Planning Report

Proposed Telstra Telecommunications Facility

Perisher Valley Telstra Exchange – Kosciuszko Road, PERISHER VALLEY NSW 2624

March 2013

urbis

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Executive Summary

Site and Proposal Details

Address of Site	Perisher Valley Telstra Exchange – Kosciuszko Road, Perisher Valley NSW 2624
Legal Property Description	N/A
Local Authority	National Parks and Wildlife Service and Department of Planning & Infrastructure
Land Manager/Lessor	National Parks and Wildlife Service
Area Designation	Kosciuszko National Park
Purpose of Proposal under the LEP	Telecommunications Facility
Owner	NSW National Parks and Wildlife Service

Applicant Details

Applicant	Telstra Corporation Limited ABN 051 775 556 C/- Urbis GPO Box 5278, NSW SYDNEY 2001	
Contact Person	Jon Mills	Ph. 02 8233 9923 jmills@urbis.com.au
Our Reference	Perisher Valley TE	

1 Introduction

This Statement of Environmental Effects has been prepared by Urbis on behalf of Telstra as supporting information to an application for development consent for the installation of a telecommunications facility at Perisher Valley Telstra Exchange, Kosciuszko Road, Perisher Valley NSW 2624.

This report addresses the merits of the development with regard to the provisions of the State Environment Planning Policy (Kosciuszko National Park – Alpine Resorts) 2007.

This development application involves:

- The construction of a 25 metre Telstra monopole, with a one meter extension.
- The attachment of six new CNNPX310R-6P panel antennas.
- The installation of ancillary equipment, including feeders to be installed in underground conduits and the attachment of a cable ladder to be fixed to the existing Telstra Exchange building wall.

The overall height of the monopole will be 26.3m.

The proposal is considered to be appropriate for the subject site for the following reasons:

- The proposal will improve 3G communications services to the area, including voice calls, video calling and Wireless Broadband - a high speed wireless internet service via the 3G phone network.
- The surrounding area consists of National Park and Alpine Resort. The proposal does not conflict with these land uses and will improve communications for the National Parks and Wildlife Service (NPWS), emergency services, commercial operators, visitors and locals alike.
- The siting of the proposal adjacent to the Telstra Exchange building will minimise the impact of the structure on the visual amenity and character of the surrounding landscape.
- The proposal would provide the surrounding area with a significantly improved level of essential mobile and wireless telecommunications coverage. This is particularly necessary in ensuring that mobile communication to emergency services is readily available at all times.
- The subject site comprises of land designated for Infrastructure services – namely the Telstra Exchange and the Waste Transfer Station. The proposal will not conflict with the existing use of the site or the surrounding area.
- The proposal will have minimal impact on the natural environment, having no vegetation on the site and having an established infrastructure use through the existing Telstra Exchange building.

The key purpose for this proposed facility upgrade is to improve the telecommunications capacity of the area – being the number of people utilising their telecommunications devices at one time. This is because of the substantial technological advances experienced and the increase in the number of people visiting Perisher Valley over the past few years.

The proposed development is appropriate and necessary for the area and therefore the NSW Department of Planning and Infrastructure's approval of the application is sought. This report should be read in conjunction with the plans attached at Appendix 1.

2 Mobile Telecommunications Systems

Mobile telecommunications systems are based on the use of small, low-powered, intelligent two-way radio transmitters (mobile phones) that are interconnected over radio channels to the telephone network via a series of mobile base stations.

A network of base stations provides coverage across the region. Each base station consists of a series of antennas, an equipment shelter and associated cabling, and is designed to provide network coverage to the area immediately surrounding the base station – up to several kilometres. Depending on coverage requirements and objectives, and the particular characteristics of each site, the shape, number and size of antennas will vary for each location (see **Figure 1**).

Each base station transmits and receives signals to and from mobile devices in the area. As the mobile phone user moves around, their handset will communicate with the nearest set of antennas to them at all times. If they cannot pick up a signal, or the nearest base station is congested (already handling the maximum number of phone calls) the user may not be able to place a call, or a call might "drop out".

The signals transmitted between the base station antennas and mobile phone need to be unimpeded, which mean that reliable communication is limited mainly to "line of sight" of the mobile device. Whilst some buildings and foliage can be penetrated, radio signals cannot penetrate more substantial objects, such as hills.

As a general rule, the higher a base station is elevated and the taller a base station structure is, the greater its range of coverage. If this height is compromised, additional base stations, and thus more infrastructure will be required for any given locality. The further a base station is located away from its technically optimum position, the greater the compromise of coverage. This may result in coverage gaps and require additional base stations to provide adequate coverage.

Figure 1 – Diagram demonstrating Mobile Phone Networking.

Telstra is in the process of improving its 3G network. This 3G network delivers all existing, essential mobile services (voice calling, SMS) as well as live video calling, video-based content services including news, finance and sports highlights, and a high-speed wireless internet services via the 3G phone network – Wireless Broadband.

Importantly, 3G transmissions can include large packets of data (video clips for example) – and therefore transmissions can be very "capacity hungry". (This has the same effect as large downloads on your home computer – which may take a longer time to download.) As a consequence of the nature of the large data transfers, 3G networks require more network facilities, located closer together to ensure a high quality signal strength that provides a reliable service delivering the fastest possible data transfer rates.

Telstra will always endeavour to co-locate 3G Network facilities with existing Network facilities wherever possible. However, the technical demands of the 3G service, outlined briefly above, will require additional stand-alone facilities to be built in areas where existing facilities are not well located, or are insufficient to provide ubiquitous 3G services.

3 Purpose of the Proposal

As demand grows on mobile telecommunications networks, additional investment is required to match capacity to demand. In the case of the service provided by the existing Telstra sites in the area, many investments have been made to increase the capacity of these facilities and the other surrounding facilities. These include utilising additional radio channels, sectorisation or cell splitting and spreading the load over all the different frequency bands that are available to Telstra under its telecommunications Carrier licence.

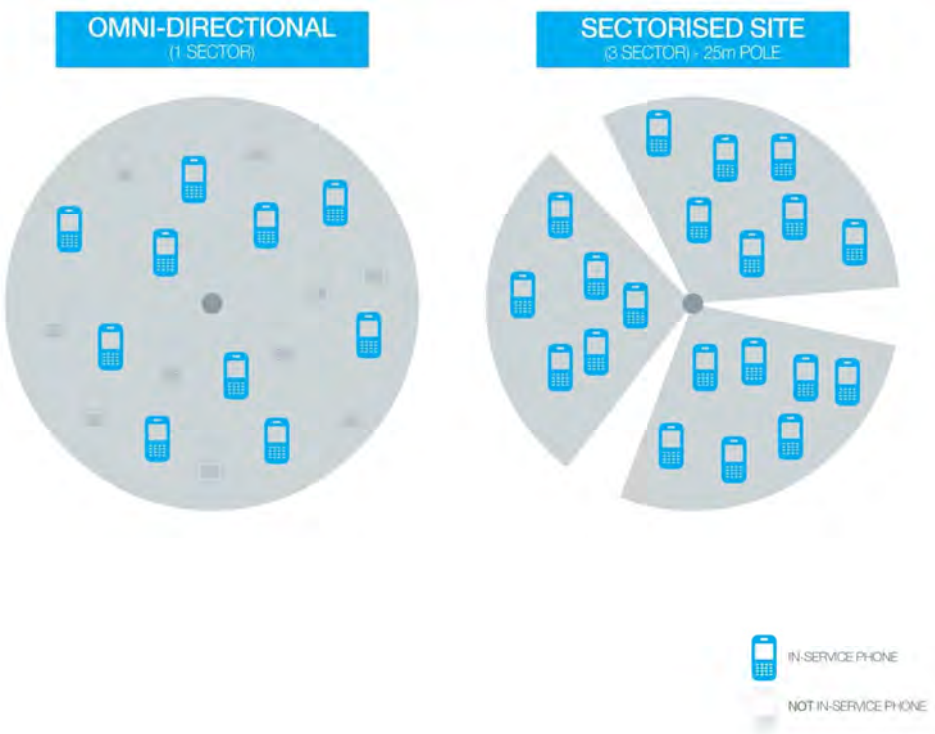
If this is not introduced into the network in this area then two main issues arise:

1) Customers may have difficulty connecting to the network or the call may drop out.

2) Reduced data speeds may be experienced with longer download times and poor performance at busy times of the day of data intensive or time sensitive applications (e.g. video) due to the available capacity being shared across too many customers.

For Perisher Valley, the current telecommunications service is provided by Omnidirectional antennas; that is, one directional antennas that cover a 360° radius. Omnidirectional antennas are unable to provide the capacity required to adequately service Telstra's 3G customers. The solution to the capacity issue is to sectorise the 3G service on the site. That is, to replace the current 3G Omnidirectional antennas with panel antennas. Panel antennas provide greater capacity by targeting specific zones within a 360° radius.

Figure 2 – Omnidirectional antennas versus Sectorisation (Source: Urbis 2013)



What is driving the sites to reach Capacity?

Telstra customers demand for mobile broadband, voice and video services. Since the introduction of Smartphone's tablet devices together with wireless internet and social networking applications Telstra is experiencing a DOUBLING EVERY YEAR of wireless demand.

Telstra's network plan to address the capacity issue:-

> *Where a local facility has served a community in the past we may now need to upgrade the existing facility through sectorisation. This will assist in giving improved service and dedicated resources to the areas that are experiencing performance gaps.*
>
> *This improved facility is required to ensure the customers of the Perisher community do not experience less than optimal services and can seamlessly enjoy the lifestyle and level of services they enjoy today.*

The existing facility at Perisher Valley TE only has one sector (technology processor). Telstra has deployed all of the technology it can on this one sector, however there remains to be insufficient capacity, being unable to service traffic (phone and data/internet) that people in the area are generating.

This is due to the 50% increase per year in data/internet usage that has been experienced in the area.

By creating three sectors, the network capacity of the area will increase by three times. This will ensure that customer expectations are met, as well as reduce the need for installation of additional infrastructure in the future.

Figure 3 – Common devices driving the sites to capacity

4 Background of the Site

The existing 11m timber pole and antenna mounts on the site were installed as a temporary measure by the applicant. This was done as a result of the recent development of the Waste Transfer Station to the rear of the Telstra Exchange building, as shown in Figure 4.

Figure 4 – Image of the Waste Transfer Station located to the south-east of the Telstra Exchange Building (Source: Urbis 2012)

This new Station was found to interfere with the signal of the pre-existing facility, which ultimately became ineffective in providing adequate telecommunications capacity and coverage for the area. The timber pole facility that currently exists on the site was subsequently installed as a means for continuing to provide sufficient mobile capacity and coverage to the area. This also presented an opportunity for Telstra to assess whether there were any alternative locations and/or means for providing an improved telecommunications facility in the area.

It is considered to be in the public interest that telecommunications coverage reaches the nearby ski slopes to enable effective emergency communication at all times. As the current facility does not service this essential need and it is the only telecommunications facility within the Perisher Valley village, it is necessary that the optimum amount of telecommunications coverage is achieved through the proposed upgrade. However, the technical requirements for improved coverage in the Perisher Valley area indicate that a tower of 25m would be needed. This is due to the proposed new technology and the topography of Perisher Valley, in which key target areas identified are elevated >25m from the village. This is further detailed in Sections 5 and 12 of this report.

Meanwhile, if the facility were to be relocated away from the village only certain target areas would be covered, meaning that additional infrastructure (monopoles) would be required in order to provide complete coverage. Taking this into consideration, it was determined that the existing Telstra Exchange property was the most appropriate and least sensitive site to accommodate the upgraded facility. This is further detailed in Section 4 of this report.

As such, the proposal that is the subject of this development application seeks to provide a more permanent facility by removing the timber pole and relocating the facility within the Telstra Exchange property.

5 Justification for the Site

The geographical restrictions of Perisher Valley area provide limited options for locating a telecommunications facility. As an existing Telstra site, the Telstra Exchange Building is considered to have the least impact on the surrounding community, commercial businesses and natural environment, whilst also being able to meet the technical requirements for improved coverage and reception in the area.

Consideration has been given to alternatives to this proposal. These alternatives are examined below.

5.1 Potential Sites

5.1.1 Existing Site

The existing temporary facility is located adjacent to the south-eastern elevation of the Telstra Exchange building, off Kosciuszko Road. It is listed as site number 6264004 on the Radio Frequency National Site Archive (RFNSA) website. It consists of an 11m timber pole tower.

As indicated in Section 3, there is a need to relocate and upgrade the existing temporary facility within the Telstra Exchange property. Replacing and relocating the temporary facility is considered to be necessary for the following reasons:

- The timber pole will eventually be susceptible to rotting, particularly due to the significant fluctuations in temperature throughout the year within Perisher Valley;
- The timber pole is not structurally capable of supporting new and future technologies;
- The temporary facility provides limited mobile capacity for the area, providing only one sector;
- The existing tower presents a significant occupational health and safety hazard to NPWS staff and contractors, particularly during the winter months. Ice often builds up on the antennas and frequently falls during windy conditions or thawing periods;
- The temporary facility restricts vehicle (particularly truck) movement within the existing yard, posing an issue for the adjacent Waste Transfer Station.

As such, relocating the facility to the south-western elevation of the Telstra Exchange building is considered to be suitable.

As mentioned above, the current timber pole will not structurally support sectorisation. The current pole could be replaced by a concrete pole of the same height, however Telstra has identified that this will not enable the use of future technologies which operate at higher frequencies. This is because the higher frequencies cover a smaller area than the current 3G frequency at Perisher Valley.

Telstra is committed to meeting customer expectations and anticipate technology upgrades to be required at this site in the relatively near future. A pole of the current height will not support any future technology upgrades.

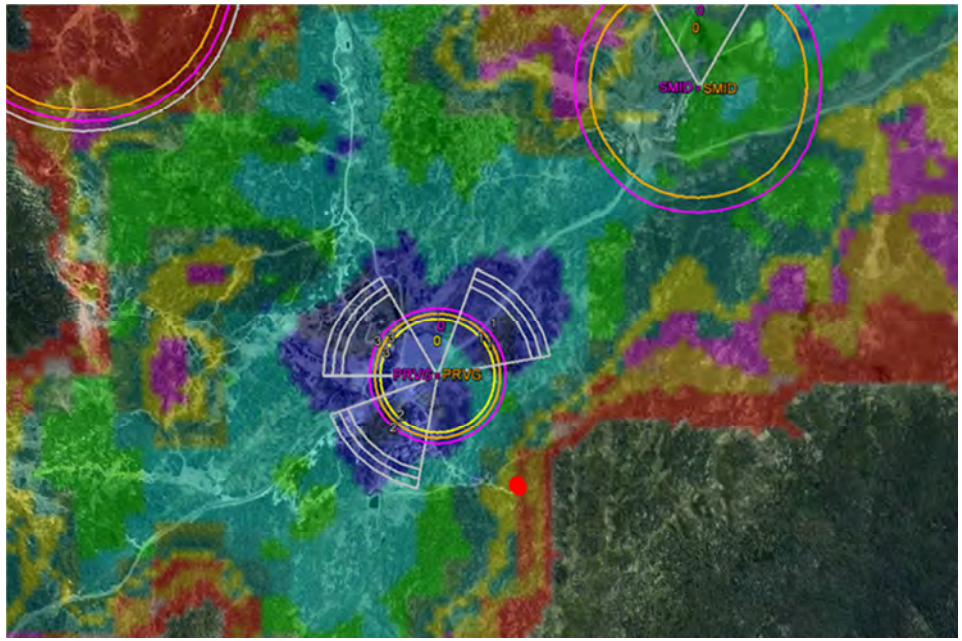
5.1.2 Co-location at Water Tank

The site number for the facility is 2624002 on the Radio Frequency National Site Archive (RFNSA) website. It is located to the south-east of the Perisher Valley village, approximately 830m from Kosciuszko Road and adjacent to a water tank. While the site has minimal visual impact on the nearby village, it does not meet the technical requirements needed to improve telecommunications capacity within the area.

Due to the location of the Water Tank site, co-location of the facility would still remain limited to one sector. The provision of one sector to the area is not sufficient to meet the mobile and data/internet capacity needs of the Perisher Valley village. By locating the facility at the Water Tank, there would be no improvement to telecommunication capacity.

In contrast, positioning the facility within the Perisher Valley village at the Telstra Exchange Building would create three sectors, thereby allowing Telstra to service three times the mobile and data traffic, providing better coverage and capacity. This is illustrated in Figure 5.

Figure 5 – Image of the sectors provided from the proposed site. The red dot is the Water Tank site. (Source: Telstra 2012)



5.1.3 Locate adjacent to Existing Facility at Water Tank

Similar to subsection 5.1.2, locating the proposal adjacent to the existing facility near the water tank would result in only one sector being available. Capacity will not be improved by locating an additional facility in this area. An additional two facilities would be required in order to improve the capacity of the area, thereby creating further visual and environmental impact. Furthermore, the existing facility may cause interference to the proposal and thereby defeat the purpose of the additional facility.

Increasing the height of the facility would not improve the coverage or capacity of any facility located near the water tank, as it would still be limited to only one sector.

It is therefore necessary for the facility to be constructed within the Perisher Valley village in order to improve telecommunication services.

5.1.4 Repeater Sites

The installation of repeater sites has been considered by Telstra as an alternative to the proposal. However, repeater sites do not provide capacity, being the driving cause for this proposed upgrade. Repeater sites merely drag capacity from the nearest macro site. This solution would also require additional poles or antennas within Perisher Valley Village, thereby creating a proliferation of infrastructure in the area. The additional infrastructure would create a detrimental visual effect and additional environmental impact without solving the current problem being experienced.

5.1.5 Telstra Exchange Building

The proposed site is located on the south-western elevation of the Telstra Exchange building off Kosciuszko Road. This site is considered to be the most appropriate both in terms of technical requirements and its impact on the surrounding land uses. This is further detailed below.

5.2 The Site

The proposed location for the facility is considered to be the most suitable for the following reasons:

- There is no vegetation on the site requiring clearing for the proposed development and is considered to have the least impact on the natural environment;

- The property is currently utilised by Telstra and is not in proximity to any sensitive sites;
- Use of the location will enable Telstra to service three times the mobile and data traffic, providing significantly improved capacity.

Furthermore, the proposal will provide greater capacity to the ski slopes and surrounding areas. This will ensure that mobile communication in emergencies is readily available. This is not only applicable to users of the ski slopes, but to commercial operators and the NPWS as well.

There is currently no licence/lease agreement between the NPWS and Telstra for the site. Such agreements can be established under the *National Parks and Wildlife Act 1974*. As outlined in Section 11.3, the site complies with these criteria. Telstra has utilised the site for an extended period of time and is currently pursuing the formation of a formal licence/lease agreement with the NPWS.

6 The Site and Surrounding Area

6.1 The Site

The site is situated within the Perisher Range Alpine Resort Area. The proposed site for the telecommunications facility is located on Kosciuszko Road, Perisher Valley, NSW, 2624. The site consists of a Telstra Exchange building, with an existing 11m timber pole facility. The facility is accessed from a driveway off Kosciuszko Road that is also used by neighbouring properties.

The site is located within the Kosciuszko National Park and has an elevation of 1735m above sea level. The property does not contain any vegetation.

6.2 The Surrounding Area

Immediately surrounding the site is a number of buildings, along with the Kosciuszko National Park. To the north-west are the Fire and Ambulance Service buildings which share the driveway access from Kosciuszko Road. Directly to the rear of the Telstra Exchange building and existing facility is a Waste Transfer Station, managed by the NSW National Parks and Wildlife Service.

In addition, to the immediate south-east of the subject site is a helipad utilised by the Snowy Hydro SouthCare Helicopter Service. Access to this helipad is achieved through the shared driveway. To the east of the site is a church which is accessed via a separate driveway.

With regards to the site's wider context, to the west and north is the Perisher Valley village. This area is predominantly used for tourism purposes, namely Alpine Resorts. The Perisher Ski fields exist further to the north-west of the site, on the opposite side of Kosciuszko Road. Meanwhile to the south and east of the property is vegetated land, forming the Kosciuszko National Park.

Figure 6 – Image of the existing site. (Source: Urbis 2012)

Figure 7 – Location map showing the proposed site and surrounding land uses (Source: Google Earth 2012).

Figure 8 – Location map showing the land uses of the surrounding locality (Source: Google Earth 2012).

7 Proposal

The proposed development at Perisher Valley TE – Kosciuszko Road, Perisher Valley, NSW, 2624 is comprised of the following:

- The installation of a 25m high Telstra concrete monopole in a non-reflective surface grey colour, with a 1m aircraft warning light extension.
- The installation of six new panel antennas mounted to a triangular headframe. The panel antennas will be located at a height of 25m (to the centre line). They will have the following dimensions:
    - 6 x CNNPX310R-6P panel antennas - 2630mm x 370mm x 120mm

  The structure will have an overall height of 26.3m.
- The installation of associated feeder cables running internally within the monopole. The proposed feeder cables will be installed in proposed ∅150 underground conduits to a Telstra $1m^2$ pit.
- Installation of a proposed new feeder earth bar beside the existing feeder window and connected to the existing Telstra Earth Ring in accordance with Telstra Standard Earthing Design.
- The installation of a proposed Telstra 300mm wide NEMA 20C cable ladder to be fixed to the existing wall below the feeder window.
- Ancillary works including the installation of a concrete footing.

Access to the site for construction and maintenance will be from the existing access point to the north-east of the property off of Kosciuszko Road.

Refer to Plans attached at Appendix 1.

8 Key Planning Framework

The following information provides a summary of the Federal legislation relevant to telecommunications development proposals.

8.1 Commonwealth Telecommunications Act, 1997

The *Telecommunications Act 1997* (the Act) came into operation on 1st July 1997. The Act provides a system for regulating telecommunications and the activities of carriers and service providers.

Under the Act, telecommunications carriers are no longer exempted from State and Territory planning laws except in three limited instances:

1. There are exemptions for inspection of land, maintenance of facilities, installation of "low impact facilities", subscriber connections and temporary defence facilities. These exemptions are detailed in the *Telecommunications (Low-impact Facilities) Determination 1997* and the *Amendment No. 1 of 1999* and these exceptions are subject to the *Telecommunications Code of Practice 1997*;
2. A limited case-by-case appeals process exists to cover installation of facilities in situations of national significance; and
3. There are some specific powers and immunities from the previous *Telecommunications Act 1991.*

8.1.1 Telecommunications (Low-impact Facilities) Determination, 1997 and Amendment No.1 of 1999.

The Telecommunications (Low-impact Facilities) Determination came into effect on 1st July 1997 and the Amendment to the Determination (No.1 of 1999) came into effect on 17th August 1999.

The Determination contains a list of Telecommunications 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. Proposed installations that do not fall under the Determination require approval under State Planning Legislation.

8.2 Commonwealth Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act* commenced on 16th July 2000. It introduces a new role for the Commonwealth Government in the assessment and approval of development proposals where those proposals involve actions that have a significant impact on matters of National Environmental Significance, the environment of Commonwealth owned land and actions carried out by the Commonwealth Government.

An EPBC Act Protected Matters Report has been included in **Appendix 5** of this report. It has identified 15 Threatened Species and 1 Threatened Ecological Community exist within a 1km radius of the site. However, the subject property is an existing developed site, consisting of the Perisher Valley Telstra Exchange building. This property is also located within the Perisher Valley village, being a well-established urban area in the National Park.

As an existing developed site, there will be no impact on the flora and fauna of the area. The site is located adjacent to the SouthCare Helipad, meaning that no additional impact will be had upon any migratory bird species.

As such, the proposal is not of National Environmental Significance as defined under the EPBC Act, as it will not impact on:

- World Heritage Areas;
- Wetlands protected by International Treaty (The RAMSAR Convention);
- Nationally listed threatened species and communities;
- Nationally listed migratory species;
- All nuclear actions; and
- The environment of Commonwealth Marine area.

It is therefore considered that the proposal does not warrant referral to the Federal Government.

9 Industry Code C564: 2011 Mobile Phone Base Station Deployment

In response to calls for greater council and community involvement when telecommunications facilities are installed, the Communications Alliance Ltd developed the '*Industry Code - Mobile Phone Base Station Deployment*' (more commonly referred to as the Deployment Code).

The Deployment Code cannot change the existing regulatory regime for telecommunications at local, State or Federal level. However, it supplements the existing obligations on carriers, particularly in relation to community consultation and the consideration of exposure to radio signals, sometimes known as electromagnetic energy (EME or EMR).

The Code imposes mandatory levels of notification and community consultation for sites complying with the Telecommunications (Low-impact Facilities) Determination 1997. It identifies varying levels of notification and/or consultation depending on the type and location of the infrastructure proposed.

The subject proposal, in not being designated a 'Low-impact' facility, is not subject to the notification or consultation requirements associated with the Deployment Code. These processes are handled within the relevant State and Local consent procedures.

Nevertheless the intent of the Code, to ensure Carriers follow a 'precautionary approach' to the siting of infrastructure away from sensitive land uses, has been followed in the selection of this site as demonstrated in the Deployment Code Section 4 Precautionary Approach Checklist which is attached at Appendix 2.

Included in the Section 4.1 Checklist is a statement of how the public's exposure to EME from the site has been minimised. All emissions from the site will be well within the requirements of the relevant Australian Standard. Details of this standard are contained in the following section.

Also attached at Appendix 2 is the Deployment Code Section 4.2 Precautionary Approach Checklist which demonstrates how the proposal has been designed in accordance with the Code's 'precautionary approach'.

This site has been selected and designed to comply with the requirements of the Deployment Code in so much as the precautionary approach has been adhered to and, as a result the best design solution has been achieved.

Refer to Precautionary Approach Checklists in Appendix 2.

10 EME & Health

Telstra acknowledges some people are genuinely concerned about the possible health effects of electromagnetic energy (EME) from mobile phone base stations and is committed to addressing these concerns responsibly.

Telstra, along with the other mobile phone carriers, must strictly adhere to Commonwealth Legislation and regulations regarding mobile phone facilities and equipment administered by the Australian Communications and Media Authority (ACMA).

In 2003 the ACMA adopted a technical standard for continuous exposure of the general public to RF EME from mobile base stations. The standard, known as the *Radiocommunications (Electromagnetic Radiation – Human Exposure) Standard 2003*, was prepared by the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) and is the same as that recommended by ICNIRP (International Commission for Non-Ionising Radiation Protection), an agency associated with the World Health Organisation (WHO). Mobile carriers must comply with the Australian Standard on exposure to EME set by the ACMA.

The Standard operates by placing a limit on the strength of the signal (or RF EME) that Telstra can transmit to and from any network base station. The general public health standard is not based on distance limitations, or the creation of "buffer zones". The environmental standard restricts the signal strength to a level low enough to protect everyone at all times. It has a significant safety margin, or precautionary approach, built into it.

The use of the Standard in development applications involving Telecommunications Facilities was tested and supported by decisions made in the New South Wales Land and Environment Court, having particular regard to *Telstra Corporation Limited v Hornsby Shire Council* [2006] NSWLEC 133 which tested whether the proposed EME levels will harm the health and safety of the residents

The Land and Environment Court ruled in favor of Telstra, on the basis that the Standards set by the ACMA are scientifically proved & robust. The Court stated that Councils should adopt these standards when measuring and determining EME levels, given that it is the ACMA that has the responsibility for ensuring exposure limits do not adversely affect the heath and amenity of the community.

The Court further stated that it was not appropriate for the Court to set aside or disregard the existing safety standard nor is it appropriate for the Court to pioneer its own standards. The Court ruled it was appropriate for safety standards to be set by authorities with special expertise, such as ARPANSA.

In order to demonstrate compliance with the standard, ARPANSA created a prediction report using a standard methodology to analyse the maximum potential impact of any new telecommunications facility. Carriers are obliged to undertake this analysis for each new facility and make it publicly available.

Importantly, the ARPANSA-created compliance report demonstrates the maximum signal strength of a proposed facility, assuming that it's handling the maximum number of user's 24-hours a day.

In this way, ARPANSA requires network carriers to demonstrate the greatest possible impact that a new telecommunications facility could have on the environment, to give the community greater peace of mind. In reality, base stations are designed to operate at the lowest possible power level to accommodate only the number of customers using the facility at any one time. This design function is called "adaptive power control" and ensures that the base station operates at minimum, not maximum, power levels at all times.

Using the ARPANSA standard methodology, Telstra has undertaken a compliance report that predicts the maximum levels of radiofrequency EME from the proposed installation at Kosciuszko Road, Perisher Valley. This is illustrated on a map image of the area in Figure 7 (this is also located in Appendix 6)

The maximum environmental EME level from the site, once it is operational, has been estimated as being 0.5**%** of the ACMA mandated exposure limit.

This maximum level is extremely low and well below the ACMA standard. Telstra complies with the public health and safety standard by a significant margin.

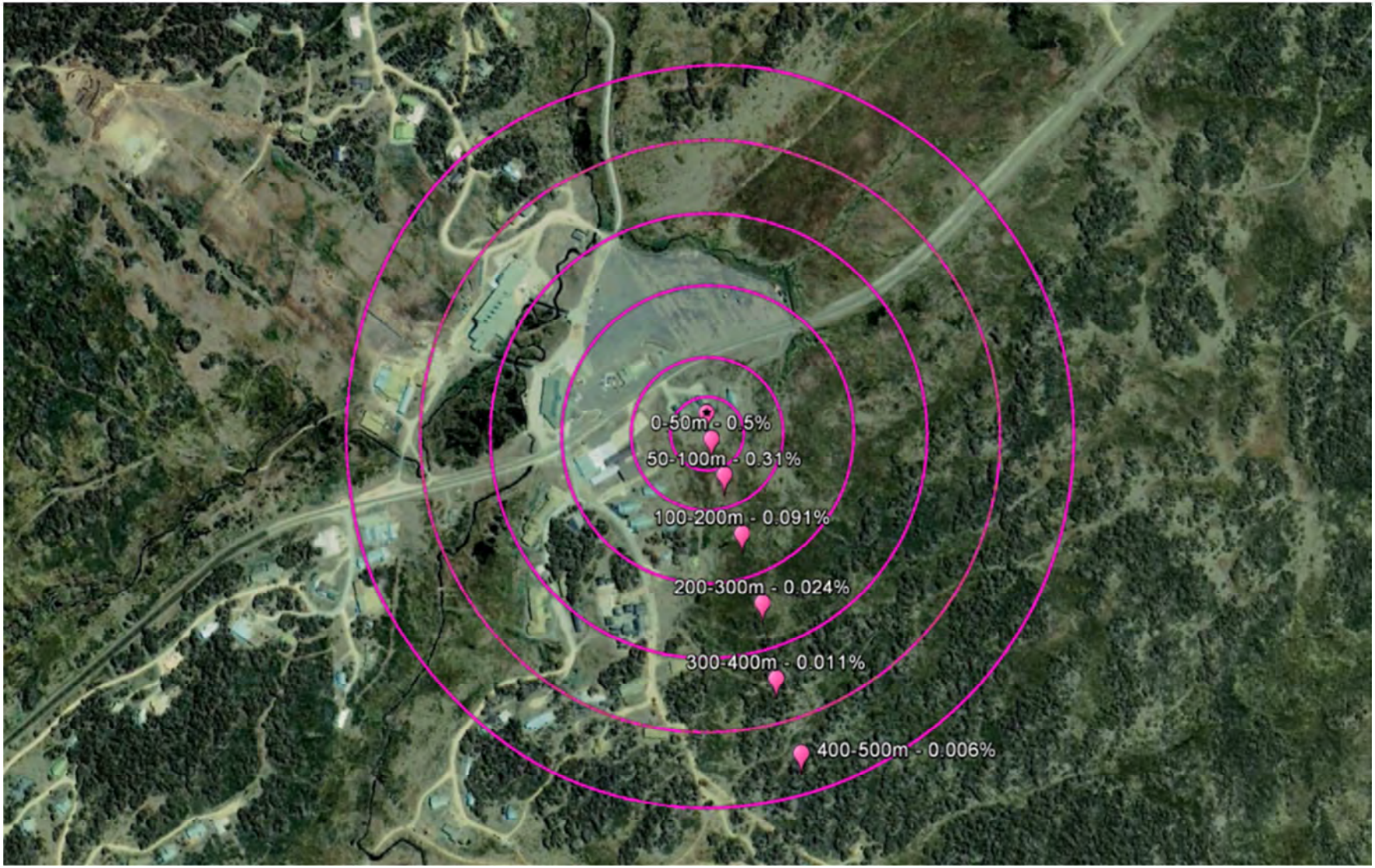
Telstra relies on the expert advice of national and international health authorities such as the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) and the World Health Organisation (WHO) for overall assessments of health and safety impacts.

The WHO advises that all expert reviews on the health effects of exposure to radiofrequency fields have concluded that no adverse health effects have been established from exposure to radiofrequency fields at levels below the international safety guidelines that have been adopted in Australia.

Telstra has strict procedures in place to ensure its mobile phones and base stations comply with these guidelines. Compliance with all applicable EME standards is part of Telstra's responsible approach to EME and mobile phone technology.

Refer to the EME Report attached at Appendix 3 and Predictive EME map attached at Appendix 6.

Figure 9 – Map demonstrating the predicted EME levels from the proposed Telstra Site at Kosciuszko Road, Perisher Valley, expressed as a % of the ARPANSA Standard (Source: Google Earth 2012).



11 State Legislation

11.1 State Environmental Planning Policy (Infrastructure) 2007

This SEPP was released in December 2007 with the purpose of simplifying planning controls for infrastructure developments and facilitating public consultation during the development assessment process. It also categorises 23 classes of infrastructure in an attempt to more efficiently deliver infrastructure and service facilities. 'Telecommunication and other communication facilities' have been categorised as a class of infrastructure, where a telecommunications facility has been defined as;

> *"(a) any part of the infrastructure of a telecommunications network, or*
>
> *(b) any line, optical fibre, equipment, apparatus, tower, mast, antenna, dish, tunnel, duct, hole, pit, pole or other structure in connection with a telecommunication network."*

Clause 115 Development permitted with consent allows for;

> *"(1) Development for the purposes of telecommunications facilities, other than development in Clause 114, may be carried out by any person with consent on any land."*

Therefore the proposed telecommunication facility at Kosciuszko Road, Perisher Valley NSW 2624 is consistent with the SEPP definition and would be considered as a development permitted with consent. In accordance with the development controls of this SEPP, it is necessary to submit a development application to Council for an assessment of the proposed telecommunications facility.

The SEPP also contains operation principles in relation to telecommunications facilities. These principles are:

- *Principle 1: A Telecommunications facility is to be designed and sited to minimise visual impact* - This has been addressed in Chapter 12 of this planning report.
- *Principle 2: Telecommunications facilities should be co-located wherever practical*- This has been addressed in Chapters 3 and 4 of this planning report.
- *Principle 3: Health standards for exposure to radio emissions will be met*- This has been addressed in Chapter 9 of this planning report.
- *Principle 4: Minimise disturbance and risk, and maximise compliance*- This has been addressed in Chapter 10 and 11 of this planning report.

All of these principles have been addressed in the relevant parts of this report and it is considered that the proposed Telstra facility complies with State Environmental Planning Policy (Infrastructure) 2007 and its operational principles.

11.2 State Environmental Planning Policy (Kosciuszko National Park – Alpine Resorts) 2007

The site is identified as being part of the Perisher Range Alpine Resort, and therefore comes under the jurisdiction of the SEPP (Kosciuszko National Park – Alpine Resorts) 2007. The overall aim of the policy is to:

> *"…protect and enhance the natural environment of the alpine resorts, in the context of Kosciuszko National Park, by ensuring that development in those resorts is managed in a way that has regard to the principles of ecologically sustainable development (including the conservation and restoration of ecological processes, natural systems and biodiversity)."* (Clause 2 (1)).

Under this SEPP, development for the purposes of telecommunications facilities is permissible with consent in this area.

The proposal is anticipated to have no additional impacts on the site and surrounding area. The proposed monopole will remain on the existing site which has no vegetation. Consequently, there will be no impact on the existing biodiversity and natural systems and processes of the surrounding National Park.

Clause 2 of the SEPP outlines the objectives of the policy as follows:

(a) To encourage the carrying out of a range of development in the alpine resorts (including the provision of services, facilities and infrastructure, and economic and recreational activities) that do not result in adverse environmental, social or economic impacts on the natural or cultural environment of land to which this Policy applies,

The proposal involves the provision of improved telecommunication infrastructure to Perisher Valley. This will enable visitors and locals to receive greater mobile coverage which will enable enhanced communications and a more reliable service within the area. The proposal will not have any additional adverse environmental or social impacts on the area. The siting of the facility will ensure that it has minimal impact on the surrounding resort and National Park land uses. Improved telecommunications in the area will ultimately have positive economic and social impacts, including greater connectivity to emergency services.

(b) To put in place planning controls that contribute and facilitate the carrying out of ski resort development in Kosciuszko National Park that is ecologically sustainable in recognition of the fact that this development is of State and regional significance,

The proposal complies with the controls outlined within this policy, as discussed below. The proposal will not have any adverse impact to the ecology and biodiversity of the National Park.

(c) To minimise the risk to the community of exposure to environmental hazards, particularly geotechnical hazards, bush fire and flooding, by generally requiring development consent on land to which this Policy applies.

The proposal will not expose the community to any environmental hazards. As a result of the upgraded facility, improved telecommunications coverage will be provided to NPWS Staff and Emergency services. This will consequently enable more effective emergency responses in the instance of a bush fire, flooding or other environmental hazards.

11.3 National Parks and Wildlife Act 1974

The NPW Act 1974 is the governing piece of legislation concerning the operation, management and development of National Parks and natural conservation areas in NSW. Under this statute the NPWS is the designated manager of National Parks within NSW, including Kosciuszko National Park.

The Act provides for leases, licences and easements for broadcasting and telecommunications facilities within National Parks. As mentioned in Section 5, the present telecommunications facility at Kosciuszko Road, Perisher Valley does not have a licence agreement with the NPWS.

Under Clause 153D, the Minister may approve the granting of a lease, licence or easement if the facility satisfies the following criteria. An assessment of the site and its compliance with these criteria is also provided:

(a) There is no feasible alternative site for the proposed broadcasting or telecommunications facility concerned on land that is not reserved under this Act, and

As discussed in Section 5, assessments of the area have indicated that there are no feasible alternative sites. This is primarily due to the geographic restrictions of the area and the need to meet the technical requirements to ensure improved mobile coverage is achieved. The subject site is the only viable option for improved telecommunications coverage.

(b) The site of any proposed above ground broadcasting or telecommunications facility covers the minimum area possible, and

The proposed concrete monopole will have a diameter of 1m. Ancillary equipment such as feeder cables will be installed underground. The facility will therefore cover the minimum area possible.

(c) The proposed broadcasting or telecommunications facility is to be designed and constructed in such a manner as to minimise risk of damage to the facility from bushfires, and

The site does not contain any vegetation that may act as fuel to a potential bushfire. The proposal will be improving the existing facility, which currently consists of a timber pole, by replacing it with a concrete monopole. In addition, the local fire station is a neighbouring property to the proposed facility, fronting Kosciuszko Road.

(d) The site and construction of the proposed broadcasting or telecommunications facility have been selected, as far as is practicable, to minimise the visual impact of the facility, and

The facility is proposed to be relocated adjacent to the south-western elevation of the Telstra Exchange building. The proposal has been designed using non-reflective material and an appropriate colour scheme so as to limit its visual impact. The siting of the proposed facility at the Telstra Exchange building, which is setback approximately 80m from Kosciuszko Road, will assist in limiting any visual impact as a result of the development.

It should be noted that the relocation of the facility is considered to be necessary by both the applicant and the NPWS. The existing location of the facility presents a significant occupational health and safety hazard to people, mostly NPWS staff and contractors, walking beneath it during winter. This is because ice builds up on the antennas throughout winter and falls during windy or thawing periods.

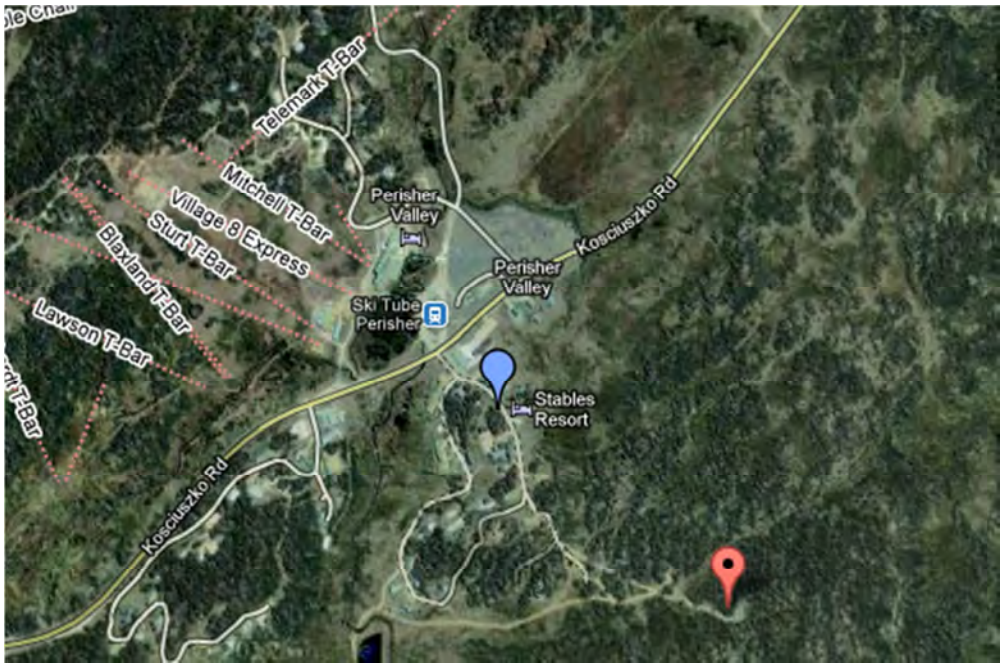
(e) If feasible, an existing means of access to the proposed site of the lease, licence, easement or right of way is to be used, and

Access to the site will continue to be through the existing shared driveway from Kosciuszko Road.

(f) The proposed broadcasting or telecommunications facility is essential for the provision of broadcasting or telecommunications services for land reserved under this Act or for surrounding areas to be served by the facility, and

The remoteness of the location and its geographic restrictions has resulted in limited telecommunications coverage for the area. As indicated in Figure 8, the existing facility is one of two located within the vicinity of the village and acts as the principle source of mobile reception to the Perisher Valley village and resorts. As outlined in Section 5 of this report, the facility located near the water tank to the south-east of the village would not meet the technical requirements needed to improve the coverage and reception in the area. The proposed upgrade to this existing facility is therefore considered to be essential, particularly for emergency services on the nearby ski slopes.

Figure 10 – Nearby telecommunications facilities in Perisher Valley (Source: RFNSA 2012)



(g) The broadcasting or telecommunications facility is to be removed and the site of the facility is to be restored as soon as possible after the facility becomes redundant (for example, due to advances in technology), and

The proposed facility will not affect the site's ability to be utilised for alternative uses in the future. Should less intrusive means of providing telecommunications coverage to the area be developed and made available, the site will be restored to its original condition.

(h) The site of the proposed broadcasting or telecommunications facility has been selected after taking into account the objectives set out in any plan of management relating to the land concerned, and

The proposal and its location have been considered with regard to the SEPP (Kosciuszko National Park – Alpine Resorts) 2007 and the Perisher Range Resorts Master Plan. It is considered that the proposal is in keeping with the overall objectives of the area, as it will assist in providing improved mobile coverage to the NPWS, visitors, commercial businesses and locals alike.

(i) The proposed broadcasting or telecommunications facility is, if feasible, to be co-located with an existing structure or located at a site that is already disturbed by an existing lease, licence, easement or right of way on the land.

There are no other feasible facilities upon which the proposal could co-locate. The proposal is to be located in the same property as the existing temporary facility. This is adjacent to the existing Telstra Exchange building. This is considered to be an appropriate location for the proposed facility upgrade.

The site therefore complies with the requirements Clause 153D of the NPW Act and is considered to be eligible for a licence agreement with the NPWS for use of the site for a telecommunications facility. The applicant has initiated further discussions with NPWS with regard to this matter.

11.4 Threatened Species Conservation Act 1995

The TSC Act commenced on 1 January 1996. The purpose of the Act is to protect species, populations and ecological communities that are threatened with extinction in NSW. The main objectives of the TSC Act are to:

- Conserve biological diversity and promote sustainable development;
- Prevent the extinction of native plants and animals;
- Protect habitat that is critical to the survival of endangered species;
- Eliminate or manage threats to biodiversity;
- Properly assess the impact of development on threatened species;
- Encourage cooperative management in the conservation of threatened species.

The Act provides for the facilitation of the appropriate assessment, management and regulation of actions that may damage critical or other habitat or otherwise significantly affect threatened species, populations and ecological communities.

As identified in the EPBC Act Protected Matters Report in **Appendix 5** of this report, there are 15 Threatened Species and 1 Threatened Ecological Community within a 1km radius of the site.

The proposal will have no impact on these threatened species and ecological community. The proposed site is an existing developed area, being located adjacent to the Perisher Valley Telstra Exchange building. The property is located on the edge of the Perisher Valley village. There is no vegetation on the site. It is therefore considered that the proposal will have no impact on any threatened species or ecological communities.

12 Section 79C Assessment

This Statement of Environmental Effects provides a summary of the matters for consideration set out in Section 79C of the Environmental Planning and Assessment Act 1979. This assessment clearly demonstrates that the development will have minor impacts and is a suitable use for the subject site.

12.1 Any Environmental Planning Instruments

The proposed use is permissible with development consent and is consistent with objectives of the SEPP (Kosciuszko National Park – Alpine Resorts) 2007, as discussed in Section 12.2.

12.2 Any Draft Environmental Planning Instruments

No Draft Environmental Planning Instruments have been identified.

12.3 Any Development Control Plan

No development control plans relate to the subject site.

12.4 Any Matters prescribed by the regulations

12.4.1 Perisher Range Resorts Master Plan

The Perisher Range Resorts Master Plan (PRRMP) was published in November 2001 and was prepared by the NPWS. The Plan provides the overall vision and objectives for the Perisher Range Alpine Resort area. The vision for development in this area is as follows:

"Perisher Range will be the pre-eminent all-year-round destination mountain resort in Australia providing international-class facilities based on ecological sustainable principles."

The proposal is in keeping with this vision, by providing improved telecommunications for the area. This will ensure that the area remains to be a prominent tourism destination, providing the mobile coverage that visitors require.

The objectives for the master plan are separated into environmental, social and economic, and functional objectives; and generally include:

- Improve environmental performance of the resorts;
- Create economically viable and socially responsive, all-season resorts on Perisher Range; and
- Enhance functionality of the resorts for all users.

The proposal is particularly relevant to the latter two objectives of the master plan. That is, the upgraded telecommunications facility will provide better mobile coverage to the area, which will assist in meeting the needs of visitors, NPWS, commercial operators and locals.

As outlined in Section 5, the location of the proposal is considered to be appropriate and suitable for the proposed facility upgrade. It will not have any significant or permanent impact on the natural environment; however it will provide substantially improved mobile coverage for the area. This will ultimately be of economic benefit to the Alpine Resort, as it will assist in catering to the needs of its visitors.

Height Considerations

The PRRMP provides for the height controls within the Perisher Valley Central Precinct and Village Centre.

The main objectives in relation to height controls in the area are to:

- Ensure the development fits into the landscape;
- Ensure building mass is varied in height;
- Ensure the overall form of the development follows the local ground contour lines, stepping down to the north;
- Ensure building design is not compromised through attempts to accommodate an excessive number of storeys; and
- Encourage use of a higher structure to mark the Village Centre at the southern end of the site (intersection of Bridge Street and Kosciuszko Road).

The proposal is considered to be distinct from any previous building applications of a similar height for the following reasons:

1. The proposal is necessary - it consists of essential telecommunications infrastructure that is needed for emergency services, commercial operations and NPWS operations.
2. The proposed structure is comparatively minimal – it does not consist of the same bulk and/or scale as a building.
3. It is the only technically feasible option available.

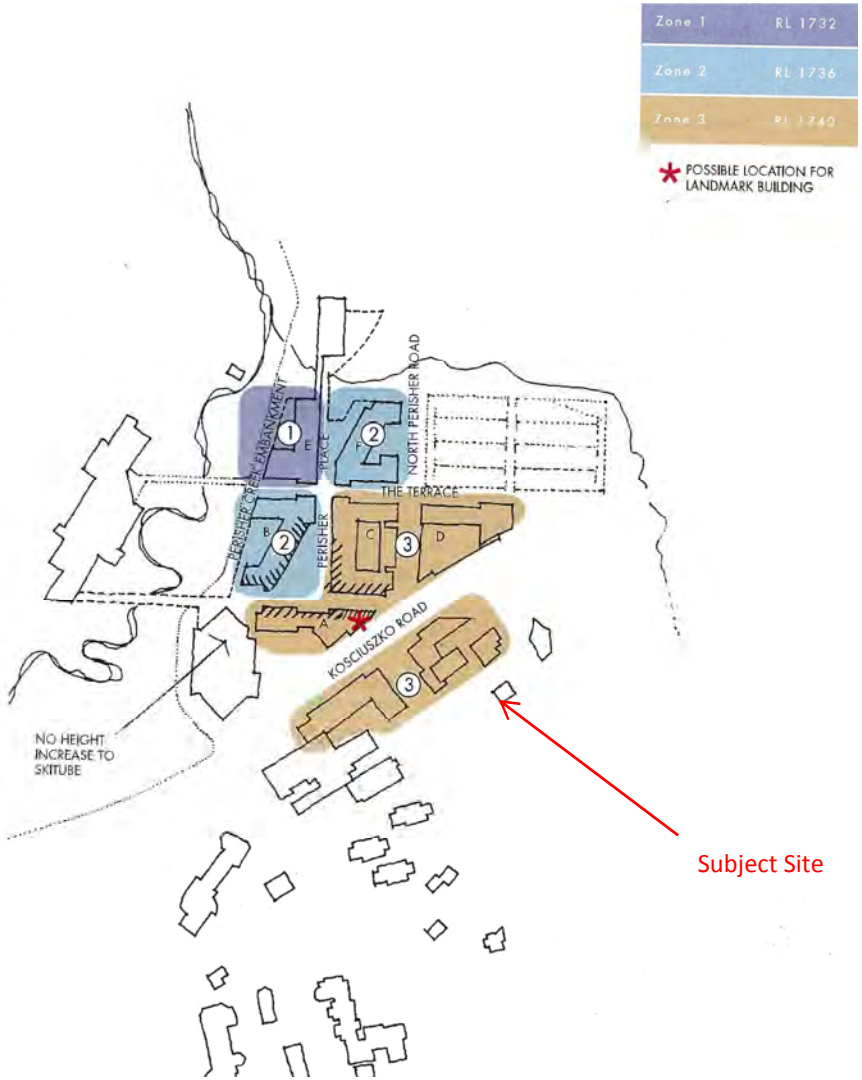
Consideration to the objectives of the PRRMP has been made in relation to the design of the facility. This is apparent through the use of non-reflective material, its siting at the existing Telstra Exchange building which is located on the edge of the Perisher Valley Village and its minimal building mass.

As demonstrated in Figure 11, the PRRMP provides for three height zones within the Perisher Valley Village Centre. However, as marked on Figure 11, the proposed site does not reside within any of these height zones. As such, these numerical height controls are not applicable to the subject proposal.

Section 7.4.7 of the PRRMP does however provide for other considerations in relation to height that are applicable to areas outside of these zones. Those relevant to the proposed type of development include:

- The roofline of buildings in the new Village Centre will not break the skyline when viewed from a point on Kosciuszko Road half way between Pipers Gap and the existing car park;
- Height of buildings need to maintain solar access to key public spaces;
- Height of new buildings may be limited in consideration of views and amenity of existing buildings.

Figure 11 – Village Centre Building Heights Map (Source: PRRMP 2001)



As apparent in Drawing M03 in **Appendix 4** of this report, the proposed facility will not break the skyline when viewed from Kosciuszko Road, between the car park and Pipers Gap. The surrounding topography to the south is higher than the proposed facility, and consequently it will not break the skyline when viewed from this point or from the nearby ski slopes. This is further discussed in Section 13 of this report.

Due to the siting of the proposed facility, it is anticipated that it will not have any impact on solar access to any of the surrounding properties. The facility will also consist of a monopole, thereby having minimal visual bulk.

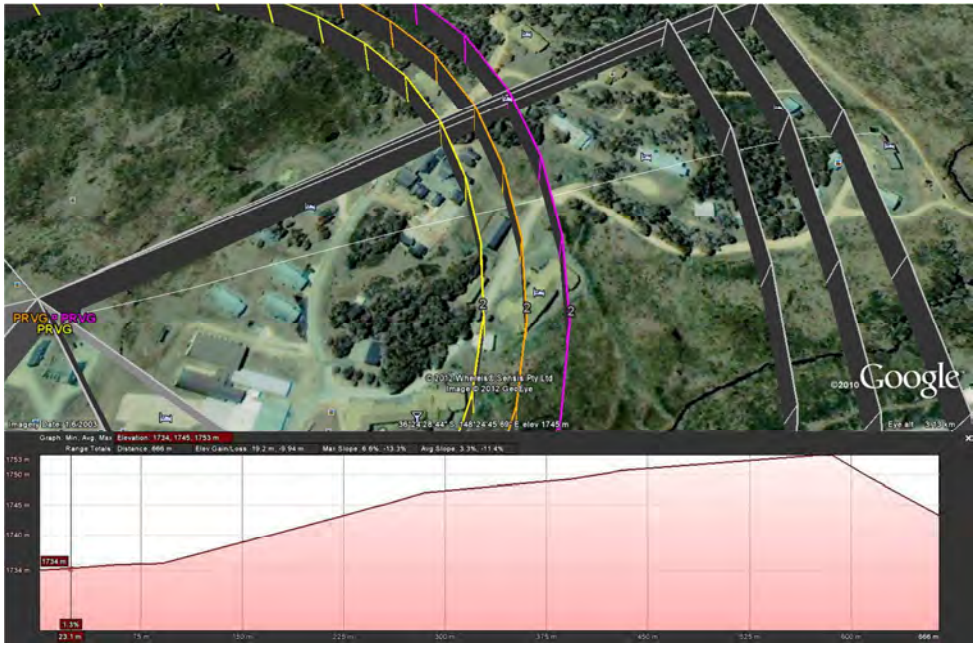
With regards to amenity, the upgraded facility will improve telecommunications services to users of the area, including the NPWS, emergency services, commercial operators and visitors. The facility will have no adverse impact on existing utilities.

As such, the proposal is considered to be generally in keeping with the objectives and controls of the PRRMP.

The technical requirements for the site and service provision demands has resulted in the proposed 25m facility being the only feasible option for the proposed upgrade. The new technology proposed for the site will provide improved capacity to the area, meaning that more people will be able to utilise their telecommunications devices at one time. However, the higher frequency provided by this new technology does not travel as far as the current technology. Subsequently, in order to maintain the same level of existing coverage, being the area to which service may be received, a higher pole is required. The key target areas to improve coverage are also positioned above 25m from the Telstra Exchange building. If the proposed facility is lower than 25m in height, a clear Line of Site (LOS) will not be established and consequently these areas to the south-west will not receive in building coverage (IBC). Refer to Figure 12.

There are substantial benefits associated with installing a new 25m monopole for the proposed upgrade. Such a facility will meet the requirements of the foreseeable future. Any technology upgrades required to meet customer expectations will not look significantly different from the current proposal, meaning that the overall visual effect will remain relatively constant.

Figure 12 – Image demonstrating SW terrain and proposed coverage (Source: Google Earth 2012)



Most importantly though, the construction of a 25m monopole will avoid the need for multiple sites in Perisher Valley. This will certainly be required if this proposal is not approved. Multiple facilities will ultimately have a far

more adverse impact on the natural environment and have a far greater visual impact than the proposed.

A 25m facility is therefore considered to be the absolute minimum height required to provide improved coverage and network performance to the Perisher Valley area. As detailed in this report, the provision of improved telecommunications coverage and services within the area is essential, particularly with regards to emergency communication, commercial operations and NPWS management.

Refer to the diagrams in **Appendix 9** that assist to explain the technical requirements for the facility.

12.5 The Likely Impacts of the Development

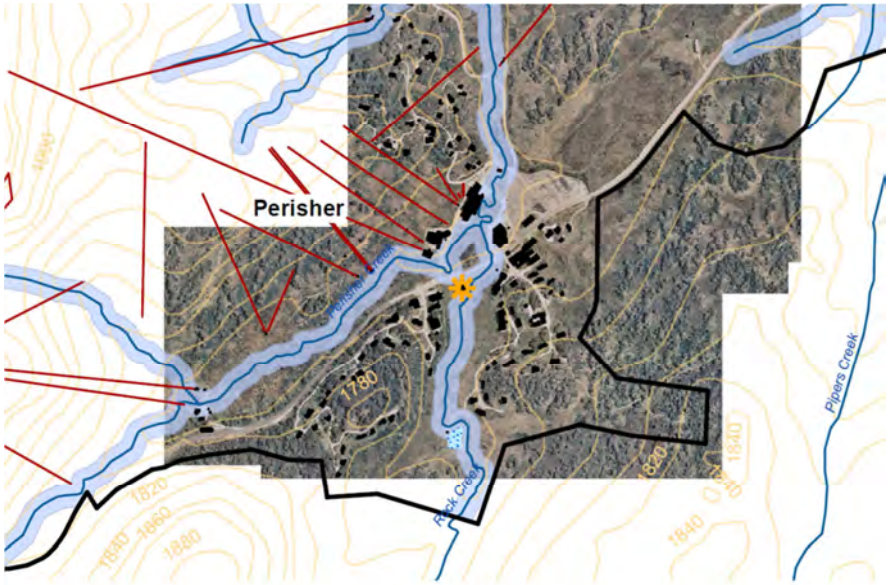
Below is an assessment of the relevant likely impacts of the proposed Telstra development located at Kosciuszko Road, Perisher Valley NSW 2624.

12.5.1 Flora and Fauna

A search of the Protected Matters Search Tool via the Commonwealth Department of Sustainability, Environment, Water, Population and Communities found that there is one threatened ecological community, 15 threatened species and 13 migratory species within the vicinity of the site. This is largely attributed to the fact that the site is within the Kosciuszko National Park. This report is included in Appendix 5.

However, the site will be constructed on a small area and within an established urban area of the National Park. The footprint of the monopole will be approximately 1m in diameter. The site is not located within a riparian corridor, as noted in Figure 13 below. There will be no removal of any vegetation and no adverse impacts to existing flora and fauna.

Figure 13 – Riparian corridors in the area (Source: Urbis 2012).



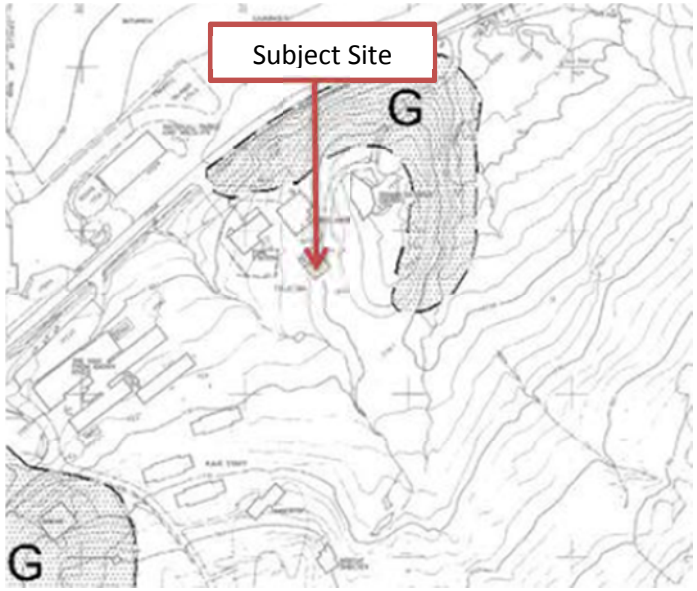
12.5.2 Geology, Soil, Water Quality and Hydrology

Geotechnical Policy – Kosciuszko Alpine Resorts

The Geotechnical Policy for the Kosciuszko Alpine Resorts indicates which areas require the preparation of a geotechnical report. As demonstrated in Figure 14, the site is not classified as requiring such a report. However, clause 6 of the policy requires all development applications that do not require a geotechnical report to have a site classification report prepared in accordance with AS 2870-1996 – Residential Slabs and Footings.

As part of the preliminary investigations of the area, a geotechnical report was conducted specifically around the Telstra Exchange building. This report is included in Appendix 8. The proposed works are minor in nature and are not anticipated to have any adverse impacts with respect to Soil, Water Quality or Hydrology.

Figure 14 – Geotechnical Policy Map (Source: Department of Infrastructure, Planning and Natural Resources 2003).



12.5.3 Bushfire Prone Land

The land resides within the Kosciuszko National Park and is therefore considered to reside within bushfire prone land. The site has previously been cleared of vegetation and does not pose a significant bushfire risk.

12.5.4 Air Quality

During the operation of the facility, no air pollutants will be emitted and there will be no impact on local air quality.

The construction of the facility is not anticipated to generate significant dust pollutants. Given the minor nature of the works, it is unlikely that any air pollutants will noticeably or adversely affect surrounding residences or transportation routes.

12.5.5 Heritage & Character

A search was undertaken on the following databases for items of heritage significance;

- Australian Heritage Database of the Australian Heritage Council;
- Australian Heritage Places Inventory;
- State Heritage Inventory of the NSW Heritage Office; and
- Aboriginal Heritage Information Management System (AHIMS)

The AHIMS Report attached in Appendix 10 identifies no Aboriginal Heritage Sites within the immediate surrounds of the subject site. The property is an existing site utilised for telecommunications infrastructure. Searches of the above Heritage databases and inventories indicate that other than being included within the Kosciuszko National Park, the specific site has not been registered as having any heritage significance. As such, the proposal will not have any impact on the heritage significance of the area.

12.5.6 Noise Impacts

Noise generation during construction will include machinery associated with drilling and excavation. Given that this will only be temporary, occurring only during the construction period, it is not expected that potential noise impacts will adversely affect surrounding residences/resorts. The site is sufficiently located away from neighbouring sensitive uses.

Any potential noise impacts are expected to be minor and short term in duration. Further, construction works will be undertaken only during standard working hours to minimise off-site impacts on neighbouring residents. No noise will be generated during operation of the facility.

12.5.7 Waste Management

The proposed facility will be unmanned and will restrict unauthorised access during operation; therefore no waste will be generated. A Waste Management Plan will be submitted prior to the construction phase addressing waste disposal during the construction of the facility.

Access to the existing Waste Transfer Station at the rear of the Telstra Exchange building may be limited during the construction period. This will only be temporary and is not anticipated to have any substantial impact on waste management for the area. A Traffic Management Plan will be prepared prior to the construction period, as identified in the following subsection.

12.5.8 Traffic and Access

Vehicular access to the site is currently achieved via Kosciuszko Road, located to the north-west of the property. It is anticipated that the removal of the existing timber pole and the relocation of the facility will enable easier movement for vehicles that frequent the yard – particularly waste disposal trucks accessing the Waste Transfer Station.

The existing shared driveway will be utilised by Telstra for construction and maintenance of the facility. The proposed access arrangement will provide simplified access during construction, and a suitable access for the continued operation of the site.

Construction is anticipated to be completed within a 5 week period following commencement of works. Minimal traffic impacts are expected during the construction phase of the proposal. However a Traffic Management Plan will be prepared prior to the construction phase in order to ensure that accessibility to the Fire Station is not affected.

When operational, the facility will be unmanned and will restrict unauthorised access. Therefore vehicular access to the site will be infrequent, and will generally be limited to maintenance when required. The location and operation of the proposed facility in this area will have no identifiable impact on the local vehicular transport infrastructure.

The safety and efficiency of Kosciuszko Road will not be adversely affected by the construction and ongoing operation of the telecommunications facility. The proposed development will also meet any relevant road traffic noise standards (addressed in 13.5.6).

12.5.9 Adjacent Helipad

To the east of the site is a helipad which is used by the Snowy Hydro SouthCare service. Similarly to the fire station, use of the shared driveway during the construction period will require a Traffic Management Plan. The facility will include an aircraft warning light on the top of the proposed 25m monopole in order to maintain aircraft safety.

It is anticipated that the relocation of the monopole will not have any adverse impact on the use of the helipad. The facility is proposed to be located adjacent to the western elevation of the existing Telstra Exchange building. This is positioned away from the helipad. Consultation has been made with the Snowy Hydro SouthCare Service who has approved the proposed facility. The Service has indicated that the proposed location is preferable to its current location. Correspondence with the Hydro SouthCare Service is attached in Appendix 7.

12.5.10 Cumulative Environmental Effect

The key perceived and potential environmental impacts of the proposed development have been identified and considered individually and collectively from a cumulative impact perspective.

Given the low levels of EME exposure levels from the proposed facility, the risk of adverse health effects resulting from EME derived exposure from the proposed development is considered minimal. The proposed facility will comply and will be well within the standard limits set by the ACMA.

The proposed development does generate the potential of visual impacts when viewed from surrounding locations within the region. However, any such impacts are expected to be minimised by the following measures taken during the siting and design of the facility:

- Siting of the facility at the rear of the existing Telstra Exchange building will provide a level of screening that will reduce the visual impact of the proposal;

- Location of the facility and adequate separation form surrounding sensitive land uses;
- Slimline design of the facility with minimal lateral protrusion to avoid bulky appearance.

Any environmental impact during construction is expected to be temporary and mitigated through the implementation of appropriate work measures specified within this Statement of Environmental Effects. Consequently, the proposed development is not considered to have an appreciable adverse cumulative impact on the environment.

12.6 The Suitability of the Site for the Development

The proposed installation is considered suitable for the following reasons:

- The site location provides optimum telecommunication coverage for the surrounding area, resulting in improved network performance for the local population, NPWS and emergency services.
- The location is preferable to that of the existing facility with regards to vehicle and helicopter access.
- Future developments will not be constrained in terms of their future development potential, as a result of this installation.
- The proposal should have no impact on the site's existing stormwater and bushfire management capabilities.
- No vegetation exists on the site meaning that no clearing is required.
- The relocation of the facility will improve the occupational health and safety standards of the area, in that NPWS staff are less likely to be affected by falling ice shards that build up on the antennas.

12.7 Any Submissions

No submissions are required from authorities at this time.

Section 79C (d) and (e) of the Act require that any public submissions made in accordance with the Act or the public interest be considered in the development assessment process. The public, owners, occupants and any other local stakeholders should be consulted as part of the development application process. Telstra will have regard to any submissions received.

12.8 The Public Interest

The proposed facility is considered to be in the public interest due to the enhanced mobile and wireless telecommunications improvements to Perisher Valley and surrounding areas. This is considered to be essential for the following reasons:

- The proposal will enable Telstra to service three times the amount of mobile and data traffic in the area. This will assist in improving:
  - Emergency services and communications on the ski slopes and surrounding areas.
  - Communication within the NPWS to assist the effective management of the National Park.
  - The experience of visitors staying in the area, thereby assisting commercial operators in providing for the needs of their customers.
- The relocation of the existing facility will ensure that (unlike the existing facility) it does not present an occupational health and safety hazard to the NPWS staff.
- The relocation of the facility will improve vehicle and helicopter accessibility to the site.

13 Visual Impact Statement

The proposed facility is located at Perisher Valley Telstra Exchange, Kosciuszko Road, Perisher Valley, NSW, 2624 in the Kosciuszko National Park. The facility lies at an elevation of 1729.5m. There are limited permanent residences within the area, the majority of properties being used for tourism purposes. There are two resorts located in proximity to the site: one to the north-west on the opposite side of Kosciuszko Road (approximately 120m away), the other being adjacent to the site to its west (approximately 100m away).

The proposed works involve the installation of a monopole with 6 new antennas installed on a triangular headframe at a height of 25m (centreline). The antennas and monopole extension will have a non-reflective natural colour finish to ensure that the facility remains as visually unobtrusive as possible.

The proposed facility will be visible from some distance, given its required height; however the site is substantially setback from Kosciuszko Road and adequately separated from urban and residential areas, minimising the level of visual impact. The height of this facility is required to gain optimal network performance for residents, visitors, NPWS staff and emergency services in the surrounding areas.

A visual assessment of the facility has been undertaken to illustrate the visual impact resulting from the proposed development. A number of images were taken of the facility from the areas surrounding the site in order to understand and assess any impacts the proposed works may have. The visual impact from various viewpoints, as illustrated in Figure 19, has been assessed as follows:

13.1 Ski Slopes

The top of the ski slopes on the opposite side of Kosciuszko Road is located approximately 1km away from the proposed facility. The elevation is approximately 100m higher than that of the Telstra Exchange building. Consequently, from this viewpoint the proposed facility will not have a substantial impact. This is because one would be looking down upon the facility, which is proposed to have an overall height of approximately 26m. As such, it will not break the skyline from this viewpoint, particularly with the elevated terrain further to the south. From the base of the ski slopes, the site will be partially screened by nearby buildings as seen in Figure 15.

The facility seeks to minimise its visual impact through the natural colouring and design of the proposal and its appropriate setting within the property amongst existing infrastructure. It is also important to acknowledge the wider context of the area, with the ski lifts having a much greater visual impact than that of the proposed facility. As such, the visual impact of the proposed facility is considered to be acceptable.

Figure 15 – View looking up the ski slopes (top image) and looking towards the Telstra Exchange building (bottom image) from the bottom of the ski slopes (Source: Urbis 2013).

13.2 Perisher Valley Carpark

The Perisher Valley Carpark is located approximately 110m from the Telstra Exchange building, on the opposite side of Kosciuszko Road. The proposed facility will have some visual impact from the carpark viewpoint. However, as previously mentioned, the facility has been designed to minimise this impact. The facility is also proposed to be substantially setback from Kosciuszko Road, which will also assist in minimising this impact.

Furthermore, as this viewpoint is utilised as a car park and is not a sensitive land use, the visual impact of the facility is considered to be allowable. Given the advantages to be derived by the public at large (by improving telecommunications services), the facility provides an acceptable level of impact which outweighs any general loss of visual amenity.

Figure 16 – View from the carpark towards the Telstra Exchange building (Source: Urbis 2013)

13.3 Pedestrian Bridge

The Pedestrian Bridge is located approximately 270m north west from the Telstra Exchange building. It provides for access to the Perisher Centre. This substantial distance will limit any adverse visual impact. The minimal bulk and large setback from Kosciuszko Road will also result in the facility having an unsubstantial visual impact on the surrounding tourism uses.

The proposed non-reflective grey colouring of the facility is anticipated to blend effectively into the surrounding landscape. This is assisted by the incline in elevation to the south of the proposed facility, which will also ensure that its visual impact is minimised.

As such, the proposed facility is not anticipated to have a substantial visual impact from the viewpoint of the pedestrian bridge to the Perisher Centre.

13.4 National Parks and Wildlife Service Information Centre

The National Parks and Wildlife Service Information Centre is located adjacent to the car park, directly opposite the proposed site. It is situated approximately 120m away from the Telstra Exchange building. The Information Centre has an elevation of approximately RL 1727, being lower than that of the Telstra Exchange site. As such, some visual impact is anticipated.

The purpose of this proposal is in part to respond to the request by the NPWS to relocate the existing facility in order to obtain greater access to the Waste Transfer Station and improve occupational health and safety standards for NPWS staff that frequent the site. The relocation of the facility ultimately requires the installation of new technology, which in turn requires the construction of a new support structure. As previously described, the technical requirements of this new technology impose the need for a 25m pole. This is the only feasible option available in order to improve telecommunications capacity and service in the area.

The proposed facility has been designed to have minimal bulk and consist of non-reflective, grey material to assist in reducing its visual impact. The substantial distance of the facility from the Information Centre will also minimise this impact. Any visual impact caused to this viewpoint is therefore considered not to be substantial enough to outweigh the improved telecommunications service benefits associated with the proposed facility.

Figure 17 – View from the front of the NPWS Office toward the Telstra Exchange building (Source: Urbis 2013)

13.5 Perisher Valley Nordic Centre

The Perisher Nordic Shelter is located approximately 180m south of the Telstra Exchange site. The shelter has an elevation of RL 1745, being approximately 16m higher than the ground level at the subject site. The Nordic Centre faces towards Kosciuszko Road, to the north-west. While some visual impact is anticipated, having consideration for the views of the ski lifts and the minimal bulk and natural colouring of the proposed facility, this impact is considered to be allowable and will not adversely impact any tourism operations. Rather, greater telecommunications service will ensure that the technological needs of visitors are satisfactorily met. As such, the proposed facility is not anticipated to have a substantial impact on the views from this point.

Figure 18 – View for the rear of the Nordic Centre towards the Telstra Exchange building (Source: Urbis 2013)

It is acknowledged that the proposed facility will create some visual impact to certain areas. However, the design of the proposal seeks to reduce this impact through the use of a non-reflective natural colour finish and the minimisation of bulk. Furthermore, it is considered that the benefits associated with the improved telecommunications capacity and services as a result of the proposal to emergency services, commercial operators, the NPWS and visitors significantly outweigh any visual impact caused. From this assessment, it is considered that the visual impact of the proposed facility will not be excessive and is acceptable with consideration to these benefits.

Figure 19 – Viewpoints surrounding the site (Source: Google Earth 2013).

Figure 20 – Photomontage of the proposed facility from Kosciuszko Road, near the Man from Snowy River Hotel (Source: Urbis 2012).

As demonstrated in Figure 20, some visual impact is anticipated when viewing the proposal from Kosciuszko Road. However, from this viewpoint the facility does not appear to have a more substantial visual impact to that of the flag poles outside of the Man from Snowy River Hotel, and the church steeple adjacent to the Telstra Exchange property.

The proposed facility is to be setback approximately 95m from Kosciuszko Road, which minimises its potential visual impact. Furthermore, as evident in Figure 20 the facility has been designed to reduce bulk and remain relatively unobtrusive.

Figure 21 – Photomontage of the facility from Kosciuszko Road, to the south-west of the Village (Source: Urbis 2012).

Figure 21 demonstrates the view of the proposed facility when entering the Perisher Valley village from the south-west. It is acknowledged that there is some visual impact caused from this view point. However, as described previously, this is considered to be acceptable.

As seen in Figure 21, while the facility will break the skyline of the landscape, its minimal massing considerably reduces its visual impact. Furthermore, its non-reflective natural colouring will enable the facility to assimilate into the natural surrounds.

Figure 22 – Photomontage of the facility from Kosciuszko Road, to the north-east of the Village (Source: Urbis 2012)

The main access route to and from the Perisher Valley is via Kosciuszko Road from the north-east, coming from Jindabyne. From this viewpoint, the proposed facility will have little visual impact to the surrounding area. As apparent in Figure 22, the surrounding landscape will assist in limiting the visual impact of the proposed facility. This is largely due to its minimal bulk and natural colouring. In relation to the height controls identified in Section 12.4.1 of this report, the proposal will not break the skyline when viewed from this direction. Its visual impact is considered to be the equivalent of the church steeple when viewed from this direction, being the primary viewpoint to the village. As such, the visual impact of the proposal is considered to be acceptable.

Figure 23 - Map showing the location of the photomontage points (Source: Google Earth 2012)

14 Conclusion

The proposed telecommunications facility at Perisher Valley TE will form an integral component in Telstra's 3G networks. Importantly, the proposed facility will provide mobile phone coverage to the surrounding area, ensuring the quality and reliability of coverage for users.

Telstra, together with Urbis have undertaken an assessment of the relevant matters as required by the Telecommunications Act 1997, the Environment Protection, Biodiversity and Conservation Act 2000 and the State Environmental Planning Policy (Kosciuszko National Park – Alpine Resorts) 2007. The proposal is considered appropriate in light of the relevant legislative, environmental, technical, radio coverage and public safety requirements.

This assessment of the proposed development for a Telecommunications Facility indicates that the proposal is a suitable form of development on the site. The proposed facility is considered suitable in this location for the following reasons:

- The proposal is consistent with the overall objectives and provisions of the State Environmental Planning Policy (Kosciuszko National Park – Alpine Resorts) 2007;
- The proposal will enable Telstra to service three times the amount of mobile and data traffic in the area. This improved service is considered essential to the needs of the NPWS, local emergency services and visitors to the area;
- There will be minimal off-site impacts;
- There is no vegetation that requires clearing on the site;
- The specific siting, design and colouring of the installation will limit the visual impact of the facility on local residents, commercial operators and visitors;
- Emissions from the proposed facility will be significantly below the Australian Communications and Media Authority standard; and
- The proposal will sensitively provide essential mobile and wireless communications coverage to existing and future development areas.

It is submitted that the proposal represents sound and proper town planning and it is respectfully requested that permission be granted for this application.

Appendix 1 – Site Plans

DRAWING/DOCUMENT DESCRIPTION	DRAWING NUMBER	SHEET NO.	ISSUE NO.	ISSUE DATE	DRAWING STATUS			
					CANCELLED	PRELIMINARY	FOR CONSTRUCTION	AS BUILT
SITE SPECIFIC NOTES	N25638	S0	1	03/12/12			✓	
SITE LAYOUT AND ACCESS	N25638	S1	2	03/12/12			✓	
ANTENNA LAYOUT	N25638	S1-1	1	03/12/12			✓	
SITE LAYOUT	N25638	S2	1	01/05/09				✓
SITE ELEVATION - SHEET 1 OF 2	N25638	S3	2	03/12/12			✓	
SITE ELEVATION - SHEET 1 OF 2	N25638	S3-1	2	03/12/12			✓	
ANTENNA CONFIGURATION TABLE	N25638	S3-2	1	03/12/12			✓	
EQUIPMENT LAYOUT	N25638	E1	1	03/12/12			✓	
SITE TENURE PLAN	N25638	G1	1	01/05/09				✓
SITE DETAIL SURVEY	N25638	G2	1	01/05/09				✓
SITE EARTHING PLAN	N25638	G4	1	03/12/12			✓	
SITE PEGGING	N25638	G5	1	01/05/09				✓
ANTENNA LAYOUT	N25638	A1	2	22/01/10				✓
EQUIPMENT LAYOUT	NX310028	1	19	03/12/12			✓	
POLE FOOTING DETAIL - SHEET 1 OF 2	N25638	H1	1	03/12/12			✓	
POLE FOOTING DETAIL - SHEET 2 OF 2	N25638	H1-1	1	03/12/12			✓	
HEAD FRAME AND ANTENNA MOUNTING DETAILS	N25638	T3	1	01/05/09				✓
OMNI ANTENNA MOUNTING DETAIL	N25638	T3-1	1	03/12/12			✓	
PARABOLIC ANTENNA MOUNTING DETAIL	N25638	T3-2	1	03/12/12			✓	
VERTICAL CABLE GANTRY SUPPORT DETAIL	N25638	T6	1	03/12/12			✓	
AIRCRAFT WARNING LIGHT MOUNTING DETAILS	N25638	T8	1	03/12/12			✓	
CONSTRUCTION NOTES-SHEET 1 OF 2	N25638	T8-1	1	03/12/12			✓	
CONSTRUCTION NOTES-SHEET 2 OF 2	N25638	T8-2	1	03/12/12			✓	
STRUCTURAL CERTIFICATION	N25638	Z1	TO BE PROVIDED BY ROCLA					
REFERENCE DRAWINGS								
TRIANGULAR HEADFRAME TO SUIT ROCLA CONCRETE POLE	017866P105	11	2	11/02/11			✓	
TRIANGULAR HEADFRAME TO SUIT ROCLA CONCRETE POLE	017866P105	12	1	28/05/10			✓	
TRIANGULAR HEADFRAME TO SUIT ROCLA CONCRETE POLE	017866P105	13	1	28/05/10			✓	
TRIANGULAR HEADFRAME TO SUIT ROCLA CONCRETE POLE	017866P105	14	2	11/02/11			✓	
DETAILS & CONNECTIONS	017866P201	1	1	15/03/11			✓	
FEEDER EARTHING DETAILS	017866P201	11	1	24/02/11			✓	
CONCRETE POLE EARTHING DETAIL	017866P204	1	1	15/05/11			✓	

NEXT G™ NETWORK

Telstra

PERISHER VALLEY TE

Node Manager Address ID 45644

ADDRESS: KOSCIUSZKO RD
PERISHER VALLEY
NSW 2624

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FOR CONSTRUCTION WCDMA850

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
	NM	NM	CP952232PRVG (CDMA RECOVERY)	NM	NM	29.10.08	2
	AA	BW	DRAWING RATIONALIZATION	BW	BW	01.05.09	3
10/031	CPG	-	A1 ISS2 3G 850 2N UCA BRER EXPANSION(SP08 6939)	MJB	CG	27.01.10	4
NA13039.01	RP	PM	WCDMA850 DETAILED DESIGN 7772754700Q01URB	ML	ML	03.12.12	5

WCDMA850 UNAPPROVED DRAWING

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Telstra Wireless Operations Template - 017866P02 issue 10 - 15 June 2012

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A3

SITE SPECIFIC NOTES

EQUIPMENT SHELTER

TYPE: EXISTING EXCHANGE BUILDING

RBS 6201

TYPE: INDOOR ERICSSON RBS 6201
SIZE (mm): 600(W)X483(D)X1485(H)
QUANTITY: PROPOSED 1 OFF

STRUCTURE

TYPE: PROPOSED CONCRETE MONOPOLE
MODEL NO.: ROCLA SR2-BM25
SIZE AT TOP: Ï 540mm
SIZE AT BASE: Ï 915mm
HEIGHT: 25.00m
COLOUR: NATURAL CONCRETE COLOUR
REFERENCE DRAWING: DWG. N25638 SHT S3 & S3-1

HEADFRAME

TYPE: PROPOSED TRIANGULAR HEADFRAME
MODEL NO.: -
COLOUR: GALVANISED FINISH
REFERENCE DRAWING: DWG. 017866P105 SHT. 11, 12, 13, 14

ANTENNAS

COLOUR: NATURAL PRODUCT COLOUR
FOR DETAILS SEE SHEET S3-2

ANTENNA MOUNTS

TYPE: STEEL TUBE MOUNT
COLOUR: GALVANISED FINISH
REFERENCE DRAWING: DWG. 017866P105 SHT. 11, 12, 13, 14

ANTENNA ACCESS

TELSTRA: BY CHERRY PICKER
OTHERS: -

HORIZONTAL CABLE GANTRY

TYPE: N/A

VERTICAL CABLE GANTRY

TYPE: FEEDERS TO RUN INSIDE MONOPOLE
HEIGHT: 25m
FEEDER BRACKET: -
COLOUR: -
REFERENCE DRAWING: DWG. N25638 SHT S3 & S3-1
TYPE: 850- PROPOSED 300mm NEMA 20C
HEIGHT: 2m APPROX
COLOUR: GALVANISED FINISH
REFERENCE DRAWING: DWG. N25638 SHT. T6

FIBRE LINK

EXISTING

FEEDER CABLE CONDUITS

TYPE: UPVC
SIZE: Ï 150
QUANTITY: 850- PROPOSED (6 OFF)
COLOUR: WHITE

FEEDERS

MAIN FEEDER TYPE:
850- PROPOSED LCF78-50JA (9 OFF)
850- EXISTING LDF4-50 TO BE RECOVERED (3 OFF)
900- PROPOSED LDF5-50 (2 OFF)
900- EXISTING LDF4-50 TO BE RECOVERED (2 OFF)

MAIN FEEDER LENGTH:
850- 55m APPROX. (PROPOSED)
850- 22m APPROX. (RECOVER)
900- 45m APPROX. (PROPOSED)
900- 22m APPROX. (RECOVER)

REFER TO CANRAD FOR FEEDER DETAILS

PITS

COMMUNICATION PITS :
850- PROPOSED (2 OFF)
TYPE: ACO CABLEMATE POLYMER CONCRETE TYPE 99 WITH 2xRISERS & POLYMER CONCRETE LID
SIZE (mm): 1010(L) x 1010(W) x 1180(D)
EARTHING PITS:
EXISTING (1 OFF)
850- PROPOSED (1 OFF)
TYPE: ACO CABLEMATE PLASTIC TYPE 2 WITH RISER & CEMENT CONCRETE LID
SIZE (mm): 660(L) x 290(W) x 775(D)
POWER PITS: N/A
TYPE: -
SIZE (mm): -

POWER SUPPLY

DC POWER TO BE SUPPLIED FROM EXISTING DISTRIBUTION RACK. A NEW 125Amp CIRCUIT BREAKER TO BE INSTALLED IN POSITION 4.

EARTHING DETAIL

ALL EARTHING TO BE INSTALLED IN ACCORDANCE WITH APPROVED TELSTRA EXTERNAL PLANT STANDARDS & DRAWINGS G4 & 017866P201 SHEET 1 REV. 1 & SHEET 9 REV. 1 & SHEET 11 REV 1 & 017866P204 SHEET 1 REV. 1 .

SITE ACCESS

VIA KOSCIUSZKO ROAD
REFER SHEET S1

SITE SIGNAGE

ALL EME SIGNAGE IS REFERENCED ON DRAWINGS S1, S1-1, S3 & S3-1. REFER TO DOCUMENTS 005486A04, 005486A05 & 005486A10 FOR DETAILS.

#2 EME TELSTRA #2 SIGN
SIGNS TO BE UV STABLE STICKERS AND FIXED TO REAR OF TELSTRA PANEL ANTENNAS

#6 EME TELSTRA #6 SIGN
SIGNS TO BE FIXED AT DEFINED ACCESS RESTRICTION.

PROPERTY SIGNAGE

SPECIFY PROPERTY SIGNAGE AS PER DOCUMENT 017866A12.
PROPERTY SIGN INCLUDES RFNSA SITE NUMBER.
SIGN NAME : BRANDED SITE IDENTIFICATION REGULAR (BSr)
TELSTRA S/I NO. 187/00929
JABAC NO. TFMS929-M

TOWER MOUNTED AMPLIFIERS

SUPPLIER: N/A
PART NUMBER: N/A

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.

3. SERVICES, WHERE SHOWN ARE INDICATIVE ONLY. LOCATION OF ALL RELEVANT EXISTING SERVICES SHALL BE IDENTIFIED AND CONFIRMED PRIOR TO COMMENCING WORK. CONTRACTOR TO LIAISE WITH RELEVANT AUTHORITIES FOR DIRECTIONS AND PERMITS REQUIRED.
DIAL 1100 BEFORE YOU DIG.

4. FEEDER CONNECTION DETAILS, ELECTRICAL AND MECHANICAL TILTS ARE TO BE OBTAINED FROM CANRAD REPORTS.

SITE REFERENCE DETAILS

OCCUPIER	SITE NAME	SITE CODE
TELSTRA	PERISHER VALLEY TE	45644

RFNSA SITE NUMBER - 2624004
STRUCTURE OWNER - TELSTRA

SECURITY COMPOUND GATE KEY NO.	N/A
EQUIPMENT SHELTER KEY NO.	GMK
STRUCTURE KEY NO.	GMK
MAINS POWER METER BOX LOCK TYPE.	N/A
AIR-CONDITIONING CAGE LOCKS	N/A
BATTERY CABINET (BBU&RRU) LOCKS	N/A

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

A1 (1) DENOTES EXISTING TELSTRA ANTENNA SECTOR
A1 (1) DENOTES PROPOSED TELSTRA ANTENNA SECTOR

NA13039.01 DESIGN BRIEF ISSUE 1 DATED 24/07/2012

FOR CONSTRUCTION WCDMA850

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
NA13039.01	RP	PM	WCDMA850 DETAILED DESIGN 71727517WO01URB	ML	ML	03.12.12	1

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DWG NO. N25638
SHT NO. S0 INDEX

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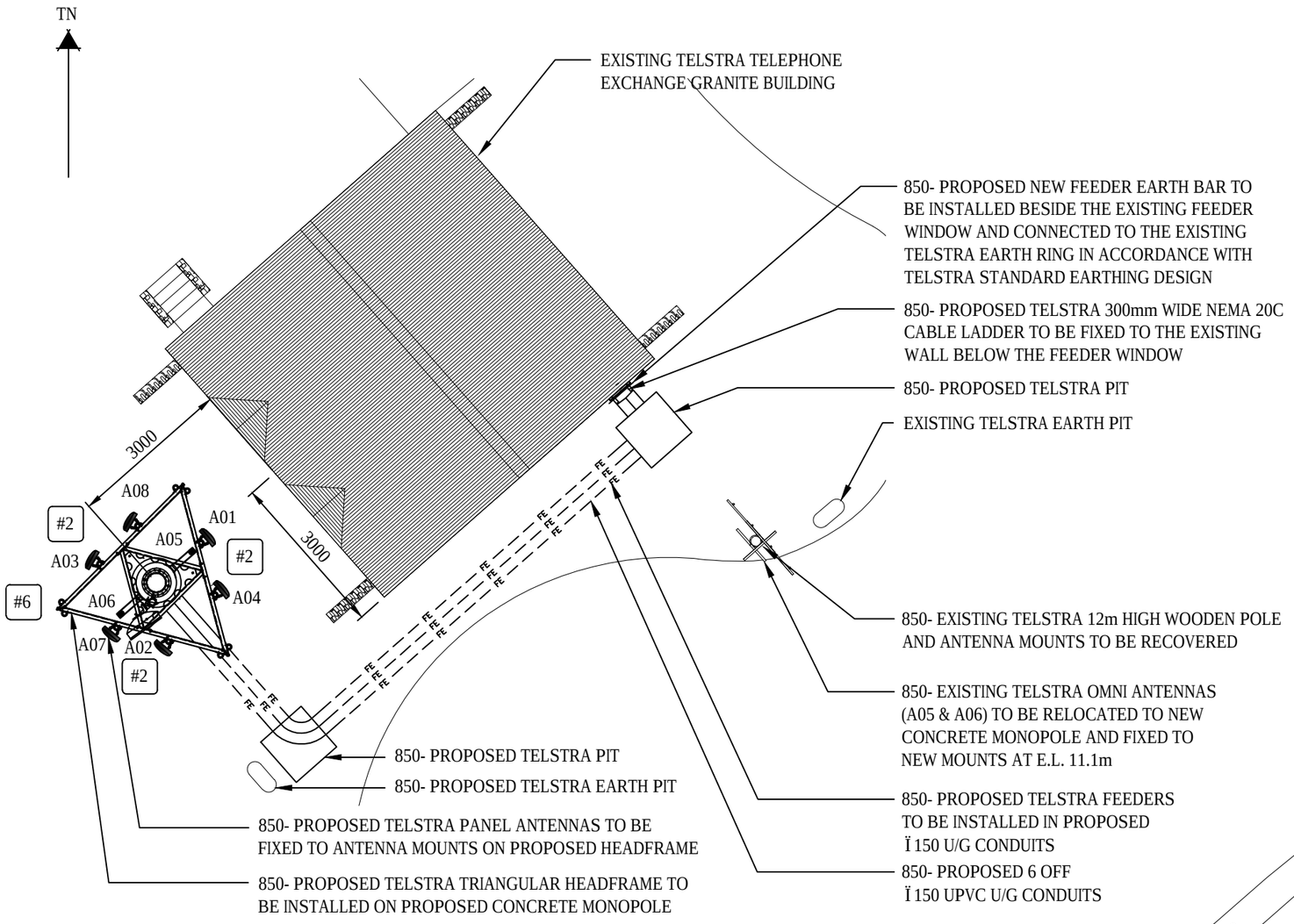

SITE LAYOUT

SCALE 1:100

1m 0 1m 2m 3m 4m 5m SCALE 1:100

RFNSA SITE No. 2624004

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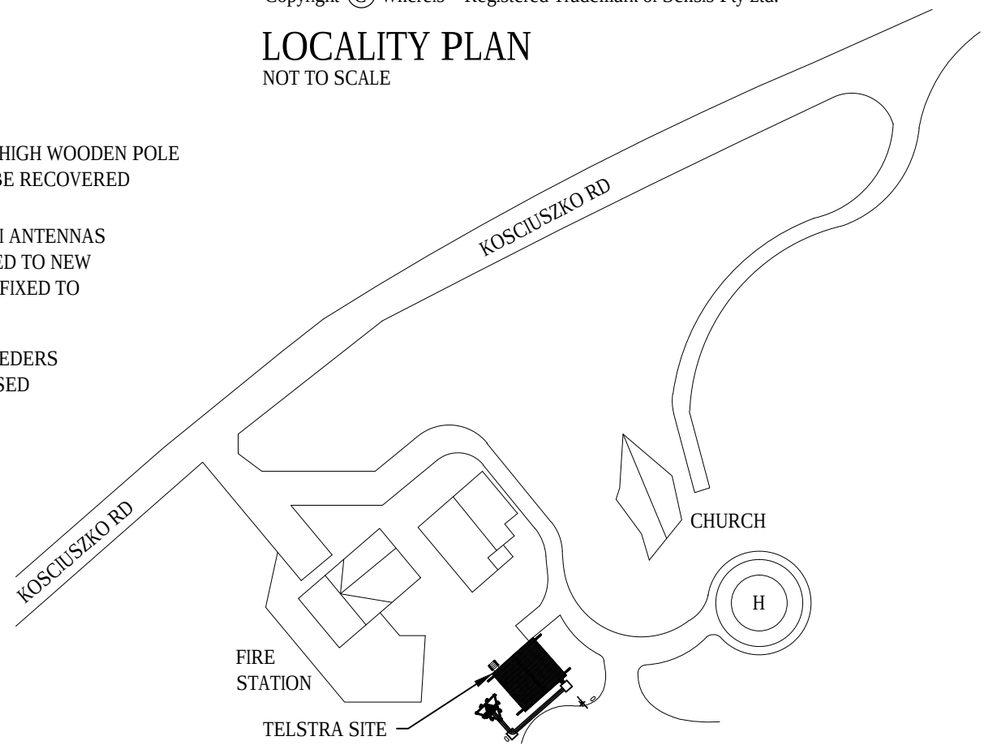
LOCALITY PLAN

NOT TO SCALE



SITE ACCESS

NOT TO SCALE

NOTES :

1. FOR EME SIGNS NOTATED #X REFER TO 005486 DOCUMENTS FOR DETAILS.
2. #2 EME SIGN SECURED TO ANTENNAS REFER TO 005486 DOCUMENTS.
3. #6 EME SIGN SECURED AT THE DEFINED ACCESS RESTRICTION.
4. ALL ACCESS POINTS ON THE STRUCTURE MUST BE BIRD PROOFED AS PER EXTERNAL PLANT POLICY 003615.
5. EXISTING TELSTRA OMNI ANTENNAS (A01, A02, A03, A04, A07) AND FEEDERS TO BE RECOVERED.
6. OMNI ANTENNAS A05 & A06 AND RELATED FEEDERS TO BE RELOCATED TO PROPOSED MONOPOLE AT LEVEL 11.1m
7. AIRCRAFT WARNING LIGHT TO BE INSTALLED ON THE TOP OF PROPOSED 25m MONOPOLE.

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PROPERTY DESCRIPTION

PARISH OF GUTHEGA
COUNTY OF WALLACE

SITE STRUCTURE CO-ORDINATES (GDA94) GPS READING ACCURACY: Ñ10m CENTRE OF EXISTING POLE	
LATITUDE	-36.40534 (GDA94)
LONGITUDE	148.41423 (GDA94)

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	AA	BW	DRG RATIONALISATION DRAWN FROM NX256382 & /B15	BW	BW	01.05.09	1
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SITE LAYOUT AND ACCESS

KOSCIUSZKO RD

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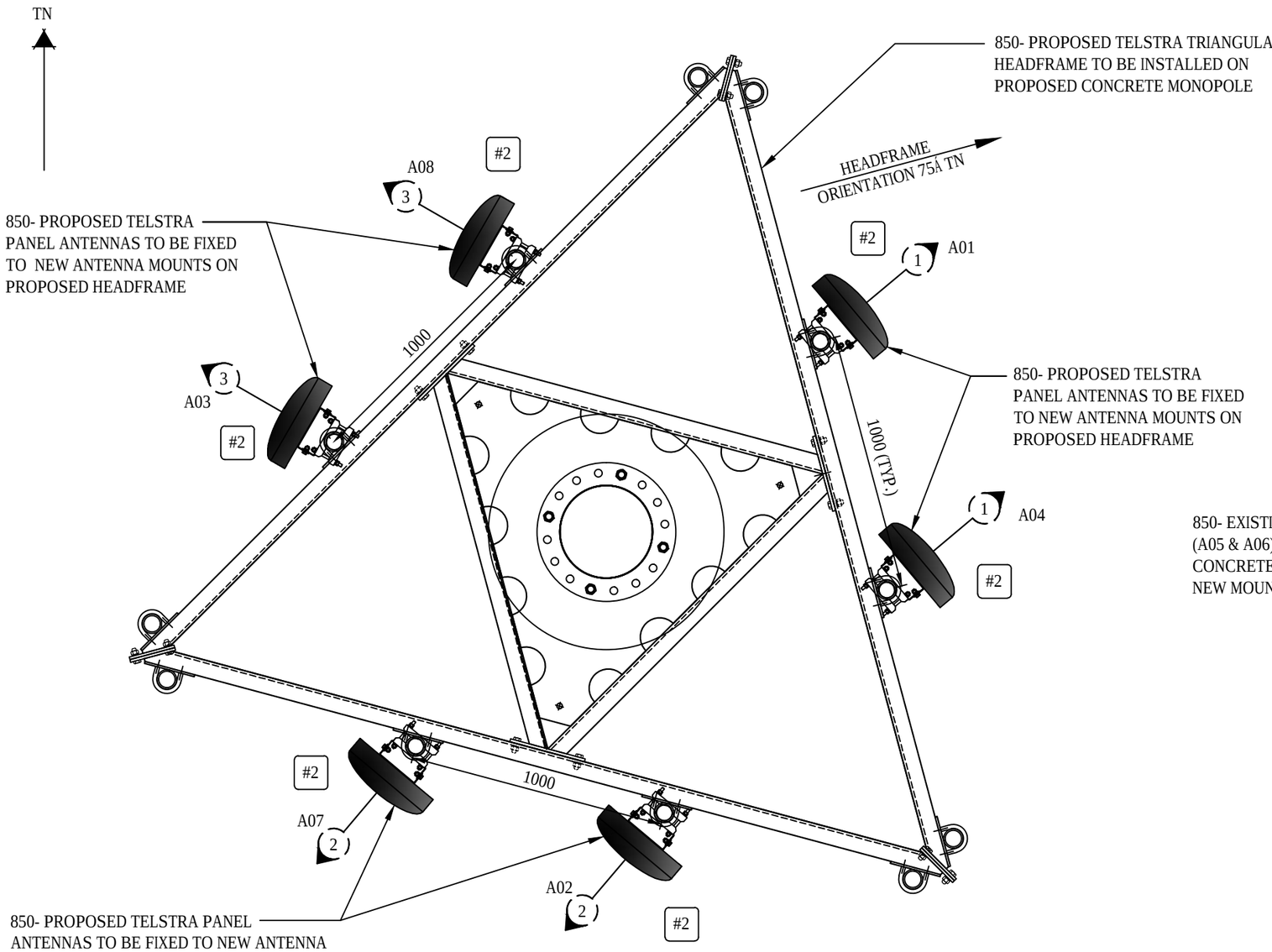
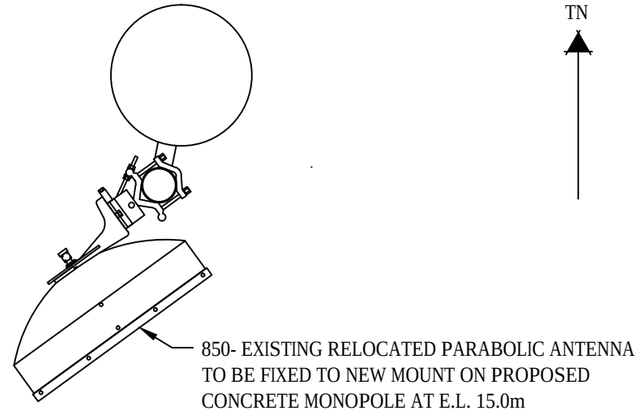


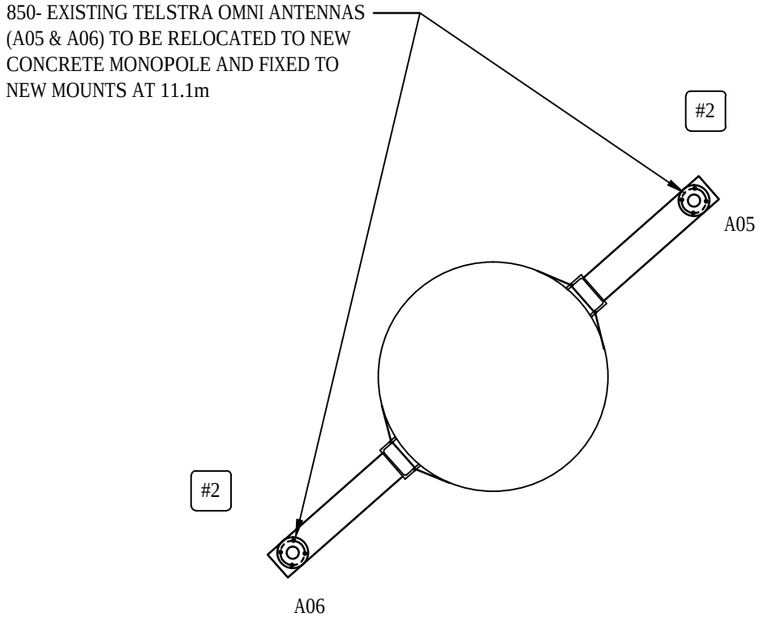
ANTENNA LAYOUT AT E.L. 25m

SCALE 1:20



ANTENNA LAYOUT AT E.L. 15.0m

SCALE 1:20



ANTENNA LAYOUT AT E.L. 11.1m

SCALE 1:20

200 0 1000 SCALE 1:20

NOTES :

1. FOR EME SIGNS NOTATED #X REFER TO 005486 DOCUMENTS FOR DETAILS.
2. #2 EME SIGN SECURED TO ANTENNAS REFER TO 005486 DOCUMENTS.
3. #6 EME SIGN SECURED AT THE DEFINED ACCESS RESTRICTION.
4. ALL ACCESS POINTS ON THE STRUCTURE MUST BE BIRD PROOFED AS PER EXTERNAL PLANT POLICY 003615.
5. EXISTING TELSTRA OMNI ANTENNAS (A01, A02, A03, A04, A07) AND FEEDERS TO BE RECOVERED.
6. OMNI ANTENNAS A05 & A06 AND RELATED FEEDERS TO BE RELOCATED TO PROPOSED MONOPOLE AT LEVEL 11.1m.
7. AIRCRAFT WARNING LIGHT TO BE INSTALLED ON THE TOP OF PROPOSED 25m MONOPOLE.

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NEXT G™ NETWORK

▽ E.L. 26.3m R.L 1755.8m A.H.D
TOP OF PROPOSED TELSTRA PANEL ANTENNAS

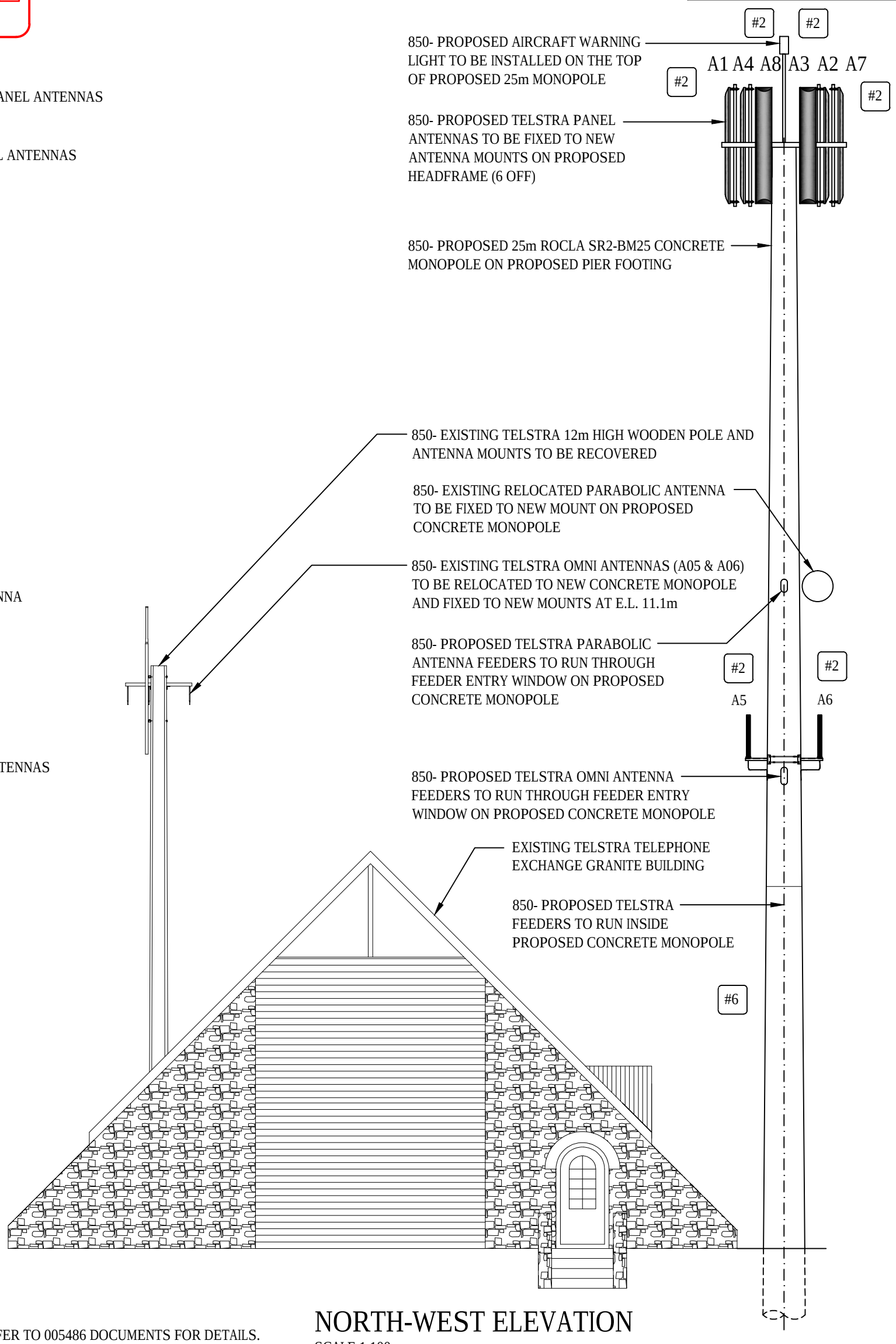
▽ E.L. 25.0m R.L 1754.5m A.H.D
C/L PROPOSED TELSTRA PANEL ANTENNAS
TOP OF MONOPOLE

▽ E.L. 15.0m R.L 1744.5m A.H.D
RELOCATED PARABOLIC ANTENNA

▽ E.L. 11.1m R.L 1740.6m A.H.D
RELOCATED TELSTRA OMNI ANTENNAS

▽ E.L. 5.0m
#6 SIGN LEVEL

▽ E.L. 0.00m R.L 1729.5m A.H.D
GROUND LEVEL



NORTH-WEST ELEVATION

SCALE 1:100

1m 0 1m 2m 3m 4m 5m SCALE 1:100

NOTES :

1. FOR EME SIGNS NOTATED #X REFER TO 005486 DOCUMENTS FOR DETAILS.
2. #2 EME SIGN SECURED TO ANTENNAS REFER TO 005486 DOCUMENTS.
3. #6 EME SIGN SECURED AT THE DEFINED ACCESS RESTRICTION.
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6. OMNI ANTENNAS A05 & A06 TO BE RELOCATED TO PROPOSED MONOPOLE AT LEVEL 11.1m.
7. AIRCRAFT WARNING LIGHT TO BE INSTALLED ON THE TOP OF PROPOSED 25m MONOPOLE.

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	AA	BW	DRG RATION WAS NX25638/2 & MERCS COMPLIANCE	BW	BW	01.05.09	1
NA13039.01	RP	PM	WCDMA850 DETAILED DESIGN 717375[illegible]001URB	ML	ML	03.12.12	2

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MOBILE NETWORK SITE 45644

PERISHER VALLEY T.E

SITE ELEVATION - SHEET 1 OF 2

KOSICIUSKO RD, PERISHER VALLEY, NSW 2624

DWG NO. N25638

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850- PROPOSED AIRCRAFT WARNING LIGHT TO BE INSTALLED ON THE TOP OF PROPOSED 25m MONOPOLE

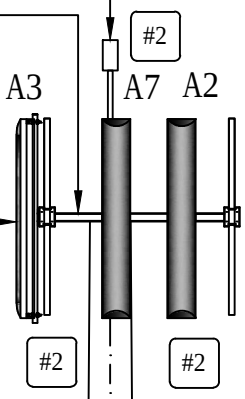
850- PROPOSED TELSTRA TRIANGULAR HEADFRAME TO BE INSTALLED ON PROPOSED CONCRETE MONOPOLE

850- PROPOSED TELSTRA PANEL ANTENNAS TO BE FIXED TO ANTENNA MOUNTS ON PROPOSED HEADFRAME

850- PROPOSED 25m ROCLA SR2-BM25 CONCRETE MONOPOLE

850- PROPOSED TELSTRA FEEDER CABLES TO RUN INSIDE PROPOSED CONCRETE MONOPOLE

850- EXISTING RELOCATED PARABOLIC ANTENNA TO BE FIXED TO NEW MOUNT ON PROPOSED CONCRETE MONOPOLE



▽ E.L. 26.3m R.L 1755.8m A.H.D
TOP OF PROPOSED TELSTRA PANEL ANTENNAS

TOP OF MONOPOLE

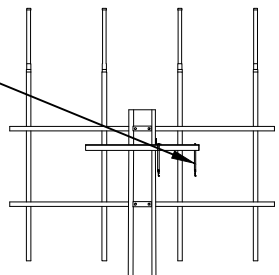
▽ E.L. 25.0m R.L 1754.5m A.H.D
C/L PROPOSED TELSTRA PANEL ANTENNAS

NOTES :

1. FOR EME SIGNS NOTATED #X REFER TO 005486 DOCUMENTS FOR DETAILS.
2. #2 EME SIGN SECURED TO ANTENNAS REFER TO 005486 DOCUMENTS.
3. #6 EME SIGN SECURED AT THE DEFINED ACCESS RESTRICTION.
4. ALL ACCESS POINTS ON THE STRUCTURE MUST BE BIRD PROOFED AS PER EXTERNAL PLANT POLICY 003615.
5. EXISTING TELSTRA OMNI ANTENNAS (A01, A02, A03, A04, A07) AND FEEDERS TO BE RECOVERED.
6. OMNI ANTENNAS A05 & A06 AND RELATED FEEDERS TO BE RELOCATED TO PROPOSED MONOPOLE AT LEVEL 11.1m.
7. AIRCRAFT WARNING LIGHT TO BE INSTALLED ON THE TOP OF PROPOSED 25m MONOPOLE.

▽ E.L. 15.0m R.L 1744.5m A.H.D
RELOCATED PARABOLIC ANTENNA

850- EXISTING TELSTRA OMNI ANTENNAS (A05 & A06) TO BE RELOCATED TO NEW CONCRETE MONOPOLE AND FIXED TO NEW MOUNTS AT E.L. 11.1m



A5 (BEHIND)
A6
#2

▽ E.L. 11.1m R.L 1740.6m A.H.D
RELOCATED TELSTRA OMNI ANTENNAS

EXISTING TELSTRA TELEPHONE EXCHANGE GRANITE BUILDING

EXISTING TELSTRA GPS ANTENNA

EXISTING TELSTRA 12m HIGH WOODEN POLE AND ANTENNA MOUNTS TO BE RECOVERED

EXISTING TELSTRA 150mm WIDE CABLE LADDER TO BE RECOVERED

▽ E.L. 5.0m
#6 SIGN LEVEL

#6

▽ E.L. 0.00m R.L 1729.5m A.H.D
GROUND LEVEL

PROPOSED NEW FEEDER EARTH BAR TO BE INSTALLED BESIDE THE EXISTING FEEDER WINDOW AND CONNECTED TO THE EXISTING TELSTRA EARTH RING IN ACCORDANCE WITH TELSTRA STANDARD EARTHING DESIGN

PROPOSED TELSTRA 300mm WIDE NEMA 20C CABLE LADDER TO BE FIXED TO THE EXISTING WALL BELOW THE FEEDER WINDOW

PROPOSED TELSTRA 1x1x1m PITS

PROPOSED TELSTRA FEEDERS TO BE INSTALLED IN PROPOSED Ï150 U/G CONDUITS

PROPOSED 6 OFF Ï150 UPVC U/G CONDUITS

SOUTH-WEST ELEVATION

SCALE 1:100

1m 0 1m 2m 3m 4m 5m SCALE 1:100

FOR CONSTRUCTION WCDMA850

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
	AA	BW	DRG. RATION WAS NX25638/2 & MERCS COMPLIANCE	BW	BW	01.05.09	1
NA13039.01	RP	PM	WCDMA850 DETAILED DESIGN NX25638V1917WO01URB	ML	ML	03.12.12	2

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MOBILE NETWORK SITE 45644
PERISHER VALLEY T.E
SITE ELEVATION - SHEET 2 OF 2
KOSICIUSKO RD, PERISHER VALLEY, NSW 2624

DWG NO. N25638
SHT NO. S3-1 INDEX

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A3V

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TELSTRA MOBILES ANTENNA CONFIGURATION TABLE

ANTENNA No	ANTENNA TYPE & SIZE H x W x D	ANTENNA STATUS	ANTENNA HEIGHT C/L A.G.L.	PHYSICAL ANTENNA BEARING (xÁT)	SECTOR NO. & SYSTEM
OLD A01	DECIBEL DB583-XC OMNI	EXISTING REMOVE	12.0m	0Á	S0: SPARE
A01	ARGUS CNNPX310R-6P 2630 x370 x 120	PROPOSED	25.0m	50Á	S1: WCDMA850 S1: WCDMA850 S1: SPARE S1: SPARE S1: SPARE S1: SPARE
OLD A02	DECIBEL DB583-XC OMNI	EXISTING REMOVE	12.0m	360Á	S0: WCDMA850
A02	ARGUS CNNPX310R-6P 2630 x370 x 120	PROPOSED	25.0m	220Á	S2: WCDMA850 S2: WCDMA850 S2: SPARE S2: SPARE S2: SPARE S2: SPARE
OLD A03	DECIBEL DB583-XC OMNI	EXISTING REMOVE	12.0m	0Á	S0: SPARE
A03	ARGUS CNNPX310R-6P 2630 x370 x 120	PROPOSED	25.0m	300Á	S3: WCDMA850 S3: WCDMA850 S3: SPARE S3: SPARE S3: SPARE S3: SPARE
OLD A04	DECIBEL DB583-XC OMNI	EXISTING REMOVE	12.0m	0Á	S0: WCDMA850
A04	ARGUS CNNPX310R-6P 2630 x370 x 120	PROPOSED	25.0m	50Á	S1: WCDMA850 S1: SPARE S1: SPARE S1: SPARE S1: SPARE S1: SPARE
A05	ARGUS CNA002U OMNI	EXISTING RELOCATE	Base of Omni 11.1m	0Á	S0: GSM900
A06	ARGUS CNA002U OMNI	EXISTING RELOCATE	Base of Omni 11.1m	0Á	S0: GSM900
OLD A07	ARGUS CNA002U OMNI	EXISTING REMOVE	Base of Omni 11.1m	0Á	S0: GSM900
A07	ARGUS CNNPX310R-6P 2630 x370 x 120	PROPOSED	25.0m	220Á	S2: WCDMA850 S2: SPARE S2: SPARE S2: SPARE S2: SPARE S2: SPARE
A08	ARGUS CNNPX310R-6P 2630 x370 x 120	PROPOSED	25.0m	300Á	S3: WCDMA850 S3: SPARE S3: SPARE S3: SPARE S3: SPARE S3: SPARE

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MOBILE NETWORK SITE 45644
PERISHER VALLEY T.E
ANTENNA CONFIGURATION TABLE
KOSICIUSKO RD, PERISHER VALLEY, NSW 2624

DWG NO. N25638 SHT NO. S3-2 INDEX

A3

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850- PROPOSED 125Amp CIRCUIT BREAKER TO BE INSTALLED IN POSITION 4 OF THE EXISTING DC DISTRIBUTION RACK FOR NEW RBS6201

850- EXISTING GPO ON THE WALL TO BE RELOCATED TO ALLOW INSTALLATION OF PROPOSED RBS 6201

850- EXISTING FOLDER SHELF TO BE RELOCATED TO ALLOW INSTALLATION OF PROPOSED RBS 6201

850- PROPOSED RBS 6201

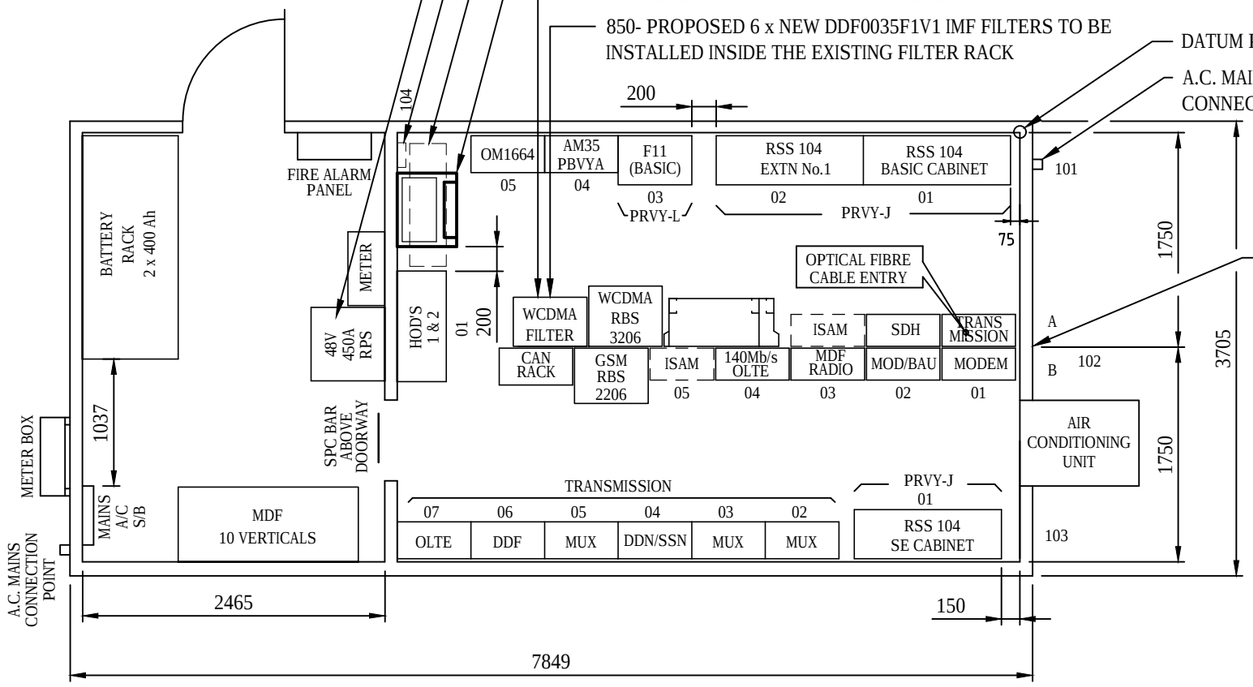
850- EXISTING ERICSSON KRF102269/1-R1A IMF FILTER TO BE REPLACED WITH A NEW DDF0035F1V1 IMF FILTER INSIDE THE EXISTING FILTER RACK

850- PROPOSED 6 x NEW DDF0035F1V1 IMF FILTERS TO BE INSTALLED INSIDE THE EXISTING FILTER RACK

DATUM POINT

A.C. MAINS CONNECTION POINT

850- PROPOSED TELSTRA FEEDER CABLES TO RUN THROUGH THE EXISTING SANDWICH PANEL WALL. DRILL NEW HOLES THROUGH THE WALL OR ADJUST THE EXISTING HOLES TO SUIT NEW FEEDERS IF REQUIRED



EQUIPMENT SHELTER

SCALE 1:50

500 0 2500 SCALE 1:50

LEGEND

EXISTING EQUIPMENT

PROPOSED EQUIPMENT

RESERVED EQUIPMENT

FLOOR PLAN INFORMATION EXTRACTED FROM DRAWING NX31028/3 SHT. 1 ISS.19

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MOBILE NETWORK SITE 45644

PERISHER VALLEY T.E

EQUIPMENT LAYOUT

KOSICIUSKO RD, PERISHER VALLEY, NSW 2624

DWG NO. N25638

SHT NO. E1 INDEX

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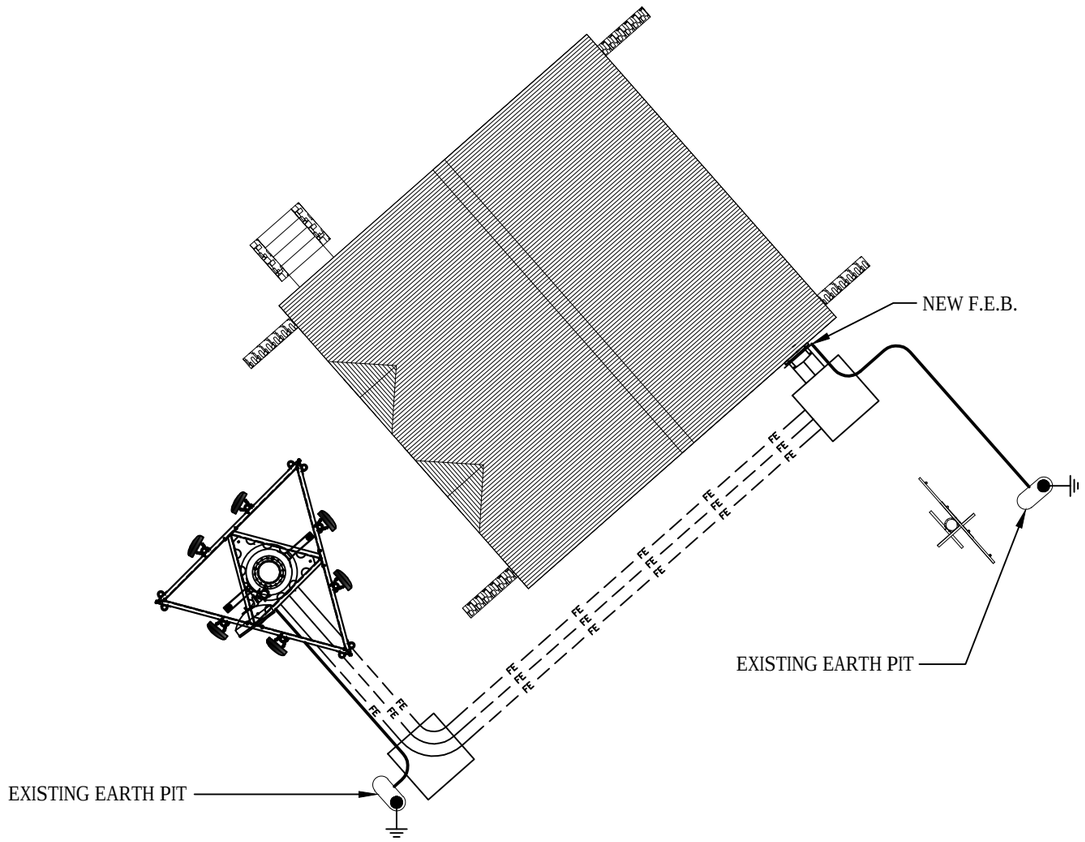

SITE EARTHING PLAN

SCALE 1:50

500 0 2500 SCALE 1:50

LEGEND

EARTH STRAP

EARTH INSPECTION PIT

35mm² G/Y INSULATED CABLE (19/1.53).

EARTH ELECTRODE

CONNECTION

SERVICE EARTH BAR S.E.B.

FEEDER EARTH BAR F.E.B.

NOTES :

SPECIFIC DESIGNS ARE REQUIRED FOR TELEPHONE EXCHANGE SITES

1. REFER DRAWING 017866P201 SHEET 1 FOR ADDITIONAL CONNECTION DETAILS.
2. ALL EARTH STRAPS TO BE 50x3 mm HOT DIPPED GALVANISED MS FLAT AND LAID TO A MINIMUM DEPTH OF 500mm. TELSTRA EXCHANGE SITES WILL HAVE AN EXISTING SERVICE EARTH PRESENT. CHECK RECORDS FOR LOCATION. NOTE THAT THERE MAY BE OBSOLETE SYSTEMS IN SITU, TESTING WILL BE REQUIRED TO ENSURE THAT THE SERVICE EARTH IS IN SERVICE. JOIN THE NEW MOBILES EARTH INTO THE EXISTING SERVICE EARTH VIA A BOLTED CONNECTION THAT CAN BE BROKEN FOR EARTH TESTING. THIS BOND IS TO BE UNDERTAKEN EXTERNAL TO THE BUILDING AND MUST NOT BE RUN VIA EQUIPMENT AREAS.
3. STANDARD ELECTRODES TO BE STAINLESS STEEL CLAD ROD (S/I 446/16) 1440mm LONG AT 3 METRE SPACING BY A MINIMUM OF 2 ELECTRODES DEEP. THE SPECIFIC DESIGN WILL DETAIL ELECTRODE DEPTH BASED ON RESISTIVITY SURVEYS. ALL ELECTRODES ARE TO BE PLACED WITHIN A P1/P2 INSPECTION PIT.
4. 19/1.53mm GREEN AND YELLOW COPPER CABLE SHALL BE RUN FROM THE POLE AND TERMINATE AT THE ELECTRODE NEAREST THE POLE AND CONTINUE TO THE SERVICE EARTH ELECTRODE. THIS CONDUCTOR IS THEN TO CONTINUE ONTO THE S.E.B. SHOULD NO INSULATED CABLE ALREADY EXIST. THE PATH OF THIS BOND TO THE S.E.B. IS NOT TO TRAVERSE EQUIPMENT AREAS.
5. EARTH RESISTANCE OBJECTIVE IS 5 ohms. RESISTANCE IS TO BE MEASURED BEFORE CONNECTION OF FEEDERS TO EQUIPMENT AND ISOLATED FROM THE SERVICE EARTH.
6. IF OBJECTIVE IS NOT ACHIEVED, REPORT RESULTS TO DESIGN ENGINEER.
7. ALL CONNECTIONS TO EARTH ELECTRODE AND JOINTS ARE TO BE TREATED WITH DENSO PASTE AND TAPE.
8. WHERE ELECTRODES CANNOT BE DRIVEN, OR EARTH RESISTIVITY IS HIGH, DEEP DRILLED ELECTRODES MAY NEED TO BE INSTALLED. BACKFILL WITH EARTH ENHANCING MATERIAL (e.g. CALCIUM BENTONITE AND GYPSUM SLURRY).
9. FEEDERS TO BE EARTHED AT TOP AND BOTTOM OF POLE. REFER DRAWING 017866P201 SHEET 11 AND 017866P204 SHEET 1 FOR CONCRETE POLES.
10. FEEDERS THAT RUN THROUGH CABLE ENTRY WINDOW TO BE EARTHED ON FEEDER EARTH BAR OUTSIDE WINDOW. CONNECT F.E.B. TO NEAREST EARTH ELECTRODE. ELECTRODE MUST BE WITHIN 5m OF THE F.E.B. OTHERWISE INSTALL AN ELECTRODE BELOW THE F.E.B. AND BOND TO THE SERVICE EARTH ELECTRODE OR MOBILES EARTH ELECTRODE FEEDER EARTHING NOT REQUIRED WHERE THE F.E.B. < 2m FROM THE POLE.
11. CONNECT RBS TO MOBILES S.P.C. IF USING DEDICATED POWER OTHERWISE EARTH CABINET AS PER ESTABLISHED EXCHANGE EARTHING ARRANGEMENTS.
12. WHERE A DEDICATED POWER SYSTEM IS INSTALLED TO THE RBS, THE TILT PANEL BACKBOARD MAY BE EARTHED TO THE S.P.C OF THIS POWER SUPPLY. WHERE THE EXCHANGE POWER SYSTEM IS UTILISED FOR THE RBS, THE TILT PANEL IS TO BE EARTHED TO THE SERVICE EARTH AT THE S.E.B. OR A SE-TAPOFF.

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SITE EARTHING PLAN
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DWG NO. N25638 SHT NO. G4 INDEX

A3

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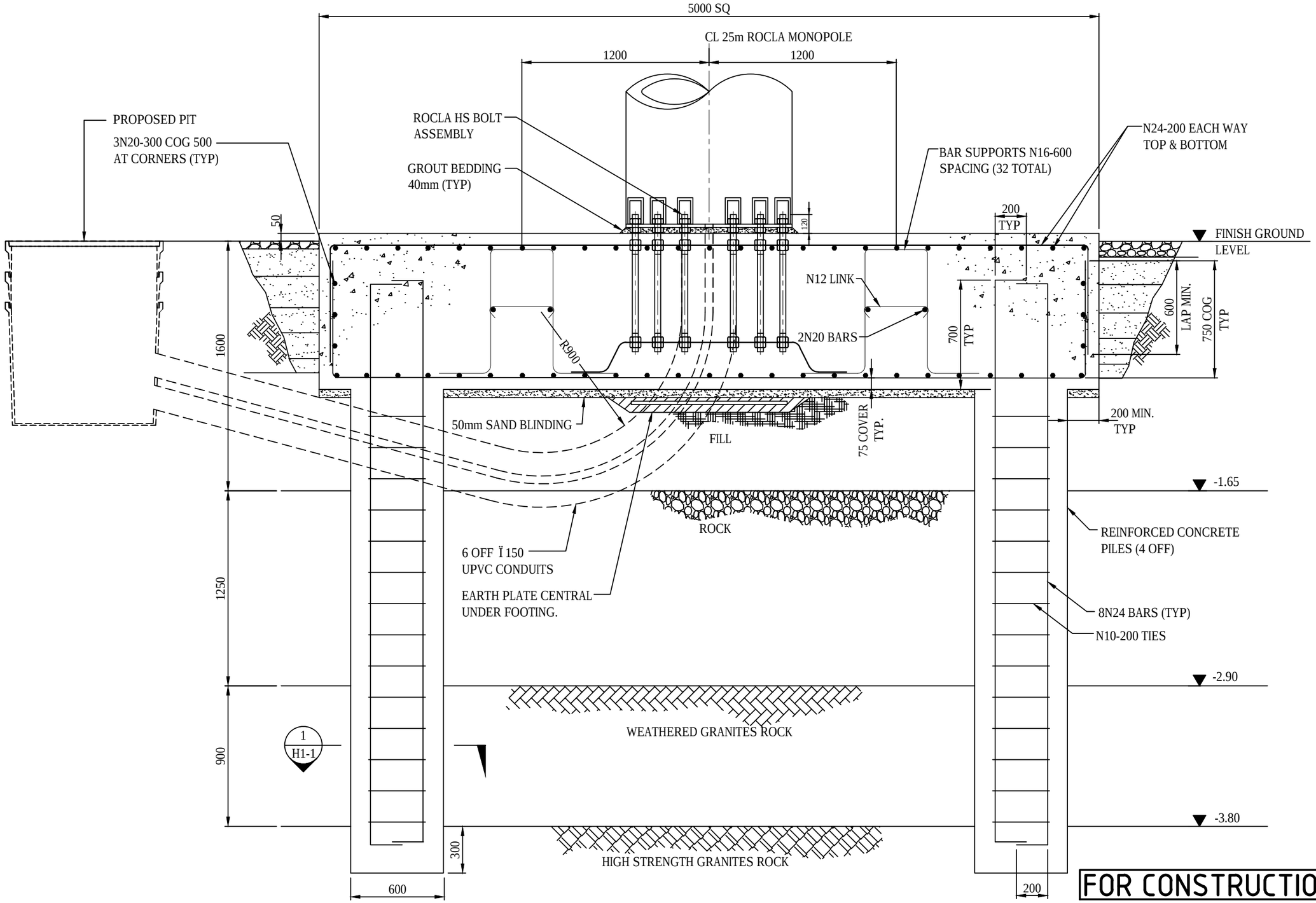

FOR CONSTRUCTION WCDMA850

100 0 500 SCALE 1:10

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MOBILE NETWORK SITE 45644

PERISHER VALLEY T.E

POLE FOOTING DETAIL - SHEET 1 OF 2

KOSICIUSKO RD, PERISHER VALLEY, NSW 2624

DWG NO. N25638

SHT NO. H1 INDEX

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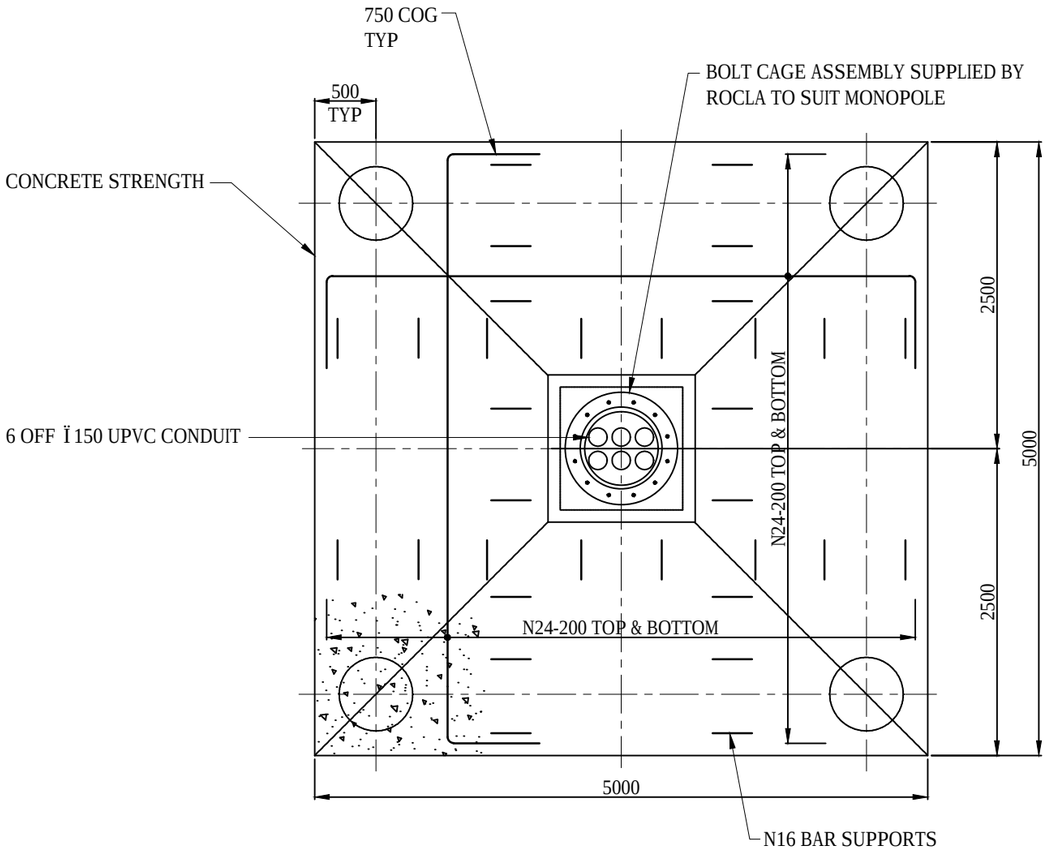
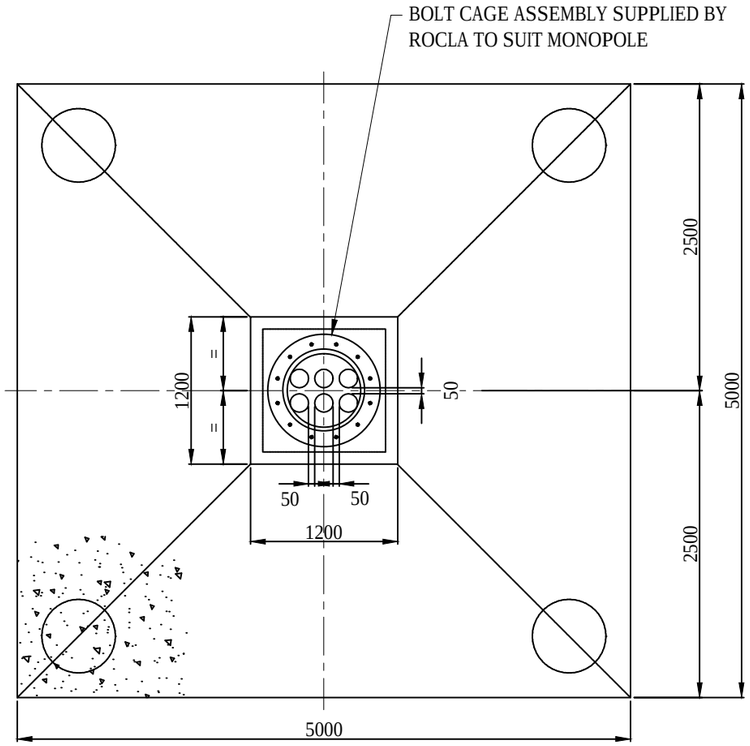
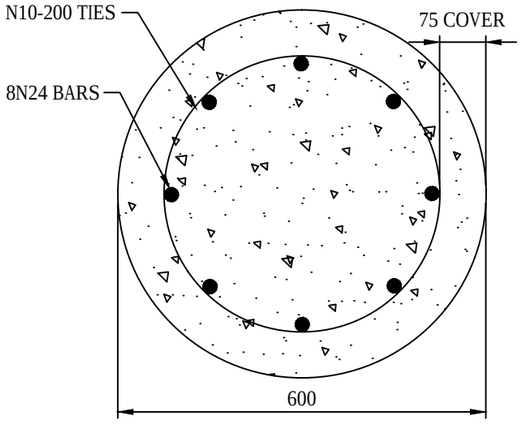


MONOPOLE FOOTING DETAIL
SCALE 1:50



HD BOLT SETOUT PLAN
SCALE 1:50



SECTION 1/H1
SCALE = 1:10

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100 0 500 SCALE 1:10

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MOBILE NETWORK SITE 45644
PERISHER VALLEY T.E
POLE FOOTING DETAIL - SHEET 2 OF 2
KOSICIUSKO RD, PERISHER VALLEY, NSW 2624

DWG NO. N25638 SHT NO. H1-1 INDEX

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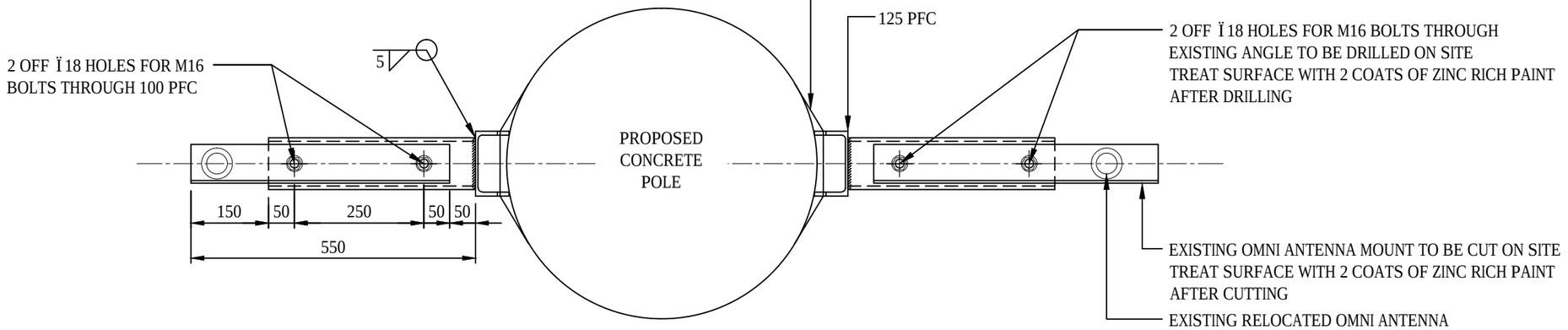
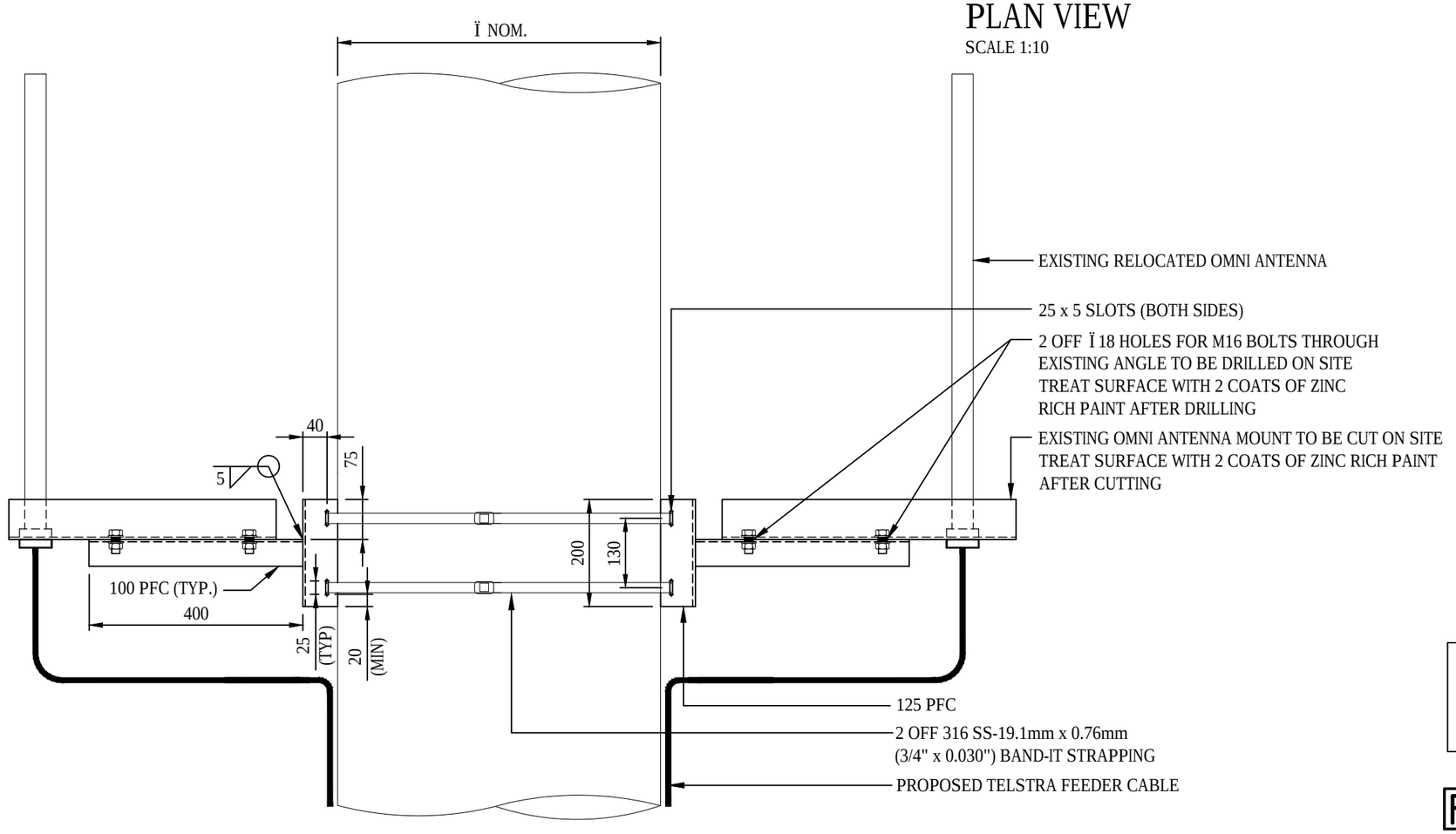


PLAN VIEW
SCALE 1:10



ELEVATION
SCALE 1:10

100 0 500 SCALE 1:10

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OMNI ANTENNA MOUNTING DETAIL
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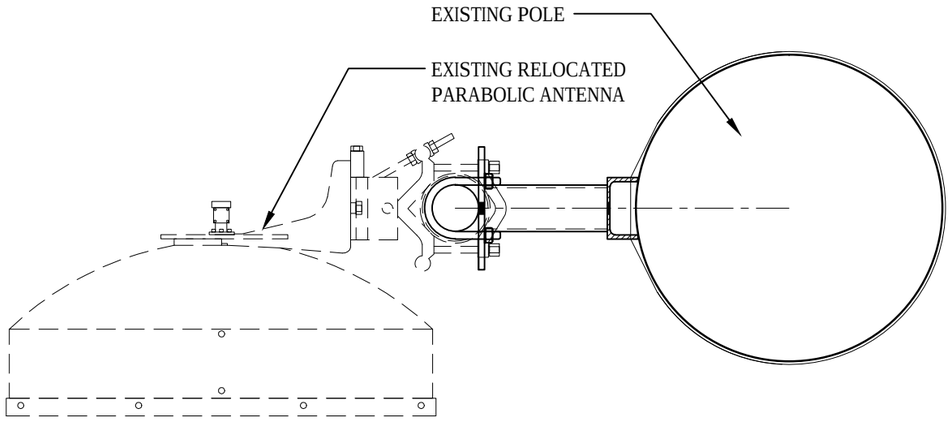
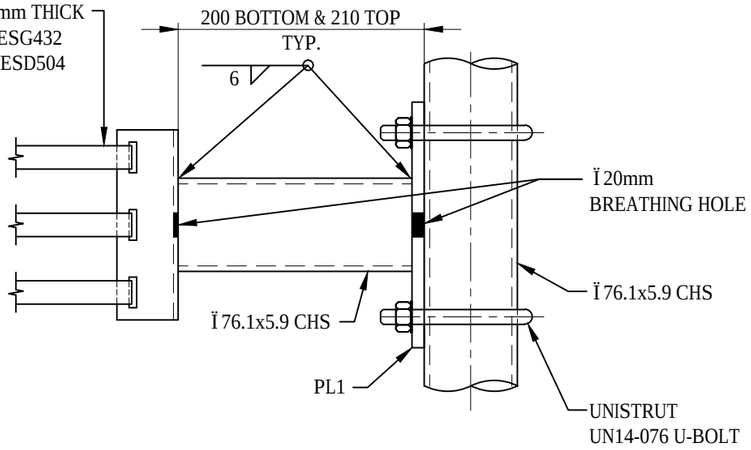
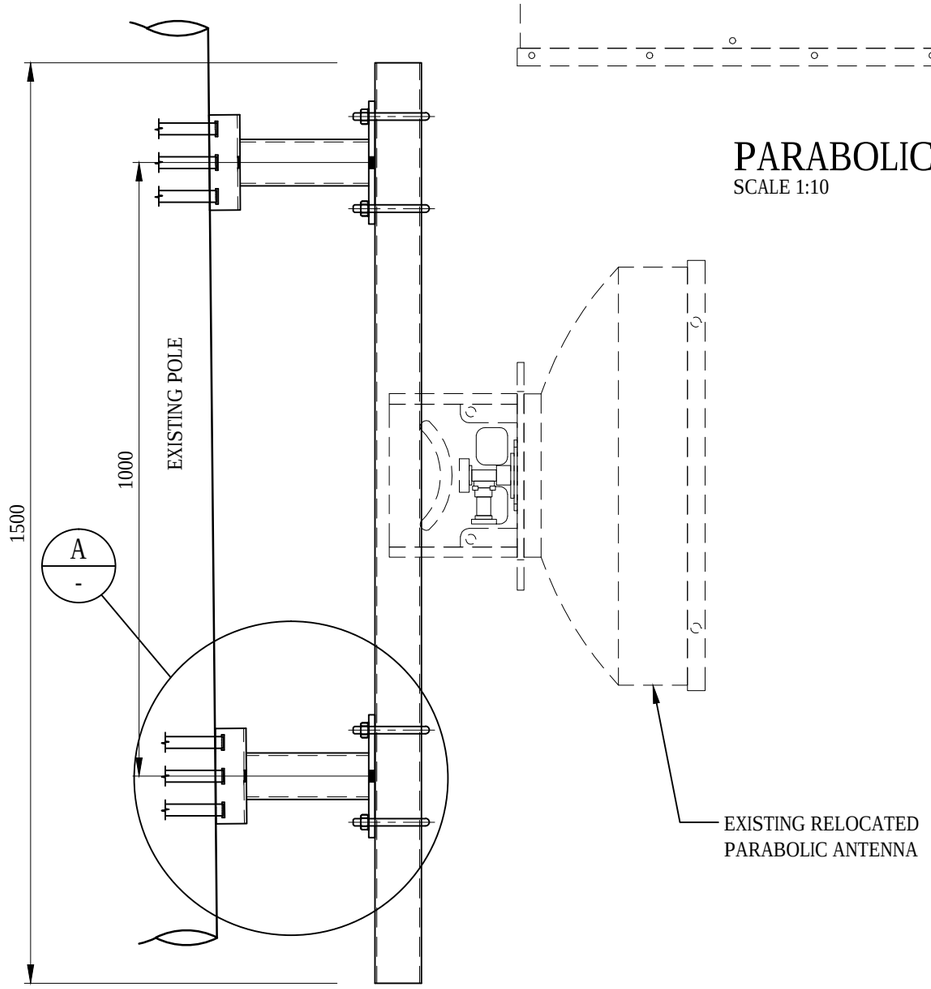


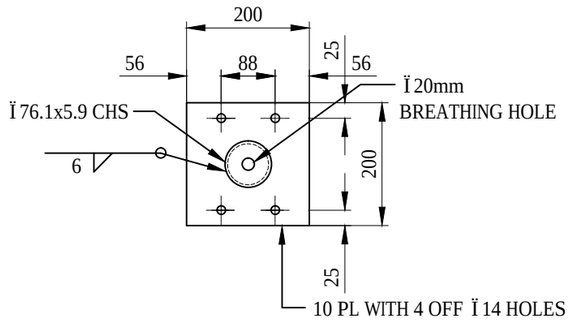
PARABOLIC ANTENNA MOUNT PLAN
SCALE 1:10



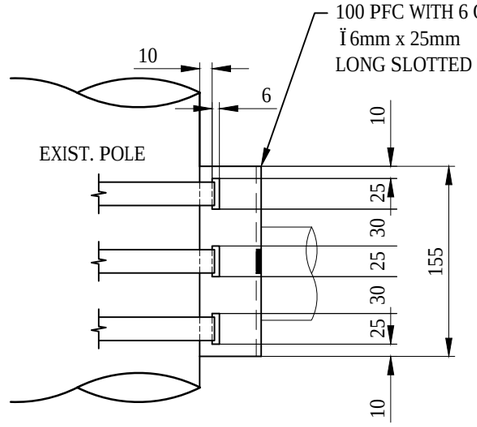
DETAIL A
SCALE 1:5



PARABOLIC ANTENNA MOUNT ELEVATION
SCALE 1:10



PL1 DETAIL
SCALE 1:10



100 PFC DETAILS
SCALE 1:5

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PARABOLIC ANTENNA MOUNTING DETAIL
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DWG NO. N25638
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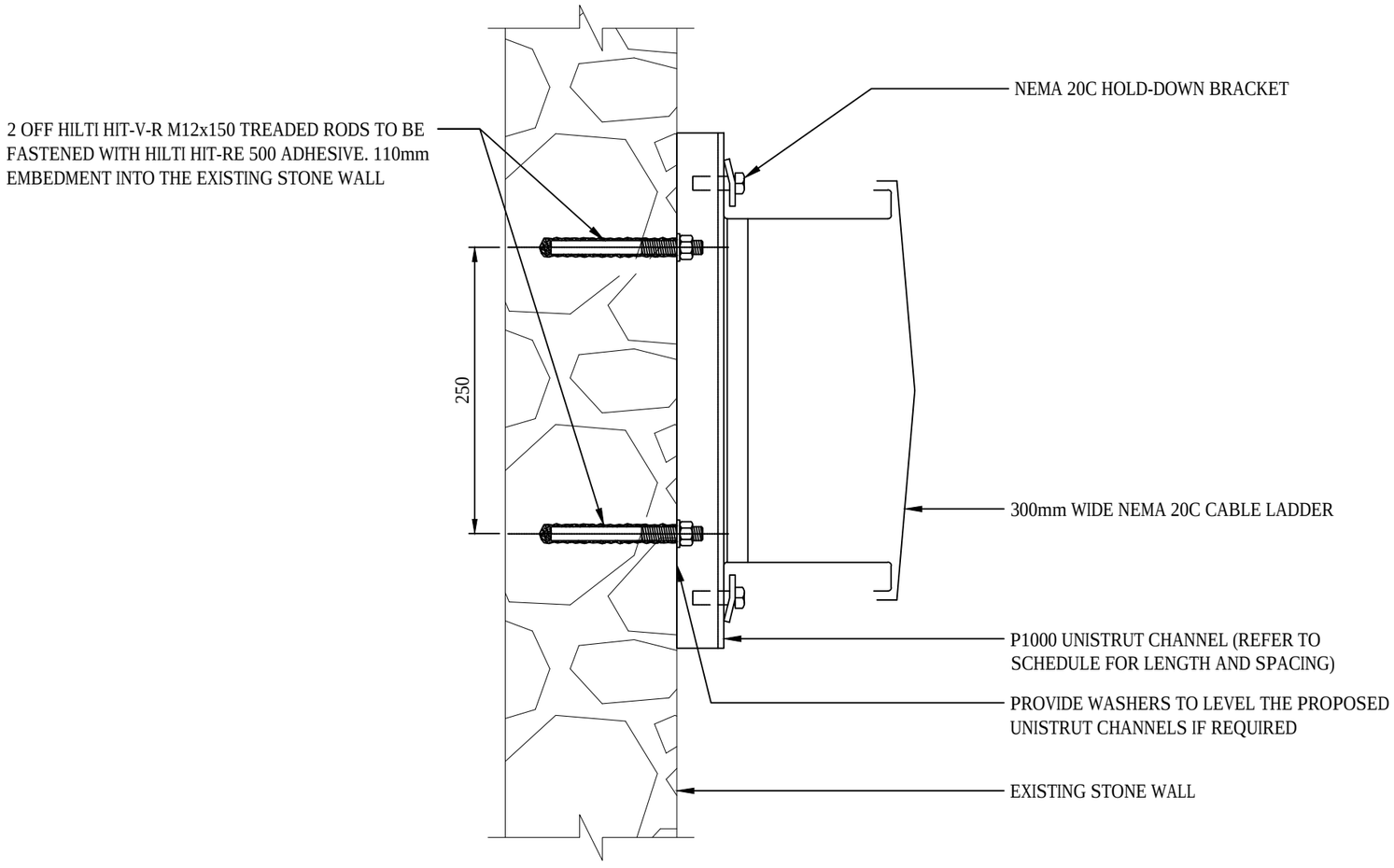
CABLE LADDER SCHEDULE			
CABLE LADDER SIZE	MAX. SPACING OF SUPPORTS	P1000 UNISTRUT LENGTH	CENTRES OF FIXINGS FOR EACH UNISTRUT
300	1800	450	250



VERTICAL CABLE LADDER FIXING TO STONE WALL (PLAN)

SCALE 1:5

50 0 250 SCALE 1:5

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VERTICAL CABLE GANTRY SUPPORT DETAIL
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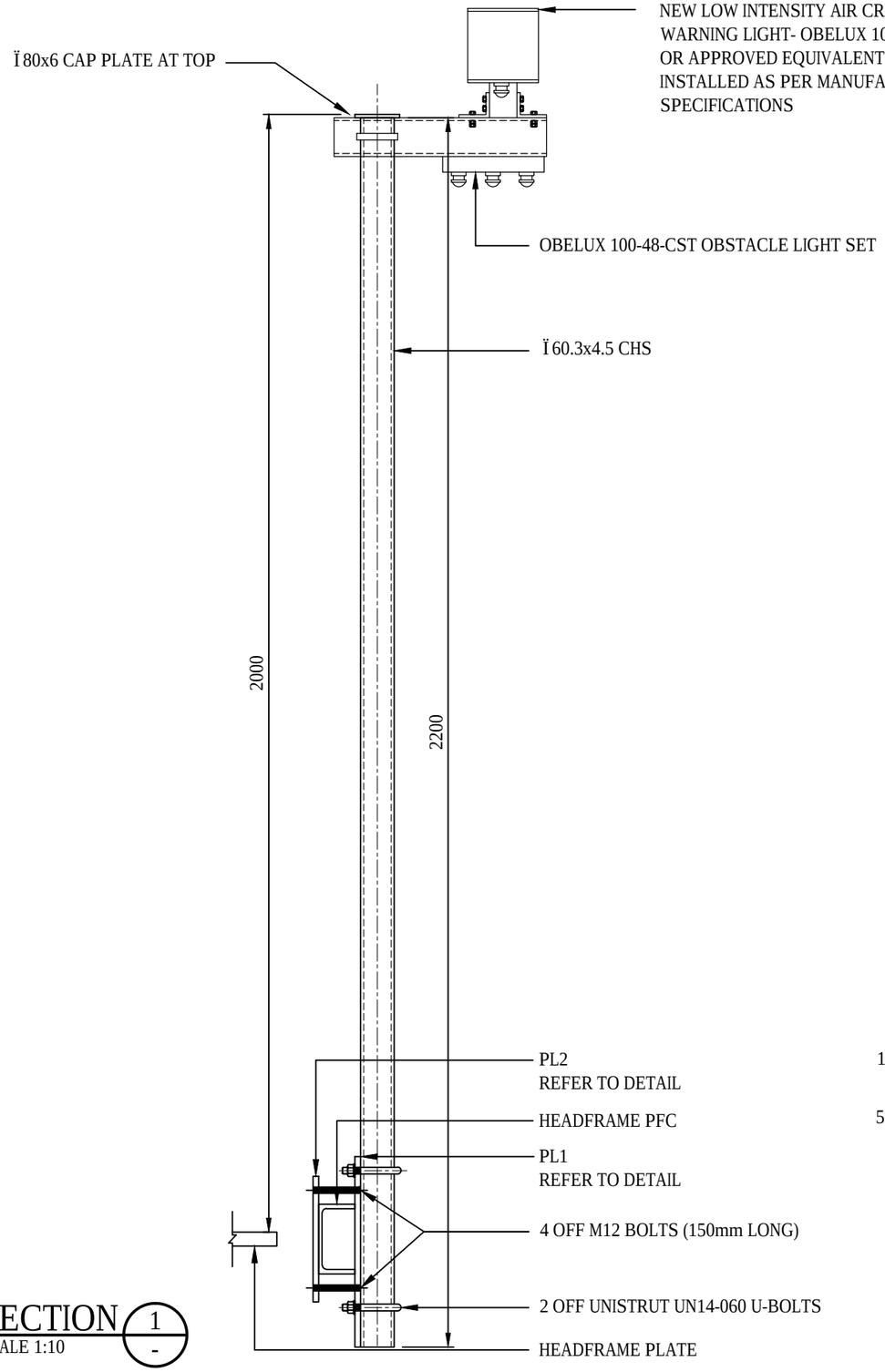
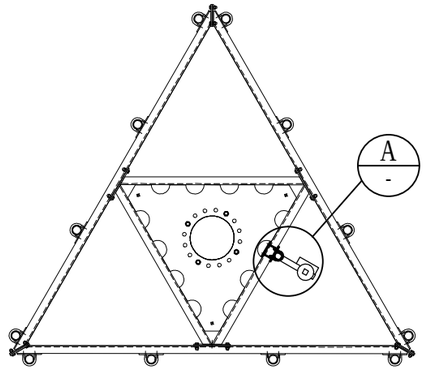
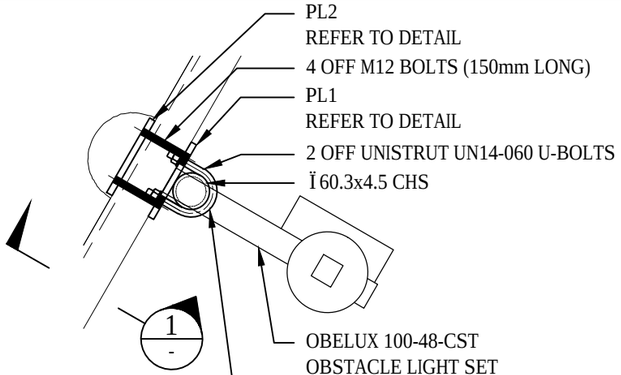


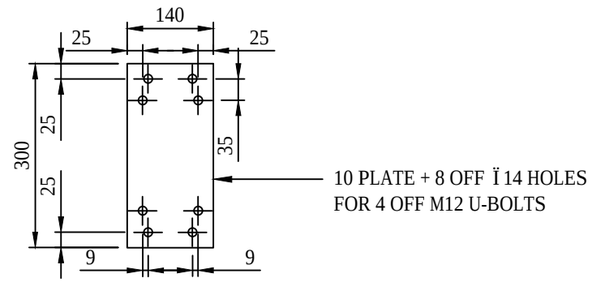
SECTION 1/- SCALE 1:10



AIRCRAFT LIGHT SUPPORT POLE PLAN
SCALE 1:50



DETAIL A/- SCALE 1:10



PL1 DETAIL
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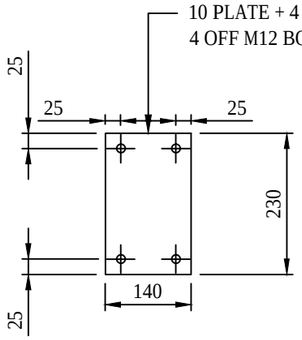

PL2 DETAIL
SCALE 1:10

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PERISHER VALLEY T.E
AIRCRAFT WARNING LIGHT MOUNTING DETAILS
KOSICIUSKO RD, PERISHER VALLEY, NSW 2624

DWG NO. N25638 SHT NO. T8 INDEX

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GENERAL AND PRELIMINARY:

G1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE RELEVANT AS/NZS CODES AND THE BY-LAWS AND ORDINANCES OF THE RELEVANT BUILDING AUTHORITIES
G2. THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE ' TELSTRA ' CONSTRUCTION SPECIFICATION FOR ALL WORKS AND REQUIREMENTS UNLESS NOTED OTHERWISE
G3. THE DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE ' TELSTRA ' DESIGN MANUAL & APPENDICES AND ALL DISCREPANCIES SHALL BE REFERRED TO THE TELSTRA CONSTRUCTION MANAGER FOR A DIRECTIVE PRIOR TO PROCEEDING WITH THE WORK.
G4. THE CONTRACTOR OR HIS REPRESENTATIVE SHALL BE RESPONSIBLE FOR LIAISON WITH THE PROPERTY OWNER REGARDING CONSTRUCTION OF THE INSTALLATION. THE PROPERTY MUST REMAIN SERVICEABLE AND OPERATIONAL AT ALL TIMES UNLESS AGREED OTHERWISE WITH THE PROPERTY OWNER.
G5. DURING CONSTRUCTION THE STRUCTURE SHALL BE MAINTAINED IN A STABLE CONDITION AND NO PART SHALL BE OVERSTRESSED.
G6. TRUE NORTH POINT AS SHOWN ON DRAWINGS (TN) INDICATES AMG NORTH.
G7. SPECIFIED PRODUCTS (OR THEIR APPROVED EQUIVALENTS) SHALL BE USED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.
G8. REFER TO GIVEN DIMENSIONS ONLY, DO NOT SCALE DRAWINGS, ALL DIMENSIONS ARE IN MILLIMETRES U.N.O.
G9. THE CONTRACTOR SHALL USE DROP SHEETS OR ANY OTHER MEANS DEEMED EFFECTIVE TO PROTECT THE EXISTING BUILDING FROM DAMAGE DURING CONSTRUCTION.
G10. ALL REDUCED LEVELS ARE EXPRESSED IN METRES TO A.H.D.
G11. EXTERNAL CABLE LADDERS SHALL BE NEMA 16A STEEL U.N.O.
G12. CONTRACTOR SHALL INSPECT EXISTING CONDITION & ALLOW FOR ANY & ALL PENETRATION & ACCESS WORK TO ALLOW FOR THE INSTALLATION OF THE PROPOSED STRUCTURAL ELEMENTS (EG. REMOVING & CUTTING/ PENETRATING/ EXISTING BUILDING ELEMENTS

CONSTRUCTION TOLERANCES:

Q1. COMPOUND SET-OUT PEGS TO BE LOCATED WITHIN Ñ200mm OF CONSTRUCTION DRAWING REQUIREMENTS.
Q2. TOWER/MONOPOLE/CABIN POSITION TO BE LOCATED WITHIN Ñ100mm OF CONSTRUCTION DRAWING REQUIREMENTS.
Q3. MONOPOLE IS TO BE ERECTED VERTICALLY WITHIN Ñ50mm OVER FULL LENGTH OF ABOVE-GROUND SECTION OF POLE (TO BE CONFIRMED BY SURVEYOR)
Q4. MONOPOLE HEIGHT TO BE WITHIN Ñ200mm OF ELEVATION SHOWN ON CONSTRUCTION DRAWINGS.
Q5. ANTENNA/RTD SUPPORT POLES ON ROOF TOP INSTALLATIONS TO BE LOCATED WITHIN Ñ100mm TO ALLOW FOR HIDDEN REINFORCEMENT IN EXISTING STRUCTURE.
Q6. ANTENNA/RTD SUPPORT POLES TO BE ERECTED VERTICALLY WITHIN Ñ5mm OVER 1000mm.
Q7. STEELWORK ERECTION TOLERANCES ARE AS SHOWN IN CLAUSE 15.3 OF AS 4100.
Q8. CONCRETE STRUCTURES ARE TO BE CONSTRUCTED TO THE TOLERANCES SET OUT IN CLAUSE 19.5 OF AS 3600.

STANDARD ABBREVIATIONS:

TBA - TO BE ADVISED
TBC - TO BE CONFIRMED
VOS - VERIFY ON SITE
AHD - AUSTRALIAN HEIGHT DATUM
AMG - AUSTRALIAN MAPPING GRID
AS - AUSTRALIAN STANDARD
GL - GROUND LEVEL
RL - REDUCED LEVEL
UNO - UNLESS NOTED OTHERWISE
Tx - TRANSMIT ANTENNA
Rx - RECEIVE ANTENNA

STRUCTURAL STEELWORK:

S1. ALL MATERIALS AND WORKMANSHIP TO BE IN ACCORDANCE WITH AS 4100, AS 1657 AND AS 1554.
S2. UNLESS NOTED OTHERWISE, ALL STEEL SHALL BE IN ACCORDANCE WITH:
FOR PLATES, GRADE 250 (MIN) - AS 3678
FOR HOT ROLLED SECTIONS, FLATS, RODS
HIGH STRENGTH STEEL, WELDED BEAMS & COLUMNS, GRADE 250 (MIN) - AS 3679
CHS, RHS AND PRESSURE PIPES, GRADE 250 (MIN) - AS 1163
S3. ANY CUTS, HOLES OR WELDS TO EXISTING STEELWORK SHALL BE PAINTED WITH ONE COAT OF AN APPROVED ZINC RICH PRIMER.
S4. ALL ANCHORS ARE TO BE OF THE CHEMICAL TYPE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION U.N.O. ANCHORS INTO CONCRETE AND BRICK/BLOCKWORK TO BE HOT DIP GALVANISED U.N.O.
S5. WELD CATEGORY SHALL BE SP AND ALL WELDS TO BE 6mm CONTINUOUS FILLET WELDS U.N.O.
NON DESTRUCTIVE TESTING OF WELDS SHALL BE IN ACCORDANCE WITH AS 1554.

WELD CATEGORY	VISUAL	%	OTHER	%
SP	100	%	ONLY AS DIRECTED	

NOTE: ALL WELDING ON ANTENNA MOUNTING POLES TO BE DONE IN THE WORKSHOP AS PER AS 1554.5 'WELDING OF STEEL STRUCTURES SUBJECT TO HIGH LEVELS OF FATIGUE LOADINGS OR AS DIRECTED BY SITE DRAWINGS.
S6. BUTT WELDS WHERE INDICATED ON THE DRAWINGS ARE TO BE FULL PENETRATION BUTT WELDS AS DEFINED IN AS 1554.
S7. UNLESS NOTED OTHERWISE ALL BOLTS SHALL BE GRADE 8.8/S (MIN. M16) TO AS 1252 TIGHTENED USING A STANDARD WRENCH TO A 'SNUG TIGHT' CONDITION.
S8. WHERE BOLTS ARE DENOTED 4.6/S THEY SHALL BE GRADE 4.6 BOLTS TO AS 1111 TIGHTENED USING A STANDARD WRENCH TO A 'SNUG TIGHT' CONDITION. WHERE BOLTS ARE DENOTED 8.8/TF OR 8.8/TB THEY SHALL BE GRADE 8.8 BOLTS TO AS 1252 FULLY TENSIONED IN A CONTROLLED MANNER TO THE REQUIREMENTS OF AS 4100. 'TF' DENOTES A FRICTION TYPE JOINT AND 'TB' DENOTES A BEARING TYPE JOINT.
S9. CONCRETE ENCASED STEELWORK SHALL BE WRAPPED WITH W5 WIRE AT 150 CENTRES AND SHALL HAVE A MINIMUM 50mm COVER UNLESS NOTED OTHERWISE.
S10. ALL STRUCTURAL STEELWORK SHALL BE HOT DIP GALVANISED IN ACCORDANCE WITH AS 4680 AND ONLY PAINTED IF INDICATED ON THE SITE SPECIFIC DRAWINGS. THE CONTRACTOR SHALL PROVIDE ALL REQUIRED DRAIN HOLES PLUG AND SEAL WATERTIGHT DRAIN HOLES.
S11. THE CONTRACTOR SHALL PROVIDE ALL CLEATS AND DRILL ALL HOLES NECESSARY FOR FIXING STEEL TO STEEL AND TIMBER TO STEEL WHETHER OR NOT DETAILED ON THE DRAWINGS.
S12. ALL TRANSPORT AND ERECTION DAMAGE, SITE WELDS, ETC, SHALL BE REINSTATED TO A FINISH EQUIVALENT TO THAT OF ADJACENT STEELWORK.
S13. PROVIDE APPROVED NEOPRENE (OR EQUIVALENT) WASHERS AND COLLARS AT ALL DISSIMILAR METAL INTERFACES.

FOR CONSTRUCTION WCDMA850

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
NA13039.01	RP	PM	WCDMA850 DETAILED DESIGN 71727517WO01URB	ML	ML	03.12.12	1

WCDMA850 UNAPPROVED DRAWING

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MOBILE NETWORK SITE 45644
PERISHER VALLEY T.E
CONSTRUCTION NOTES - SHEET 1 OF 2
KOSICIUSKO RD, PERISHER VALLEY, NSW 2624

DWG NO. N25638
SHT NO. T8-1 INDEX

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CONCRETE WORK:

C1. ALL CONCRETE WORK SHALL COMPLY WITH THE CURRENT ISSUE OF AS 3600 AND OTHER RELEVANT STANDARDS REFERENCED THEREIN.
C2. STRENGTH OF CONCRETE.
UNLESS OTHERWISE SPECIFIED THE CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH AFTER TWENTY EIGHT (28) DAYS OF 32 MPa.
C3. UNLESS OTHERWISE SPECIFIED, THE CEMENT SHALL BE TYPE GP OR GB AS DEFINED IN AS 3972. THE NOMINAL MAXIMUM SIZE OF AGGREGATE SHALL BE 20mm. THE SLUMP OF THE CONCRETE SHALL BE 80mm UNLESS OTHERWISE SHOWN ON THE DRAWINGS AND SHALL BE DETERMINED FROM SAMPLES OBTAINED IN ACCORDANCE WITH THE ABOVE STANDARD.
C4. CLEAR CONCRETE COVER TO REINFORCEMENT SHALL BE DETERMINED IN ACCORDANCE WITH AS 3600 REQUIREMENTS FOR EACH INDIVIDUAL SITE. UNLESS NOTED OTHERWISE.
C5. CURING.
ALL CONCRETE SURFACES SHALL BE CURED BY MAINTAINING THEM CONSTANTLY DAMP OR WET FOR A MINIMUM OF 7 DAYS. CURING TO COMMENCE IMMEDIATELY AFTER POURING. ALTERNATIVE CURING METHODS & CONCRETE MIXERS APPROVED ON A SITE BY SITE BASIS.
C6. SIZES OF CONCRETE ELEMENTS DO NOT INCLUDE THICKNESS OF APPLIED COATINGS.
C7. CONSTRUCTION JOINTS SHALL NOT BE USED EXCEPT WHERE SHOWN ON DRAWINGS OR APPROVED BY THE TELSTRA CONSTRUCTION MANAGER.
C8. BEAM DEPTHS ARE WRITTEN FIRST AND INCLUDE SLAB THICKNESS, (IF ANY).
C9. NO HOLES OR CHASES OTHER THAN THOSE SHOWN ON THE DESIGN DRAWINGS SHALL BE MADE IN CONCRETE MEMBERS WITHOUT THE PRIOR APPROVAL OF THE TELSTRA CONSTRUCTION MANAGER.
C10. REINFORCEMENT IS REPRESENTED DIAGRAMMATICALLY, IT IS NOT NECESSARILY SHOWN IN TRUE PROJECTION.
C11. SPLICES IN REINFORCEMENT SHALL BE MADE ONLY IN THE POSITIONS SHOWN. THE WRITTEN APPROVAL OF THE TELSTRA CONSTRUCTION MANAGER MUST BE OBTAINED FOR ANY OTHER SPLICES. WHERE THE LAP LENGTH IS NOT SHOWN IT SHALL BE SUFFICIENT TO DEVELOP THE FULL STRENGTH OF THE REINFORCEMENT AS NOMINATED IN AS 3600. WELDING OF REINFORCEMENT SHALL NOT BE PERMITTED UNLESS SPECIFIED ON THE DESIGN DRAWINGS, OR APPROVED BY THE TELSTRA CONSTRUCTION MANAGER.
C12. PIPES OR CONDUITS SHALL NOT BE PLACED WITHIN THE CONCRETE REINFORCEMENT COVER WITHOUT THE APPROVAL OF THE TELSTRA CONSTRUCTION MANAGER.
C13. REINFORCEMENT SYMBOLS:
Y - DENOTES GRADE 400Y DEFORMED BARS TO AS 1302
S - DENOTES GRADE 250S DEFORMED BARS TO AS 1302
F - DENOTES GRADE 450F WELDED WIRE MESH TO AS 1304
OTHER REINFORCEMENT SYMBOLS AS PER AS 3600 - TABLE 6.2.1.
C14. MINIMUM LAP FOR FABRIC SHALL BE TWO TRANSVERSE WIRES Ñ25mm.
C15. SAMPLING, TESTING AND ASSESSMENT SHALL BE IN ACCORDANCE WITH AS 3600.

MASONRY WORK:

M1. ALL MASONRY WORKMANSHIP AND MATERIAL SHALL CONFORM WITH THE CURRENT ISSUE OF AS 3700 AND ALL OTHER STANDARDS REFERENCED THEREIN.
M2. TYPE OF MORTAR FOR DIFFERENT CLASS BRICKS AND BLOCKS SHALL BE AS FOLLOWS:

ELEMENT	MATERIAL	STRENGTH	MORTAR
WALLS	BRICKWORK	20	C1 : L1 : S6
	BLOCKWORK	12	C1 : L1 : S6

M3. BUILD IN AS NECESSARY, LINTELS, FRAMES, BOLTS, LUGS, WALL TIES AND METALWORK.
M4. CAREFULLY POSITION OPENINGS FOR OTHER TRADES TO ELIMINATE CUTTING.
M5. BED JOINTS ARE TO BE 10mm THICK.
M6. BEFORE LAYING MASONRY UNITS, ENSURE THAT THE BASE IS CLEAN AND FREE OF LAITANCE.
M7. PROVIDE CLEAN OUT OPENINGS IN THE BOTTOM COURSE OF REINFORCED MASONRY IN ALL CORES FOR MORTAR REMOVAL AND POSITIONING AND TYING OF VERTICAL REINFORCEMENT. OPENINGS ARE TO BE CLOSED BEFORE GROUTING.
M8. ALL CORES OF REINFORCED MASONRY SHALL BE GROUT FILLED WITH CORE FILLING CONCRETE COMPACTED THOROUGHLY, UNLESS NOTED OTHERWISE.
M9. INSTALL WIRING FOR POWER AND OTHER CONDUITS WITHIN BLOCK CORES (WHERE APPLICABLE). DO NOT CUT CHASES IN HOLLOW BLOCKWORK.
M10. ALL WALL INTERSECTIONS SHALL BE OF BONDED CONSTRUCTION OR TIED TO EXISTING WITH MEDIUM DUTY (MIN) TIES AT 400mm CENTRES VERTICALLY.
M11. NO MASONRY WALLS SHALL BE ERECTED ON SUSPENDED SLABS AND BEAMS UNTIL APPROVAL BY THE TELSTRA CONSTRUCTION MANAGER HAS BEEN GIVEN TO REMOVE PROPS.
M12. FOR CONCRETE SLABS SUPPORTED ON MASONRY WALLS PLACE 2 LAYERS OF 0.2mm THICK GALVANISED IRON WITH GRAPHITE SMEAR BETWEEN ON ALL MASONRY BEARING SURFACES BEFORE PLACING CONCRETE.

FOR CONSTRUCTION WCDMA850

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WCDMA850 UNAPPROVED DRAWING

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MOBILE NETWORK SITE 45644
PERISHER VALLEY T.E
CONSTRUCTION NOTES - SHEET 2 OF 2
KOSICIUSKO RD, PERISHER VALLEY, NSW 2624

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SHT NO. T8-2 INDEX

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Appendix 2 – Deployment Code Section 4.1 & 4.2 Checklists

Precautionary Approach Checklist – Site Selection (Code Ref Section 4.1 & 4.2)

Issue Date	12/02/2013	**Carrier**	Telstra	**Location**	Perisher Valley TE – Kosciuszko Road, PERISHER VALLEY NSW 2624
Description of Infrastructure	Upgrade of the existing telecommunications facility, including – the construction of a 25m concrete monopole, installation of panel antennas and associated ancillary equipment.				

4.1 Application of Precautionary Approach to Site Selection		
Section No.	**Industry Code C564:2011Requirement For each site the Carrier must have regard to:**	**Comments on how the Carrier has had regard to each item.**
4.1.3	For new sites, once the preferred option has been selected, the Carrier must make available to the public on request the summary of the sites considered and the reasons for the selection of the preferred option.	This has been included within the Statement of Environmental Effects accompanying this development application.
4.1.5 (a)	The reasonable service objectives of the carrier including (i) the area the planned service must cover (ii) power levels needed to provide quality of service (iii) the amount of usage the planned service must handle	This facility is intended to provide enhanced mobile phone services, improved capacity and call quality in the area surrounding the site. The transmit power settings at this facility will be set to accomplish the desired coverage, capacity and call quality within the areas listed above. The Over the Air specifications provide for the ability for the facility to reduce the transmitting power to each user based on the radio environment.
4.1.5 (b)	Minimisation of EMR exposure to public	This facility is designed and will be installed in accordance with Telstra Document 005486 to restrict public access to any areas that exceed the general public EME exposure limits. The environmental EME level is minimised through the radio network design and reducing the transmit power to each user based on the radio environment.
4.1.5 (c)	The likelihood of an area being a community sensitive location.	Not applicable. The proposed works will take place at an existing facility location specifically designated for telecommunications infrastructure.
4.1.5 (d)	The objective of avoiding community sensitive locations	Not applicable. The proposed works will take place at an existing facility location specifically designated for telecommunications infrastructure. Community sensitive locations were considered during the initial establishment of the site.

Precautionary Approach Checklist – Site Selection (Code Ref Section 4.1 & 4.2)

4.1.5 (e)	Relevant state and local government telecommunications planning policies	This has been included within the Statement of Environmental Effects accompanying this development application. In particular, the SEPP (Kosciuszko National Park – Alpine Resorts) 2007, SEPP (Infrastructure) 2007 and the Perisher Alpine Resort Master Plan have been thoroughly considered.
4.1.5 (f)	The outcomes of consultation processes with Councils and Interested and Affected parties as set out in Section 6.7	Public exhibition will be undertaken through the development application process.
4.1.5 (g)	The heritage significance (built, cultural and natural)	The proposed works will take place at an existing facility location specifically designated for telecommunications infrastructure. Review of the heritage significance of the area has been undertaken and the Heritage significance has not changed.
4.1.5 (h)	The physical characteristics of the locality including elevation and terrain	The physical characteristics of this site have been considered during the original evaluation of this facility. Factors considered included the terrain, site elevation and the height of the surrounding obstacles.
4.1.5 (i)	The availability of land and public utilities	Not Applicable. The proposed works will take place at an existing facility location specifically designated for telecommunications infrastructure. Consideration of land and public utilities was undertaken when the site was established originally.
4.1.5 (j)	The availability of transmission to connect the radiocommunications infrastructure with the rest of the network, e.g. line of sight for microwave transmission	Transmission facilities are available to connect the proposed telecommunications infrastructure with Telstra's network.
4.1.5 (k)	The radiofrequency interference the planned service may cause to other services	Prescribed antennae spacing (in conjunction with appropriate tilt) and allocated frequencies have been used to meet the requirements for coverage from the facility, while minimising interference to the existing network. Whilst interference is not anticipated, Telstra will promptly investigate any interference issues that are reported.
4.1.5 (l)	The radiofrequency interference the planned service could experience at that location from other services or sources of radio emissions	Radio propagation analysis has been used to ensure the new facility can be integrated with the existing network while minimising the interference to the new facility.
4.1.5 (m)	Any obligations, and opportunities, to co-locate facilities	There are no feasible opportunities to co-locate facilities in the area. This is addressed within the Statement of Environmental Effects.
4.1.5 (n)	Cost factors	Telstra has under taken preliminary costing of this facility and are of the opinion these costs are reasonable.

Precautionary Approach Checklist – Site Selection (Code Ref Section 4.1 & 4.2)

4.2 Application of Precautionary Approach to Infrastructure Design		
Section No.	**Industry Code C564:2011Requirement For each site the Carrier must have regard to:**	**Comments on how the Carrier has had regard to each item**
4.2.3 (a)	The reason for the installation of the infrastructure considering – coverage, capacity and quality	This facility is intended to provide enhanced mobile phone services, improved capacity and call quality in the area surrounding the site.
4.2.3 (b)	The positioning of antennas to minimise obstruction of radio signals	Prescribed antennae spacing (in conjunction with appropriate tilt) and allocated frequencies have been used to meet the requirements for coverage from the facility, while minimising interference to existing networks.
4.2.3 (c)	The objective of restricting access to areas where RF exposure may exceed limits of the EMR standard	This facility is designed and will be installed in accordance with Telstra Document 005486 to restrict public access to any areas that exceed the general public EME exposure limits.
4.2.3 (d)	The type and features of the infrastructure that are required to meet service needs including: (i) the need for macro, micro or pico cells; and (ii) the need for directional or non-directional antennas	The proposed works involves the upgrade of an existing telecommunications facility location. The works will involve the construction of a concrete monopole, the installation/connection of panel antennas and associated ancillary equipment.
4.2.3 (e)	The objective of minimising power whilst meeting service objectives	Adaptive power control measures have been applied to this site. Adaptive Power control aims to control the transmission power levels in such a way that acceptable quality of service for the users is guaranteed with lowest possible transmission powers.
4.2.3 (f)	Whether the costs of achieving this objective are reasonable	Telstra has under taken preliminary costing of this facility and are of the opinion these costs are reasonable.
4.2.5	Site EMR assessments for Mobile Phone Radiocommunication Infrastructure must be made in accordance with the ARPANSA prediction methodology and report format (see Appendix B – Additional Design Information and Appendix C – ARPANSA EME Report Format)	A predictive EME report demonstrating the cumulative levels resulting from the proposed works has been produced in accordance with the ARPANSA prediction methodology and report format.

Appendix 3 – EME Report

Summary of Estimated RF EME Levels around the Mobile Phone Base Station at PERISHER VALLEY EXCHANGE KOSCIUSZKO RD, PERISHER VALLEY NSW 2624

Introduction:

Date 12/1/2012

NSA Site No (2624004)

This report summarises the estimated maximum cumulative radiofrequency (RF) electromagnetic energy (EME) levels at ground level emitted from the existing Mobile Phone Base Station antennas at PERISHER VALLEY EXCHANGE KOSCIUSZKO RD PERISHER VALLEY NSW 2624 . Maximum EME levels are estimated in 360° circular bands out to 500m from the base station. The procedures for making the estimates have been developed by the Australian Radiation Protection And Nuclear Safety Agency (ARPANSA)[1]. These are documented in the ARPANSA Technical Report; "Radio Frequency EME Exposure Levels - Prediction Methodologies" which is available at http://www.arpansa.gov.au

EME Health Standard

ARPANSA, an Australian Government agency in the Health and Ageing portfolio has established a Radiation Protection Standard[2] specifying limits for continuous exposure of the general public to RF transmissions at frequencies used by mobile phone base stations. Further information can be gained from the ARPANSA web site.

The Australian Communications and Media Authority (ACMA)[3] mandates exposure limits for continuous exposure of the general public to RF EME from mobile phone base stations. Further information can be found at the ACMA website http://emr.acma.gov.au

Existing Site Radio Systems

Telstra / GSM900	Telstra / WCDMA850		

Table of Predicted EME Levels – Existing

Distance from the antennas at PERISHER VALLEY EXCHANGE KOSCIUSZKO RD in 360° circular bands	Maximum Cumulative EME Level – All carriers at this site (% of ARPANSA exposure limits[2]) Public exposure limit = 100%
0m to 50m	0.41%
50m to 100m	0.25%
100m to 200m	0.075%
200m to 300m	0.019%
300m to 400m	0.0089%
400m to 500m	0.005%
Maximum EME level 28.23 m, from the antennas at PERISHER VALLEY EXCHANGE KOSCIUSZKO RD	0.41%

Note: Estimation for the maximum level of RF EME at 1.5m above the ground from the existing antennas assuming level ground. The estimated levels have been calculated on the maximum mobile phone call capacity anticipated for this site. This estimation does not include possible radio signal attenuation due to buildings and the general environment. The actual EME levels will generally be significantly less than predicted due to path losses and the base station automatically minimising transmitter power to only serve established phone calls[5]. Where applicable, particular locations of interest in the area surrounding the base station, including topographical variations, are assessed in Appendix A " Other areas of Interest" table on the last page.

Summary – Existing Radio Systems

RF EME levels have been estimated from the existing antennas at PERISHER VALLEY EXCHANGE KOSCIUSZKO RD PERISHER VALLEY NSW 2624 . The maximum cumulative EME level at 1.5 m above ground level is estimated to be 0.41 % of the ARPANSA public exposure limits.

Existing and Proposed Site Radio Systems

Telstra / GSM900	Telstra / WCDMA850 (proposed)		

Table of Predicted EME Levels – Existing and Proposed

Distance from the antennas at PERISHER VALLEY EXCHANGE KOSCIUSZKO RD in 360° circular bands	Maximum Cumulative EME Level – All carriers at this site (% of ARPANSA exposure limits[2]) Public exposure limit = 100%
0m to 50m	0.5%
50m to 100m	0.31%
100m to 200m	0.091%
200m to 300m	0.024%
300m to 400m	0.011%
400m to 500m	0.006%
Maximum EME level 28.23 m, from the antennas at PERISHER VALLEY EXCHANGE KOSCIUSZKO RD	0.5%

Note: Estimation for the maximum level of RF EME at 1.5m above the ground from the existing and proposed antennas assuming level ground. The estimated levels have been calculated on the maximum mobile phone call capacity anticipated for this site. This estimation does not include possible radio signal attenuation due to buildings and the general environment. The actual EME levels will generally be significantly less than predicted due to path losses and the base station automatically minimising transmitter power to only serve established phone calls[5]. Where applicable, particular locations of interest in the area surrounding the base station, including topographical variations, are assessed in Appendix A "Other areas of Interest" table on the last page.

Summary – Existing and Proposed Radio Systems

RF EME levels have been estimated from the existing and proposed antennas at **PERISHER VALLEY EXCHANGE KOSCIUSZKO RD** PERISHER VALLEY NSW 2624 . The maximum cumulative EME level at 1.5 m above ground level is estimated to be **0.5** % of the ARPANSA public exposure limits.

Reference Notes:

1. The Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) is a Federal Government agency incorporated under the Health and Ageing portfolio. ARPANSA is charged with responsibility for protecting the health and safety of people, and the environment, from the harmful effects of radiation (ionising and non-ionising).

2. Australian Radiation Protection and Nuclear Safety Agency (ARPANSA), 2002, 'Radiation Protection Standard: Maximum Exposure Levels to Radiofrequency Fields — 3 kHz to 300 GHz', Radiation Protection Series Publication No. 3, ARPANSA, Yallambie Australia. [Printed version: ISBN 0-642-79400-6 ISSN 1445-9760] [Web version: ISBN 0-642-79402-2 ISSN 1445-9760]

3. The Australian Communications and Media Authority (ACMA) is responsible for the regulation of broadcasting, radiocommunications, telecommunications and online content. Information on EME is available at http://emr.acma.gov.au/

4. The EME predictions in this report assume a near worst-case scenario including:
   - base station transmitters operating at maximum power (no automatic power reduction)
   - simultaneous telephone calls on all channels
   - an unobstructed line of sight view to the antennas.
   In practice a worst-case scenario is rarely the case. There are often trees and buildings in the immediate vicinity, and cellular networks automatically adjust transmit power to suit the actual telephone traffic. The level of EME may also be affected where significant landscape features are present and predicted EME levels might not be the absolute maximum at all locations.

5. Further explanation of this report may be found in "Understanding the ARPANSA Environmental EME Report" and other documents on the ARPANSA web site, http://www.arpansa.gov.au

Appendix A

Table of Other Areas of Interest

Additional Locations	Height / Scan relative to location ground level	Maximum Cumulative EME Level All Carriers at this site (% of ARPANSA exposure limits[2]) Public exposure limit = 100%
ACIF Code Section 5.5 - community consultation plan new sites	n/a	Existing Site Update - No additional locations identified. Refer to previous table for the environmental EME assessment
Topography/Buildings	n/a	No locations identified
Other (e.g. significant previous community concern)	n/a	No locations identified

Note: Estimation for the maximum EME levels at selected areas of interest over a height range relative to the specific ground level at the area of interest. This table includes any existing and proposed radio systems.

Estimation Notes / Assumptions – Other Areas of Interest
Variable ground topography has been included in the assessment of the "Other Areas of Interest" as per ARPANSA methodology
Insert other data / notes as required

Appendix 4 – Photomontages

PROPOSED
TELSTRA FACILITY

Before

After

This is a representation only. The final installation may vary slightly in size, shape and/or colour.

Rev.	Date	Created	Revision Description
A	12.12.12	ZV	Preliminary

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Site Address
Kosciuszko Rd
Perisher Valley
NSW, 2624

Site Name :
Perisher Valley TE

Site Number. :
N25638

Telstra

Approved :

Photographer :

Date :
12.12.12

Drawing title
Photomontage View 3

Drawing No. :
M03

Checker :

REV.
A

PROPOSED
TELSTRA FACILITY

Before

After

This is a representation only. The final installation may vary slightly in size, shape and/or colour.

Rev.	Date	Created	Revision Description
A	12.12.12	ZV	Preliminary

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Site Address
Kosciuszko Rd
Perisher Valley
NSW, 2624

Site Name :
Perisher Valley TE

Site Number. :
N25638

Telstra

Approved :

Photographer :

Date :
12.12.12

Drawing title
Photomontage View 2

Drawing No. :
M02

Checker :

REV.
A

Before

PROPOSED
TELSTRA FACILITY

After

This is a representation only. The final installation may vary slightly in size, shape and/or colour.

Rev.	Date	Created	Revision Description
A	12.12.12	ZV	Preliminary

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Site Address
Kosciuszko Rd
Perisher Valley
NSW, 2624

Drawing title
Photomontage View 1

Site Name :
Perisher Valley TE

Site Number. :
N25638

Drawing No. :
M01

Telstra

Photographer :

Checker :

Approved :

Date :
12.12.12

REV.
A

Appendix 5 – Protected Matters Report

Australian Government

Department of Sustainability, Environment, Water, Population and Communities

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information about the EPBC Act including significance guidelines, forms and application process details can be found at http://www.environment.gov.au/epbc/assessmentsapprovals/index.html

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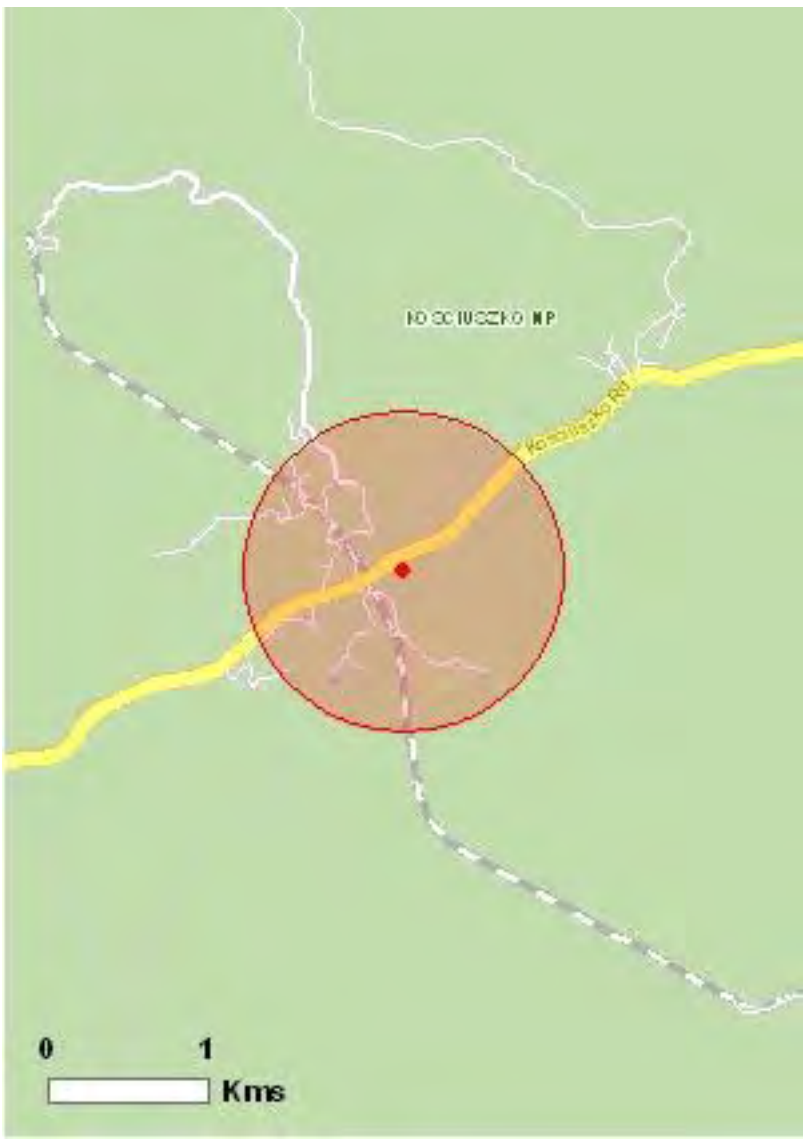
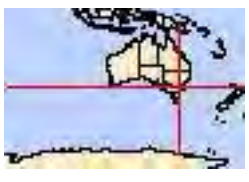


This map may contain data which are ©Commonwealth of Australia (Geoscience Australia), ©PSMA 2010

Coordinates

Buffer: 1.0Km



Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance - see http://www.environment.gov.au/epbc/assessmentsapprovals/guidelines/index.html

World Heritage Properties:	None
National Heritage Places:	2
Wetlands of International	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Areas:	None
Threatened Ecological Communities:	1
Threatened Species:	15
Migratory Species:	13

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place and the heritage values of a place on the Register of the National Estate. Information on the new heritage laws can be found at http://www.environment.gov.au/heritage/index.html

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species. Information on EPBC Act permit requirements and application forms can be found at http://www.environment.gov.

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	11
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

Place on the RNE:	3
State and Territory Reserves:	1
Regional Forest Agreements:	1
Invasive Species:	10
Nationally Important Wetlands:	None

Details

Matters of National Environmental Significance

National Heritage Properties		[Resource Information]
Name	State	Status
Natural		
Australian Alps National Parks and Reserves	NSW	Listed place
Historic		
Snowy Mountains Scheme	NSW	Nominated place

Wetlands of International Significance (RAMSAR)	[Resource Information]
Name	Proximity
Blue lake	Within 10km of Ramsar

Threatened Ecological Communities	[Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Name	Status	Type of Presence
Alpine Sphagnum Bogs and Associated Fens	Endangered	Community likely to occur within area

Threatened Species [Resource Information]

Name	Status	Type of Presence
BIRDS		
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat likely to occur within area
Rostratula australis Australian Painted Snipe [77037]	Vulnerable	Species or species habitat may occur within area
FISH		
Prototroctes maraena Australian Grayling [26179]	Vulnerable	Species or species habitat may occur within area
FROGS		
Litoria verreauxii alpina Alpine Tree Frog, Verreaux's Alpine Tree Frog [66669]	Vulnerable	Species or species habitat likely to occur within area
Pseudophryne corroboree Southern Corroboree Frog [1915]	Endangered	Species or species habitat likely to occur within area
MAMMALS		
Burramys parvus Mountain Pygmy-possum [267]	Endangered	Species or species habitat likely to occur within area
Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat may occur within area
Petrogale penicillata Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat may occur within area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Vulnerable	Species or species habitat may occur within area
Pseudomys fumeus Konoom, Smoky Mouse [88]	Endangered	Species or species habitat may occur within area
PLANTS		
Argyrotegium nitidulus Shining Cudweed [82043]	Vulnerable	Species or species habitat likely to occur within area
Ranunculus anemoneus Anemone Buttercup [14889]	Vulnerable	Species or species habitat likely to occur within area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat likely to occur within area
REPTILES		
Cyclodomorphus praealtus Alpine She-oak Skink [64721]	Endangered	Species or species habitat likely to occur within area

Name	Status	Type of Presence
[Liopholis guthega](#)		
Guthega Skink [83079]	Endangered	Species or species habitat likely to occur within area

Migratory Species [Resource Information]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Migratory Marine Birds		
[Apus pacificus](#)		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area
[Ardea alba](#)		
Great Egret, White Egret [59541]		Species or species habitat may occur within area
[Ardea ibis](#)		
Cattle Egret [59542]		Species or species habitat may occur within area
Migratory Terrestrial Species		
[Haliaeetus leucogaster](#)		
White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
[Hirundapus caudacutus](#)		
White-throated Needletail [682]		Species or species habitat known to occur within area
[Merops ornatus](#)		
Rainbow Bee-eater [670]		Species or species habitat may occur within area
[Monarcha melanopsis](#)		
Black-faced Monarch [609]		Species or species habitat likely to occur within area
[Myiagra cyanoleuca](#)		
Satin Flycatcher [612]		Species or species habitat known to occur within area
[Rhipidura rufifrons](#)		
Rufous Fantail [592]		Species or species habitat likely to occur within area
Migratory Wetlands Species		
[Ardea alba](#)		
Great Egret, White Egret [59541]		Species or species habitat may occur within area
[Ardea ibis](#)		
Cattle Egret [59542]		Species or species habitat may occur within area
[Gallinago hardwickii](#)		
Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
[Rostratula benghalensis (sensu lato)](#)		
Painted Snipe [889]	Vulnerable*	Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species [Resource Information]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba Great Egret, White Egret [59541]		Species or species habitat may occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
Hirundapus caudacutus White-throated Needletail [682]		Species or species habitat known to occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat likely to occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Vulnerable*	Species or species habitat may occur within area

Extra Information

Places on the RNE [Resource Information]

Note that not all Indigenous sites may be listed.

Name	State	Status
Natural		
Kosciuszko Alpine Area	NSW	Registered
Kosciuszko National Park (1981 boundary)	NSW	Registered
Historic		
Snowy Mountains Scheme	NSW	Registered

State and Territory Reserves [Resource Information]

Name	State
Kosciuszko	NSW

Regional Forest Agreements [Resource Information]

Note that all areas with completed RFAs have been included.

Name	State

Name	State
Southern RFA	New South Wales

Invasive Species [Resource Information]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resouces Audit,

Name	Status	Type of Presence
Mammals		
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Asparagus asparagoides Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]		Species or species habitat likely to occur within area
Nassella trichotoma Serrated Tussock, Yass River Tussock, Yass Tussock, Nassella Tussock (NZ) [18884]		Species or species habitat likely to occur within area
Pinus radiata Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]		Species or species habitat may occur within area
Rubus fruticosus aggregate Blackberry, European Blackberry [68406]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area
Ulex europaeus Gorse, Furze [7693]		Species or species habitat likely to occur within area

Coordinates

-36.40528 148.41417

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World Heritage and Register of National Estate properties, Wetlands of International Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

For species where the distributions are well known, maps are digitised from sources such as recovery plans and detailed habitat studies. Where appropriate, core breeding, foraging and roosting areas are indicated under 'type of presence'. For species whose distributions are less well known, point locations are collated from government wildlife authorities, museums, and non-government organisations; bioclimatic distribution models are generated and these validated by experts. In some cases, the distribution maps are based solely on expert knowledge.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Department of Environment, Climate Change and Water, New South Wales
-Department of Sustainability and Environment, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment and Natural Resources, South Australia
-Parks and Wildlife Service NT, NT Dept of Natural Resources, Environment and the Arts
-Environmental and Resource Management, Queensland
-Department of Environment and Conservation, Western Australia
-Department of the Environment, Climate Change, Energy and Water
-Birds Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-SA Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Atherton and Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
-State Forests of NSW
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact Us page.

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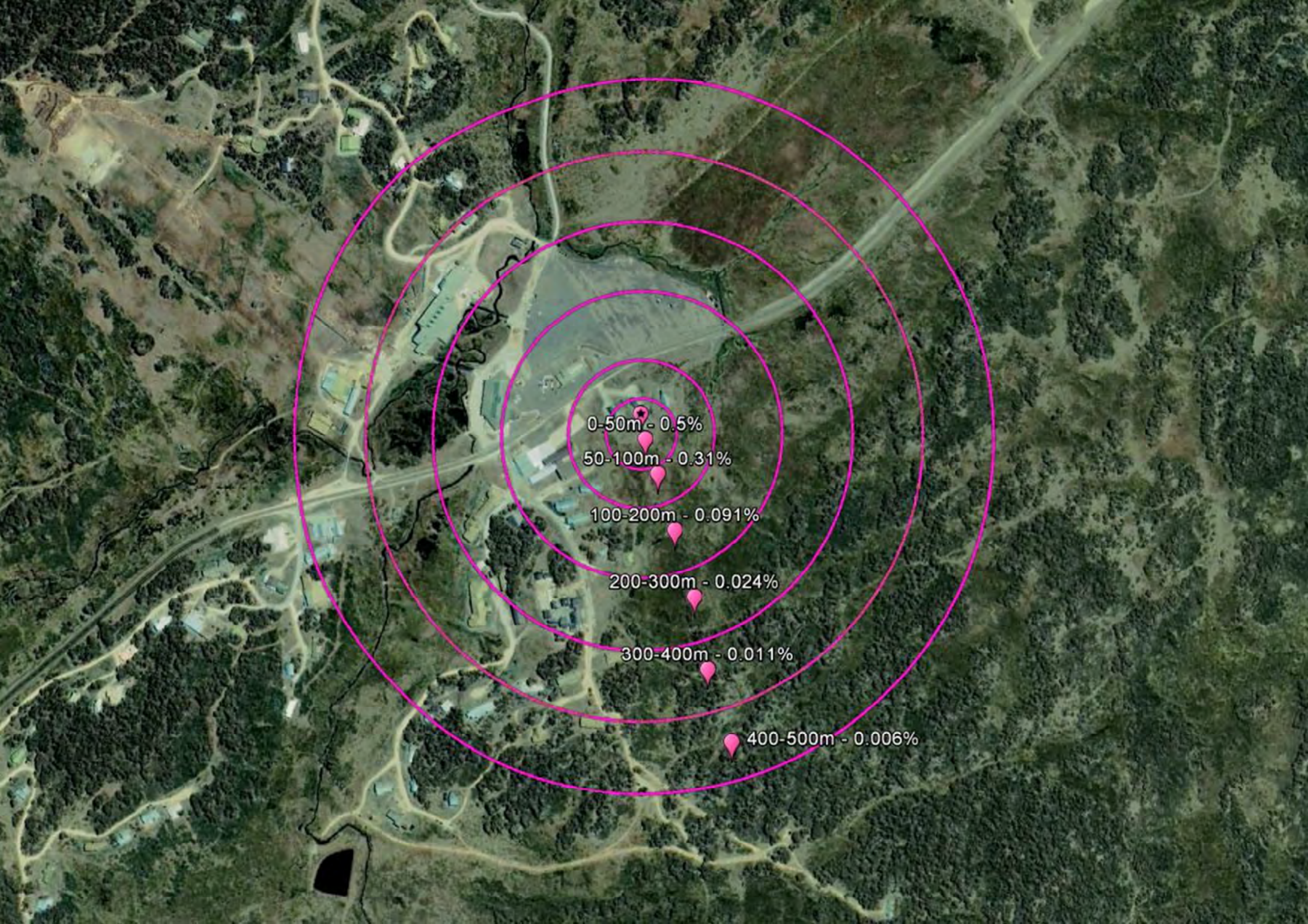
Department of Sustainability, Environment, Water, Population and Communities
GPO Box 787
Canberra ACT 2601 Australia
+61 2 6274 1111

Appendix 6 – Predictive EME Map


0-50m - 0.5%
50-100m - 0.31%
100-200m - 0.091%
200-300m - 0.024%
300-400m - 0.011%
400-500m - 0.006%

Appendix 7 – Snowy Hydro SouthCare Approval

Caitlin Adcock

From: Canberra BM <canbmgr@chc.ca>
Sent: Thursday, 13 December 2012 4:37 PM
To: Caitlin Adcock
Subject: RE: Perisher Valley TE - Telstra facility proposal

Hi Caitlin,

Thanks for the updated site plan diagram. The proposal should not interfere with SouthCare's operations. Although the proposed tower is highter than the existing comms tower, locating it on the SW side of the existing building structure will provide greater separation from our departure route from the helipad to the South East.

Can you indicate a rough timeframe for when the installation work will commence and finish?

Regards

Simon Lovell
Mobile 0406378184
for
Craig Thomas
Base Manager - Canberra
CHC Helicopters (Australia)
10250 Monaro Highway
Symonston ACT 2609

T (02) 62646600
F (02) 62646620
M (+61) 417 900063

Email canbmgr@chc.ca

From: Caitlin Adcock [cadcock@urbis.com.au]
Sent: Thursday, 13 December 2012 3:00 PM
To: Canberra BM
Cc: Jonathan Mills
Subject: Perisher Valley TE - Telstra facility proposal

Hi Simon,

Thanks for the call and apologies if I caused you any confusion. Please find attached annotated plans of the proposed Telstra Facility in Perisher Valley. I've included on the first page notes identifying the existing Waste Transfer Station, the existing facility and the proposed facility.

Just to clarify, the proposal includes the following:

- Removal of the 11m timber pole facility located on the south-eastern elevation of the TE
- Construction of a new 25m concrete pole on the south-western elevation of the TE

Please do not hesitate to give me a call if you have any further queries.

Kind regards,

Caitlin Adcock
PLANNING CONSULTANT - TELCO

AUSTRALIA . ASIA . MIDDLE EAST
t 02 8233 9900 **d** 02 8233 9926 **m** 0431 031 520
e cadcock@urbis.com.au **w** urbis.com.au
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Working With Contractors – One of the twelve elements of CHC's Integrated SMS

At CHC we insist that contractors adopt our safety requirements to ensure we protect our people from any potential impact of their actions.

Appendix 8 – Geotechnical Report

Department of
Infrastructure, Planning and Natural Resources

Geotechnical Policy – Kosciuszko Alpine Resorts
Form 1A – Declaration and certification made by a geotechnical engineer or engineering geologist in a site classification report

Date received: ____/____/____ DA no: _____

To be submitted with a Development Application

You can use Form 1A where a structure is proposed to be erected outside the "G" line area of the geotechnical maps. In this case a geotechnical report is not required to be submitted with the development application, however a site classification report is required to be prepared and submitted with the development application.

Please contact the Alpine Resorts Assessments Team in Jindabyne for further information. Phone 02 6456 1733.

To complete this form, please place a cross in the boxes ☐ and fill out the white sections.

1. Declaration made by a geotechnical engineer or engineering geologist as part of a site classification report

I,

Mr ☑ Ms ☐ Mrs ☐ Dr ☐ Other ☐

AGI

Family name

ZENON

OF

Company/~~organisation~~

JEFFERY & KATAUSKAS PTY LTD (trading as JK Geotechnics)

on this the 14TH day of FEBRUARY 2013,

certify that I am a geotechnical engineer or engineering geologist as defined by the "Policy" and I; (tick appropriate box)

☑ ~~prepared~~ reviewed the ~~site classification~~ report referenced below in accordance with AS 2870-1996, ~~or~~ which was prepared by Adrian Hulskamp of JK Geotechnics.

☐ I am wiling to technically verify that the site classification report referenced below has been prepared in accordance with AS2870-1996.

2. Site Classification Report Details

Report Title

PROPOSED CONCRETE ANTENNA POLE (REF: 26054ZHrpt)

Author

ADRIAN HULSKAMP

Dated

23/10/2012

DA Site Address

KOSCIUSZKO ROAD, PERISHER VALLEY, NSW

DA Applicant

I am aware that the site classification report I have either prepared or am technically verifying for the above development is to be submitted in support of a development application for the proposed development site (referenced above), and it's findings will be relied upon by the consent authority in determining the development application.

* I note that provision of a site classification in accordance with AS2870-2011 is not relevant for this project + the design will need to be carried out using engineering principles. (Refer to our report, Ref: 260542A rpt)

3. Signatures

Signature

Name
AGI ZEMON

Chartered professional status
CPEng FIEAust

Date
14/2/2013

4. Contact details

Alpine Resorts Assessments team
Snowy River Avenue
PO Box 36 JINDABYNE 2627
t: 02 6456 1733
f: 02 6456 1736
e: **alpineresorts_assessments@dipnr.nsw.gov.au**

REPORT

TO

MYD CONSULTING ENGINEERS PTY LTD

ON

GEOTECHNICAL INVESTIGATION

FOR

PROPOSED CONCRETE ANTENNA POLE

AT

KOSCIUSZKO ROAD, PERISHER VALLEY, NSW

23 October 2012
Ref: 26054ZHrpt

AS/NZS ISO 9001
Certified
Davis Langdon Certification Services

JK Geotechnics
GEOTECHNICAL & ENVIRONMENTAL ENGINEERS

PO Box 976, North Ryde BC NSW 1670
Tel: 02 9888 5000 Fax: 02 9888 5003
www.jkgeotechnics.com.au

Jeffery & Katauskas Pty Ltd, trading as JK Geotechnics ABN 17 003 550 801

Date: 23 October 2012
Report No: 26054ZHrpt
Revision No: 0

Report prepared by:

Adrian Hulskamp
Associate

Report reviewed by:

Agi Zenon
Senior Associate

For and on behalf of
JK GEOTECHNICS
PO Box 976
NORTH RYDE BC NSW 1670

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This Report (which includes all attachments and annexures) has been prepared by JK Geotechnics (JK) for its Client, and is intended for the use only by that Client.

This Report has been prepared pursuant to a contract between JK and its Client and is therefore subject to:

a) JK's proposal in respect of the work covered by the Report;

b) the limitations defined in the Client's brief to JK;

c) the terms of contract between JK and the Client, including terms limiting the liability of JK.

If the Client, or any person, provides a copy of this Report to any third party, such third party must not rely on this Report, except with the express written consent of JK which, if given, will be deemed to be upon the same terms, conditions, restrictions and limitations as apply by virtue of (a), (b), and (c) above.

Any third party who seeks to rely on this Report without the express written consent of JK does so entirely at their own risk and to the fullest extent permitted by law, JK accepts no liability whatsoever, in respect of any loss or damage suffered by any such third party.

TABLE OF CONTENTS

1 INTRODUCTION

This report presents the results of a geotechnical investigation for a proposed concrete antenna pole at the Perisher Valley Telstra Exchange, Kosciusko Road, Perisher Valley, NSW. The investigation was commissioned by Mr Ali Abooi of MYD Consulting Engineers Pty Ltd (MYD) in an email dated 25 September 2012. The commission was on the basis of our fee proposal, Ref: P36020ZH, dated 24 September 2012.

For the purpose of this report, we have taken the existing Telstra Exchange building on site to be located on the northern side of the existing timber antenna pole, with both 'True North' and 'Site North' shown on Figure 1.

We understand that the existing 12m high timber pole at the site is to be replaced with a new 25m high concrete pole. We have not been provided with the design loads, however, we expect that lateral loads will be the critical design case.

The purpose of the investigation was to assess the subsurface conditions at one borehole location, and based on the information obtained, to present our comments and recommendations on footing design and soil aggression.

2 INVESTIGATION PROCEDURE

The fieldwork was carried out on 9 October 2012 and comprised the drilling of one borehole (BH1) at the location shown on Figure 1. The borehole location was located as close as practical to the existing timber pole and was set out by tape measurements off existing surface features. Figure 1 was prepared based on our field tape measurements.

BH1 was auger drilled to a depth of 3.12m below existing grade using a Gemco 210D drill rig. The borehole was extended into the underlying bedrock using rotary diamond coring techniques with an NMLC triple tube core barrel and water flush to a final depth of 7.20m.

The nature and composition of the subsurface profile were assessed by logging the materials recovered during drilling. The relative compaction, density and strength of the subsoil profile were assessed from the Standard Penetration Test (SPT) 'N' values, augmented by hand penetrometer testing on a remoulded auger sample. The strength of the upper weathered bedrock profile was assessed by observation of auger penetration resistance when using a

tungsten carbide (TC) bit. The strength of the cored bedrock was assessed by examination of the recovered rock cores, together with correlations with subsequent laboratory Point Load Strength Index ($I_{S(50)}$) tests. Groundwater observations were made in the borehole during the fieldwork. Further details of the methods and procedures employed in the investigation are presented in the attached Report Explanation Notes.

Our geotechnical engineer (Joel Dalberger) was present on a full-time basis during the fieldwork and set out the borehole location, nominate the testing and sampling and prepare the attached borehole log. The Report Explanation Notes define the logging terms and symbols used.

The recovered rock core was photographed and returned to Soil Test Services Pty Ltd, a NATA registered laboratory, for Point Load Strength Index testing. The core photograph is enclosed facing the cored borehole log. The Point Load Strength Index test results are plotted on the borehole log and summarised in the attached Table A. The unconfined compressive strengths (UCS), as estimated from the Point Load Strength Index test results, are also summarised in Table A.

Selected soil samples were returned to another NATA registered laboratory (Envirolab Services Pty Ltd) for soil pH, chloride, sulphate and resistivity tests. The test results are summarised in Table B. The Envirolab Services Pty Ltd *"Certificate of Analysis"* is attached to this report.

3 RESULTS OF THE INVESTIGATION

3.1 Site Description

The existing timber pole is located within undulating topography, along the toe of a north facing hillside which grades at about 5˚ to 8˚. The hillside slope was covered by grass and small shrubs with numerous granite exposures. Kosciuszko Road is located about 80m to the north-east of the site.

At the time of the fieldwork, the site was occupied by the Perisher Valley Telecommunications Exchange which comprised a single storey stone faced concrete block and clad building. The timber pole was located just off the south-eastern corner of the building, as shown on Figure 1. A concrete driveway was located on the southern and eastern sides of the building

A fill batter slope up to 1.7m high was located on the southern and eastern sides of the building and graded between about 20˚ and 30˚ down towards the building. The existing timber pole was

positioned along the crest of the fill batter slope. The fill batter slope was covered by patchy grass. We did not observe any obvious signs (ie. slumping, tension cracks behind the crest etc) of fill batter slope instability.

To the south of the existing timber pole was the Perisher Valley Waste Transfer Station which comprised a single storey warehouse style building set back at least 10m from the existing timber pole. This building appeared to be in good condition, based on a cursory inspection.

3.2 Subsurface Conditions

With reference to the 1:3,000,000 Geological Map of NSW, the site is underlain by igneous rocks comprising *"Granite, adamellite, granodiorite, porphyry, monzonite, andesite".*

BH1 has disclosed a subsurface profile comprising fill overlying residual sands and clayey sands with weathered granite bedrock at moderate depth. Reference should be made to the attached borehole log for specific details at the borehole location. A summary of the encountered subsurface characteristics presented below:

Fill

Fill comprising silty clayey gravel and silty clay was encountered from the ground surface in BH1 and extended down to 1.65m depth. Inclusions of igneous, granite and quartz gravel and root fibres were present within the fill. Based on the SPT 'N' values, the fill was assessed to be poorly compacted.

Residual Soils

Residual sand and silty clayey sand with fine to medium grained quartz gravel was encountered below the fill in BH1. The residual soils were loose.

Weathered Granite Bedrock

Weathered granite bedrock was encountered below the residual soil profile at 2.9m depth and extended down to the borehole termination depth. The weathered granite bedrock was distinctly weathered and of very low to low strength at first contact and rapidly improved to fresh granite of high and very high strength below 3.8m depth. The cored portion of the bedrock contained numerous inclined joints and a single 25mm thick extremely weathered seam at 3.3m depth.

Groundwater

Groundwater seepage was encountered at the soil/rock interface at 2.9m depth in BH1, with groundwater measured at the same depth on completion of auger drilling. On completion of coring, groundwater was measured at a depth of 4.4m in BH1. As water is used in the coring process, the latter groundwater level has most likely been affected by the introduced drill flush water. There was a full return of the drill flush water, which indicates a relatively impermeable rock mass.

We note that groundwater levels may not have stabilised within the short observation period. No long term groundwater monitoring was carried out.

3.3 Laboratory Test Results

The results of the Point Load Strength Index tests carried out on recovered rock core samples correlated well with our field assessment of bedrock strength. The estimated UCSs ranged between 2MPa and 64MPa.

The soil pH tests results were between values of 4.7 and 5.6, which show the samples tested to be slightly acidic. The soil sulphate and chloride test results were between to 3mg/kg and 870mg/kg, which indicate low sulphate and chloride contents. The soil resistivity test results were between 16 ohm m and 500 ohm m, which indicate low soil resistivity.

4 COMMENTS AND RECOMMENDATIONS

4.1 Pole Footing

Based on the investigation results, the parameters tabulated below may be used for the design of the pole footing. We do not recommended founding within the fill profile, as this may result in instability of the fill batter slope and therefore the pole itself. Therefore, a piled footing is likely to be required.

Material	Elastic Modulus (MPa)	Effective Cohesion (kPa)	Friction Angle (Degrees)	Ultimate Bearing Pressure (kPa)	Allowable Bearing Pressure (kPa)	Ultimate Shaft Adhesion* (kPa)	Allowable Shaft Adhesion* (kPa)
Loose Residual Soils	15	0	28	Will depend on the pile diameter and type		15	5

Material	Elastic Modulus (MPa)	Effective Cohesion (kPa)	Friction Angle (Degrees)	Ultimate Bearing Pressure (kPa)	Allowable Bearing Pressure (kPa)	Ultimate Shaft Adhesion* (kPa)	Allowable Shaft Adhesion* (kPa)
Very low or higher strength granite bedrock	150	N/A	N/A	3,000	1,000	300	100
Medium or higher strength granite bedrock	1,000	N/A	N/A	40,000	6,000	1,000	600

* In Compression (for the bedrock profile only).

The lateral restraint of a pile socketted into bedrock may be estimated based on 25% of the above tabulated bearing values. For a pile in uplift and where socketed into bedrock, the above shaft adhesion values should be halved.

The above ultimate values must be used in conjunction with an appropriate "*Geotechnical Strength Reduction Factor*" (ϕ_g). Provided there is good workmanship and quality control during footing construction, we recommend that a ϕ_g value not greater than 0.55 be adopted for end bearing and shaft adhesion.

Due to the presence of medium, high and very high strength bedrock, only high torque drilling rigs equipped with rock augers and/or coring buckets, should be brought to site. If the fill and residual soils are found to collapse into an open bored pile hole, then the fill/residual soil profile will need to be supported using temporary or sacrificial liners, or alternatively, grout injected auger piles may be used. The sides of all rock sockets must be suitably roughened using a grooving tool fitted to the side of the auger.

Driven piles are not recommended as vibrations are induced during pile driving, which could damage nearby structures and buried services, as well as the tendency for driven piles to refuse on the bedrock surface. Steel (helix) screw piles are not recommended as we would expect the helix to refuse prematurely on the bedrock surface. Screw piles also have very limited lateral resistance capacity.

If bored piles are adopted, then groundwater seepage should be expected during drilling and therefore an allowance should be made for either pumping out the seepage prior to pouring concrete or pouring concrete using tremie methods.

We recommend an inspection be carried out during the initial stages of pile drilling by a geotechnical engineer to check that a satisfactory bearing stratum has been achieved. The pole footings should be excavated, cleaned, inspected and poured with minimal delay.

4.2 Soil Aggression

In accordance with Table 6.4.2(C) of AS2159-2009 ('Piling – Design and Installation'), the exposure classification to buried concrete is "mild". In accordance with Table 6.5.2(C) of AS2159-2009, the exposure classification to buried steel is "moderate".

5 GENERAL COMMENTS

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

Occasionally, the subsurface conditions may be found to be different (or may be interpreted to be different) from those expected. Variation can also occur with groundwater conditions, especially after climatic changes. If such differences appear to exist, we recommend that you immediately contact this office.

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

A waste classification will need to be assigned to any soil excavated from the site prior to offsite disposal. Subject to the appropriate testing, material can be classified as Virgin Excavated Natural Material (VENM), General Solid, Restricted Solid or Hazardous Waste. If the natural soil has been stockpiled, classification of this soil as Excavated Natural Material (ENM) can also be undertaken, if requested. However, the criteria for ENM are more stringent and the cost associated with attempting to meet these criteria may be significant. Analysis takes seven to 10 working days to complete, therefore, an adequate allowance should be included in the construction program unless testing is completed prior to construction. If contamination is encountered, then substantial further testing (and associated delays) should be expected. We strongly recommend that this issue is addressed prior to the commencement of excavation on site.

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

115 Wicks Road
Macquarie Park, NSW 2113
PO Box 976
North Ryde, BC 1670
Telephone: 02 9888 5000
Facsimile: 02 9888 5001

SOIL TEST SERVICES

ABN 43 002 145 173

TABLE A
POINT LOAD STRENGTH INDEX TEST REPORT

Client:	JK Geotechnics	**Ref No:**	26054ZH
Project:	Proposed Concrete Pole	**Report:**	A
Location:	Kosciuszko Road, Perisher Valley	**Report Date:**	22/10/2012
		Page 1 of 1	

BOREHOLE NUMBER	DEPTH	$I_{S\,(50)}$	ESTIMATED UNCONFINED COMPRESSIVE STRENGTH
	m	MPa	(MPa)
1	3.20-3.24	0.1	2
	3.40-3.44	0.1	2
	3.65-3.70	0.6	12
	4.35-4.39	3.2	64
	5.25-5.29	1.2	24
	6.50-6.54	2.4	48

NOTES:

1. In the above table testing was completed in the Axial direction.
2. The above strength tests were completed at the 'as received' moisture content.
3. Test Method: RTA T223.
4. The Estimated Unconfined Compressive Strength was calculated from the point load Strength Index by the following approximate relationship and rounded off to the nearest whole number :
   U.C.S. = 20 $I_{S\,(50)}$

All services provided by STS are subject to our standard terms and conditions. A copy is available on request.

TABLE B
SUMMARY OF SOIL CHEMISTRY TEST RESULTS
SOIL pH, SULPHATE, CHLORIDE & RESISTIVITY

Borehole Number	Sample Depth (m)	Sample Description	pH Units	Sulphate (mg/kg)	Chloride (mg/kg)	Resistivity In Soil (ohm m)
BH1	0.5 - 0.95	Fill: Silty clay	4.7	27	870	16
BH1	1.65 - 1.95	Residual Sand	5.3	3	4	500
BH1	2.5 -2.8	Residual Silty Clayey Sand	5.6	18	43	200

JK Geotechnics
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERS

BOREHOLE LOG

Borehole No. 1

Client: MYD CONSULTING ENGINEERS PTY LTD

Project: PROPOSED CONCRETE POLE

Location: KOSCIUSZKO ROAD, PERISHER VALLEY, NSW

Job No. 26054ZH
Date: 9-10-12
Method: SPIRAL AUGER GEMCO DRILL 210D
Logged/Checked by: J.D./A.J.H.
R.L. Surface: N/A
Datum:

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
						0			FILL: Silty clayey gravel, fine to medium grained igneous and granite, dark brown, trace of root fibres.	M			
									FILL: Silty clay, low plasticity, light brown, with fine to medium grained quartz gravel, trace of root fibres.	MC<PL			TOO FRIABLE FOR HP TESTING APPEARS POORLY COMPACTED
					N = 4 2,2,2	1							
					N = 9 3,3,6								
ON COMPLET-ION OF AUGER-ING						2		SP	SAND: fine to medium grained, light grey and mid grey, with fine to medium grained quartz gravel, trace of clay fines.	M	L		RESIDUAL
								SC	SILTY CLAYEY SAND: fine to medium grained, light brown, with fine to medium grained quartz gravel.				
					SPT 20/100mm/ REFUSAL	3		-	GRANITE: medium to coarse grained, light grey and brown. REFER TO CORED BOREHOLE LOG	DW	VL-L		LOW 'TC' BIT RESISTANCE 'TC' BIT REFUSAL
						4							
						5							
						6							
						7							

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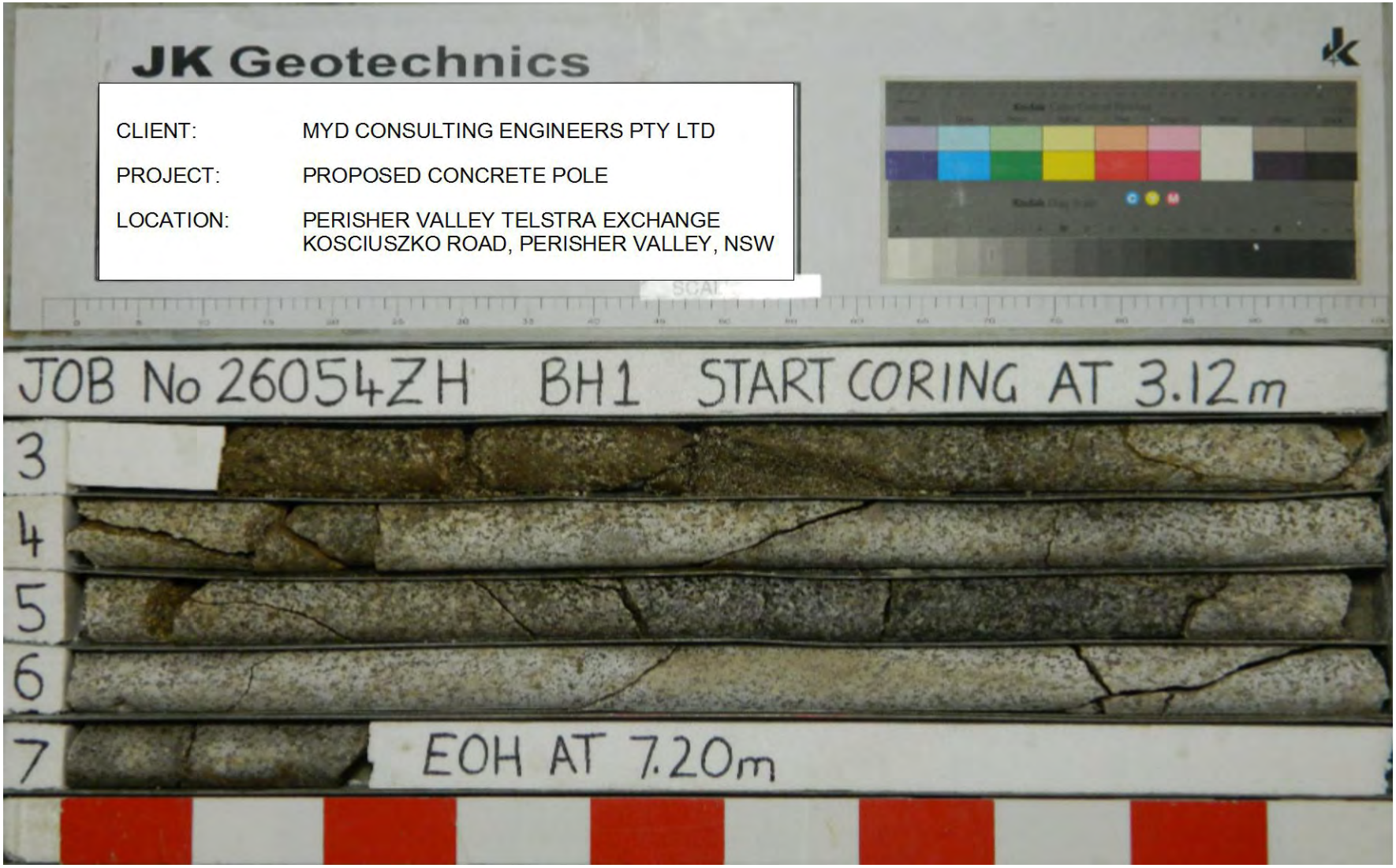
Ref: 26054ZH - BH1



JK Geotechnics
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERS

CORED BOREHOLE LOG

Borehole No. **1** **2/2**

Client: MYD CONSULTING ENGINEERS PTY LTD

Project: PROPOSED CONCRETE POLE

Location: KOSCIUSZKO ROAD, PERISHER VALLEY, NSW

Job No. 26054ZH **Core Size:** NMLC **R.L. Surface:** N/A

Date: 9-10-12 **Inclination:** VERTICAL **Datum:**

Drill Type: GEMCO DRILL 210D **Bearing:** - **Logged/Checked by:** J.D./A.J.H.

Water Loss/Level	Barrel Lift	Depth (m)	Graphic Log	CORE DESCRIPTION: Rock Type, grain characteristics, colour, structure, minor components.	Weathering	Strength	POINT LOAD STRENGTH INDEX $I_S(50)$ EL VL L M H VH EH	DEFECT SPACING (mm) 500 300 100 50 30 10	DEFECT DETAILS: DESCRIPTION Type, inclination, thickness, planarity, roughness, coating. Specific / General
		2							
		3		START CORING AT 3.12m					
				GRANITE: medium to coarse grained, grey brown.	DW	VL-L			- XWS, 0-5°, 25mm.t - J, 65°, P, R, IS - J, 75°, P ,R, IS
		4		GRANITE: medium to coarse grained, light grey and dark grey.	FR	M			- J, 65°-90°, Un, R, IS - J, 50°, P, R, IS
▼ ON COMPLET-ION OF CORING						VH			- J, 70°, P, R, IS
						H			
		5							- J, 35°, P, S, IS - J, 75°-90°, Un, R, IS - HEALED J, 75-90° - J, 40°, P, S
FULL RET-URN		6							- J, 70-90°, Un, R, CLAY COATED - J, 60°, P, S, IS
		7							- J, 40°, P, S, IS - J, 75-90°, Un, S, IS
				END OF BOREHOLE AT 7.20m					
		8							
		9							

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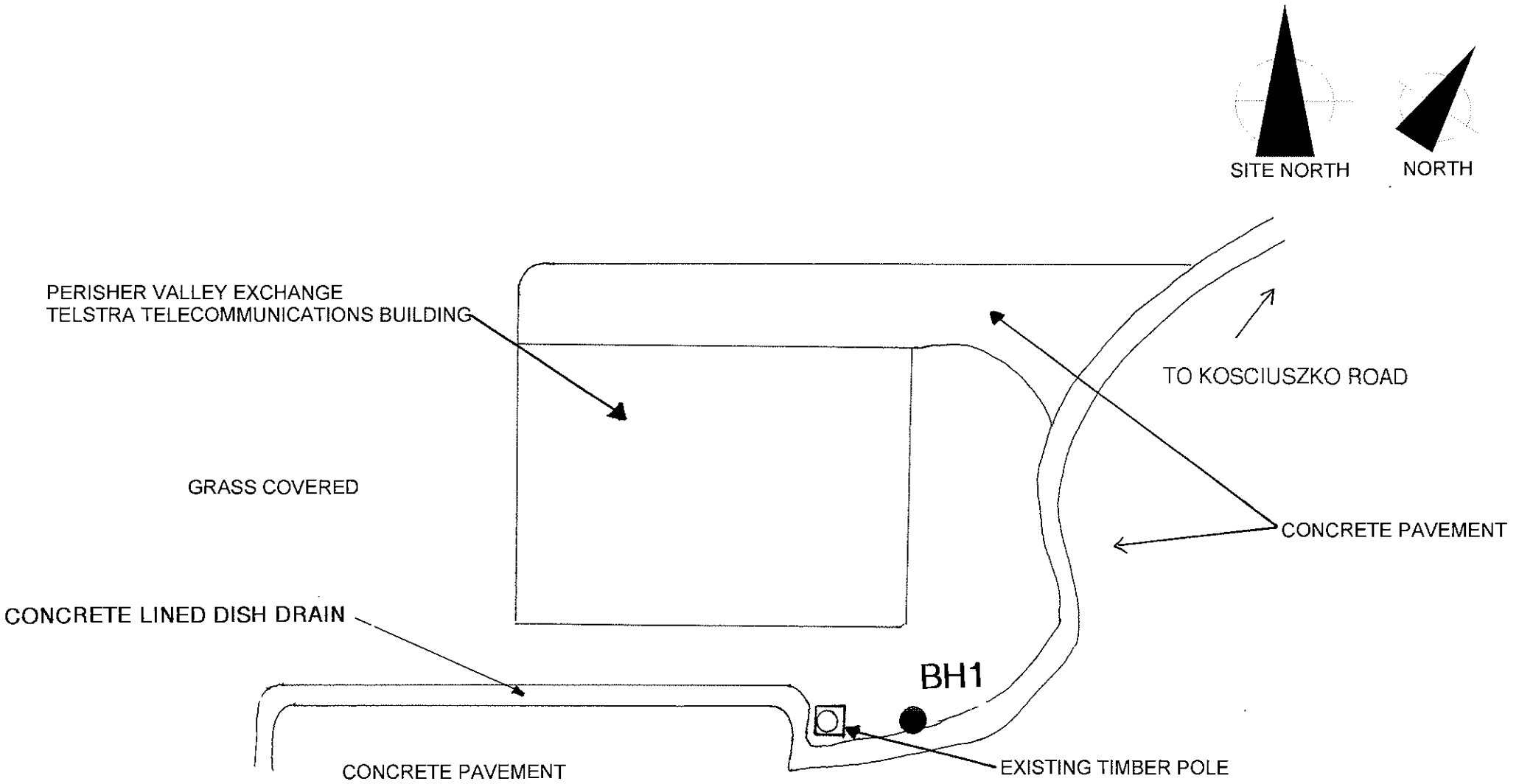

BOREHOLE LOCATION PLAN

SCALE (m)

0 10

JK Geotechnics
GEOTECHNICAL & ENVIRONMENTAL ENGINEERS

Report No. 26054ZH Figure No. 1

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

CERTIFICATE OF ANALYSIS 80168

Client:
Jeffery & Katauskas Pty Ltd
PO Box 976
North Ryde BC
NSW 1670

Attention: Joel Dalberger

Sample log in details:

Your Reference:	**26054ZH, Perisher Valley**		
No. of samples:	3 Soils		
Date samples received / completed instructions received	12/10/12	/	12/10/12

Analysis Details:
Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.
Please refer to the last page of this report for any comments relating to the results.

Report Details:

Date results requested by: / Issue Date:	19/10/12	/	19/10/12
Date of Preliminary Report:	Not issued		

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Accredited for compliance with ISO/IEC 17025. **Tests not covered by NATA are denoted with *.**

Results Approved By:

Nick Sarlamis
Inorganics Supervisor

NATA
ACCREDITED FOR TECHNICAL COMPETENCE

Miscellaneous Inorg - soil				
Our Reference:	UNITS	80168-1	80168-2	80168-3
Your Reference	----------	BH1	BH1	BH1
Depth	----------	0.5-0.95	1.65-1.95	2.5-2.8
Date Sampled		9/10/2012	9/10/2012	9/10/2012
Type of sample		Soil	Soil	Soil
Date prepared	-	18/10/2012	18/10/2012	18/10/2012
Date analysed	-	18/10/2012	18/10/2012	18/10/2012
pH 1:5 soil:water	pH Units	4.7	5.3	5.6
Sulphate, SO4 1:5 soil:water	mg/kg	27	3	18
Chloride, Cl 1:5 soil:water	mg/kg	870	4	43
Resistivity in soil*	ohm m	16	500	200

Method ID	Methodology Summary
Inorg-001	pH - Measured using pH meter and electrode in accordance with APHA 22nd ED, 4500-H+.
Inorg-081	Anions - a range of Anions are determined by Ion Chromatography, in accordance with APHA 22nd ED, 4110 -B.
Inorg-002	Conductivity and Salinity - measured using a conductivity cell and dedicated meter, in accordance with APHA 22nd ED 2510 and Rayment & Lyons.

Client Reference: 26054ZH, Perisher Valley

QUALITY CONTROL Miscellaneous Inorg - soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			18/10/2012	80168-1	18/10/2012 || 18/10/2012	LCS-1	18/10/2012
Date analysed	-			18/10/2012	80168-1	18/10/2012 || 18/10/2012	LCS-1	18/10/2012
pH 1:5 soil:water	pH Units		Inorg-001	[NT]	80168-1	4.7 || 4.7 || RPD: 0	LCS-1	102%
Sulphate, SO4 1:5 soil:water	mg/kg	2	Inorg-081	<2	80168-1	27 || 27 || RPD: 0	LCS-1	95%
Chloride, Cl 1:5 soil:water	mg/kg	2	Inorg-081	<2	80168-1	870 || 940 || RPD: 8	LCS-1	103%
Resistivity in soil*	ohm m	1	Inorg-002	<1.0	80168-1	16 || 14 || RPD: 13	LCS-1	105%

Report Comments:

Asbestos ID was analysed by Approved Identifier:	Not applicable for this job
Asbestos ID was authorised by Approved Signatory:	Not applicable for this job

INS: Insufficient sample for this test	PQL: Practical Quantitation Limit	NT: Not tested
NA: Test not required	RPD: Relative Percent Difference	NA: Test not required
<: Less than	>: Greater than	LCS: Laboratory Control Sample

Quality Control Definitions

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike : A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample) : This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surrogate Spike: Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

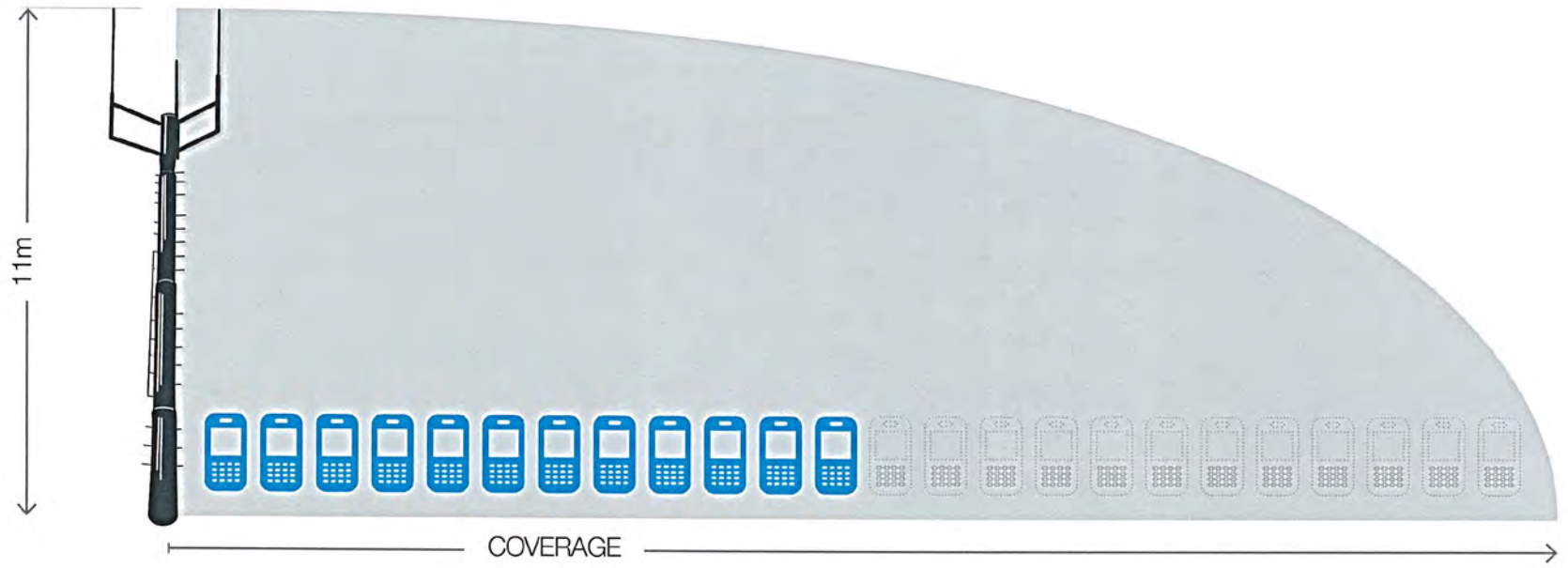
Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batched of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

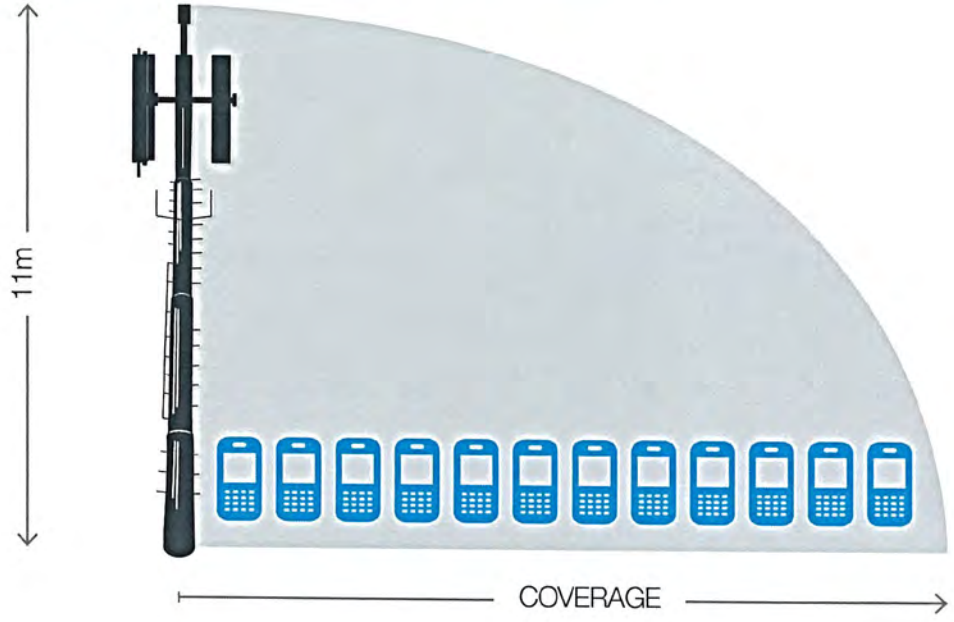
Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.
Matrix Spikes and LCS: Generally 70-130% for inorganics/metals; 60-140% for organics and 10-140% for SVOC and speciated phenols is acceptable.

Appendix 9 – Explanatory Diagrams

EXISTING FREQUENCIES -11m POLE



HIGHER FREQUENCIES -11m POLE



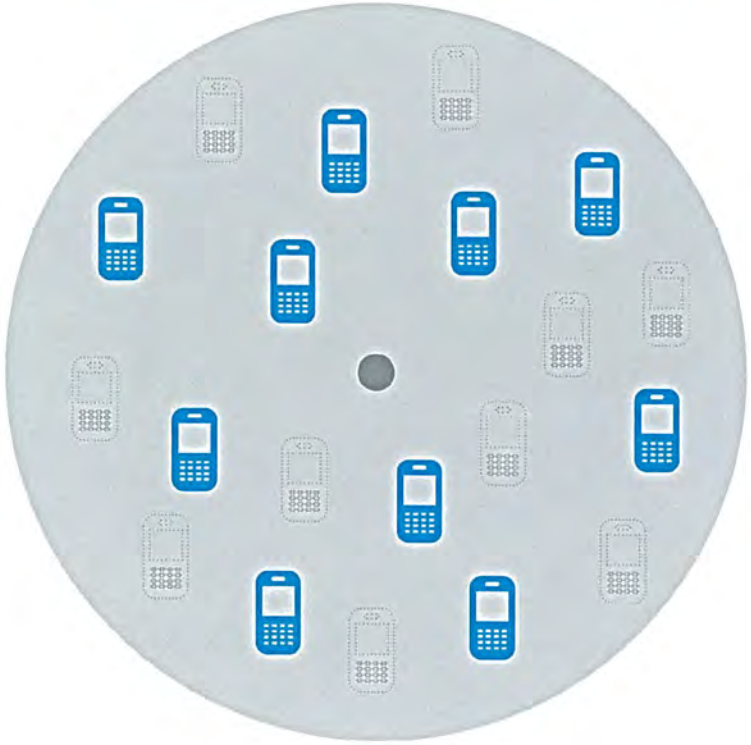
IN-SERVICE PHONE

NOT IN-SERVICE PHONE

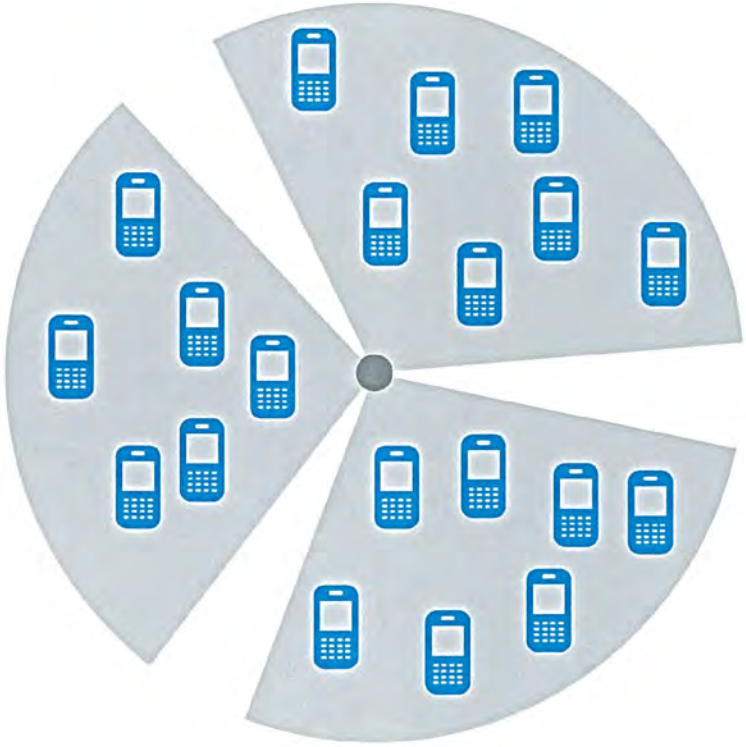
Diagram 1
EXISTING AND HIGHER FREQUENCIES

- Higher frequency will not travel as great a distance as the existing frequency.
- Phones that are not covered by the higher frequency will have to use the existing lower frequencies.
- In order to maintain coverage and improve capacity, an elevated facility is required.

OMNI-DIRECTIONAL
(1 SECTOR)



SECTORISED SITE
(3 SECTOR) - 25m POLE



IN-SERVICE PHONE

NOT IN-SERVICE PHONE

Diagram 2a
OMNI-DIRECTIONAL SITE (1 SECTOR)

- Omnidirectional antennas are unable to provide the capacity required to adequately service Telstra's 3G customers.
- While it can service a large area, it cannot service many people.
- This is because it can only provide one sector - that is technology is provided through one processor.
- In order to meet capacity requirements and customer expectations, a facility that provides three sectors (ie 3 processors) is required.

Diagram 2b
SECTORISED SITE (3 SECTOR)

- The solution to providing more capacity is to "sectorise" the 3G service - that is, to replace the current 3G Omnidirectional antennas with panel antennas.
- Panel Antennas provide greater capacity by targeting specific zones within a 360° radius.
- This will ensure that more people are able to utilise Telstra's telecommunication services within the area at one time.

Appendix 10 – AHIMS Search

AHIMS Web Services (AWS)
Search Result

Your Ref Number : Perisher Valley

Client Service ID : 93352

Caitlin Adcock

Level 23, Darling Park Tower 2, 201 Sussex Street
SYDNEY New South Wales 2000

Attention: Caitlin Adcock

Email: cadcock@urbis.com.au

Date: 25 February 2013

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lat, Long From : -36.4056, 148.4138 - Lat, Long To : -36.4052, 148.4144 with a Buffer of 0 meters, conducted by Caitlin Adcock on 25 February 2013.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.

A search of the Office of the Environment and Heritage AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

0	**Aboriginal sites are recorded in or near the above location.**
0	**Aboriginal places have been declared in or near the above location. ***

If your search shows Aboriginal sites or places what should you do?

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the NSW Government Gazette (http://www.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Office of Environment and Heritage's Aboriginal Heritage Information Unit upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Office of Environment and Heritage and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date .Location details are recorded as grid references and it is important to note that there may be errors or omissions in these recordings,
- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.
- This search can form part of your due diligence and remains valid for 12 months.

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ABN 30 841 387 271
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Web: www.environment.nsw.gov.au