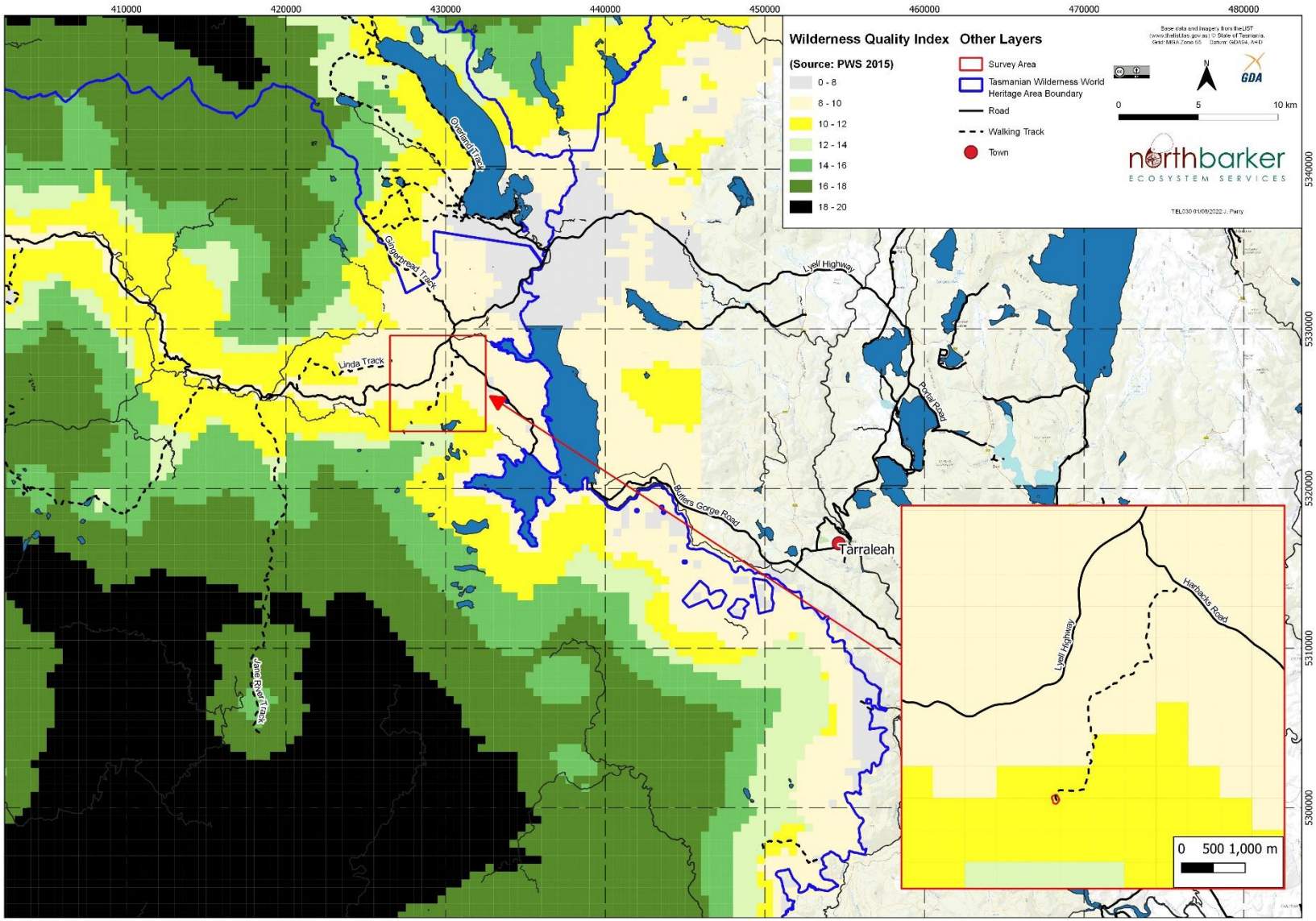

Figure 3: Wilderness quality index in relation to the survey area

4. Legislative Implications

4.1 Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*

The EPBCA is structured for self-assessment, with guidelines and criteria available to assist any person who proposes to take an action to decide whether they should submit a referral to the national Department of the Environment for a decision by the Environment Minister (the minister) on whether assessment and approval is required under the Act.

Under the Act, an action will require approval from the minister if the action has, will have, or is likely to have, a significant impact on a matter of national environmental significance (MNES), which includes all species and communities listed as threatened and/or migratory under the Act, as well as world heritage values.

The proposal is not expected to have the potential for a significant impact to flora and fauna MNES if our recommendations are followed (particularly with respect to wedge-tailed eagles, which are listed as MNES) and thus will not warrant referral in relation to such values.

The proposed works are within the Remote Area Management Zone in the current management plan for the TWWHA. Under the Act, an action is likely to have a significant impact on the World Heritage values if there is a real chance or possibility that it will cause:

- One or more of the World Heritage values to be lost;
- One or more of the World Heritage values to be degraded or damaged;
- One or more of the World Heritage values to be notably altered, modified, obscured, or diminished.

Given the modified landscape for which the proposed works are to be undertaken, the potential impact to natural World Heritage values is considered to be negligible.

The proposal is thus not considered likely to result in significant impacts to any Matter of National Environmental Significance pertaining to natural or World Heritage values listed under this Act and does not warrant referral at this time.

4.2 Tasmanian *Threatened Species Protection Act 1995*

No permit required based on current expected impacts.

4.3 Tasmanian *Nature Conservation Act 2002*

No threatened vegetation communities are present.

4.4 Tasmanian *Weed Management Act 1999*

No action is currently required to eradicate or control species under this Act (as no applicable species were recorded on site). Appropriate visitor and contractor hygiene should be applied during works to maintain compliance.

4.5 Tasmanian Wilderness World Heritage Area Management Plan 2016

At the State level, the Management Plan functions as a statutory plan for the various reserves within the TWWHA. In this regard, the management by PWS of areas that are subject to this plan is required to be in accordance with its broad intent and its specific prescriptions.

The summit area of Mt King William is zoned as a Remote Area Management Zone under the current management plan, which allows for:

- routine maintenance, use and access.
- vegetation clearance limited to that required for safe use and fire protection.
- replacement of existing infrastructure with similar structures.
- minor modifications to existing infrastructure to occur through an authority or lease.

It is anticipated that the proposed works will comply with the provisions of this zoning.

For the proposal to satisfy the assessment and approval process of the Management Plan, it must comply with the Reserve Activity Assessment (RAA) process administered under the Tasmanian National Parks and Reserves Management Act 2002, the *Land Use Planning and Approvals Act 1993*, the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*, and other approval processes detailed in this report.

4.6 Tasmanian National Parks and Reserves Management Act 2002

The Tasmanian Parks and Wildlife Service (PWS) are responsible for maintaining the significant values protected within lands reserved under this Act, including values of biological diversity, geological diversity, water quality, sites/areas of cultural significance, and areas of high wilderness quality. PWS are also charged with encouraging certain forms of use of reserves and assessing proposed uses. The Reserve Activity Assessment (RAA) process is the Environmental Impact Assessment system PWS uses to assess whether activities proposed on PWS managed land are environmentally, socially and economically acceptable, and to ensure that proposals are consistent with any approved management plan that applies to the land. Activities that require an RAA are new or recurrent works/activities that over a period of time have the potential for adverse environmental, social or economic impacts. Activities that do not require an RAA are usually routine or general maintenance activities that are often done on a day-to-day basis. They have low potential environmental, social or economic impacts even if they are conducted over a long period of time. The RAA process applies to both PWS and external proponents' activities on PWS managed land. The RAA process complements other external planning assessment processes covered under each of the Acts discussed in this section.

4.7 Central Highlands Interim Planning Scheme 2015

4.7.1 Zoning

The survey area is located within the Environmental Management (D29) zone. The proposal will meet the A1 Acceptable Solution for the use standard 29.3.1 (Reserved Land) through the adherence to assessment and approval process of the *Tasmanian Wilderness World Heritage Area Management Plan 2016*.

The proposal must also meet the requirements of the Development Standards for Buildings and Works - Design 29.4.3

The proposal does not meet the Acceptable Solutions A1 due to the site requiring the removal of native vegetation and being located on a skyline. The performance criteria must therefore be addressed.

Performance Criteria P1

The location of buildings and works must satisfy all of the following:

(a) be located in an area requiring the clearing of native vegetation only if:

(i) there are no sites clear of native vegetation and clear of other significant site constraints such as access difficulties or excessive slope;

Existing areas of cleared land will be utilised where practical. Topography limits the potential location of structures.

(ii) the extent of clearing is the minimum necessary to provide for buildings, associated works and associated bushfire protection measures;

Not applicable.

(iii) the location of clearing has the least environmental impact;

As the proposed siting of structures utilises existing modified areas, the remaining structures will only require a small amount of native vegetation to be removed where it is not possible to fix structures to rock. It is anticipated that approximately 120 m^2 will require removal.

(b) be located on a skyline or ridgeline only if:

(i) there are no sites clear of native vegetation and clear of other significant site constraints such as access difficulties or excessive slope;

The proposal requires a high elevation site to be feasible. The proposal plans to utilise existing areas of cleared vegetation where possible.

(ii) there is no significant impact on the rural landscape;

Not applicable.

(iii) building height is minimised;

Building height is minimised where it is practical. The tower stands at 12.9 m, which is required as a key element of the proposed network upgrades.

(iv) any screening vegetation is maintained.

Not applicable.

(c) be consistent with any Desired Future Character Statements provided for the area or, if no such statements are provided, have regard to the landscape.

There are no Desired Future Character Statements provided for this area. In regard to the landscape, the proposal will not denigrate that immediate area as it is a partially modified landscape with several structures scattered across the summit area.

4.7.2 Overlays

The survey area is not subject to any planning overlays pertaining to natural values.

5. Conclusion and Recommendations

Our field investigation has established that the potential impact to natural values associated with the proposed TasGRN installation at Mt King William will be relatively minor regardless of the precise siting of infrastructure, which will provide the proponent with a degree of flexibility should factors such as micro-topography, geomorphology, and access influence the final design within the general area. There is however the potential for disturbance of eagle nesting activities should viable habitat within 500 m and 1 km line of sight support a currently undocumented nest – recommendations are thus provided to limit this likelihood.

With our recommendations followed, the proposal is not considered likely to result in significant impacts to any Matter of National Environmental Significance pertaining to natural values listed under the EPBCA.

Adhering to the various requisite Acts discussed in section 4 will satisfy the planning and approval process of the *Tasmanian Wilderness World Heritage Management Plan 2016*.

The following are recommended based on our results and scope of works:

<u>Vegetation</u>

- Any temporary lay down areas must be carefully selected to avoid permanent impacts to native vegetation. This may include utilising sites that will be permanently cleared for temporary lay downs, setting platforms in rocky areas largely free of vegetation, or cutting back shrubs and laying materials on top. The latter method is the least desirable and efforts should be made to adopt the former vegetation impact mitigation methods. Areas containing herbfields and cushion plants must be avoided.
- Construction workers must utilise existing tracks as much as is practical, and in cases where this cannot be achieved, workers must 'fan out' to reduce the risk of new tracks forming. As above, the delicate herbfield and cushion plant vegetation must be avoided. Conforming to tracked areas also applies to any routine maintenance that is proposed in the future.
- Any temporary clearance areas within or on the edge of native vegetation should be targeted for revegetation post works, using propagules sourced from the local area and comprised of native species (with the corresponding species lists in Appendix B to be used as guidance).

<u>Weeds</u>

- Consider a project specific *Weed and Hygiene Management Plan* to detail weed and hygiene prescriptions for contractors and outline their requirements.
- The following should be followed for best practice prescriptions:
    - *Weed and Disease Planning and Hygiene Guidelines - Preventing the spread of weeds and diseases in Tasmania* (DPIPWE, Stewart and Askey-Doran, 2015)
- A follow-up weed inspection of the project area is recommended to establish if treatment is warranted for the proliferation of weeds due to the project disturbance – this should be undertaken in spring or summer and at least 6 months after works are completed (but not longer than 2 years).

<u>Threatened Fauna</u>

- A pre-clearance survey of the project area (including a 50 m buffer) consistent with the Tasmanian Devil Survey Guidelines and Management Advice for Development Proposals[16] must be conducted, adhering to the protocol provided.
- As no viable nests are present within an area potentially subject to disturbance (500 m or 1 km line of sight), the breeding season constraints do not apply for the 2022/23 season.
- Ongoing helicopter use for maintenance and other needs will also require the same consideration of potential eagle nest locations and seasonal activity. Given it can be expected that this type of helicopter use will be required going forward within the eagle breeding season, it is advisable prior to such activities commencing to undertake a search for eagle nests within 1 km. Should nests be found, annual activity assessments (or a frequency proportional to the requirement to fly through the area in breeding season) are likely to be required, unless viewshed analyses indicate nests are not at risk of disturbance and can be avoided with flight paths. With respect to nest searches, it is noted that survey results are typically treated as valid for two years only; repeat surveys would thus be required even in the absence of nests in the first survey.
    - Nest activity assessments are undertaken annually from the air in October/November. Thus, constraints invariably apply each season from 1st July up until a point where a nest is concluded to be inactive for that season. If a nest is deemed inactive, the constraints will be lifted for the remainder of the breeding season (only to commence again 1st July the following year). If a nest is found to be active, constraints will continue until the end of the season (either January or February depending on the season).

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[16] Available at https://nre.tas.gov.au/Documents/Devil%20Survey%20Guidelines%20and%20Advice.pdf

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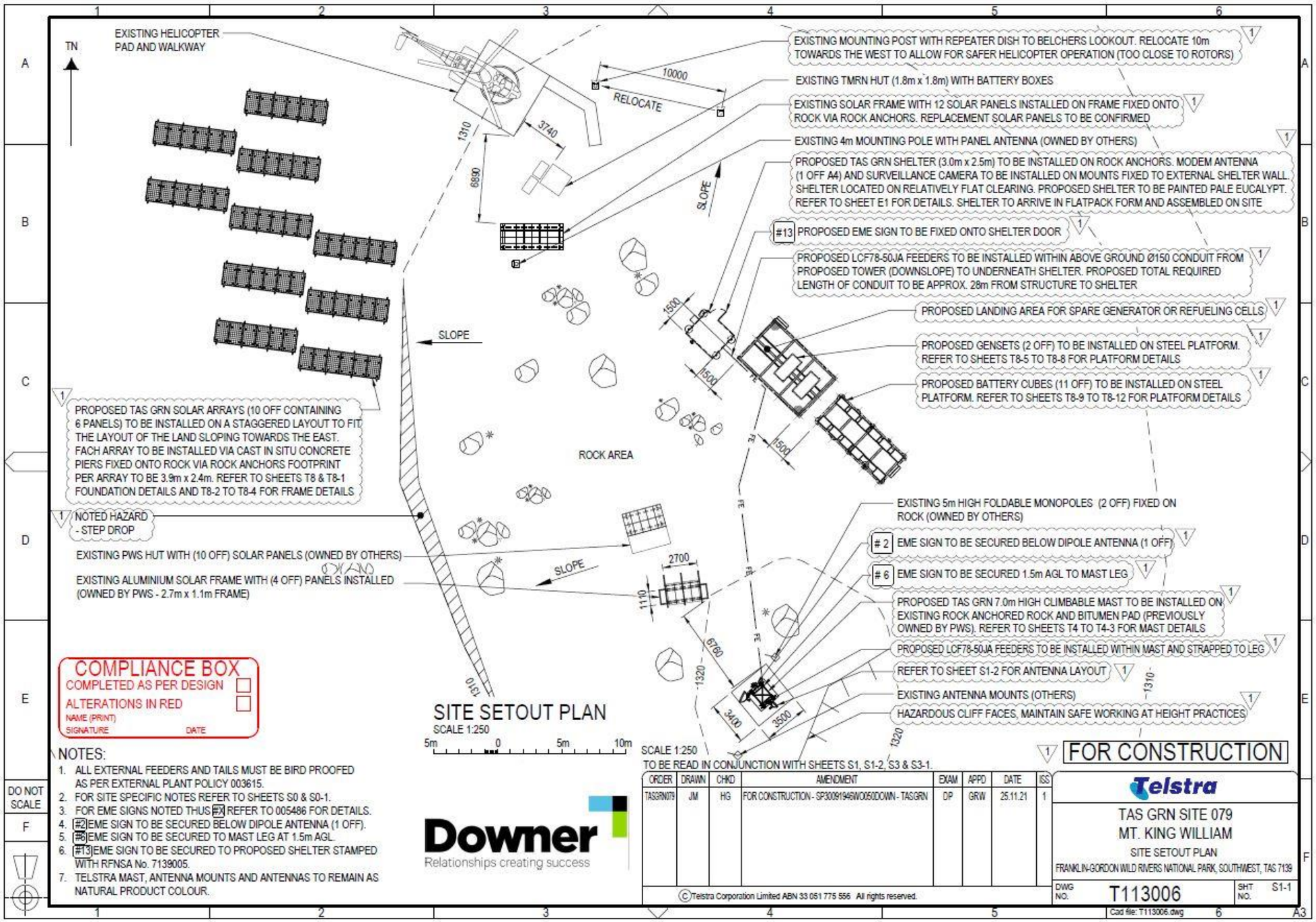
Appendix A: Site Plan



Preliminary site plan

Appendix B: Vascular Plant Species List

Status codes:

ORIGIN	NATIONAL SCHEDULE	STATE SCHEDULE
i - introduced	EPBC Act 1999	TSP Act 1995
d - declared weed WM Act	CR - critically endangered	e - endangered
en - endemic to Tasmania	EN - endangered	v - vulnerable
t - within Australia, occurs only in Tas.	VU - vulnerable	r - rare

Name	Common name	Status
DICOTYLEDONAE		
ASTERACEAE		
Abrotanella scapigera	funnel snow-wort	en
Celmisia asteliifolia	silver snowdaisy	en
Olearia ledifolia	rock daisybush	en
Ozothamnus rodwayi	common alpine everlastingbush	en
Scapisenecio pectinatus var. pectinatus	yellow alpine groundsel	en
Senecio sp.	groundsel	
CUNONIACEAE		
Bauera rubioides	wiry bauera	
DONATIACEAE		
Donatia novae-zelandiae	snow cushionplant	t
ERICACEAE		
Acrothamnus montanus	snow beardheath	
Pentachondra pumila	carpet frillyheath	
Planocarpa petiolaris	alpine cheeseberry	en
Richea sprengelioides	rigid candleheath	en
GENTIANACEAE		
Gentianella diemensis	tasmanian snowgentian	en
LOGANIACEAE		
Schizacme archeri	cushion mitrewort	
MYRTACEAE		
Leptospermum rupestre	mountain teatree	en
OROBANCHACEAE		
Euphrasia collina	purple eyebright	
PLANTAGINACEAE		
Plantago tasmanica	tasman plantain	en

PROTEACEAE		
Bellendena montana	mountain rocket	en
Orites acicularis	yellow orites	en
Orites revolutus	revolute orites	en
Persoonia gunnii	mountain geebung	en
ROSACEAE		
Rubus gunnianus	alpine raspberry	en
RUTACEAE		
Boronia citriodora	lemon boronia	
SANTALACEAE		
Exocarpos humifusus	mountain native-cherry	en
WINTERACEAE		
Tasmannia lanceolata	mountain pepper	
GYMNOSPERMAE		
PODOCARPACEAE		
Microcachrys tetragona	creeping pine	en
MONOCOTYLEDONAE		
ASTELIACEAE		
Astelia alpina var. alpina	pineapple grass	en
Milligania densiflora	silky milligania	en
CYPERACEAE		
Carex breviculmis	shortstem sedge	
Carpha alpina	alpine strawsedge	
Oreobolus acutifolius	bloodstain cushionsedge	en
JUNCACEAE		
Juncus astreptus	rigid rush	en
Luzula sp.	luzula	
POACEAE		
Poa gunnii	gunns snowgrass	en
RESTIONACEAE		
Empodisma minus	spreading roperush	
PTERIDOPHYTA		
LYCOPODIACEAE		
Lycopodium fastigiatum	mountain clubmoss	

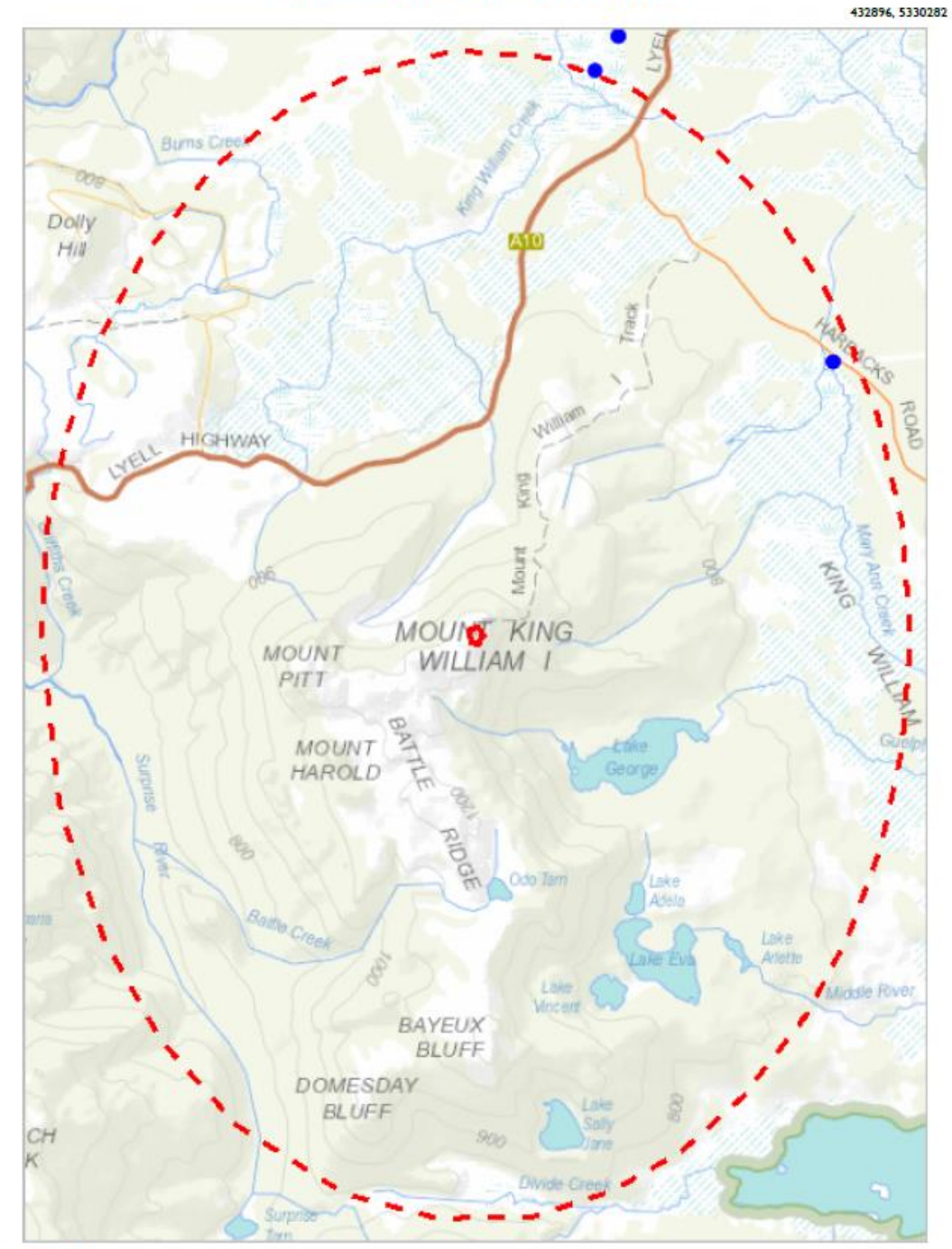
Appendix C: Natural Values Atlas Report Components

Threatened flora within 5000 metres

Verified Records

Species	Common Name	SS	NS	Bio	Observation Count	Last Recorded
Hovea montana	mountain purplepea	r		n	1	01-Nov-1988
Rhytidosporum inconspicuum	alpine appleberry	e		n	2	04-Feb-2006

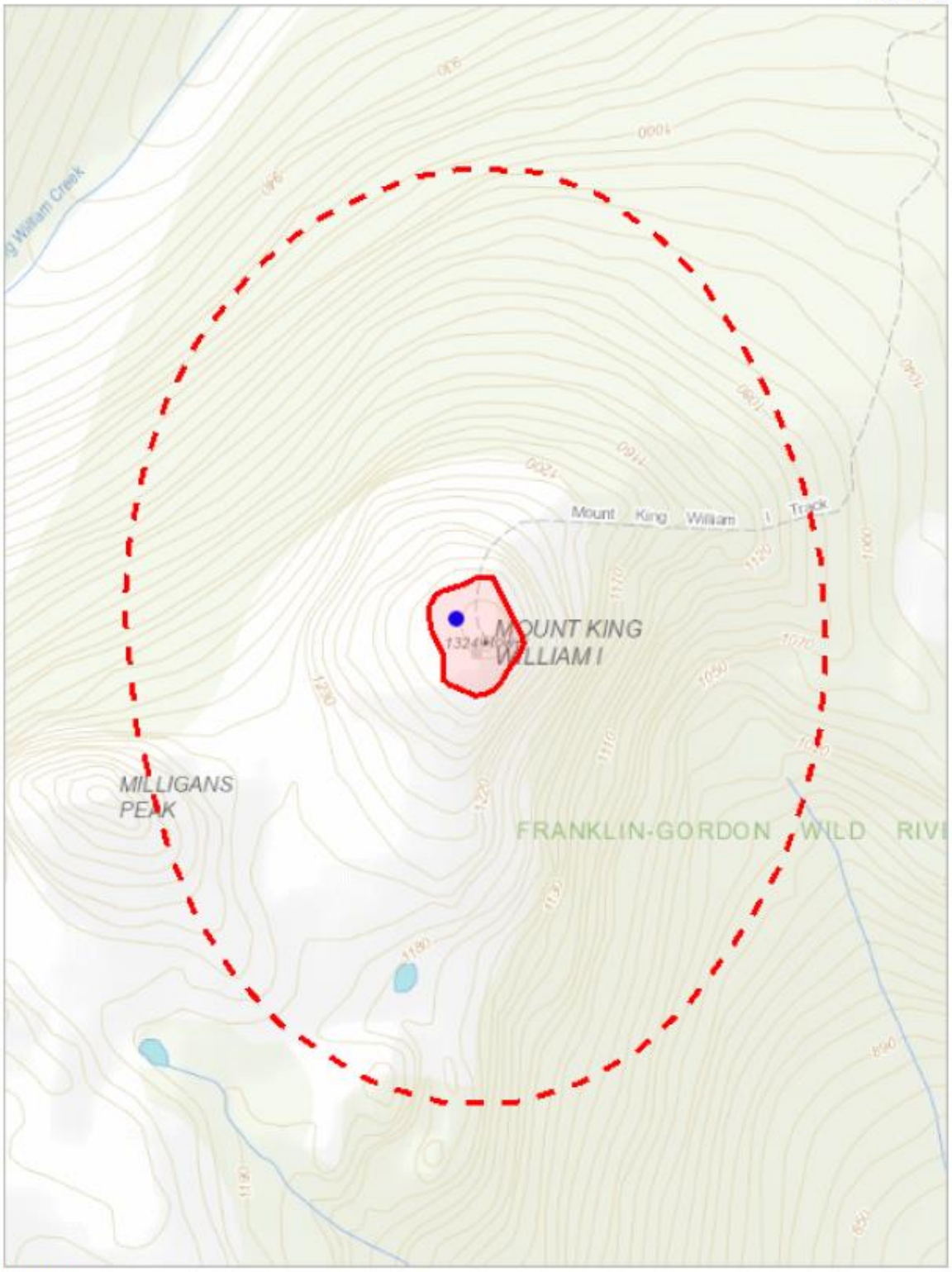
Threatened flora within 5000 metres



Please note that some layers may not display at all requested map scales

Threatened fauna within 500 metres

429510, 5325757



428337, 5324202

Please note that some layers may not display at all requested map scales

Threatened fauna within 500 metres

Verified Records

Species	Common Name	SS	NS	Bio	Observation Count	Last Recorded
Accipiter novaehollandiae	grey goshawk	e		n	1	20-Feb-2003

Unverified Records

No unverified records were found!

Threatened fauna within 500 metres
(based on Range Boundaries)

Species	Common Name	SS	NS	BO	Potential	Known	Core
Dasyurus maculatus subsp. maculatus	spotted-tail quoll	r	VU	n	1	0	0
Tyto novaehollandiae subsp. castanops	masked owl (Tasmanian)	e	VU	e	1	0	0
Haliaeetus leucogaster	white-bellied sea-eagle	v		n	1	0	0
Sarcophilus harrisii	tasmanian devil	e	EN	e	1	0	0
Accipiter novaehollandiae	grey goshawk	e		n	1	0	0
Aquila audax subsp. fleayi	tasmanian wedge-tailed eagle	e	EN	e	1	0	0

Threatened fauna within 5000 metres

Verified Records

Species	Common Name	SS	NS	Bio	Observation Count	Last Recorded
Accipiter novaehollandiae	grey goshawk	e		n	1	20-Feb-2003
Aquila audax subsp. fleayi	tasmanian wedge-tailed eagle	e	EN	e	2	31-Jan-1996
Dasyurus maculatus	spotted-tail quoll	r	VU	n	1	07-Dec-2001
Dasyurus maculatus subsp. maculatus	spotted-tail quoll	r	VU	n	3	28-Jul-1996
Dasyurus viverrinus	eastern quoll		EN	n	2	11-Jun-1996
Sarcophilus harrisii	tasmanian devil	e	EN	e	5	22-Jan-2020

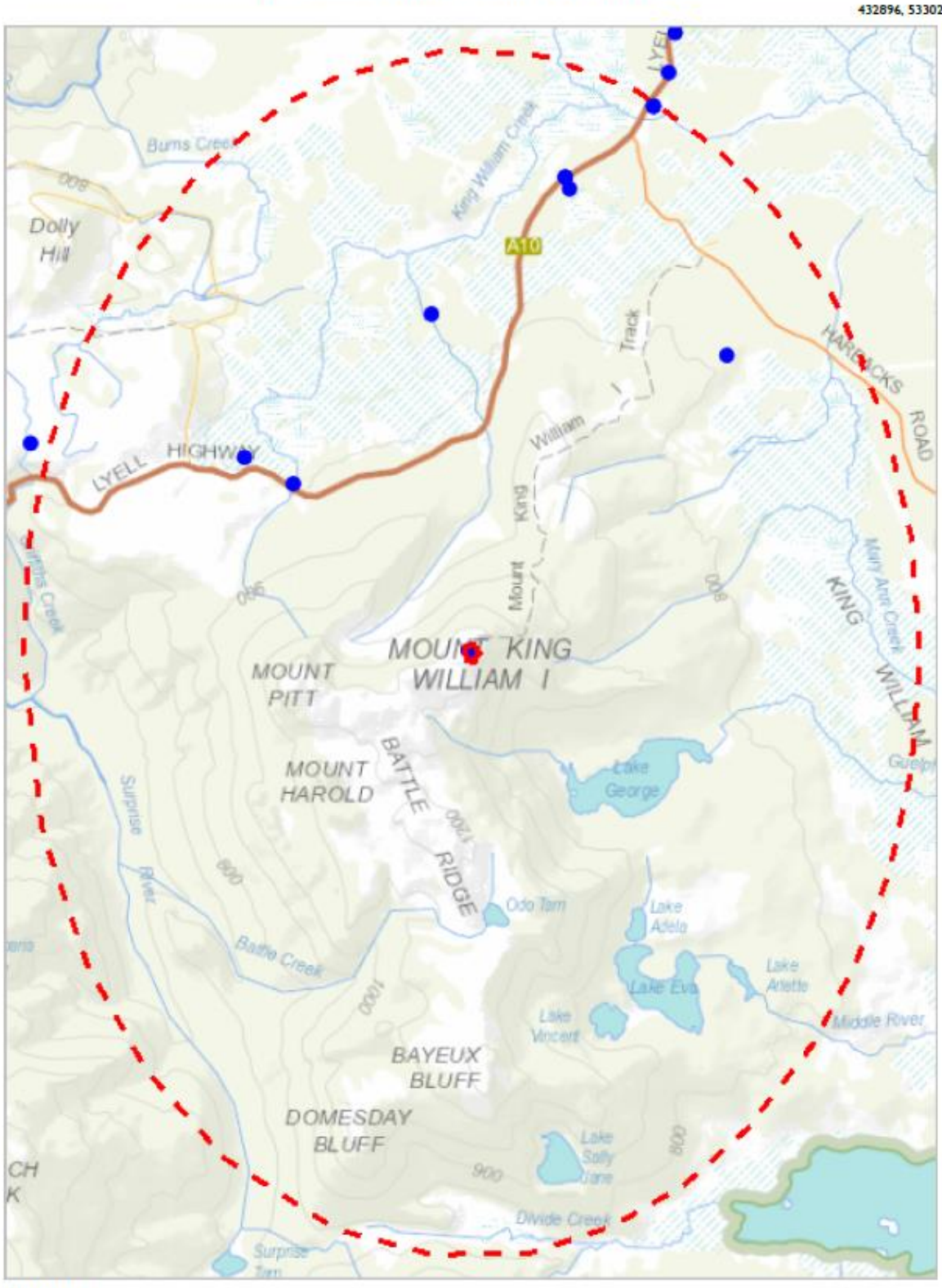
Unverified Records

No unverified records were found!

Threatened fauna within 5000 metres
(based on Range Boundaries)

Species	Common Name	SS	NS	BO	Potential	Known	Core
Dasyurus maculatus subsp. maculatus	spotted-tail quoll	r	VU	n	1	0	0
Pseudemoia pagenstecheri	tussock skink	v		n	1	0	0
Tyto novaehollandiae subsp. castanops	masked owl (Tasmanian)	e	VU	e	1	0	1
Haliaeetus leucogaster	white-bellied sea-eagle	v		n	1	0	0
Sarcophilus harrisii	tasmanian devil	e	EN	e	1	0	0
Accipiter novaehollandiae	grey goshawk	e		n	1	0	0
Aquila audax subsp. fleayi	tasmanian wedge-tailed eagle	e	EN	e	1	0	0

Threatened fauna within 5000 metres



Please note that some layers may not display at all requested map scales

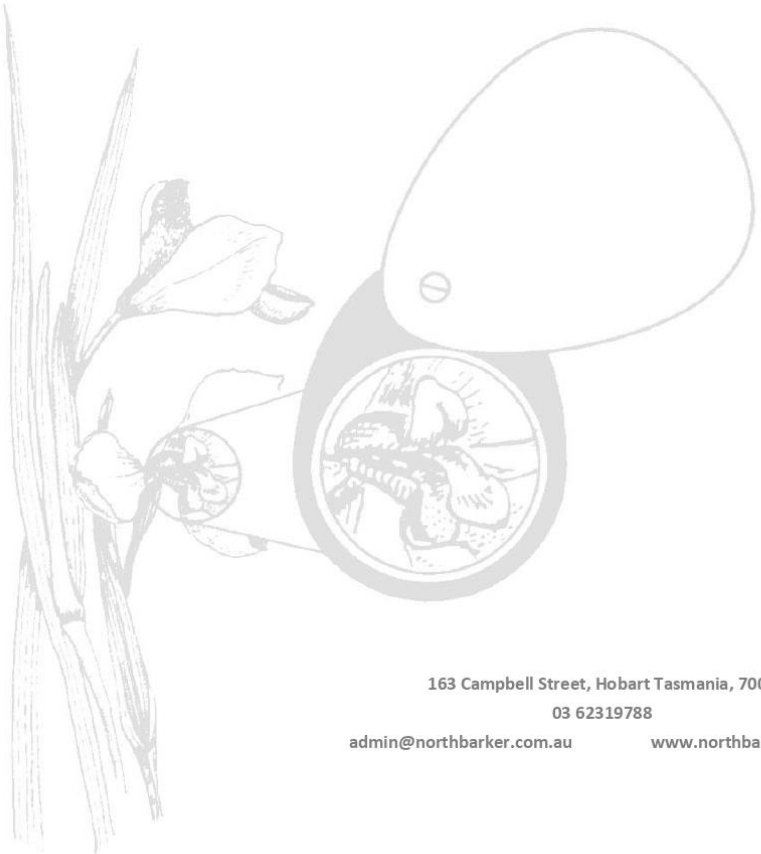
Appendix D: Eagle Nest Search Results

Tasmanian Government Radio Network (TasGRN)
Various Sites

Aerial Eagle Nest Search Report

1st April 2022

For Telstra (TEL030)



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1 Introduction and Background

The Tasmanian State Government have engaged Telstra to deliver upgrades to the State's radio network. The Tasmanian Government Radio Network (TasGRN) project aims to transition eight core user organisations, which currently operate over five separate radio networks, into one unified digital and interoperable radio network. The project will see upgrades to infrastructure on several mountains, and one greenfield site. All sites are located within reserved areas, two of which are within the Tasmanian Wilderness World Heritage Area (TWWHA). Natural values assessments have shown several sites are embedded within viable eagle nesting habitat[1], with the general lack of reported nests (particularly recently) from the sites suggesting a lack of recent survey effort. Acknowledging the potential for disturbance of unknown eagle nest sites within 500 m direct distance and/or 1 km line of sight of the proposed infrastructure upgrades (and needing to meet the requirements of Parks and Wildlife Tasmania as regulators for some of the sites), Acquirecomm engaged North Barker Ecosystem Services (NBES) to complete an aerial eagle nest search within a 1 km buffer of these project areas:

- Grasstree Hill
- Snow Hill
- South Sister
- Mt Black
- Redan Hill
- Mt King William
- Mt Wedge
- Mt Lloyd

2 Methods

2.1 Survey area

The proposed impact footprints for each transmission upgrade site were buffered by 50 m to represent individual project areas. Each project area was then buffered by 1 km to define the eagle nest search survey area of approximately 350 ha (for a total search area of 2,800 ha).

2.2 Background planning

As an exploratory desktop process, habitat within the survey areas were considered according to the suitability index of the Forest Practices Authority's (FPA) eagle habitat model[2]. Whilst this model allows guidance for areas of eagle nesting potential it is best practice to consider all habitat within a survey area when conducting the aerial search, to ensure the model has not misrepresented habitat patches and to establish if nests are present outside of areas mapped as highly suitable. It was thus proposed to survey the entire area of habitat to the degree necessary to determine habitat suitability[3], and to prioritise searching for nests where habitat was suitable.

[1] Forest Practices Authority (2014a) Fauna Technical Note No. 6: Wedge-tailed eagle nesting habitat model, Forest Practices Authority, Hobart.

[2] Forest Practices Authority (2014a)

[3] Consistent with the survey effort guide for the Tasmanian wedge-tailed eagle within Commonwealth of Australia 2010, Survey guidelines for Australia's threatened birds - Guidelines for detecting birds listed as threatened under the Environment Protection and Biodiversity Conservation Act 1999.

2.3 Aerial nest search survey[4]

The aerial search was undertaken by helicopter[5] on the 11th of March 2022. The survey was undertaken by a team of NBES ecologists, Grant Daniels, Tim Leaman, and Cameron Geeves. The team of ecologists contained two ecologists highly experienced in aerial and ground-based eagle nest surveying and the identification of suitable habitats, and a third ecologist in training (respectively, Grant has a PhD on the impacts of development to wildlife and 15 years of experience as an ecologist, Tim has over 15 years of experience as an ecologist and an extensive background in eagle nest management within the forest practices system, and Cameron has a Bachelor of Science and Honours in physical geography. Flights were conducted using Helicopter Resources, with chief pilot Hoey Stobart. Hoey has many years of experience undertaking eagle nest surveys.

Approximately 6.5 hours were spent searching or commuting between sites. The weather was mostly optimal for the duration of the survey, with winds trending from light to moderate. Showers were present during the survey at Mount Wedge, but not the degree that nest detection was impacted.

The survey involved slow flying (5-10 knots) above the tree canopy or where possible, below the adjacent canopy level, such as through gullies and valleys. In large areas of suitable nesting habitat, transects were flown to ensure complete coverage of the area. Marginal potential habitat was also checked. All known nests (with locations extracted from the Natural Values Atlas [NVA] database) within the survey area (or within the bounds of the spatial accuracy of the record) were visited to verify presence and condition (if present). Any previously reported nest(s) that could not be found were searched for using both their reported position and spatial accuracy as a guide, in addition to surrounding suitable trees and habitat. Further suitable habitat and trees in the broader vicinity of the reported nest position were also checked until it was considered that continued searching was futile.

Once a nest was located, its condition and features were described *in-situ*, including with the assistance of 10 x 50 mm binoculars where this enabled the observers to remain distant from the nest. Due to the nature of the task sometimes involving hovering near the canopy, which presents risks to local birds and the observers, nest checks were limited to the time necessary to verify presence and condition (typically less than 1-2 minutes in an area).

To support the *in-situ* observations, images of each nest (taken with a telephoto lens) were later examined to further inform the condition assessment of each nest. Characteristics of the nest to determine its condition included[6]: fresh green leaves, stick tone (brown or grey), white-wash, algal smears, nest shape (flat-topped or bowl), down/feathers, and prey remains. The integrity of the nest was then given a classification based on it being: prime, viable, derelict or remnant[7]. These factors essentially represent the viability of the nest for breeding.

[4] Considered to be more effective and efficient in large survey areas and tall forests.

[5] The recommended method for aerial nest searches within Forest Practices Authority 2014b, Eagle nest searching, activity checking and nest management, Fauna Technical Note No. 1, Forest Practices Authority, Hobart. This satisfies schedule 2, section 6.1.2 of the MIDAA criteria.

[6] Characteristics taken from the Forest Practices Authority's nest activity assessment forms

[7] Which effectively correspond to the spectrum of poor/average/good/excellent used in the Forest Practices Authority's nest activity assessment forms, but relate more to time since use (and likelihood of use in the near future), with prime being used to describe nests considered likely to be active in recent years, and remnant being those the least likely to be active – consistent with the definitions applied in assessments of these species elsewhere:

3 Survey Results

3.1 Newly located nests

One new nest (*i.e.* previously unrecorded) was found during the survey, at the Mt Lloyd site, with a raptor nest location form and nest photos provided below. The nest was rated as prime/viable and had evidence of being visited by birds (lining and whitewash) in the 21/22 season but did not appear to have been used for breeding. The nest is located around 800-900 m direct distance from proposed work areas on the summit and around 550 m from the nearest point of the access track. The nest is in a deeply incised area which limits potential viewshed as shown in the topographic map in Appendix A. It is considered highly unlikely to have viewshed to the summit works area or the access track at ground level as the nest is below a deeply incised side of the mountain, with between 150-225 m of sheer topographic relief between the height of the nest (approximately 35 m up a tree located at around 670 m asl) and the summit works area (approximately 930 m asl) or the access track (approximately 855 m asl at the nearest point). With the highest structural element of the proposed infrastructure only 8 m high (an 18 m tower is already present), it is unlikely any of the new components will be visible from the nest when constructed, as the 200 m of mountainside between them and nest will act a screen. Similarly, the height of construction vehicles on the nearest part of the track at around 855 m asl would be insignificant with the 150 m of screening provided by the mountains topography.

3.2 Previously reported nests not located

Two previously reported nests (338 at Mt Wedge, and 220 at Snow Hill) were not relocated during the aerial survey. Both records are extremely old.

Nest 338 reported from Mt Wedge is based on a single observation in 1985, but a 2017 survey indicated that no nest was present, consistent with our findings, which also noted that habitat at the reported location was highly unsuitable for a nest. It can thus definitively be considered to be free of a nest at this time.

Nest 220 reported from Snow Hill has been observed several times since it's discovery in 1985, with the most recent being in 2020. The location was marginal to our search area, being slightly beyond the buffer for the Snow Hill project area. It is thus likely the nest could still be present but further down the gully than our survey extended and beyond the potential area of disturbance from the current proposal.

4 Discussion and Conclusion

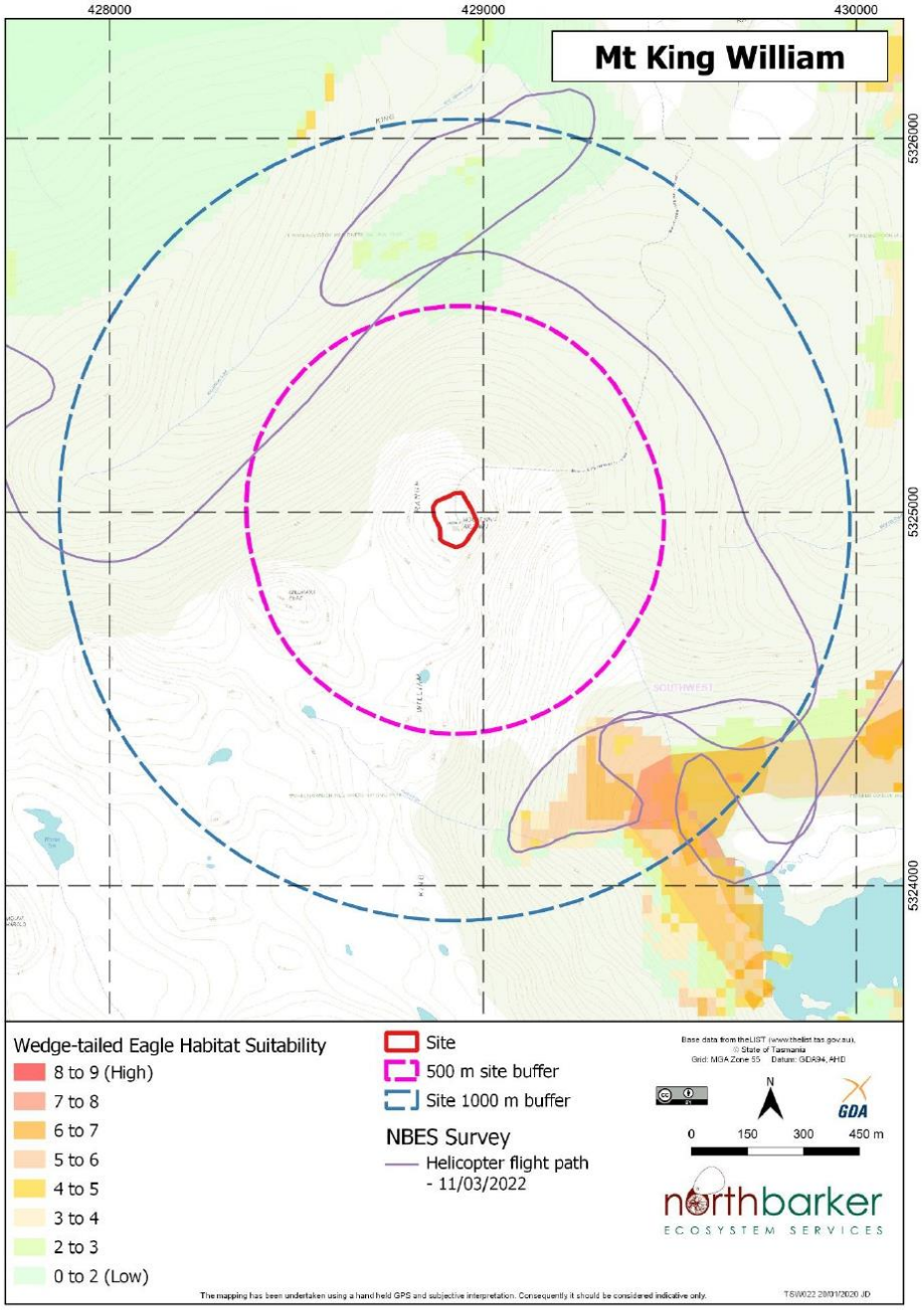
The absence of nests recorded within the search areas for Grasstree Hill, Snow Hill, South Sister, Mt Black, Redan Hill, Mt King William and Mt Wedge mean that the recommended mitigation measures (*i.e.* seasonal constraints on works) outlined within the respective natural values assessments do not need to apply to these projects. Noting however that nest search survey results are typically considered

- Wiersma, J, Koch, AJ, Livingston, D, Brown, B, Spencer, C, Mooney, N, Munks, S (2009). Eagle Nest Monitoring Project – Year 1 2007–08, Establishing monitoring sites and investigating the relationship between nesting success of the Tasmanian wedge-tailed eagle and environmental variables, report to Roaring 40s and the Forest Practices Authority, Forest Practices Authority Scientific Report 8.
- Dennis, T.E., Detmar, S.A., Brooks, A.V. and Dennis, H.M. (2011). Distribution and status of White-bellied Sea-Eagle, *Haliaeetus leucogaster*, and Eastern Osprey, *Pandion cristatus*, populations in South Australia. *South Australian Ornithologist*, 37 (1).
- Cherriman, S.C., Foster, A., Debus, S.J.S. (2009). Supplementary Notes on the Breeding Behaviour of Wedge-tailed Eagles *Aquila audax*. *Australian Field Ornithology*, 26, pp. 142-147.

to remain valid for two years only (*i.e.* an additional survey could be required in two years if works have not been completed and are required within the eagle breeding season). In addition, helicopter use throughout the lifespan of the project infrastructure must continue to consider eagle interactions and potential nest disturbance.

Given that best practice mitigation around wedge-tailed eagle nests applies to buffers of 500 m direct distance and 1 km line of sight, the nest at Mt Lloyd is sufficiently distant (> 800 m) and screened (by topography) that works could be undertaken at this site within the eagle breeding season without undue risk of disturbing the nest. The only exception to this is if helicopter use is required for works. Should that be the case, it would be inadvisable to undertake the works within the breeding season unless a flight plan can be devised (with the assistance of an ecologist/raptor expert) that would definitively not disrupt the nest or put birds at risk. If that was not possible, and helicopter works could not be completed before the commencement of the next breeding season (July 1st 2022), activity constraints (*i.e.* no works) should apply from the beginning of the season (at least) until a nest activity assessment could be undertaken in October/November 2022 – if a nest activity assessment concluded the nest was inactive for the 22/23 season, works could recommence on site (until July 1st the following year) – if the nest was found to be active for the 22/23 season, constraints should continue until the conclusion of the season in January/February 2023 (with the end date determined by the Forest Practices Authority in November). As with the other sites, helicopter use throughout the lifespan of the project infrastructure must continue to consider eagle interactions and potential nest disturbance.

TasGRN – Various Sites
Eagle Nest Search



13 – North Barker Ecosystem Services
1_04_2022 TEL030

Appendix E: Weed and Hygiene Management Plan

Tasmania Government Radio Network (TasGRN)
Mt King William

Weed and Hygiene Management Plan

Version 1.1

2nd August 2022

For Telstra (TEL030)

1. Introduction

1.1 Background

This document provides a site-specific Weed & Hygiene Management Plan for the Mt King William Government Radio Network tower and shelter project**,** located at the summit of Mt King William (Figure 1).

This plan establishes management measures to minimise the introduction of new weed species in accordance with recommendations of the Natural Values Report (NVA), 2nd August 2022 by North Barker Ecosystem Services. The NVA states the following in regard to the management of weeds:

- Consider a project specific Weed and Hygiene Management Plan to detail weed and hygiene prescriptions for contractors and outline their requirements.
- The following should be followed for best practice prescriptions:
    - *Weed and Disease Planning and Hygiene Guidelines - Preventing the spread of weeds and diseases in Tasmania (DPIPWE, Stewart and Askey-Doran, 2015)*
- A follow-up weed inspection of the project area is recommended to establish if treatment is warranted for the proliferation of weeds due to the project disturbance. This should be undertaken in spring or summer and at least 6 months after works are completed (but no longer than 2 years).

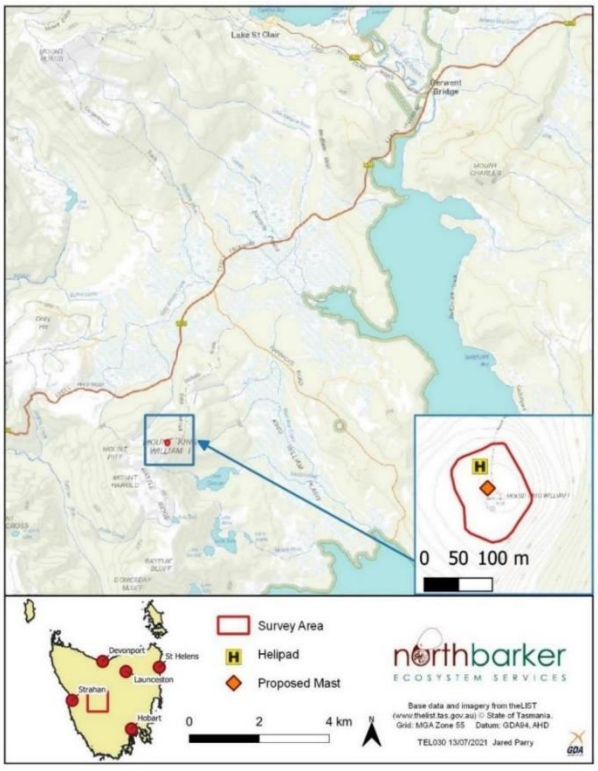


Figure 1: Location of the survey area, existing helipad, and proposed mast location

1.2 Objective

The objective of the Weed and Hygiene Management Plan is to guide the management of weeds throughout the project by:

- preventing the introduction of new weed species across the project;
- controlling or eradicating emerging weeds (where appropriate); and
- enhancing rehabilitation and landscaping success through weed management.

1.3 Site Description

The site is located on the summit of Mt King William (Figure 1) and is vegetated with eastern alpine heath (HHE).

2. Weed Management

2.1 Weed control objectives

The primary objective of weed management on site will aim to minimise the risk of introduction of new weeds and prevent a breach of the containment principles of *the* Tasmanian *Weed Management Act 1999* (WMA). Weed monitoring and treatments will be focussed on germinants establishing in areas of disturbance and along access tracks.

2.2 Weed control

No weeds requiring treatment have been identified in the construction area and therefor there is no requirement for pre-construction weed control activities.

Construction activities have the potential to introduce weeds to the project area and tracks leading to the site. The footprint of the proposed tower, the areas around the tower site and access roads should be monitored for occurrences of weeds during and following works. If weeds are identified the following should occur:

- Treat weeds as per Tasmanian guidelines provided through the Department of Natural Resources and Environment Tasmania (NRET) weed website, or by a qualified contractor or weed control operator; and;
- If herbicide is to be used, only registered herbicides and those listed under an off-label permit issued by the Australian Pesticide and Veterinary Medicines Authority (APVMA) are legally allowed to be used in the control of weeds.

In general, control of weeds during and following works will minimise the risk of their spread and the establishment of new weed species.

Planned weed control activities should consider the following:

- Soil containing weed seed must not be removed from site unless approval is obtained from State government under the Tasmanian *Weed Management Act 1999*.
- Weeds rooted in soil that will remain on site will require direct treatment on site.
- The timing of the work needs to be considered.

2.3 Hygiene Measures

In conjunction with direct weed control, various site hygiene measures must be put in place as complementary methods of weed containment. The following prescriptions should be followed by all contractors on site during construction and within the follow-up treatments.

Throughout the construction site and access tracks contractors should be required to adhere to best practice guidelines:

- Keeping it clean - A Tasmanian field hygiene manual to prevent the spread of freshwater pests and pathogens[1]
- Weed and Disease Planning and Hygiene Guidelines - Preventing the spread of weeds and diseases in Tasmania[2]

Works associated with clearance of vegetation and soil disturbance present a risk of introducing and spreading weeds.

2.3.1 Clean machinery

Any machinery and vehicles entering the site have the potential to introduce new weeds and pathogens to the area. Consequently, a further critical measure to prevent weed spread is that of vehicle and machinery hygiene.

- All vehicles and earthmoving machinery entering the works area must be clean and in particular free from clods of dirt and loose soil.
- The preference is that all machinery and vehicles are cleaned prior to traveling to site. This would be at a depot or before leaving another job site. If this is not practical and machinery or vehicles are coming to site with potential contamination, then they should be washed on the way to site before entering the works area - Given that this site is not accessible by road, any machinery to be airdropped on site must be washed down prior to helicopter transport. A washdown station must be set up at the offsite staging area, and this site must be free of weeds. An ecologist should therefore be present for the selection of an offsite staging area to ensure its suitability.
- All earthmoving plant (e.g. drills, excavators, loaders, etc.) must also be cleaned (washed down) before traveling to site or entering the site, and a wash-down checklists must be completed for each wash-down (checklists for various machinery are provided in Appendix A).
- Following wash-down and dry washdown completion, the site supervisor/manager (or equivalent personnel) should inspect vehicles and machinery for cleanliness prior to traveling to site. If the subject meets the standards of cleanliness outlined in the guidelines, the supervisor can authorise its exit and record the wash-down in a ledger (Appendix B). Washdown records are only required for earthmoving plant including excavators, loaders, trucks, drills, etc.
- Wash-downs must follow the procedures detailed in the Tasmanian Weed and Disease Planning and Hygiene Guidelines.
- The minimum standard is that no clods of dirt or loose soil should be present after wash-down. If the vehicle or machinery does not meet the minimum standard of cleanliness, the supervisor must direct that it be further cleaned before entry.

2.3.2 Imported materials

Any fill materials to be imported to the site are only to be sourced from suppliers able to provide documentation as to the weeds present at the source. This documentation must be inspected by the party responsible for importing material. If material is found to be from a location containing weeds other than those species listed in Section 2, the material must be sourced from elsewhere or an ecologist consulted on the potential implications of new weed introductions.

[1] Allen and Gartenstein (2010)
[2] DPIPWE (2015)

3. Reporting and auditing

The implementation of the works is to be audited by an independent ecologist. Project supervisor and contractors to advise ecologist on completion of tasks.

- An independent ecologist to inspect the works area, access tracks and dry washdown area in spring/summer 6 months (no longer than 12 months) post completion of civil works.
- Contractor to brief ecologist on programme including wash down (provide copy of completed wash down ledger) and control works undertaken (provide copy of completed weed management records).

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Allen, K and Gartenstein, S. (2010). *Keeping it clean - A Tasmanian field hygiene manual to prevent the spread of freshwater pests and pathogens*. NRM South

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Appendix A – Wash-down checklists and ledger

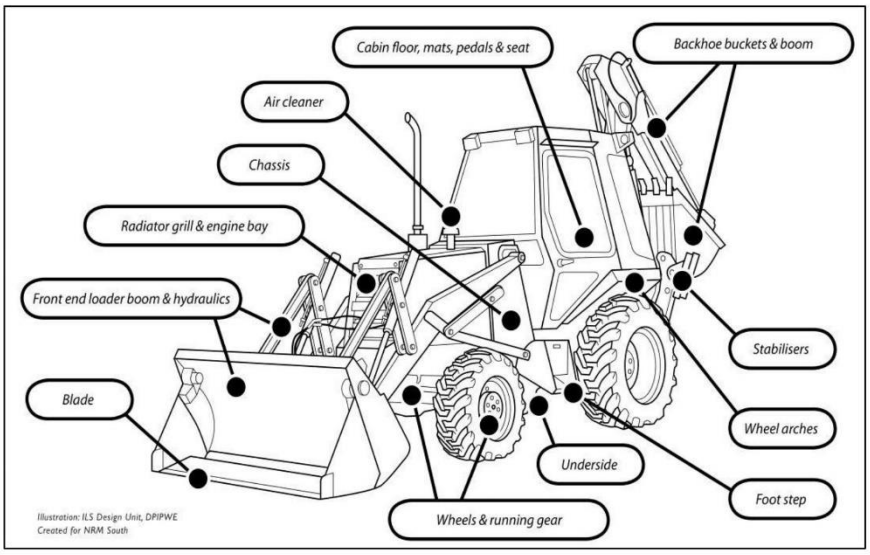
The Tasmanian *Weed and Disease Planning and Hygiene Guidelines*[3] provide the following checklists for various machinery.

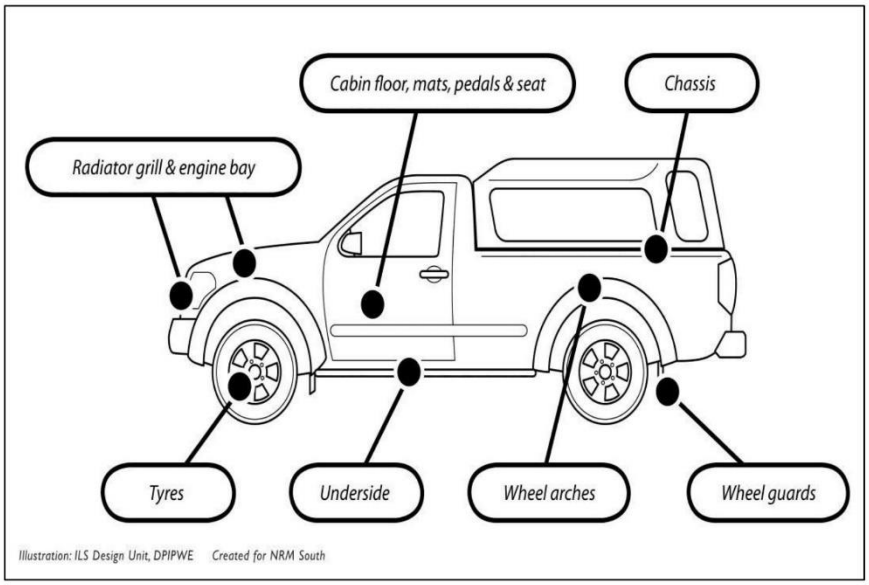
CLEANING/INSPECTION LIST FOR UTILITY/4WD				
Date:		**Site:**		
Vehicle:		**Registration/ID:**		
Area	**Contamination point**	**Inspected**	**Cleaned**	**Method**
Engine bay	Front grill			
	Radiator and other cooling cores or fins			
	Grill or recess under wipers			
	Engine mounts			
	Top of gearbox			
	Battery recess/tray			
	Any recesses on engine or manifold			
	Air cleaner (including element)			
Cabin	Footwells			
	Carpets and mats			
	Seats			
	Tool boxes			
	Air vents			
Wheels and arches	Tyre treads			
	Rims and wheel caps			
	Wheel arches			
	Mud flaps and brackets			
	Brakes			
Tray	Body of tray (especially any recesses)			
	Mats and toolboxes			
	Around fuel tank caps			
Under carriage	Chassis rails			
	Struts and stabilisers			
	Steering components			
	Axels and differentials			
	Spare tyre and mounts			
	Guards			
	Fuel Tank			
Attachments	Bull bar			
Cleaning method: Mechanical (M), Compressed Air (CA), Vacuum (V), High Pressure Water (HPW), Low Pressure Water (LPW)				
Inspected by:		**Signature:**		
Cleaned by:		**Signature:**		

[3] DPIPWE (2015)

CLEANING/INSPECTION LIST FOR AN EXCAVATOR				
Date:		**Site:**		
Vehicle:		**Registration/ID:**		
Area	**Contamination point**	**Inspected**	**Cleaned**	**Method**
Engine bay	Engine bay floor			
	Fan shroud and radiator cores			
	Air filters (shake/tap filters to determine if clean)			
	Glacier plate (near radiator)			
Cabin	Footwells			
	Carpets and mats			
	Seats			
	Tool boxes			
	Air vents			
Excavation body	Hollow section chassis channels			
	Channels for hydraulic hoses from driven motor			
	Counterweight void spaces			
	Removable track adjuster guards and lubrication points			
	Turret pivot area			
	Arms/booms - pivot points			
Bucket/Blade	Between teeth of adapters			
	Wear plates			
Rear blade (Stabiliser)	Wear plates			
	Hollow section arms			
	Hollow section blade			
Cleaning method: Mechanical (M), Compressed Air (CA), Vacuum (V), High Pressure Water (HPW), Low Pressure Water (LPW)				
Inspected by:		**Signature:**		
Cleaned by:		**Signature:**		

CLEANING/INSPECTION LIST FOR WHEELED LOADERS & COMPACTORS				
Date:		**Site:**		
Vehicle:		**Registration/ID:**		
Area	**Contamination point**	**Inspected**	**Cleaned**	**Method**
Engine and running gear	Air cleaner and air filters			
	Air conditioner unit			
	Under and around removable fuel cells			
	Brake assemblies			
Canopy/cabin	Hollow channels			
	Void space between cab and body (bird's nests have been found here)			
	Footwells			
	Carpets and mats			
	Seats			
Body	Feet of adaptors on compactors			
	Hydraulic points			
	Articulation points of hydraulics			
	Counterweight void spaces			
	Between dual wheels			
Bucket/Blades	Blade wear plates			
	Blade teeth and adaptors			
Cleaning method: Mechanical (M), Compressed Air (CA), Vacuum (V), High Pressure Water (HPW), Low Pressure Water (LPW)				
Inspected by:		**Signature:**		
Cleaned by:		**Signature:**		


Cabin floor, mats, pedals & seat
Backhoe buckets & boom
Air cleaner
Chassis
Radiator grill & engine bay
Front end loader boom & hydraulics
Stabilisers
Blade
Wheel arches
Underside
Foot step
Wheels & running gear
Illustration: ILS Design Unit, DPIPWE
Created for NRM South


Cabin floor, mats, pedals & seat
Chassis
Radiator grill & engine bay
Tyres
Underside
Wheel arches
Wheel guards
Illustration: ILS Design Unit, DPIPWE
Created for NRM South

Appendix B: Wash-down Ledger

A wash-down ledger such as this must be completed following wash-down inspections.

Date	Operator	Machine	Location

Appendix F: Geomorphological Values

Tasmanian Government Radio Network (TasGRN)

Report on the geomorphology of the Mt King William I TASGRN communications tower site.

25 August 2022

Mt King William I (left peak) from the Lyell Highway

This report was compiled by Dr Adrian Slee, Earth Sciences and Cultural Heritage, Forest Practices Authority, 30 Patrick Street, Hobart 7000

Email: adrian.slee@fpa.tas.gov.au

Citation

Slee, A. 2022. Tasmanian Government Radio Network (TasGRN) Report on the geomorphology of the Mt King William I TASGRN communications tower site. August 2022, Forest Practices Authority, 4 p.

FPA file reference

D22-436903

Disclaimer for report

The advice contained in this document has been prepared for Telstra Tas GRN, Acquirecomm and North Barker Ecosystem Services only. Whilst the Forest Practices Authority has used its best endeavours to ensure accuracy, it does not warrant that the material is free of error. Consequently, the advice is provided on the basis that the Forest Practices Authority will not be liable for any error or omission, in contract, tort or otherwise. However, should any error or omission be notified, the Forest Practices Authority will use its best endeavours to correct the advice

Mt King William I, communications tower site

The new telecommunications tower on the summit dome of Mt King William I is likely to be located on a pre-existing bitumen platform. The surrounding dolerite summit and adjacent plateau has been glaciated on several occasions in the past. However, it is debatable how much of the summit itself was covered by ice as it forms one of three prominent "glacial horns" at the northern end of the King William Range. Glacial horns develop as remnant bedrock peaks scoured and steepened over time by glacial ice abrasion on all their faces. In this case, the steep northern and eastern escarpments of Mt King William I may have experienced past oversteepening by valley glaciation and cliff collapse while the southern and western flanks of the peak are smoother, indicative of less erosive plateau ice glaciation on these faces. Distinctive glacial landforms on the top of the King William summit area would seem unlikely given the likelihood that this area has been exposed for significant periods of time above the plateau ice cap and would have during the glacial periods been impacted by significant periglacial activity and the promotion of periglacial landforms by the action of solifluction and freeze thaw (frost shattering and heave).

Recent work by the author documented limited ground ice development, ice induced movement of dolerite boulders and frost shattering of bedrock exposures near the summit of neighbouring Mt Rufus 12 km to the north of Mt King William I and at a similar altitude. It seems likely that limited ground ice (periglacial) processes are active under the current climate and that these conditions could impact the infrastructure at the site.

Photo 1: View of the steep north-eastern face of Mt King William I (photo courtesy of AAM Service).

Minor frost shatter and ice movement forms such as patterned ground and small solifluction lobes as well as larger block streams are likely on and adjacent the summit dome. However, the summit of Mt King William I is unlikely to host significant examples of these landforms in comparison to other

mountain environments in the state such as the well documented periglacial landforms on Mt Rufus, Mt Wellington, and Ben Lomond (Barrows *et al.* 2004; Slee *et al.* 2016, Annandale and Kirkpatrick 2017).

Summary

- Glacial and Periglacial landforms are present on Mt King William I. However, neither suite of landforms are likely to be significantly impacted by the infrastructure works at the communications tower site.

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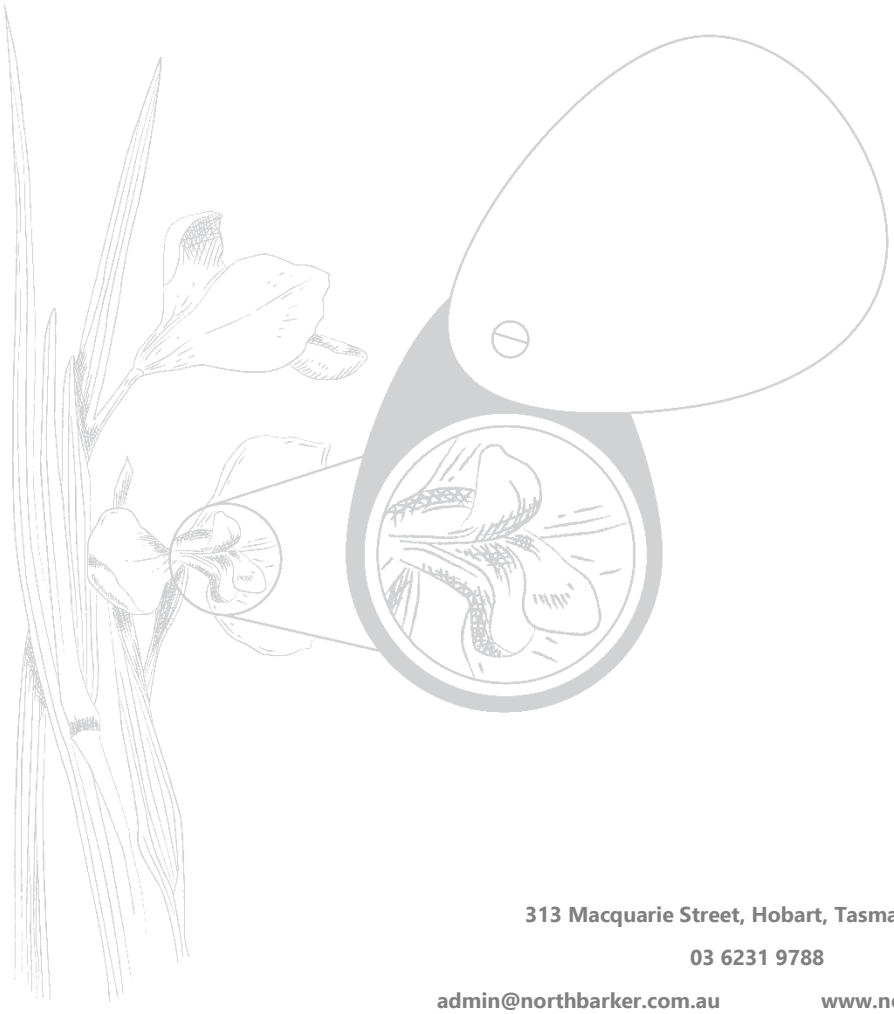
northbarker
ECOSYSTEM SERVICES

Tasmanian Government Radio Network (TasGRN)
Mt Wedge, Mt King William and Mt Black
Aerial Eagle Nest Search Report

29th April 2024

For Acquirecomm Pty Ltd

TEL030



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INTRODUCTION AND BACKGROUND

1.1. INTRODUCTION

The Tasmanian State Government have engaged Telstra to deliver upgrades to the State's radio network. The Tasmanian Government Radio Network (TasGRN) project aims to transition eight core user organisations, which currently operate over five separate radio networks, into one unified digital and interoperable radio network. The project will see upgrades to infrastructure on several mountains, and one greenfield site. All sites are located within reserved areas, two of which are within the Tasmanian Wilderness World Heritage Area (TWWHA). Natural values assessments have shown several sites are embedded within viable eagle nesting habitat.

In 2022 Acquirecomm engaged North Barker Ecosystem Services (NBES) to complete an aerial eagle nest search within a 1 kilometre (km) buffer of the eight project areas. These nest searches are valid until 2024 (with the end of the eagle nest search season June 30th, 2024). As a result and with construction likely commencing in the next year across three of the eight project areas, Acquirecomm has again engaged NBES to complete an aerial eagle nest search within a 1 km buffer of Mt Wedge, Mt King William and Mt Black project areas.

2. METHODS

2.1. SURVEY AREA

The proposed impact footprints for each transmission upgrade site were buffered by 50 m to represent individual project areas. Each project area was then buffered by 1 km to define the eagle nest search survey area of approximately 350 ha (for a total search area of 1,050 ha).

2.1.1. Background research and planning

All habitat within the search area was considered against the suitability index of the Forest Practices Authority's (FPA) eagle habitat model[1]. Whilst this model provides guidance for areas of highest eagle nesting potential, it is best practice to consider all habitats within a survey area when conducting the aerial search, to ensure the model has not misrepresented habitat patches and to establish if nests are present outside of areas mapped as highly suitable. It was thus proposed to search the entire area of habitat to determine habitat suitability[2], and to prioritise nest search effort where habitat was suitable.

2.1.2. Survey team

The survey was led by NBES Senior Ecologist Erin Harris, who has more than 350 hours of experience searching for eagle nests and a master's degree in eagle nesting habitat management. Erin was accompanied by a team that included NBES consultant Ecologist Laura Cardona, who is experienced in eagle nest searches and eagle utilistion surveys, and Will Dobson, who has a Bachelor of Science and is an NBES Ecologist. Flights were piloted using Helicopter Resources Tasmania, with pilot Greg Skerrett. Greg has been a low-altitude helicopter pilot for many years and has experience undertaking low-level surveys including eagle nest searches.

2.2. AERIAL NEST SEARCH SURVEYS

Aerial searches were undertaken by helicopter[3] (according to current best practice[4]) on April 24th, under favourable weather conditions, with excellent visibility, although windy at times. These conditions

[1] Forest Practices Authority (2023)
[2] Department of the Environment, Water, Heritage, and the Arts (2010)
[3] Aerial surveys are considered to be more effective and efficient in large survey areas.
[4] Forest Practices Authority (2023) and EPA (2023)

allowed for continuous surveying without any weather-related downtime throughout the entire survey effort.

The surveys involved slow flying (5-10 knots) above the tree canopy or where possible, below the adjacent canopy level, such as through gullies and river valleys.

Marginal potential habitat was also checked around non-*Eucalyptus* rainforest environments to ensure that patches of potential nesting habitat were not overlooked.

When a nest is located, its condition and features are described in-situ, including with the assistance of full sized (10 x 42 millimetre) binoculars, to enable observers to remain distant from the nest. For each nest located, characteristics assessed include the presence of fresh green leaves, stick coloration (brown or grey), white-wash, algal leaching, nest shape (flat-topped or concave bowl), presence of down/feathers, remains of prey, and presence of adult or juvenile eagles. The integrity of a nest is then be given a classification: prime, viable, derelict or remnant. These factors essentially represent the viability of the nest for breeding.

Sometimes the helicopter must hover near the canopy, which potentially presents risks of disturbing birds. Thus, nest checks are kept as short as possible and only long enough to verify presence and condition. To further reduce potential disturbance, all nests are photographed using a high-quality camera setup (Canon EOS R7 with a 100 - 400 millimetre lens) and location recorded with a GPS.

2.2.1. Limitations

It was not feasible to check every individual tree, nor to conduct multiple passes of all potentially suitable habitat. Therefore, there is a possibility that nests may have been missed owing to being obscured from view by other trees or dense canopy cover. To minimise the chance of missing a nest, we used three observers and pilots with extensive experience in low-level flying. Based on this we have a high degree of confidence in the results.

3. RESULTS

3.1. AREA COVERED

Approximately 75 km was covered, as shown in the flight maps in Figures 1-3. A raptor nest search form can be found in Appendix A.

3.2. NESTS SEARCH RESULTS

There were no existing nests to visit, with an old nest record (Nest #338) at Mt Wedge confirmed as 'absent' on the NVA on account of past survey effort including our 2022 search. Additionally, no new nests were found, nor were any eagles observed flying in the vicinity of the each search area. The majority of the vegetation observed is not considered suitable nesting habitat for eagles. The vegetation at the summits of each mountain is short, shrubby, and highly exposed alpine heathland, while the vegetation on the lower slopes is typically dense rainforest dominated by species not recorded to be used by eagles, such as *Athrotaxis selaginoides, Phyllocladus aspleniifolius* and *Nothofagus cunninghamii*.

4. CONCLUSION AND RECOMENDATIONS

An aerial search for eagle nests and potential nesting habitat was conducted within 1 km of the project areas at Mt Wedge, Mt King William and Mt Black in the western Tasmania. This survey was the second eagle nest search for these three sites.

Disturbances from development are known to have a negative effect on breeding eagle species, particularly the Tasmanian wedge-tailed eagle[5]. Therefore, during the breeding season, constraints on development following FPA guidelines are typically applied to reduce the impact on breeding pairs. Eagle breeding season constraints are typically applied between the 1st of July and the 31st of January; however, some years are extended until the end of February to capture late breeding events, and white-bellied sea eagle breeding season can start as early as June 1st. These constraints only apply around active nests.

The absence of nests recorded within the search areas for Mt Wedge, Mt King William and Mt Black means that the recommended mitigation measures (i.e. seasonal constraints on works) outlined within the respective natural values assessments do not need to apply to these projects. Noting however that nest search survey results are typically considered to remain valid for two years only (i.e. an additional survey could be required in two years if works have not been completed and are required within the eagle breeding season). In addition, helicopter use throughout the lifespan of the project infrastructure must continue to consider eagle interactions and potential nest disturbance.

[5] Forest Practices Authority (2023)

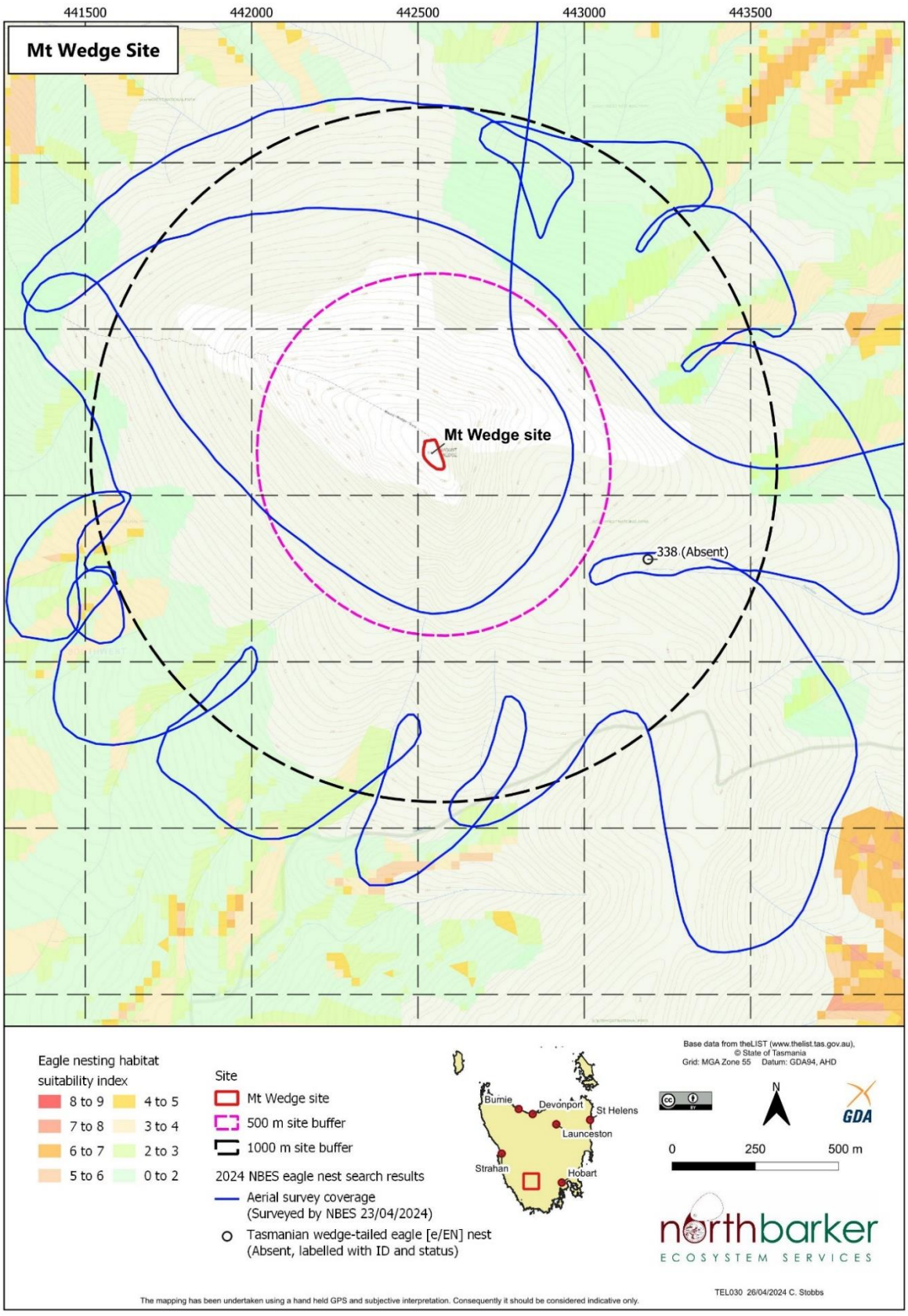

Figure 1: Mt Wedge, nest search effort.

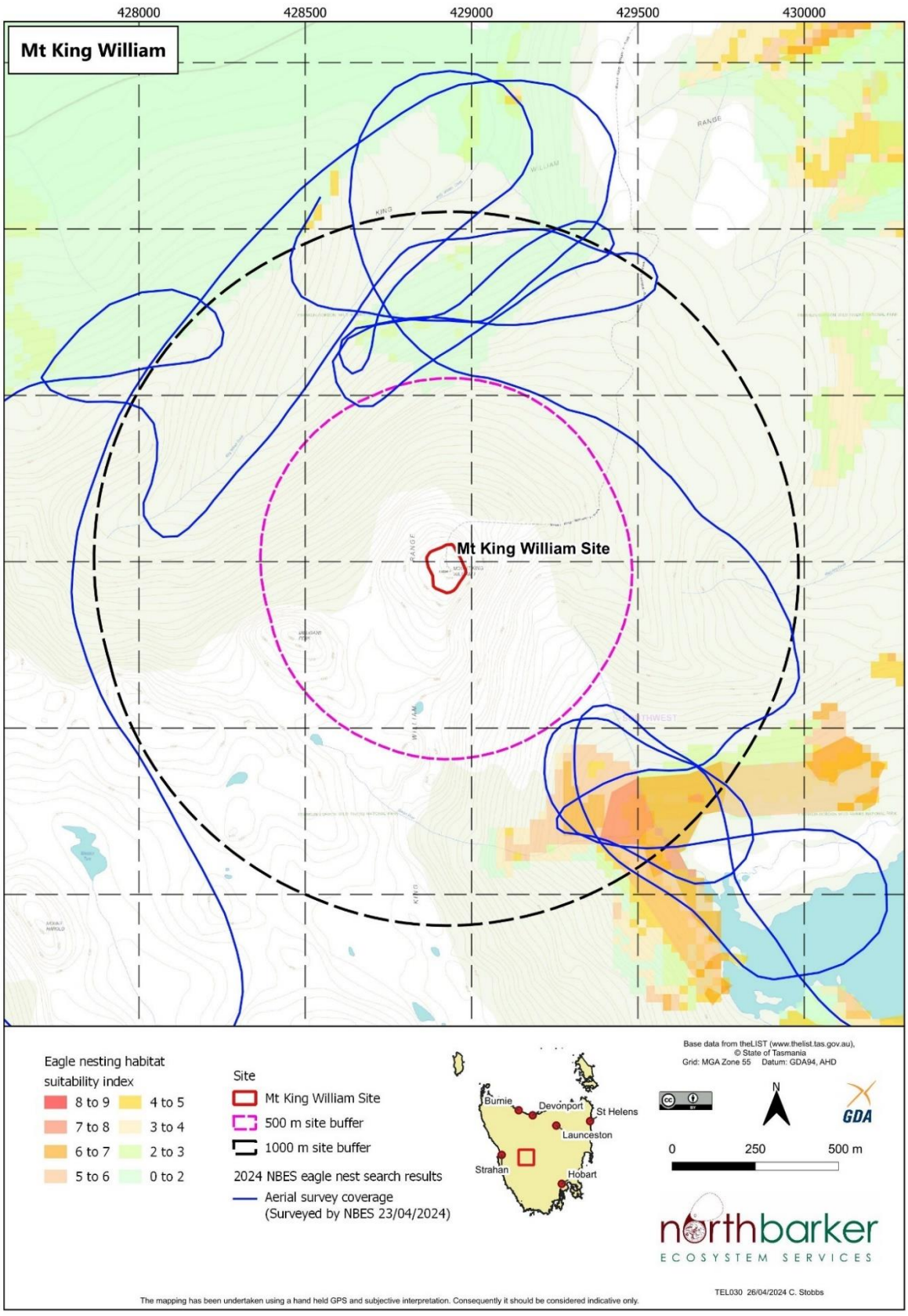

Figure 2: - Mt King William, nest search effort.

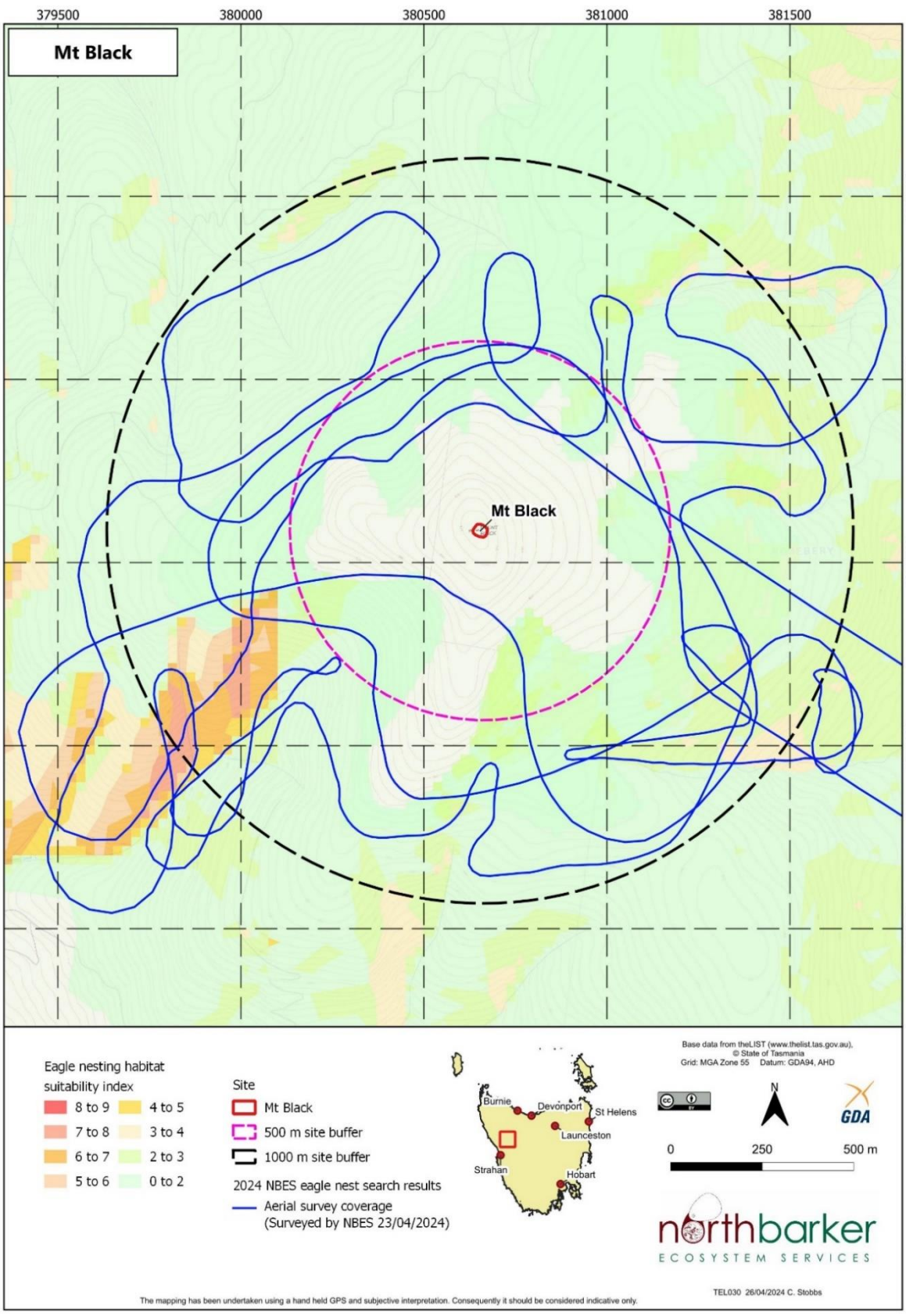

Figure 3: - Mt Black, nest search effort.

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Wiersma, J, Koch, AJ, Livingston, D, Brown, B, Spencer, C, Mooney, N, Munks, S (2009). Eagle Nest Monitoring Project – Year 1 2007–08, Establishing monitoring sites and investigating the relationship between nesting success of the Tasmanian wedge-tailed eagle and environmental variables, report to Roaring 40s and the Forest Practices Authority, Forest Practices Authority Scientific Report 8.

APPENDIX A - RAPTOR NEST SEARCH FORM

Location:

- **Mt Wedge - 442881E, 5255798N**
- **Mt King William - 429163E, 5324892N,**
- **Mt Black - 380016E, 5375690N.**

Action	Person	Date	Result
Previously searched? **Yes, these and other associated project areas searched in 2022.**	Grant Daniels Tim Leaman Cameron Geeves Hoey Stobart (pilot)	11/3/2022	No new nests found at these sites (new nest recorded at Mt Lloyd on same search).
Potential nesting habitat assessment	NBES GIS staff	15/04/2024	Potential nesting habitat area as indicated but not limited to the FPA nesting suitability index (see Figures 1-3).
Search of nesting habitat	Erin Harris Laura Cardona Will Dobson	23/04/2024	No new nests found.
Follow-up search?	N/A	N/A	
Notification to FPA	N/A	N/A	
Nest site added to NVA **Reserve added to planning maps/GIS**	N/A	N/A	

Appendix F

EPBC Referral Decision Notice 2024/09816

Australian Government
Department of Climate Change, Energy, the Environment and Water

Notification of referral decision – not controlled action if taken in a particular manner

Radiocommunications Facilities as part of the Tasmanian Government Radio Network Project- TasGRN (EPBC 2024/09816)

This decision is made under sections 75 and 77A of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Proposed Action

person proposing to take the Action	TELSTRA LIMITED 086174781
proposed Action	To replace and upgrade radiocommunications infrastructure at Mt King William and Mt Wedge, located in the Tasmanian Wilderness World Heritage Area (See EPBC Act referral 2024/09816).

Referral decision: not a controlled action if taken in a particular manner

status of proposed Action	The proposed Action is not a controlled action provided it is taken in the manner set out in Annexure A.

Person authorised to make decision

name and position	Brendan Linton-Smith Acting Branch Head Environment Assessments (Vic and Tas) and Post Approvals Branch Nature Positive Regulation Division
signature	
date of decision	25 March 2025

Annexure A

Note: Words and terms appearing in **bold** (excluding headings) have the meaning assigned to them at **Part B - Definitions**.

Part A – Particular manners specific to the Action

The following measures must be taken to avoid significant impacts on:

World Heritage properties (sections 12 and 15A)

National Heritage places (sections 15B and 15C)

Listed threatened species and communities (sections 18 & 18A)

MANNERS TO PROTECT THE TASMANIAN WILDERNESS WORLD HERITAGE AREA AND LISTED THREATENED SPECIES

1) The person taking the Action must:

   a) not **clear**:

      i) more than 0.0160 ha of **native vegetation** inside the **Mt King William Action area**;

      ii) more than 0.0175 ha of **native vegetation** inside the **Mt Wedge Action area**;

   b) not undertake any **works**, other than haulage, outside of the **Action area**;

   c) undertake weed management in accordance with the **Weed and Disease Planning and Hygiene Guidelines** and the **Construction Management Plans**, including ensuring there is no weed incursion at the **Action area** until **completion of the action**.

   d) revegetate all areas not required to remain **cleared** after **construction** with local **native vegetation**;

   e) not exceed 120 **helicopter flight days** at each site during **construction**, and must:

      i) ascend and descend gradually to reduce 'blade slap' noise;

      ii) not fly within 1000 metres line-of-sight of **active Tasmanian Wedge-tail Eagle nests** during the **Eagle management constraint period**;

      iii) except where the safe conduct of the flight is jeopardised, adhere to **Tasmanian Parks and Wildlife Service prescribed flight paths** between the **offsite staging area** and the **Action area**;

      iv) except where the safe conduct of the flight is jeopardised or during landing and take-off at the **Action area**, maintain an altitude of at least 1,000 metres above ground level;

   f) not undertake **construction** or **maintenance** within the **Eagle management constraint period** if an **active Tasmanian Wedge-tail Eagle nest** is identified within 1000 metres line-of-site of the **Action area**;

   g) avoid and reduce impacts to visual aesthetic and wilderness values, by:

      i) **constructing** the towers in a lattice form at a maximum height of 7m;

ii) except for Electromagnetic energy signage, which must have a yellow background in accordance with **Australian Standard AS 1319-1994,** using black background on all signage, to reduce visibility at a distance;

iii) ensuring that signage is mounted at a maximum height of 2 metres from ground level;

iv) colour staining all visible concrete elements using either of the following methods:

A) add a dark coloured additive to general purpose concrete mix; or

B) apply a surface colour treatment;

h) ensure diesel and chemical management and storage is undertaken in line with **Australian Standard AS 1940:2017** and **Bunding and Spill Management Guidelines**, including:

i) bunded storage of any fuel tanks, ensuring the net capacity of the bunding is at least 110% of the capacity of the largest tank or 25% of the total capacity of all tanks within the bund, whichever is greater;

ii) ensuring appropriate spill kits are available and maintained until the **completion of the Action;** and

i) ensure all waste is removed from the site and transported outside of the **Action area** and outside of the **TWWHA** to relevant facilities authorised under the **Waste Management Regulations**, before the **completion of the Action.**

Part B – Definitions

Action area means **Mt Wedge Action area** and **Mt King William Action area**.

Active Eagle Nest means any **Tasmanian Wedge-Tail Eagle** nest identified during annual nest activity surveys. A nest is considered active for a period of two years after it has been determined to be active.

Australian Standard AS 1319-1994 means the document *AS 1319-1994 Standard Safety signs for the occupational environment*, Standards Australia, 1994.

Australian Standard AS 1940:2017 means the document *AS1940:2017 The storage and handling of flammable and combustible liquids*, Standards Australia 2017.

Bunding and Spill Management Guidelines means the EPA Tasmania (2016) Bunding and Spill Management Guidelines.

Clear, **cleared** or **clearing** means the cutting down, felling, thinning, logging, removing, killing, destroying, poisoning, ringbarking, uprooting, or burning of vegetation but does not include weeds (see the '*Australian Weeds Strategy 2017-2027*, Commonwealth of Australia 2017' for further guidance)'.

Completion of the Action means the date on which all activities associated with the Action have permanently ceased and/or been completed.

Construction means:

- the erection of a building or structure that is, or is to be, fixed to the ground and wholly or partially fabricated on-site,
- any work which involves breaking of the ground (including pile driving) or bulk earthworks,
- the laying of pipes and other prefabricated materials in the ground, and
- any associated excavation work.

Construction does not include the installation of temporary fences and signage.

Construction Management Plans means the referral documents TASGRN079 Mt King William Construction Management Plan v1.3 and TASGRN089 Mt Wedge Construction Management Plan v1.2.

Department means the Australian Government agency responsible for administering the **EPBC Act**.

Eagle management constraint period means the period commencing on 1 July and ending on 31 January in the same financial year, unless a shortened or lengthened period of this name is determined (identified annually in November) and publicly advised by the **Forest Practices Authority** in writing.

EPBC Act means the *Environment Protection and Biodiversity Conservation Act 1999* (Cth).

Forest Practices Authority means the Tasmanian Government agency responsible for managing the Tasmanian forest practices system on both private land, empowered by the *Forest Practices Act, 1985* (Tas).

Helicopter flight day(s) means any day a helicopter is utilised during any **works**.

Maintenance means the maintenance or repair of any building or structure following completion of **construction**.

Mt King William Action area means the location of the Mt King William Action portion of the Action, represented in Attachment A(a) by the zone enclosed by the yellow line and shaded with yellow dots designated TasGRN Project Area.

Mt Wedge Action area means the location of the Mt Wedge portion of the Action, represented in Attachment A(b) by the zone enclosed by the yellow line and shaded with yellow dots designated TasGRN Project Area.

Native vegetation means vegetation that is indigenous to the **TWWHA**.

Offsite staging area means the location of the Mt King William staging area, represented in Attachment B(a), and Mt King Wedge staging area, represented in Attachment B(b), all designated by the H in the green circle.

Tasmanian Parks and Wildlife Service prescribed flight paths means the flight paths represented in Attachment B(a) and Attachment B(b) by the yellow dotted line designated Helicopter Flight route.

Tasmanian Wedge-Tail Eagle means the EPBC Act listed species *Aquila audax fleayi.*

TWWHA means the Tasmanian Wilderness World Heritage Area inscribed on the World Heritage List under the United Nations Educational, Scientific and Cultural Organization Convention Concerning the Protection of the World Cultural and Natural Heritage.

Waste Management Regulations means the Environmental Management and Pollution Control (Waste Management) Regulations 2020 (Tasmania) under section 102 of the Environmental Management and Pollution Control Act 1994 (Tasmania).

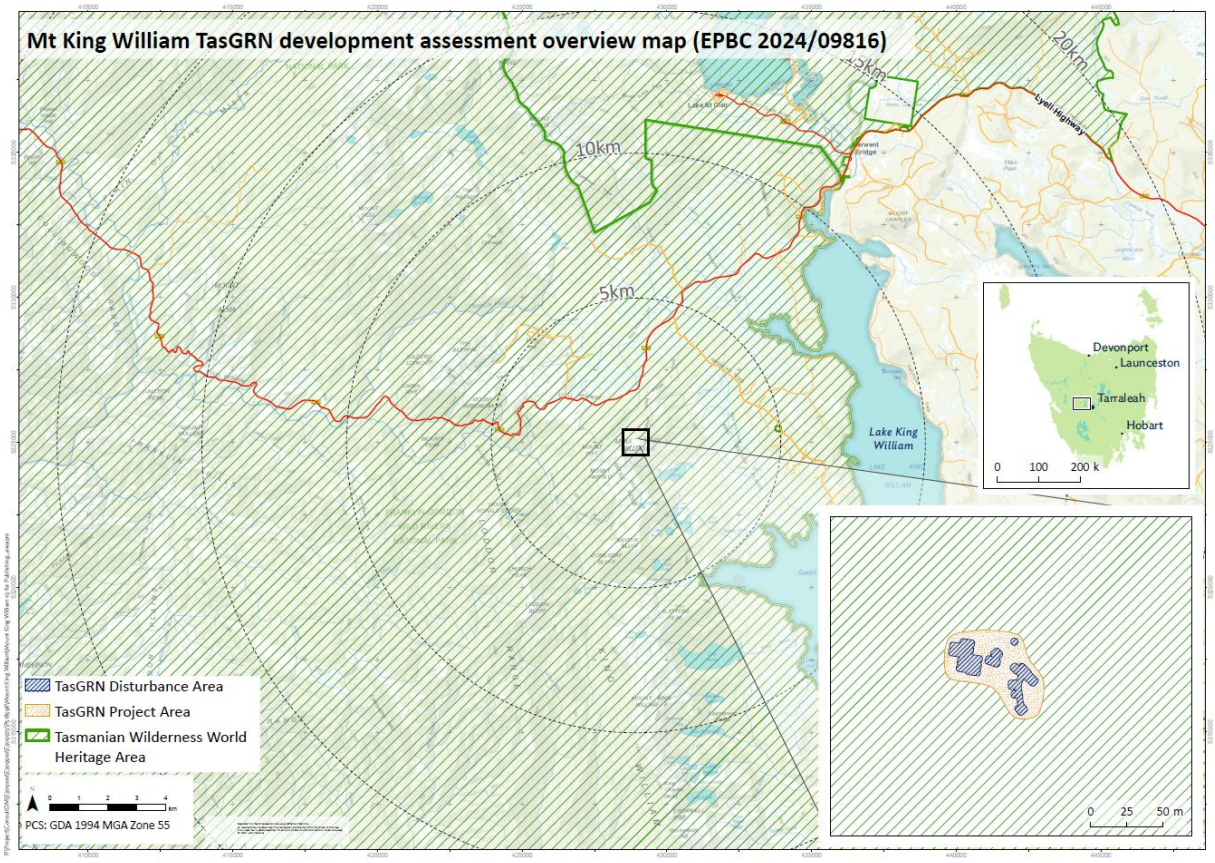
Weed and Disease Planning and Hygiene Guidelines means the Weed and Disease Planning and Hygiene Guidelines - Preventing the spread of weeds and diseases in Tasmania, Tasmanian Government 2015.

Works mean activities that make part of the Action.

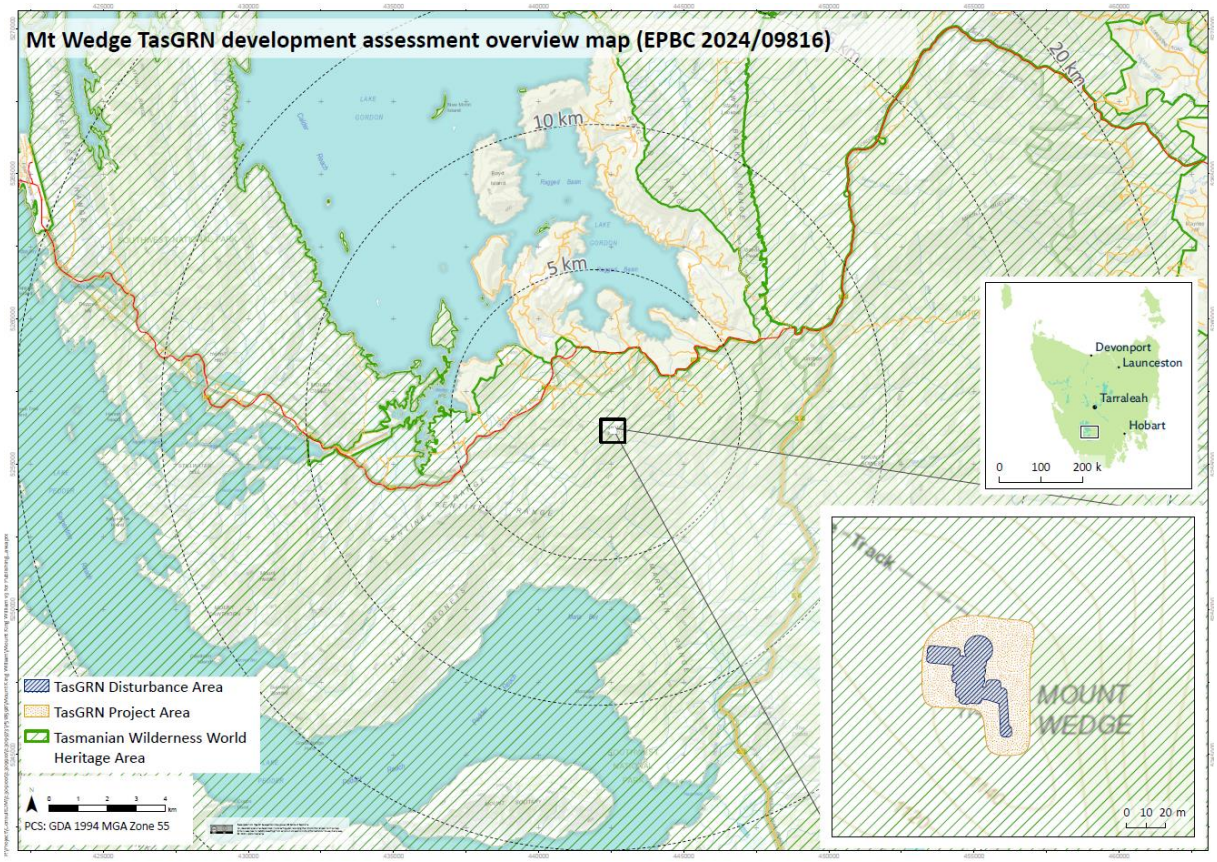
Attachments

A: Location of the action

a. Location of Mt King William Action area indicated by the zone enclosed in the yellow line and shaded with yellow dots.

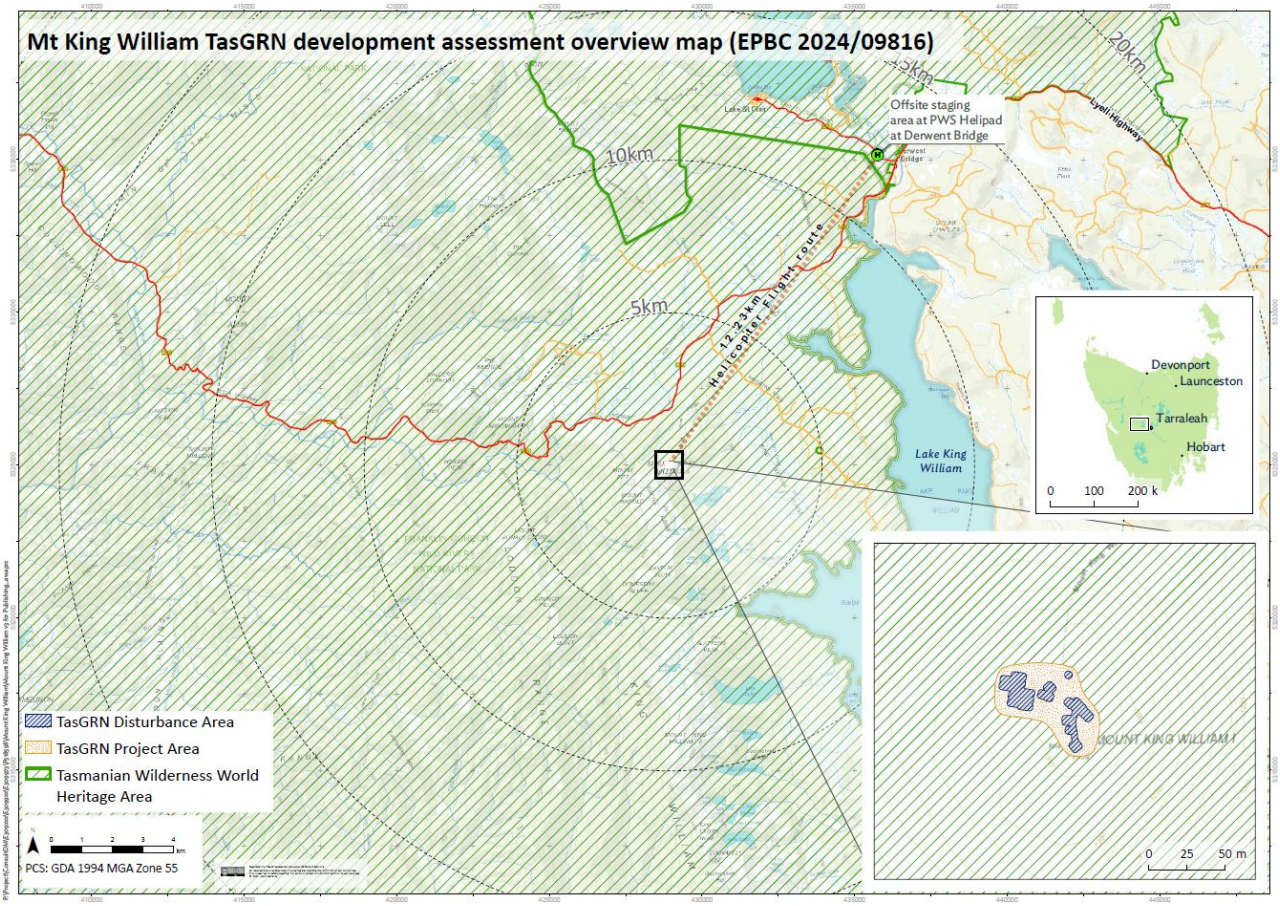


b. Location of Mt Wedge Action area indicated by the zone enclosed in the yellow line and shaded with yellow dots.

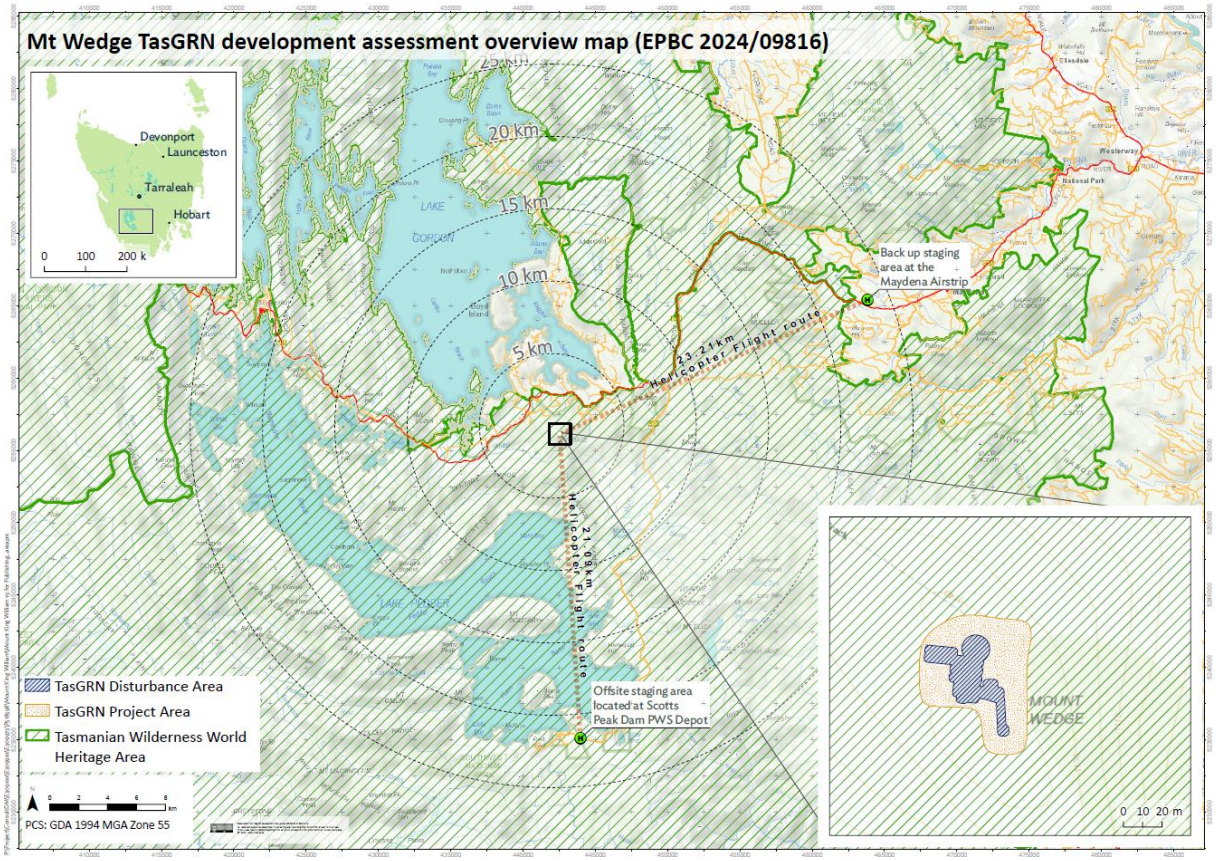


B: Tasmanian Parks and Wildlife prescribed flight paths

a. Mt King William prescribed flight path, indicated by the yellow dotted line. The offsite staging area is indicated with a green circle containing an H.



b. Mt Wedge prescribed flight path, indicated by the yellow dotted lines. The offsite staging areas are indicated with a green circle containing an H.



Appendix G Media Releases

Peter Gutwein
Premier of Tasmania

23 December 2020

Mark Shelton, Minister for Police, Fire and Emergency Management

Jeremy Rockliff, Acting Premier

Telstra Awarded TasGRN Contract

The most extensive upgrade to multiagency emergency radio communications in Tasmania's history will soon commence following the signing of a contract between the Tasmanian Government and Telstra to deliver the Tasmanian Government Radio Network (TasGRN).

The TasGRN will replace five separate radio networks with one digital, public-safety grade radio network to be delivered by Telstra and supported by Motorola Solutions as a key part of the Tasmanian Government's plan to keep Tasmanians safe.

Acting Premier Jeremy Rockliff said the total value of the project is $567 million, with construction to begin in 2021, and user organisations expected to commence migrating over to the new network in the 2022-23 financial year.

"Once complete the project will provide secure and mission critical voice and data communications as part of the Tasmanian Government's plan to keep Tasmanians safe," said Acting Premier Rockliff.

"The initial user organisations are Tasmania Police, the Tasmania Fire Service, Ambulance Tasmania, the State Emergency Service, Sustainable Timber Tasmania, Department of Primary Industries, Parks, Water and Environment, TasNetworks and Hydro Tasmania.

"The project is expected to create around 50 jobs during the three-year construction phase, with more than 30 additional positions created to help run, maintain and oversee the network once it is up and running".

Minister for Police, Fire and Emergency Management Mark Shelton said the TasGRN will improve public safety outcomes for all Tasmanians and emergency responders.

"Radio communication is a critical technology for organisations across the State, and during emergencies, the radio network must be reliable and continuous," Minister Shelton said.

"When the State is in need, immediate interoperability will be available for interstate emergency service personnel deployed to Tasmania. Similarly, any of the 10,000 TasGRN radio users will be able to provide swift support to an

interstate jurisdiction in a time of emergency."

Telstra Enterprise Executive Gretchen Cooke said TasGRN would be the largest single project Telstra had ever carried out in Tasmania and would transform the way government agencies communicate.

“This new radio network will be more reliable, more resilient, more secure and will replace five separate systems so Tasmania’s emergency services can communicate with confidence to help keep Tasmanians safe,” Ms Cooke said.

More Media Releases from Mark Shelton (/media_release_search?queries_member_query=221843)

More Media Releases from the Minister for Police, Fire and Emergency Management (/media_release_search?queries_portfolio_query=Minister for Police, Fire and Emergency Management)

Latest releases

Supporting our farmers on the Harvest Trail (http://www.premier.tas.gov.au/releases/supporting_our_farmers_on_the_harvest_trail)

Skills for economic recovery (http://www.premier.tas.gov.au/releases/skills_for_economic_recovery)

Further support for Tasmania’s screen industry during COVID-19 (http://www.premier.tas.gov.au/releases/putting_downward_pressure_on_fuel_prices_in_tasmania2)

Young Tasmanian Aboriginal Leaders Scholarships (http://www.premier.tas.gov.au/releases/young_tasmanian_aboriginal_leaders_scholarships)

Supporting our primary industries (http://www.premier.tas.gov.au/releases/supporting_our_primary_industries)

Appendix H Rendering Montages

Please note since the 2023 VWIA Reports, 24 Solar Panels on 4 solar arrays have been removed from the designs at each site, footings have been reduced in bulk (concrete piers to steel posts) and all mitigations from the VWIA's will be implemented.

Appendix I

Intrax Landslip Report, 2022

Landslide Risk Assessment

Mount King William, Tasmania

Submitted To

Downer EDI Engineering Pty Ltd
Level 4, 480 Victoria Rd
Gladesville NSW 2111

Document ID

167549-PRJ895041-GEO-REP-01

Date
7/01/2022

Revision: 0

Author
Joseph McPherson

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AGS Practice Notes 2007 Risk Assessment Matrix

Appendix C

MapScene Photography

1 Introduction

Downer EDI Engineering Pty Ltd has engaged Intrax Consulting Engineers Pty Ltd (Intrax) to conduct a landslide risk assessment for the proposed telecommunications tower development on the peak of Mount King William, Tasmania.

The scope of work and terms and conditions of our engagement are set out in the Intrax-Client service agreement reference number QU1615986. Approval to proceed was given by Richard Chan via email on 7 Feb 2023 and a purchase order for the work was received via service key on 9 Feb 2023.

1.1 Project Description

Downer EDI Engineering Pty Ltd has provided Intrax with layout drawings for review and to provide project background. The provided drawings, reference number T113006, dated: 25.11.2021, demonstrate that the telecommunication towner update (TAS GRN site 079) shall comprise the below elements (as shown in the layout drawing, Figure 1-1).

- 7 m high climbable mast to be installed on existing rock anchored rock and bitumen pad
- Shelter building 3.0 m x 2.5 m installed on rock anchors
- Generator platform and generators
- Battery cubes installed on steel platform
- Solar panel grid (10 sets of 6 panels)
- Cabling required to tie system together

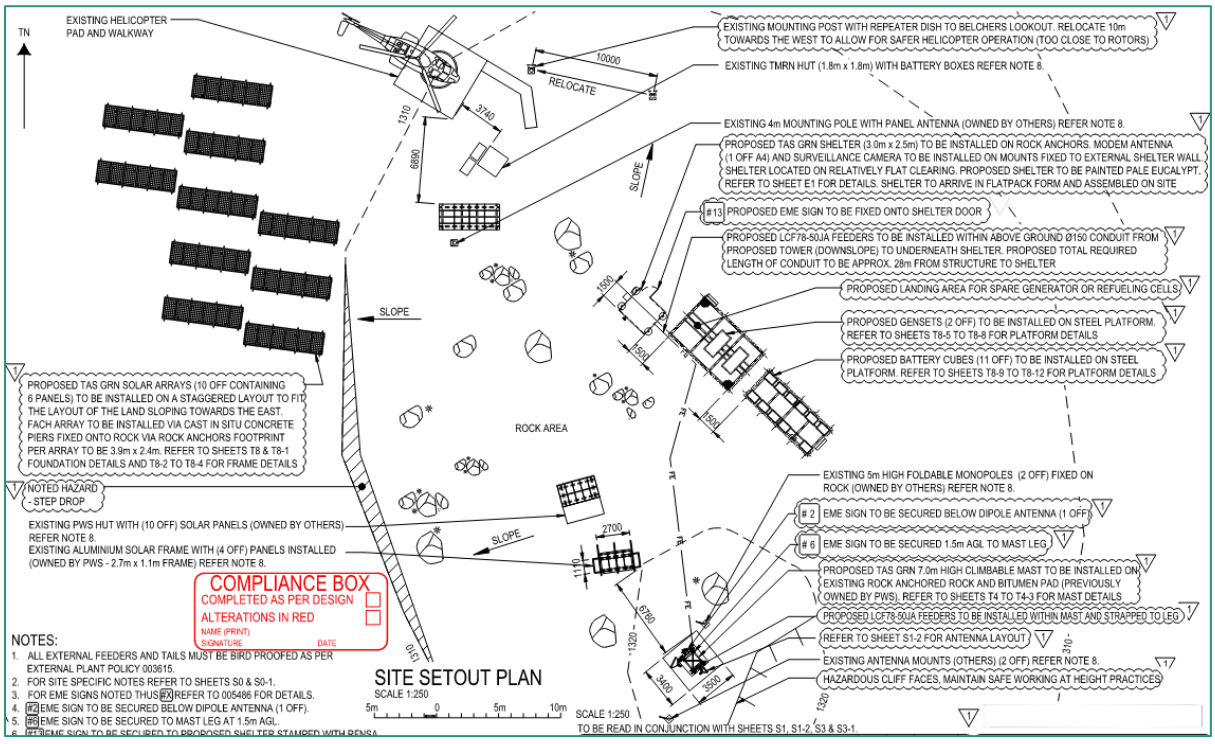


Figure 1-1: Proposed telecommunication layout (Downer, T113006, S1-1, 25.11.22)

1.2 Objectives and Scope

The objective of the landslide risk assessment is to determine the suitability of the proposed development location with respect to landslide risk. To achieve the desired objective Intrax have completed the following scope of work:

- Review of 3D photogrammetry survey provided by Downer through it's third party surveyor

- Desktop review of background information on landslide risk for the area
- Development of site-specific risk map of the site
- Landslide Risk Assessment for the proposed development with respect to the Australian Geomechanics Society 2007 guidelines

1.3 Acknowledgement of Country

Intrax acknowledge the Traditional Owners of the land on which this investigation was carried out. We pay our respects to their Elders, past and present, and the Aboriginal Elders of other communities.

1.4 Project Specific Documentation

Intrax has been provided with the following background documents related to this project. Intrax has relied upon this documentation to prepare this risk assessment.

- Downer (2021), Mt. King William TAS GRN Site 079 drawing set, T113006, Issue 1, 25.11.2021
- Entura (2023), Photogrammetry webscene, MKW 3d Scene, Entura, 30 Jan 2023

Intrax has previously produced the following documentation for this project:

- Intrax (2021), Geotechnical Desktop Assessment, TASGRN079 – Mount King William, issued to Downer EDI Engineering Pty Ltd, 167549, revision 1, 30.07.2021

2 Site Conditions

2.1 Site Description

The site is located at the peak of Mount King William, Tasmania (-42.22394, 146.13876). Mount King William is located within the south-west wilderness of Tasmania, approximately 50 km east of Queenstown and 10 km south-west of Derwent Bridge. Mount King William is one of three namesake peaks (Mount King William II and Mount King William III) within the King William Range, which lies directly west of King William Lake. King William Range runs north-south from the Lyell Highway for approximately 20 km, the range contains six peaks over 1100 m with the highest peak Mount King William II at 1363 m.

Mount King William peaks at 1324 m and is accessible via helicopter, with an existing landing pad located near the peak, as shown in Figure 1-1. The Mount King William I track connects the mountain peak to Harbacks Road, however vehicle access is only possible to approximately 1050 m, beyond this point access along the track is for foot traffic only.

The topography of the mountain peak is primarily separated into three zones, cliff areas or steeply sloped ground, moderately sloped ground and outcropped rock mass at the local peaks. Local peaks of the mountain top contain the relatively level or gently tilted surfaces of insitu rock columns which make up the mountain. The eastern face mountain peak contains large vertical cliffs exposing the insitu rock columns, stepped drops up to 25 m are present although typically only 2 m to 10 m drops are observed in each step. On the eastern half of the mountain top steeply sloped ground or stepped cliffs are present between or downslope of the prominent rim – a gully between two large cliff edges has formed in the south-east direction. The western portion of the site is generally covered with toppled rock columns or finer talus material, local depressions with soil mass are present along with local insitu rock column outcrops forming minor cliffs (2 to 3 m drops).

Proposed development areas are located on either the moderately sloped (10º to 25º) western portion of the mountain top or on the surface of insitu rock columns.

Pertinent site features are visible in the Geotechnical Plan (refer to Appendix A) which has been sketched over aerial imagery (maps.thelist.tas.gov.au).

2.2 Regional Geology

The surface geology underlying the site has been mapped by the Geological Survey of Tasmania. The digital seamless geological map for the area indicates that the surface geology is Jurassic aged Dolerite. Intrax have not attended site to inspect the rock in detail, however based on published information and photographic evidence available to Intrax it is understood the mountain peak comprises Dolerite with locally developed granophyre. Dolerite is a common rock within Tasmania, which forms most mountain peaks observed across the State. Tasmanian Dolerite is commonly columnar, forming large blocks which when destressed or subjected to external forces are susceptible to toppling, rock fall or block toppling. An extract of the local geological map is provided below.

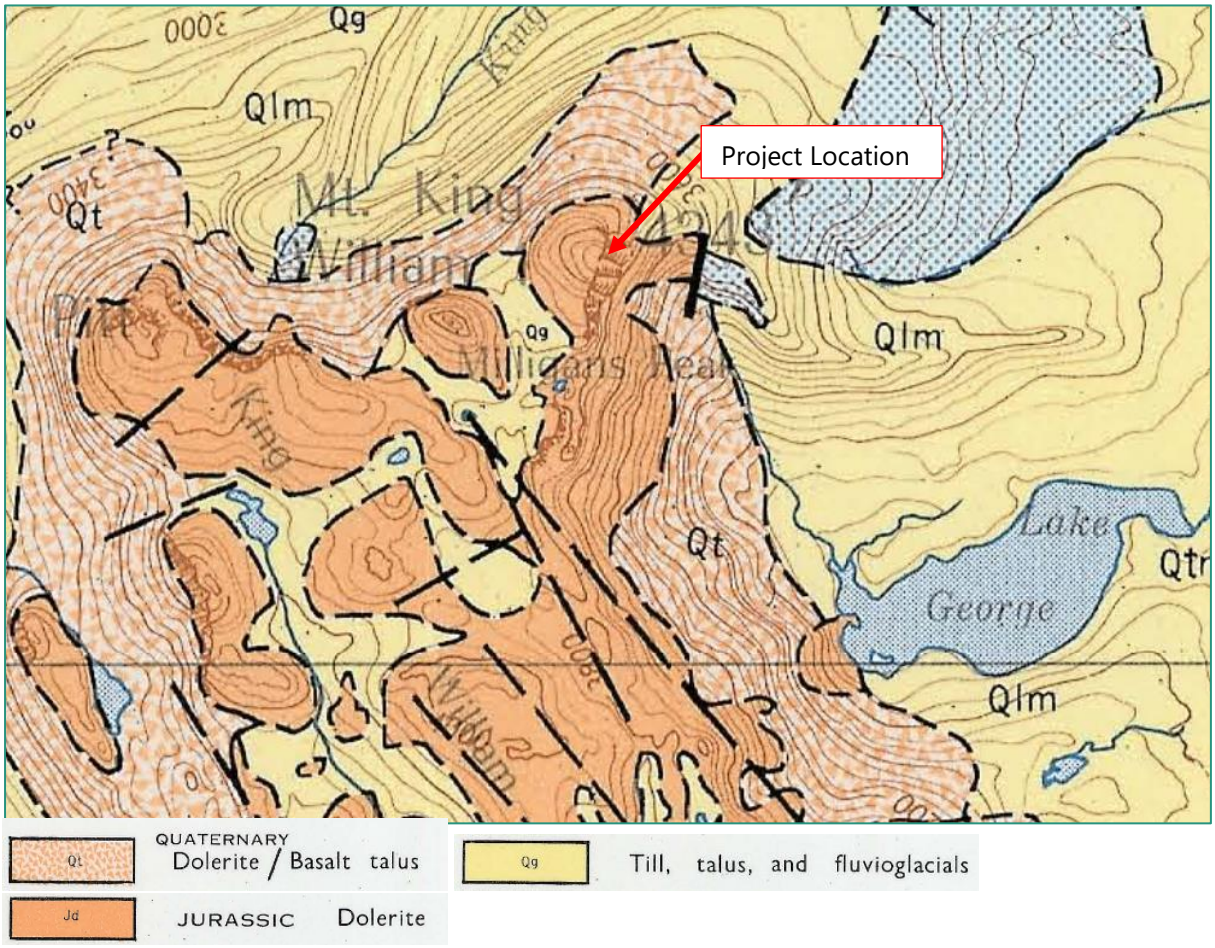


Figure 2-1: Extract of local geology, Geological Survey of Tasmania (Source: St Clair 1:63,360 scale map sheet)

2.3 Geological Structure

The site is underlain by Jurassic Dolerite which has formed columns through cooling and destressing the initial rock mass, the columnar structure can be observed in the insitu exposed rock mass observed today. Figure 2-2 and Figure 2-3 demonstrate the overall rock structure which is comprised of:

1. A series of planar horizontal and vertical major stress relief joints (red) forming approximately rectangular prism blocks. Major defects are typically spaced horizontally at 1 to 2 m and vertically at 1 to 3 m. Smaller and larger blocks are observed across the mountain, with evidence suggesting several columnar blocks may have fallen being up 6 m or more tall. The major defect sets have high persistence. Defect roughness and infill cannot be attained from digital information reviewed by Intrax.

2. A subset of minor planar or broadly curved defects which cross-cut each other at irregular angles (yellow). Minor defects are less persistent than major defects typically terminating at the intersection of a major defect, therefore confining the minor defects persistence to 1 to 2 metres or within a single block. Patterns are often observable within minor defects which demonstrate preferential stress relief directions, however patterns vary across the site and cannot not be readily generalised. Evidence from talus material on hill slopes suggests that minor defects can result in localised rock falls or break up the large block upon block toppling.

Intrax also notes that the Mount King William Dolerite has a preferential structure in the northwest-southeast direction, forming local ridges and gullies along the mountain top. This structure is sufficiently large to encompass the entire project area and not a major concern in this risk assessment.

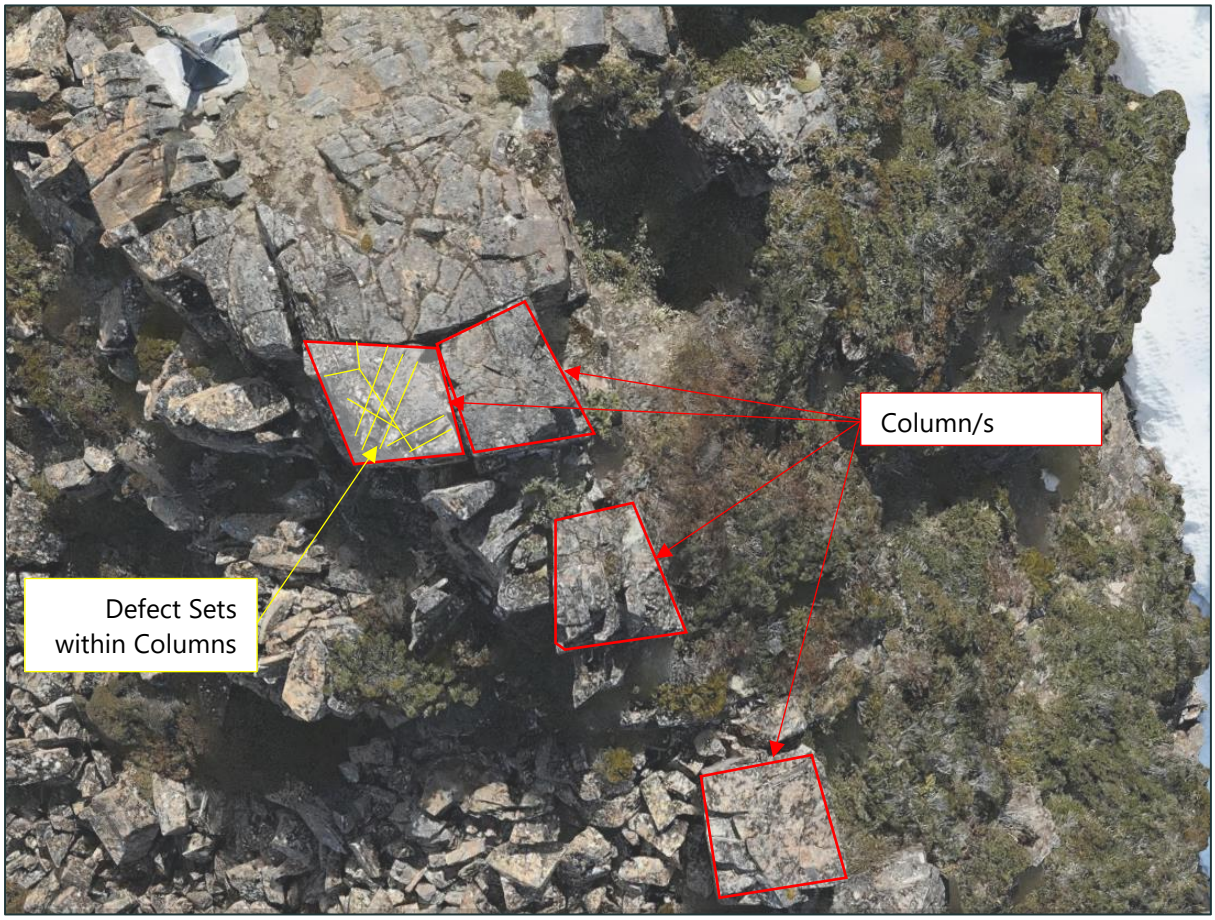


Figure 2-2: Rock structure plan view (Entura mapscene viewer)

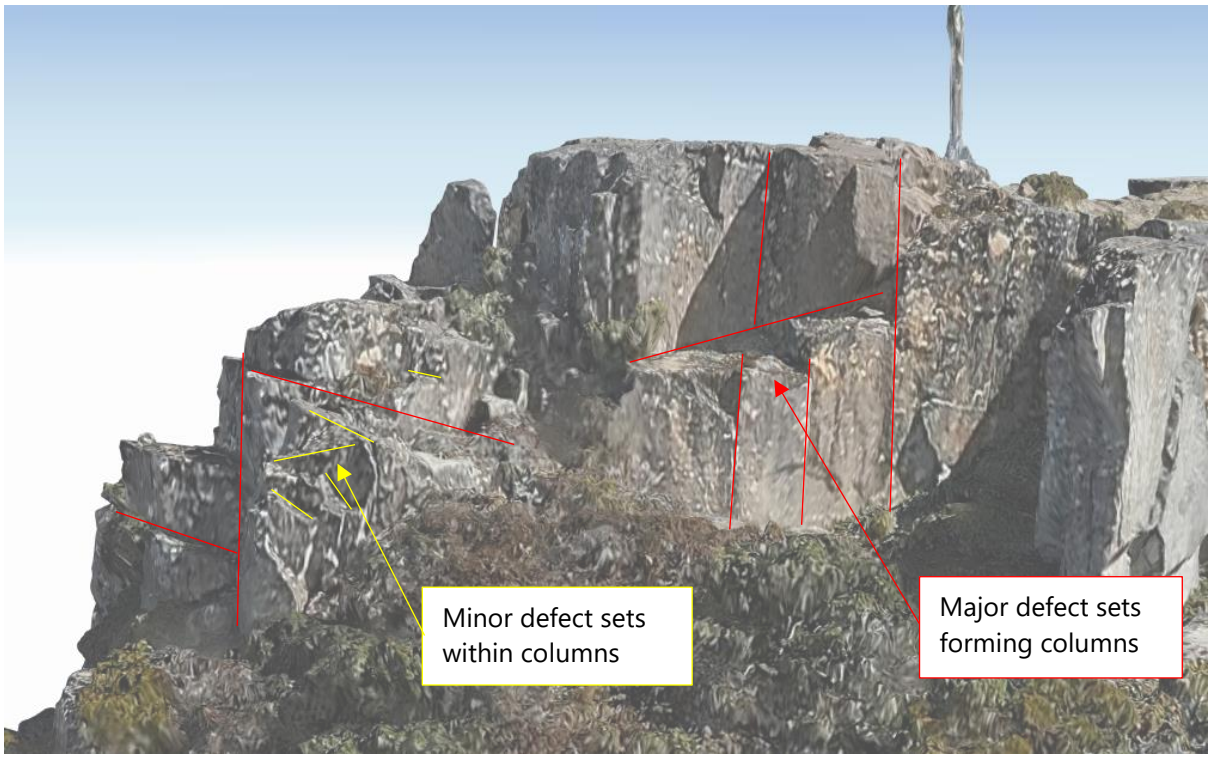


Figure 2-3: Rock structure side view (Entura mapscene viewer)

2.4 Ground Water

Groundwater is not anticipated to present within the project area of interest, the site is located at a mountain peak with no catchment area. Rock structure appears to consist of open defects which would reduce the likelihood of any local perched water tables forming.

Snow melt is likely to occur seasonally which may result in frost-thaw actions within rock defects or freeze minor soil deposits.

3 Landslide Risk Assessment

Risk is defined as a measure of the probability and severity of an adverse effect to health, property or the environment. (Australian Geomechanics Society Landslide Taskforce. 2007). To determine the landslide risk associated with the project the landslide hazards are identified, then the likelihood and consequence of events are assessed with respect to the proposed development for each hazard.

3.1 Landslide Hazards

Intrax has reviewed desktop resources and 3d photogrammetry survey to identify landslide hazards which may impact the project. In this review Intrax have identified four landslide hazards, however, deem that only two have the potential to impact the project site. The identified hazards are:

A) Rock topple
B) Rock fall
C) Block group topple
D) Shallow debris flow

A typical block topple landscape within Dolerite is shown within Figure 3-1, this formation and aftermath are visible throughout Mount King William project site.

Figure 8
Large block topple failure in Jurassic dolerite, 'The Lost World', Mt Arthur, Hobart. The site has substantially revegetated since this photo was taken.

Figure 3-1: Rock toppling landscape (Mazengarb & Stevenson, 2010)

Hazard A – Rock topple is a documented risk within the Jurassic Dolerite outcrops across Tasmania. The process of rock toppling is demonstrated within Figure 3-2. Rock toppling is typically triggered by a combination of stress relief, frost-thaw pressures, water behind blocks and jacking from tree roots.

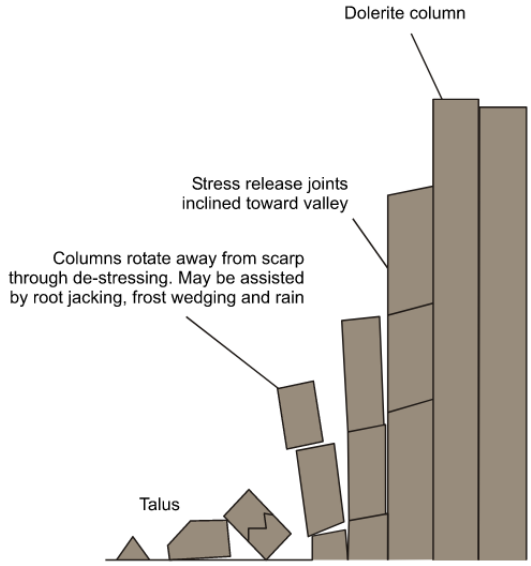


Figure 3-2: Rock topple process (Mazengarb & Stevenson, 2010)

Hazard B – Rock fall is similar to rock topple events however may not be associated with tall columnar blocks, it can occur on already loose material which remobilises or as a result of an upslope rock topple event. Larger toppled columns shall shatter resulting in a series of rock falls or collide with other loose rocks triggering them to fall.

Hazard C – Block group toppling involving toppling columnar blocks is the toppling of several blocks at once caused by destabilisation occurring from the base of the columns. This hazard is demonstrated graphically in Figure 3-3. The geological makeup of site contains a vast extent of outcropped dolerite therefore is less susceptible to group toppling as the underlying material is stable (at least within the project extent).

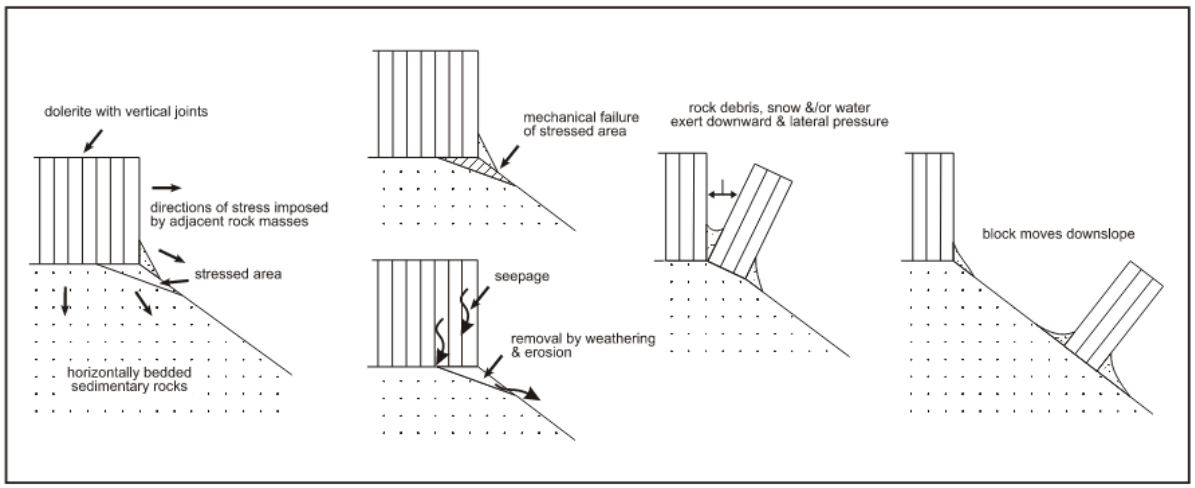


Figure 3-3: Block group topple process (Mazengarb & Stevenson, 2010)

Hazard D – Debris flows are the movement of large particle masses in a fast and significant sliding movement, generally appearing to move a liquid (hence the term flow). Debris flows within dolerite formations across Tasmania typically occur on the side slopes of mountains where deposited materials from the peak becomes unstable (typically from significant rainfall) and the surface material flows downslope. This generally occurs within gullies where water flow is concentrated and creates the flow path for the mass to move. Debris including rocks and trees are collected as the flow moves, which can often over hundreds of metres until coming to rest at the base of slopes. Large scale debris flows may be occurring at lower reaches of Mount King William however are not anticipated to impact the project site. Evidence of small debris flows containing rock talus is present around the project site, however for simplicity Intrax have classified those as rock falls given they are of limited size and

expected to comprise material originating from rock toppling and fall events of larger pieces colliding with and becoming finer material.

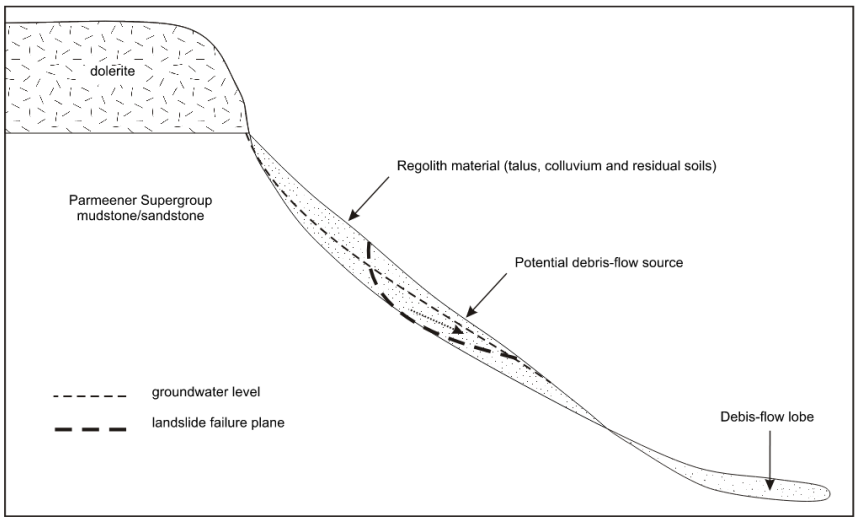


Figure 3-4: Common debris flow process for Tasmania (Mazengarb & Stevenson, 2010)

Intrax have mapped the extent of previous and possible rock fall and rock toppling across the project site, an extract from this map is presented in Figure 3-5 (refer Appendix A for full map). Hazard mapping only includes Hazards A & B, which are deemed plausible to impact the site. As shown in the proposed plans there the proposed development is located within areas of potential or rock fall or toppling – as the majority of the site mountain top is at risk of the one or the other. Minor intact rock areas at local peaks protected from cliff edges are not mapped as the landslide risk is very low for these areas within the project lifetime.

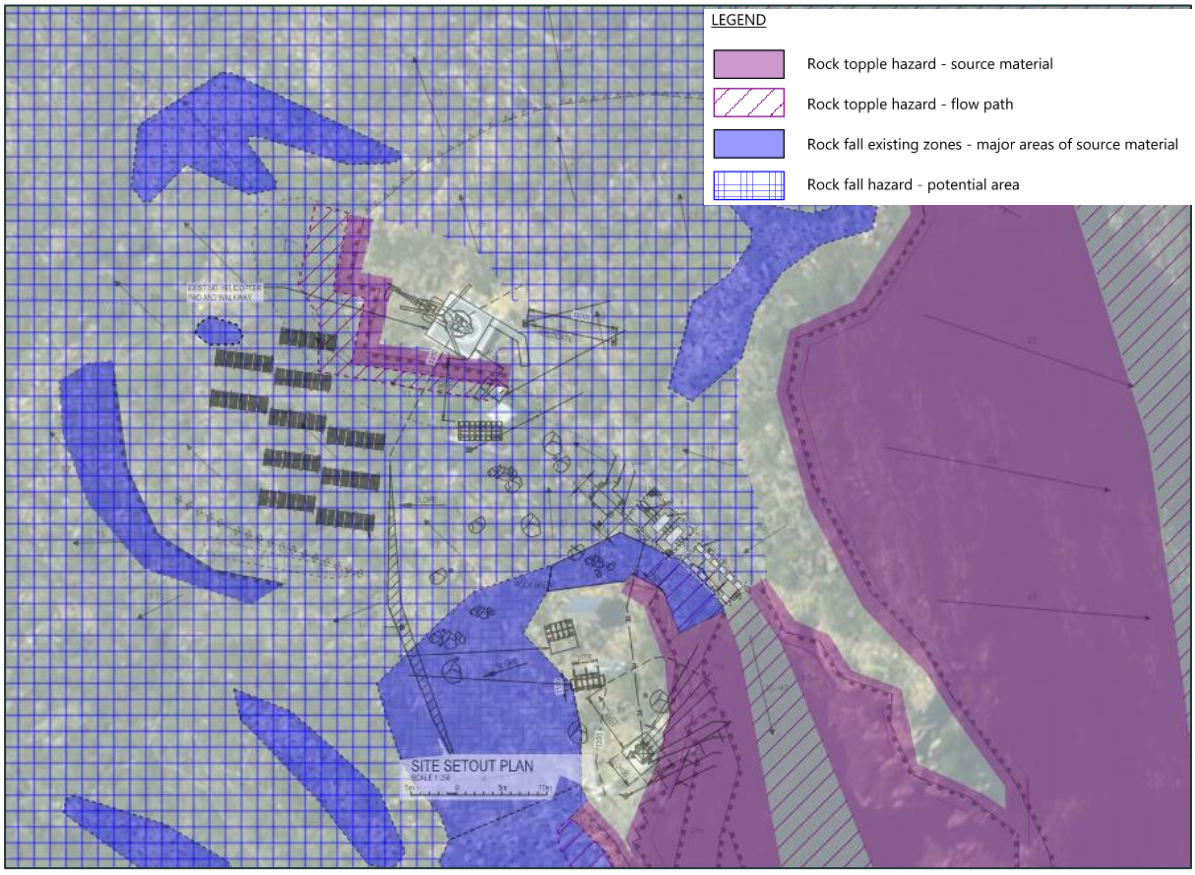


Figure 3-5: Hazard map (Appendix A)

3.2 Risk Assessment

To assess the landslide risk, the susceptibility (likelihood) and consequence of hazards have reviewed against the proposed development locations. Hazards C & D are not considered realistic likelihood of impacting the development and have therefore not been considered.

The rational for likelihood (susceptibility) of rock topples and rock falls are presented within drawing 3 in Appendix A. The consequence and risk adopted are in line with AGS 2007 guidelines (refer Appendix B). Based on the hazard identification, susceptibility rational and location of proposed structures Intrax has classified the existing landslide risk for proposed project element. The landslide risk assessment is provided in Table 3-1 & Table 3-2.

Table 3-1: Rock Topple Risk Assessment

Hazard A) Rock Topple	Likelihood	Consequence	Landslide Risk
Solar Array	Unlikely	Limited damage to part of array (Minor)	Low
Shelter, Generators & Batteries	Barely Credible	Insignificant	Very Low
7.0 m Mast	Rare	Complete loss of structure (catastrophic)	Moderate
Connecting Cables	Unlikely (worst case)	Breakage at single location – repairable (Medium)	Low

Table 3-2: Rock Fall Risk Assessment

Hazard A) Rock Fall	Likelihood	Consequence	Landslide Risk
Solar Array	Possible to Rare	Limited damage to part of array (Minor)	Very Low to Moderate
Shelter, Generators & Batteries	Rare to Unlikely	Insignificant to Minor	Very Low to Low
7.0 m Mast	NA	NA	NA
Connecting Cables	Possible	Breakage at single location – repairable (Medium)	Moderate

3.3 Conclusions

Based on the conducted risk assessment, a moderate landslide risk is applicable to rock topple impacting the mast and rock fall impacting the solar array and connecting cables.

Moderate risk is typically considered borderline acceptable with respect to development approval and the typical risk tolerance of the industry. Intrax's review of surrounding areas of the mountain top suggest that the proposed development is in the lowest risk area possible for this mountain peak. Given the extreme location of this project

and limited opportunities to relocate the development to a lower risk location Intrax believes the moderate risk shall be tolerable to stakeholders to proceed with the development.

Limited actions can be taken to reduce the landslide risk applicable to this development, however the following controls would be prudent for this site:

1. Onsite assessment of the proposed locations for identification of high-risk boulders which would impact the development if they fell after construction. Where identified unsafe boulders can be rolled downslope in a controlled manner before construction.
2. Inspection of the existing tower pad and supporting rock mass for defect orientation, roughness, persistence, and conditions.

Following implementation of the above controls Intrax anticipates that risk levels across the development could be reduced to low where favourable rock structure is observed below the tower foundation.

Other controls such as rock bolting or anchoring are possible to reduce toppling risk or pin back possible rock falls however this is not likely to be justifiable for the risk profile of the site.

4 Hold Points

Intrax must be engaged in the following events for further clarification and advice:

1. Following any landslide events within the project site
2. Assumptions and conclusions made within this report based on desktop information is proven to be inaccurate.
3. If project design is altered significantly from drawings reviewed and outlined or project described within this report

5 References

AS 1726. (2017). Geotechnical site investigations. Sydney: Standards Australia, Retrieved from SAI Global.

AS 2159. (2009). Piling-Design and Installation. Sydney: Standards Australia, Retrieved from SAI Global.

Mazengarb, C., & Stevenson, M. D. (2010). Tasmanian Landslide Map Series: User guide and technical methodology. *Record Geological Survey*.

Nearmap. (n.d.). *Nearmap*. Retrieved 2022, from nearmap.com/au

6 Limitations of Report

1. The recommendations in this report are based on the following:
    a. Information about the site & its history, proposed site treatment and building type conveyed to us by the client and or their agent.
    b. Professional judgements and opinions using the most recent information in soil testing practice that is available to us.
    c. The location of our test sites and the information gained from this and other investigations.

    Should the client or their agent neglect to supply us with correct or relevant information, including information about previous buildings, trees or past activities on the site, or should changes be made to the building type, size and or/position, this report may be made obsolete, irrelevant or unsuitable. In such cases, Intrax will not accept any liability for the consequences and Intrax reserves the right to make an additional charge if more testing or a change to the report is necessary.
2. The recommendations made in this report may need to be reviewed should any site works disturb any soil below the proposed founding depth.
3. The descriptions of the soils encountered in the boreholes follow those outlined in AS1726-2017; Geotechnical Site Investigations. Colour descriptions can vary with soil moisture content and individual interpretation.
4. If the site conditions at the time of construction differ from those described in this report, then Intrax must be contacted so a site inspection can be carried out prior to any footing being poured. The owner/builder will be responsible for any fees associated with this additional work.
5. This report assumes that the soil profile(s) observed in the boreholes are representative of the entire site. If the soil profile and site conditions appear to differ substantially from those reported herein, then Intrax should be contacted immediately and this report may need to be reviewed and amended where appropriate. The owner/builder will be responsible for any fees associated with this additional work.
6. The user of this report must consider the following limitations. Soil and drilling depths are given to a tolerance reflective of the drilling methodology. Lower levels of accuracy are possible from wash boring or solid flight auger then is achievable from geoprobe sampling or diamond coring.

    It must be understood and a condition of acceptance of this report is that whilst every effort is made to identify fill material across the site, difficulties exist in determining fill material for example, well compacted site won or area derived fill, especially when utilising a small diameter auger. Consequently, Intrax emphasises that we will not be responsible for any financial losses, consequential or otherwise, that may occur as a result of not accurately determining the fill profile across the site.
7. Finally, no responsibility will be taken for this report if it is altered in any way or is not reproduced in full.

Appendix A

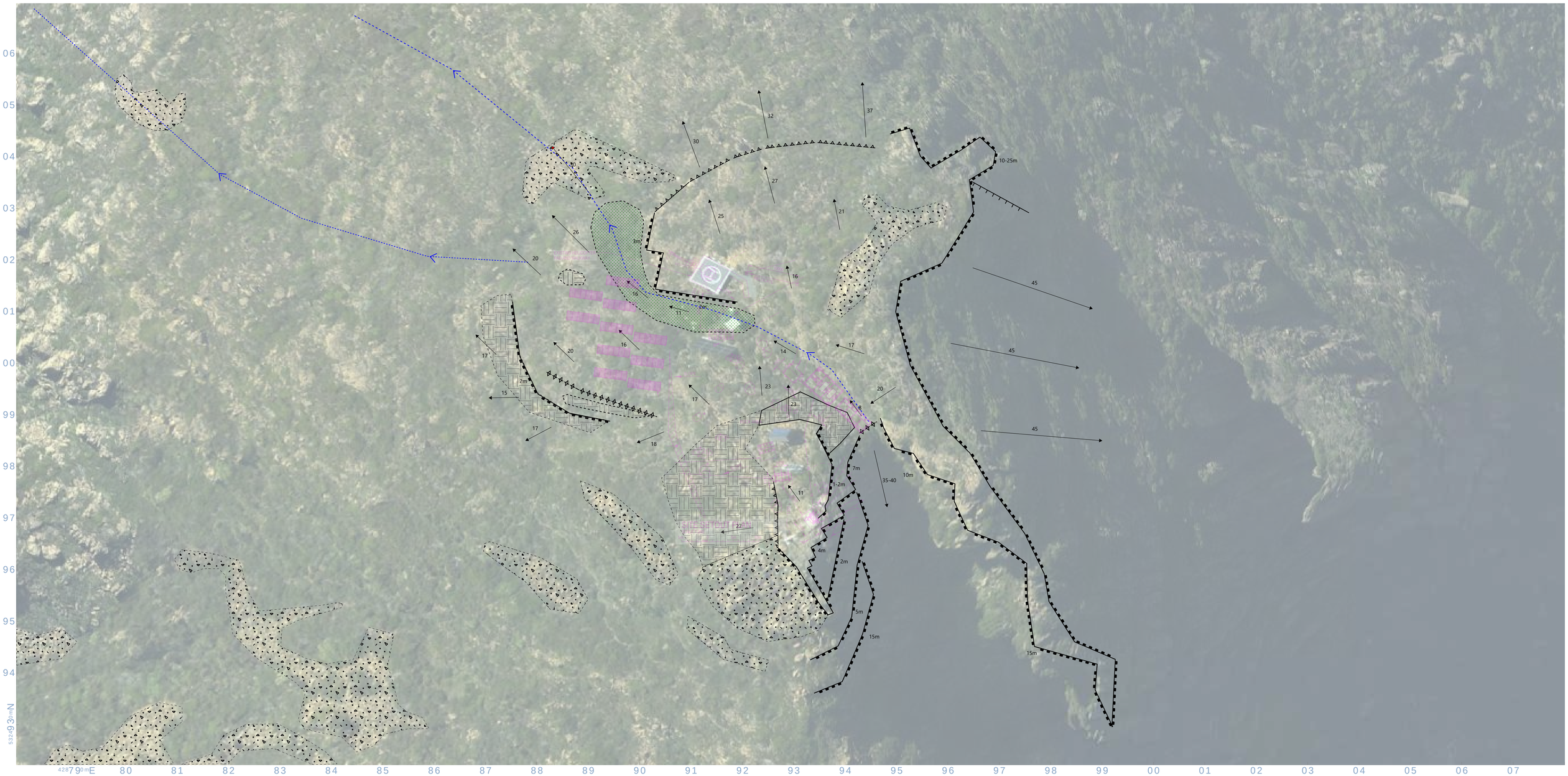
Project Drawings

Geotechnical Plan

Landslide Hazards

Landslide Susceptibility Sketch

Geotechnical Plan



LEGEND

- Talus minor scree
- Layer of toppled blocks
- Inferred soil profile
- 2m — Cliff / Escarpment / Sharp break 40 degrees or more (estimated drop in metres)
- Convex well defined or angular break in slope
- Concave well defined or angular break in slope
- Convex poorly defined or smooth break in slope
- Concave poorly defined or smooth break in slope
- 10 — Slope direction and approximate angle (degrees)
- Prominent drainage path

N

0 5 10 20

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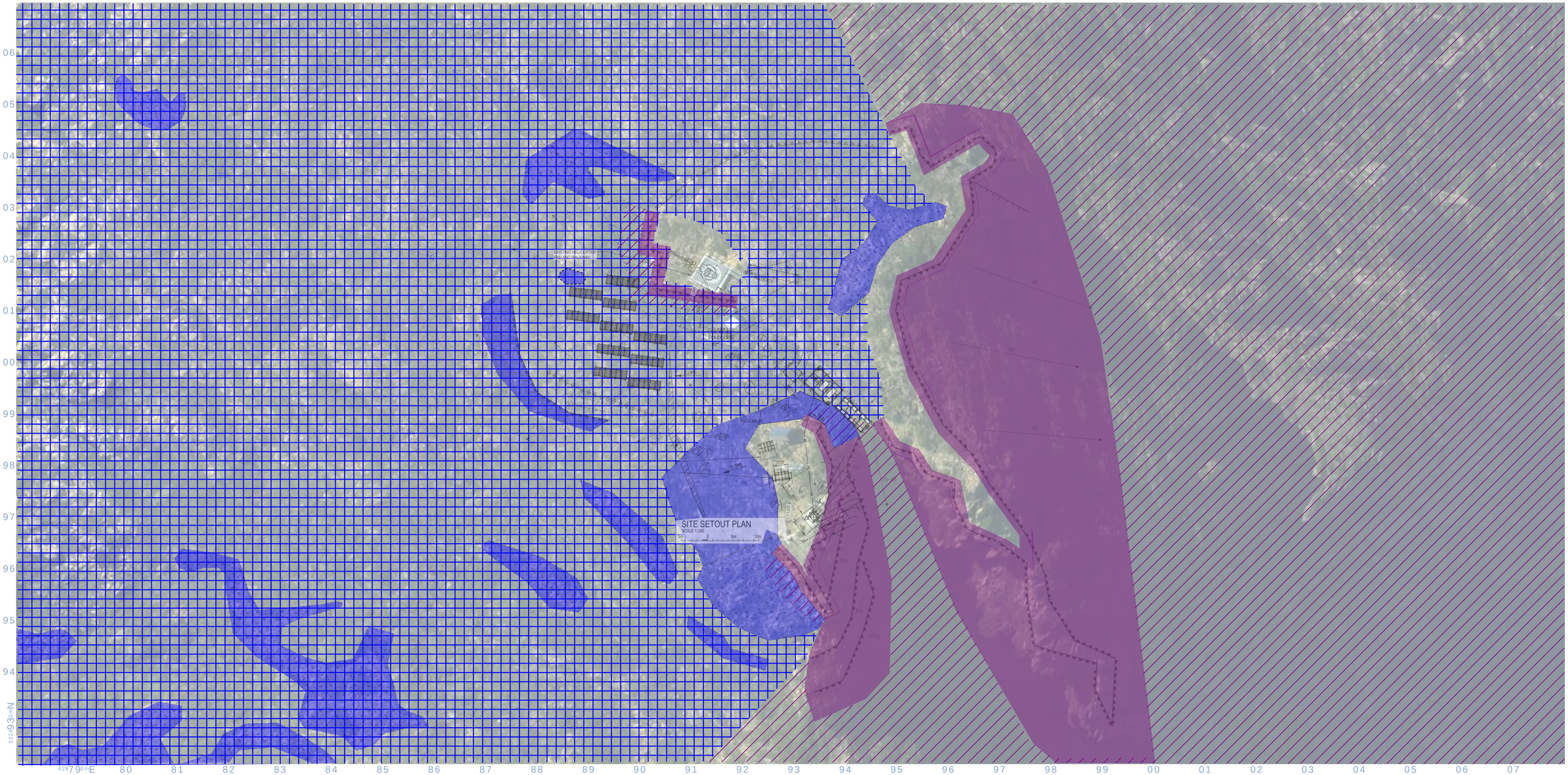
	CHECKED: S.Emmett	SITE NO.: 167549	
CLIENT: Downer EDI Engineering Pty Ltd	SCALE: -	DOC ID: 167549-PRJ895041-GEO-DWG-01	
	DATE: 23.02.2023	VERSION: 0	

Landslide Hazard Map



LEGEND

- Rock topple hazard - source material
- Rock topple hazard - flow path
- Rock fall existing zones - major areas of source material
- Rock fall hazard - potential area

N

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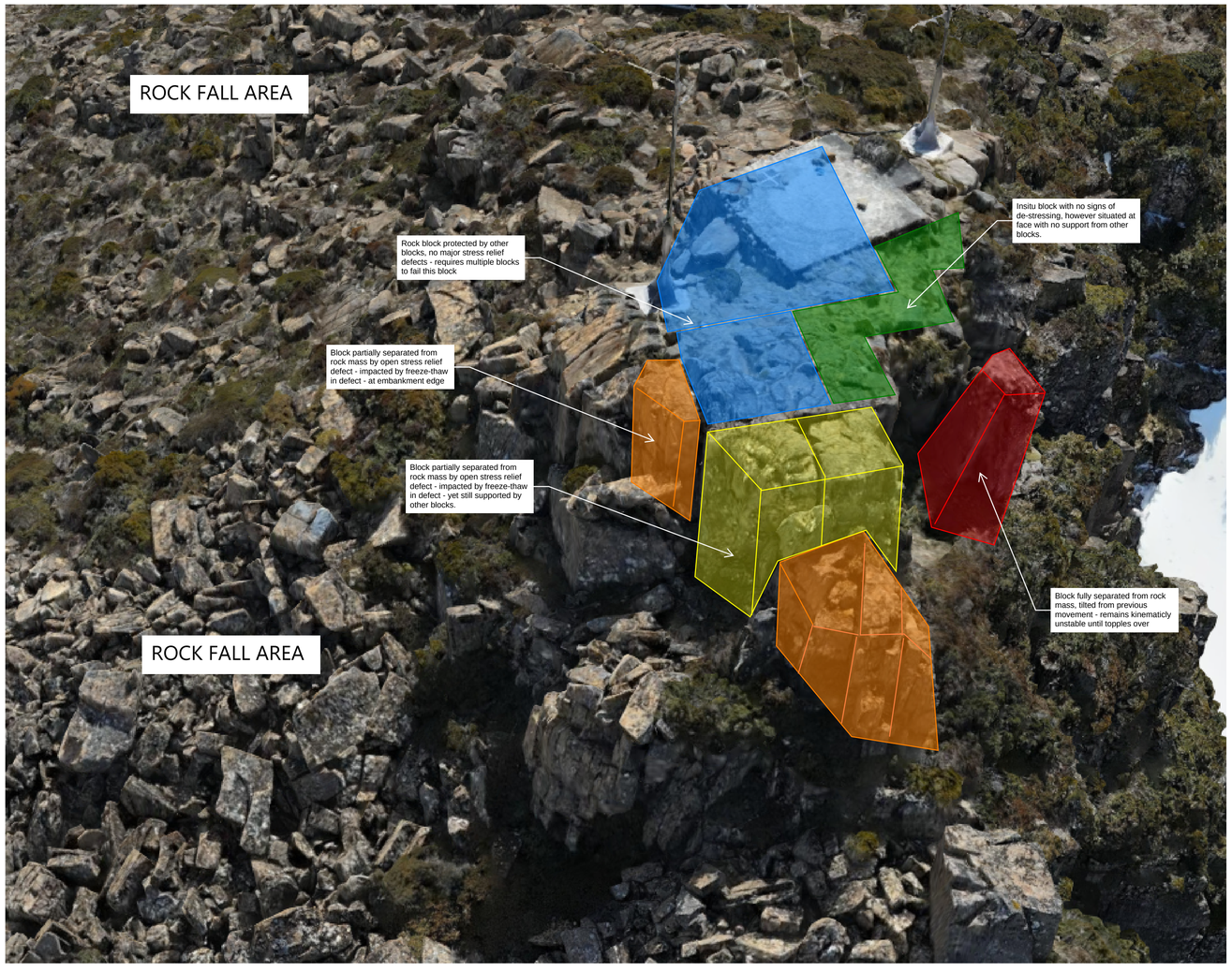
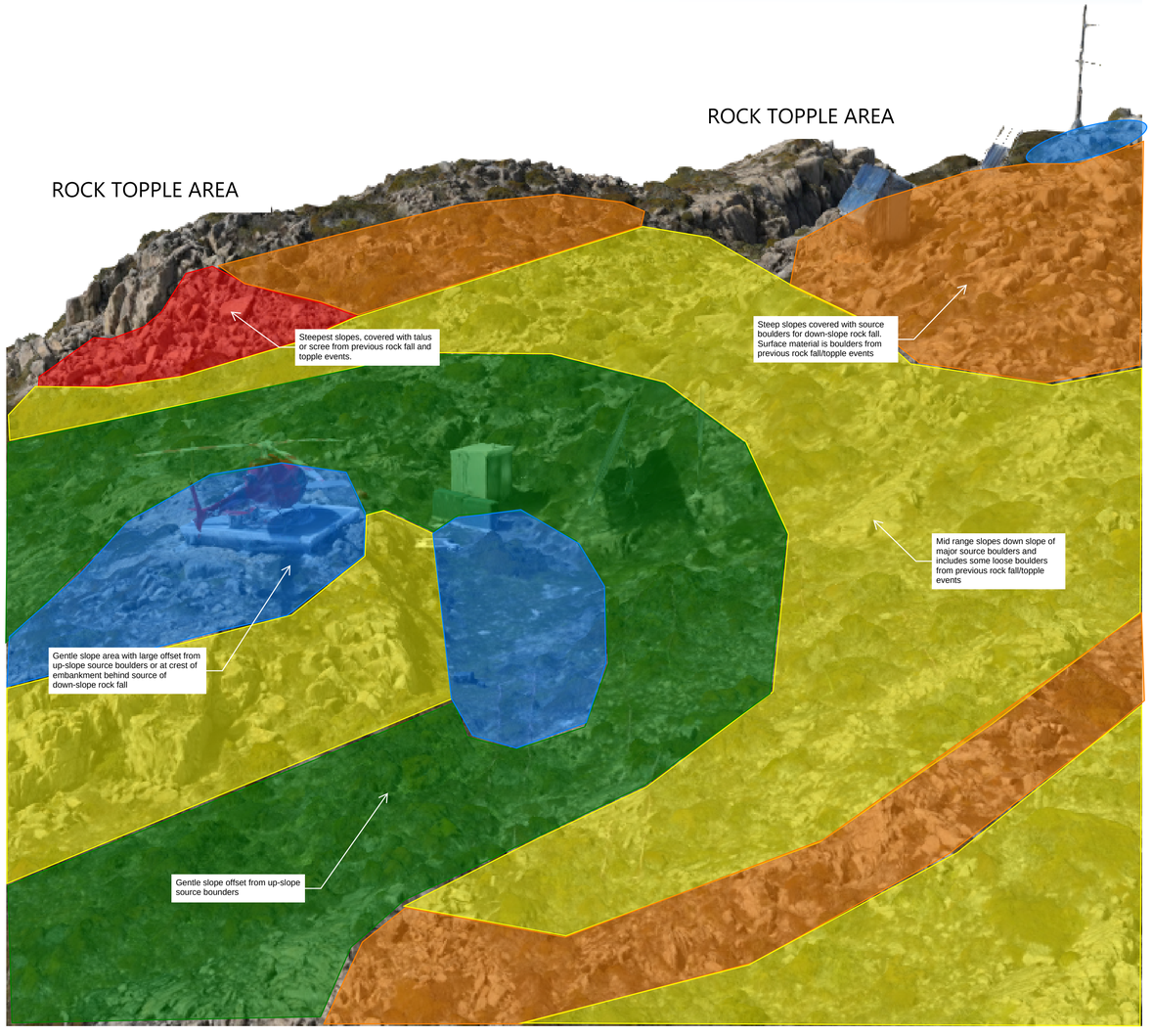
Landslide Susceptibility



Rock Topple Susceptibility Diagram



Rock Fall Susceptibility Diagram

LEGEND

- Almost certain
- Likely
- Possible
- Unlikely
- Rare
- Barely credible

Not all areas of the images have been evaluated - the sketches are provided as a guide to conditions which relate to susceptibility

N

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	CHECKED: S.Emmett	SITE NO.: 167549	
CLIENT: Downer EDI Engineering Pty Ltd	SCALE: -	DOC ID: 167549-PRJ895041-GEO-DWG-03	
	DATE: 23.02.2023	VERSION: 0	

Appendix B

AGS Practice Notes 2007 Risk Assessment Matrix

PRACTICE NOTE GUIDELINES FOR LANDSLIDE RISK MANAGEMENT 2007

APPENDIX C: LANDSLIDE RISK ASSESSMENT

QUALITATIVE TERMINOLOGY FOR USE IN ASSESSING RISK TO PROPERTY

QUALITATIVE MEASURES OF LIKELIHOOD

Approximate Annual Probability		Implied Indicative Landslide Recurrence Interval		Description	Descriptor	Level
Indicative Value	Notional Boundary					
10^{-1}	$5x10^{-2}$	10 years	20 years	The event is expected to occur over the design life.	ALMOST CERTAIN	A
10^{-2}		100 years		The event will probably occur under adverse conditions over the design life.	LIKELY	B
10^{-3}	$5x10^{-3}$	1000 years	200 years	The event could occur under adverse conditions over the design life.	POSSIBLE	C
10^{-4}	$5x10^{-4}$	10,000 years	2000 years	The event might occur under very adverse circumstances over the design life.	UNLIKELY	D
10^{-5}	$5x10^{-5}$	100,000 years	20,000 years	The event is conceivable but only under exceptional circumstances over the design life.	RARE	E
10^{-6}	$5x10^{-6}$	1,000,000 years	200,000 years	The event is inconceivable or fanciful over the design life.	BARELY CREDIBLE	F

Note: (1) The table should be used from left to right; use Approximate Annual Probability or Description to assign Descriptor, not *vice versa*.

QUALITATIVE MEASURES OF CONSEQUENCES TO PROPERTY

Approximate Cost of Damage		Description	Descriptor	Level
Indicative Value	Notional Boundary			
200%	100%	Structure(s) completely destroyed and/or large scale damage requiring major engineering works for stabilisation. Could cause at least one adjacent property major consequence damage.	CATASTROPHIC	1
60%	40%	Extensive damage to most of structure, and/or extending beyond site boundaries requiring significant stabilisation works. Could cause at least one adjacent property medium consequence damage.	MAJOR	2
20%	10%	Moderate damage to some of structure, and/or significant part of site requiring large stabilisation works. Could cause at least one adjacent property minor consequence damage.	MEDIUM	3
5%	1%	Limited damage to part of structure, and/or part of site requiring some reinstatement stabilisation works.	MINOR	4
0.5%		Little damage. (Note for high probability event (Almost Certain), this category may be subdivided at a notional boundary of 0.1%. See Risk Matrix.)	INSIGNIFICANT	5

Notes: (2) The Approximate Cost of Damage is expressed as a percentage of market value, being the cost of the improved value of the unaffected property which includes the land plus the unaffected structures.

(3) The Approximate Cost is to be an estimate of the direct cost of the damage, such as the cost of reinstatement of the damaged portion of the property (land plus structures), stabilisation works required to render the site to tolerable risk level for the landslide which has occurred and professional design fees, and consequential costs such as legal fees, temporary accommodation. It does not include additional stabilisation works to address other landslides which may affect the property.

(4) The table should be used from left to right; use Approximate Cost of Damage or Description to assign Descriptor, not vice versa

PRACTICE NOTE GUIDELINES FOR LANDSLIDE RISK MANAGEMENT 2007

APPENDIX C: – QUALITATIVE TERMINOLOGY FOR USE IN ASSESSING RISK TO PROPERTY (CONTINUED)

QUALITATIVE RISK ANALYSIS MATRIX – LEVEL OF RISK TO PROPERTY

LIKELIHOOD		CONSEQUENCES TO PROPERTY (With Indicative Approximate Cost of Damage)				
	Indicative Value of Approximate Annual Probability	1: CATASTROPHIC 200%	2: MAJOR 60%	3: MEDIUM 20%	4: MINOR 5%	5: INSIGNIFICANT 0.5%
A – ALMOST CERTAIN	10^{-1}	VH	VH	VH	H	M or L (5)
B - LIKELY	10^{-2}	VH	VH	H	M	L
C - POSSIBLE	10^{-3}	VH	H	M	M	VL
D - UNLIKELY	10^{-4}	H	M	L	L	VL
E - RARE	10^{-5}	M	L	L	VL	VL
F - BARELY CREDIBLE	10^{-6}	L	VL	VL	VL	VL

Notes: (5) For Cell A5, may be subdivided such that a consequence of less than 0.1% is Low Risk.

(6) When considering a risk assessment it must be clearly stated whether it is for existing conditions or with risk control measures which may not be implemented at the current time.

RISK LEVEL IMPLICATIONS

Risk Level		Example Implications (7)
VH	VERY HIGH RISK	Unacceptable without treatment. Extensive detailed investigation and research, planning and implementation of treatment options essential to reduce risk to Low; may be too expensive and not practical. Work likely to cost more than value of the property.
H	HIGH RISK	Unacceptable without treatment. Detailed investigation, planning and implementation of treatment options required to reduce risk to Low. Work would cost a substantial sum in relation to the value of the property.
M	MODERATE RISK	May be tolerated in certain circumstances (subject to regulator's approval) but requires investigation, planning and implementation of treatment options to reduce the risk to Low. Treatment options to reduce to Low risk should be implemented as soon as practicable.
L	LOW RISK	Usually acceptable to regulators. Where treatment has been required to reduce the risk to this level, ongoing maintenance is required.
VL	VERY LOW RISK	Acceptable. Manage by normal slope maintenance procedures.

Note: (7) The implications for a particular situation are to be determined by all parties to the risk assessment and may depend on the nature of the property at risk; these are only given as a general guide.

Appendix C

MapScene Photography

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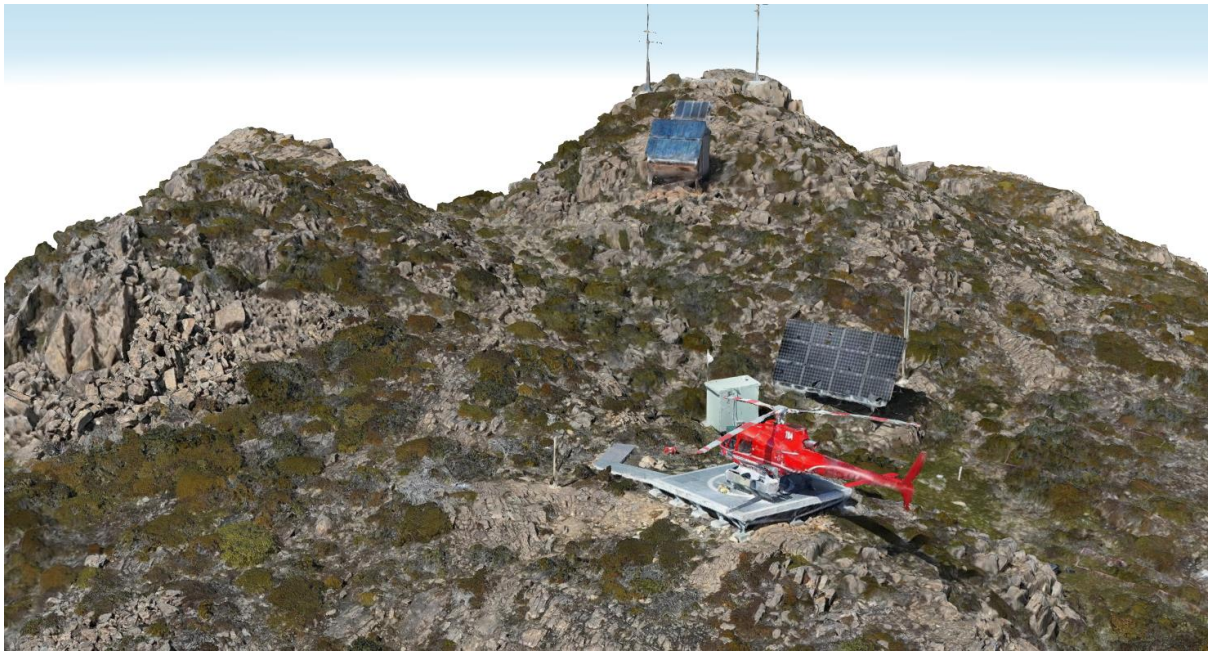

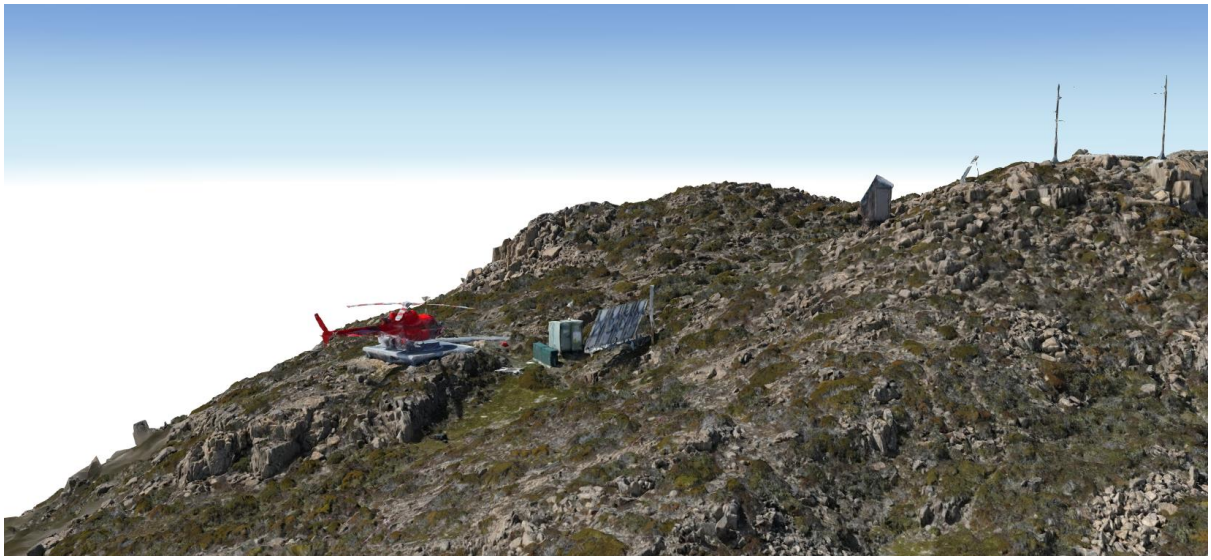

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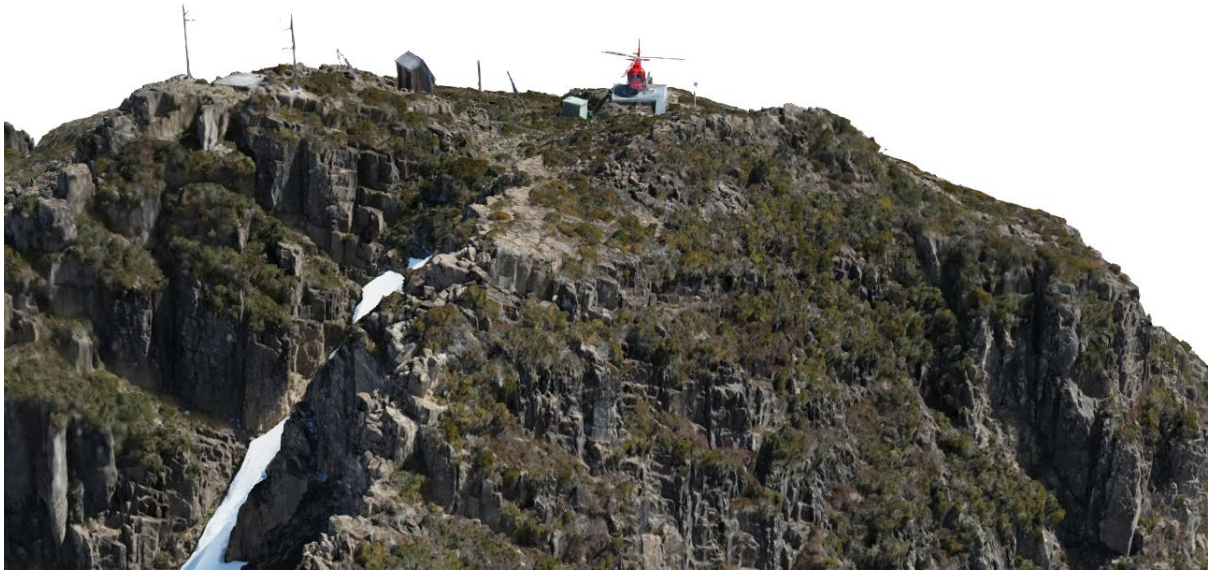

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