PP252/2018-1

3765 Great Ocean Road WYE RIVER

C/A: 2C

Building and Works associated with the Replacement of the Telecommunication Monopole

Visionstream Pty Ltd

Officer - Helen Evans

EXHIBITION FILE

Submissions to this planning application will be accepted until a decision is made on the application.

If you would like to make a submission relating to a planning permit application, you must do so in writing to the Planning Department

Colac Otway SHIRE

Planning Enquiries
Phone: (03) 5232 9400
Web: www.colacotway.vic.gov.au

Office Use Only

Application No.: Date Lodged: / /

Application for a **Planning Permit**

If you need help to complete this form, read MORE INFORMATION at the end of this form.

⚠ Any material submitted with this application, including plans and personal information, will be made available for public viewing, including electronically, and copies may be made for interested parties for the purpose of enabling consideration and review as part of a planning process under the *Planning and Environment Act 1987*. If you have any questions, please contact Council's planning department.

⚠ **Questions marked with an asterisk (*) must be completed.**

⚠ **If the space provided on the form is insufficient, attach a separate sheet.**

ⓘ Click for further information.

Clear Form

The Land ⓘ

Address of the land. Complete the Street Address and one of the Formal Land Descriptions.

Street Address *

Unit No.: | St. No.: 3765 | St. Name: Great Ocean Road

Suburb/Locality: Wye River | Postcode: 3234

Formal Land Description *
Complete either A or B.

⚠ This information can be found on the certificate of title.

If this application relates to more than one address, attach a separate sheet setting out any additional property details.

A Lot No.: ◯ Lodged Plan ◯ Title Plan ◯ Plan of Subdivision No.:

OR

B Crown Allotment No.: 2C | Section No.:

Parish/Township Name: Wongarra

The Proposal

⚠ You must give full details of your proposal and attach the information required to assess the application. Insufficient or unclear information will delay your application.

ⓘ **For what use, development or other matter do you require a permit?** *

Building and works associated with the replacement of Telstra's telecommunication monopole within the same compound. No change to the existing use.

☑ Provide additional information about the proposal, including: plans and elevations; any information required by the planning scheme, requested by Council or outlined in a Council planning permit checklist; and if required, a description of the likely effect of the proposal.

ⓘ **Estimated cost of any development for which the permit is required** *

Cost $ 95,000 ⚠ You may be required to verify this estimate. Insert '0' if no development is proposed.

Existing Conditions

Describe how the land is used and developed now *

For example, vacant, three dwellings, medical centre with two practitioners, licensed restaurant with 80 seats, grazing.

Land currently hosts an existing Telstra exchange and is used for telecommunications purposes.

☑ Provide a plan of the existing conditions. Photos are also helpful.

Title Information

Encumbrances on title *

Does the proposal breach, in any way, an encumbrance on title such as a restrictrive covenant, section 173 agreement or other obligation such as an easement or building envelope?

- ○ Yes (If 'yes' contact Council for advice on how to proceed before continuing with this application.)
- ○ No
- ◉ Not applicable (no such encumbrance applies).

☑ Provide a full, current copy of the title for each individual parcel of land forming the subject site.
The title includes: the covering 'register search statement', the title diagram and the associated title documents, known as 'instruments', for example, restrictive covenants.

Applicant and Owner Details

Provide details of the applicant and the owner of the land.

Applicant *

The person who wants the permit.

Name:
Title: | First Name: | Surname:
Organisation (if applicable): Telstra Corporation Ltd (C/- Visionstream Pty Ltd)
Postal Address: | If it is a P.O. Box, enter the details here:
Unit No.: | St. No.: | St. Name: Locked Bag 4001
Suburb/Locality: Moorabbin | State: VIC | Postcode: 3189

Please provide at least one contact phone number *

Contact information for applicant OR contact person below
Business phone: 03 9258 5743 | Email: kristy.zhang@visionstream.com.au
Mobile phone: 0431 160 839 | Fax:

Where the preferred contact person for the application is different from the applicant, provide the details of that person.

Contact person's details*
Same as applicant ☐
Name:
Title: | First Name: Kristy | Surname: Zhang
Organisation (if applicable): Visionstream Pty Ltd
Postal Address: | If it is a P.O. Box, enter the details here:
Unit No.: | St. No.: | St. Name: Locked Bag 4001
Suburb/Locality: Moorabbin | State: VIC | Postcode: 3189

Owner *

The person or organisation who owns the land

Where the owner is different from the applicant, provide the details of that person or organisation.

Same as applicant ☐
Name:
Title: | First Name: | Surname:
Organisation (if applicable): Otway Coast Committee Incorporated
Postal Address: | If it is a P.O. Box, enter the details here:
Unit No.: | St. No.: | St. Name: PO BOX 146
Suburb/Locality: Apollo Bay | State: VIC | Postcode: 3233
Owner's Signature (Optional): | Date: day / month / year

Declaration

This form must be signed by the applicant *

⚠ Remember it is against the law to provide false or misleading information, which could result in a heavy fine and cancellation of the permit.

I declare that I am the applicant; and that all the information in this application is true and correct; and the owner (if not myself) has been notified of the permit application.

Signature:

Date: 16/10/18

day / month / year

Need help with the Application?

General information about the planning process is available at planning.vic.gov.au

Contact Council's planning department to discuss the specific requirements for this application and obtain a planning permit checklist. Insufficient or unclear information may delay your application.

Has there been a pre-application meeting with a council planning officer?

◉ No ○ Yes

If 'Yes', with whom?:

Date: day / month / year

Checklist

Have you:

☐ Filled in the form completely?

☐ Paid or included the application fee? ⚠ Most applications require a fee to be paid. Contact Council to determine the appropriate fee.

Provided all necessary supporting information and documents?

- ☑ A full, current copy of title information for each individual parcel of land forming the subject site.
- ☐ A plan of existing conditions.
- ☐ Plans showing the layout and details of the proposal.
- ☐ Any information required by the planning scheme, requested by council or outlined in a council planning permit checklist.
- ☐ If required, a description of the likely effect of the proposal (for example, traffic, noise, environmental impacts).

☐ Completed the relevant council planning permit checklist?

☐ Signed the declaration above?

Lodgement

Lodge the completed and signed form, the fee and all documents with:

Colac Otway Shire
PO Box 283
Colac VIC 3250

2-6 Rae Street
Colac VIC 3250

Contact information

Phone: (03) 5232 9400
Email: inq@colacotway.vic.gov.au

Deliver application in person, by post or by electronic lodgement.

MORE INFORMATION

The Land

Planning permits relate to the use and development of the land. It is important that accurate, clear and concise details of the land are provided with the application.

How is land identified?

Land is commonly identified by a street address, but sometimes this alone does not provide an accurate identification of the relevant parcel of land relating to an application. Make sure you also provide the formal land description – the lot and plan number or the crown, section and parish/township details (as applicable) for the subject site. This information is shown on the title.

See **Example 1.**

The Proposal

Why is it important to describe the proposal correctly?

The application requires a description of what you want to do with the land. You must describe how the land will be used or developed as a result of the proposal. It is important that you understand the reasons why you need a permit in order to suitably describe the proposal. By providing an accurate description of the proposal, you will avoid unnecessary delays associated with amending the description at a later date.

⚠ Planning schemes use specific definitions for different types of use and development. Contact the Council planning office at an early stage in preparing your application to ensure that you use the appropriate terminology and provide the required details.

How do planning schemes affect proposals?

A planning scheme sets out policies and requirements for the use, development and protection of land. There is a planning scheme for every municipality in Victoria. Development of land includes the construction of a building, carrying out works, subdividing land or buildings and displaying signs.

Proposals must comply with the planning scheme provisions in accordance with Clause 61.05 of the planning scheme. Provisions may relate to the State Planning Policy Framework, the Local Planning Policy Framework, zones, overlays, particular and general provisions. You can access the planning scheme by either contacting Council's planning department or by visiting the Planning Schemes Online section of the department's website http://planning-schemes.delwp.vic.gov.au

⚠ You can obtain a planning certificate to establish planning scheme details about your property. A planning certificate identifies the zones and overlays that apply to the land, but it does not identify all of the provisions of the planning scheme that may be relevant to your application. Planning certificates for land in metropolitan areas and most rural areas can be obtained by visiting www.landata.vic.gov.au Contact your local Council to obtain a planning certificate in Central Goldfields, Corangamite, Macedon Ranges and Greater Geelong. You can also use the free Planning Property Report to obtain the same information.

See **Example 2.**

Estimated cost of development

In most instances an application fee will be required. This fee must be paid when you lodge the application. The fee is set down by government regulations.

To help Council calculate the application fee, you must provide an accurate cost estimate of the proposed development. This cost does not include the costs of development that you could undertake without a permit or that are separate from the permit process. Development costs should be calculated at a normal industry rate for the type of construction you propose.

Council may ask you to justify your cost estimates. Costs are required solely to allow Council to calculate the permit application fee. Fees are exempt from GST.

⚠ Costs for different types of development can be obtained from specialist publications such as Cordell Housing: Building Cost Guide or Rawlinsons: Australian Construction Handbook.

⚠ Contact the Council to determine the appropriate fee. Go to planning.vic.gov.au to view a summary of fees in the Planning and Environment (Fees) Regulations.

Existing Conditions

How should land be described?

You need to describe, in general terms, the way the land is used now, including the activities, buildings, structures and works that exist (e.g. single dwelling, 24 dwellings in a three-storey building, medical centre with three practitioners and 8 car parking spaces, vacant building, vacant land, grazing land, bush block).

Please attach to your application a plan of the existing conditions of the land. Check with the local Council for the quantity, scale and level of detail required. It is also helpful to include photographs of the existing conditions.

See **Example 3.**

Title Information

What is an encumbrance?

An 'encumbrance' is a formal obligation on the land, with the most common type being a 'mortgage'. Other common examples of encumbrances include:

- **Restrictive Covenants**: A 'restrictive covenant' is a written agreement between owners of land restricting the use or development of the land for the benefit of others, (eg. a limit of one dwelling or limits on types of building materials to be used).
- **Section 173 Agreements**: A 'section 173 agreement' is a contract between an owner of the land and the Council which sets out limitations on the use or development of the land.
- **Easements:** An 'easement' gives rights to other parties to use the land or provide for services or access on, under or above the surface of the land.
- **Building Envelopes:** A 'building envelope' defines the development boundaries for the land.

Aside from mortgages, the above encumbrances can potentially limit or even prevent certain types of proposals.

What documents should I check to find encumbrances?

Encumbrances are identified on the title (register search statement) under the header 'encumbrances, caveats and notices'. The actual details of an encumbrance are usually provided in a separate document (instrument) associated with the title. Sometimes encumbrances are also marked on the title diagram or plan, such as easements or building envelopes.

What about caveats and notices?

A 'caveat' is a record of a claim from a party to an interest in the land. Caveats are not normally relevant to planning applications as they typically relate to a purchaser, mortgagee or chargee claim, but can sometimes include claims to a covenant or easement on the land. These types of caveats may affect your proposal.

Other less common types of obligations may also be specified on title in the form of 'notices'. These may have an effect on your proposal, such as a notice that the building on the land is listed on the Heritage Register.

What happens if the proposal contravenes an encumbrance on title?

Encumbrances may affect or limit your proposal or prevent it from proceeding. Section 61(4) of the *Planning and Environment Act 1987* for example, prevents a Council from granting a permit if it would result in a breach of a registered restrictive covenant. If the proposal contravenes any encumbrance, contact the Council for advice on how to proceed.

You may be able to modify your proposal to respond to the issue. If not, separate procedures exist to change or remove the various types of encumbrances from the title. The procedures are generally quite involved and if the encumbrance relates to more than the subject property, the process will include notice to the affected party.

⚠ You should seek advice from an appropriately qualified person, such as a solicitor, if you need to interpret the effect of an encumbrance or if you seek to amend or remove an encumbrance.

Why is title information required?

Title information confirms the location and dimensions of the land specified in the planning application and any obligations affecting what can be done on or with the land.

As well as describing the land, a full copy of the title will include a diagram or plan of the land and will identify any encumbrances, caveats and notices.

What is a 'full' copy of the title?

The title information accompanying your application must include a 'register search statement' and the title diagram, which together make up the title.

In addition, any relevant associated title documents, known as 'instruments', must also be provided to make up a full copy of the title.

Check the title to see if any of the types of encumbrances, such as a restrictive covenant, section 173 agreement, easement or building envelope, are listed. If so, you must submit a copy of the document (instrument) describing that encumbrance. Mortgages do not need to be provided with planning applications.

⚠ Some titles have not yet been converted by Land Registry into an electronic register search statement format. In these earlier types of titles, the diagram and encumbrances are often detailed on the actual title, rather than in separate plans or instruments.

Why is 'current' title information required?

It is important that you attach a current copy of the title for each individual parcel of land forming the subject site. 'Current' title information accurately provides all relevant and up-to-date information.

Some Councils require that title information must have been searched within a specified time frame. Contact the Council for advice on their requirements.

⚠ Copies of title documents can be obtained from Land Registry: Level 10, 570 Bourke Street, Melbourne; 03 8636 2010; www.landata.vic.gov.au – go direct to "titles & property certificates".

Applicant and Owner Details

This section provides information about the permit applicant, the owner of the land and the person who should be contacted about any matters concerning the permit application.

The applicant is the person or organisation that wants the permit. The applicant can, but need not, be the contact person.

In order to avoid any confusion, the Council will communicate only with the person who is also responsible for providing further details. The contact may be a professional adviser (e.g. architect or planner) engaged to prepare or manage the application. To ensure prompt communications, contact details should be given.

Check with council how they prefer to communicate with you about the application. If an email address is provided this may be the preferred method of communication between Council and the applicant/contact.

The owner of the land is the person or organisation who owns the land at the time the application is made. Where a parcel of land has been sold and an application made prior to settlement, the owner's details should be identified as those of the vendor. The owner can, but need not, be the contact or the applicant.

See **Example 4.**

Declaration

The declaration should be signed by the person who takes responsibility for the accuracy of all the information that is provided. This declaration is a signed statement that the information included with the application is true and correct at the time of lodgement.

The declaration can be signed by the applicant or owner. If the owner is not the applicant, the owner must either sign the application form or must be notified of the application which is acknowledged in the declaration.

⚠ Obtaining or attempting to obtain a permit by wilfully making or causing any false representation or declaration, either orally or in writing, is an offence under the *Planning and Environment Act 1987* and could result in a fine and/or cancellation of the permit.

Need help with the Application?

If you have attended a pre-application meeting with a Council planner, fill in the name of the planner and the date, so that the person can be consulted about the application once it has been lodged.

Checklist

What additional information should you provide to support the proposal?

You should provide sufficient supporting material with the application to describe the proposal in enough detail for the Council to make a decision. It is important that copies of all plans and information submitted with the application are legible.

There may be specific application requirements set out in the planning scheme for the use or development you propose. The application should demonstrate how these have been addressed or met.

The checklist is to help ensure that you have:

- provided all the required information on the form
- included payment of the application fee
- attached all necessary supporting information and documents
- completed the relevant Council planning permit checklist
- signed the declaration on the last page of the application form

⚠ The more complete the information you provide with your permit application, the sooner Council will be able to make a decision.

Lodgement

The application must be lodged with the Council responsible for the planning scheme in which the land affected by the application is located. In some cases the Minister for Planning or another body is the responsible authority instead of Council. Ask the Council if in doubt.

Check with Council how they prefer to have the application lodged. For example, they may have an online lodgement system, prefer email or want an electronic and hard copy. Check also how many copies of plans and the size of plans that may be required.

Contact details are listed in the lodgement section on the last page of the form.

⚠ Approval from other authorities: In addition to obtaining a planning permit, approvals or exemptions may be required from other authorities or Council departments. Depending on the nature of your proposal, these may include food or health registrations, building permits or approvals from water and other service authorities.

EXAMPLES

Example 1

The Land

Address of the land. Complete the Street Address and one of the Formal Land Descriptions.

Street Address *

Unit No.: 4 | St. No.: 26 | St. Name: Planmore Avenue

Suburb/Locality: HAWTHORN | Postcode: 3122

Formal Land Description *
Complete either A or B.

This information can be found on the certificate of title.

If this application relates to more than one address, attach a separate sheet setting out any additional property details.

A Lot No.: 2 ○ Lodged Plan ○ Title Plan ☑ Plan of Subdivision No.: LP93562

OR

B Crown Allotment No.: | Section No.:

Parish/Township Name:

Example 2

For what use, development or other matter do you require a permit? *

Construction of two, double-storey dwellings and construction of two new crossovers.

☒ Provide additional information about the proposal, including: plans and elevations; any information required by the planning scheme, requested by Council or outlined in a Council planning permit checklist; and if required, a description of the likely effect of the proposal.

Example 3

Existing Conditions

Describe how the land is used and developed now *

For example, vacant, three dwellings, medical centre with two practitioners, licensed restaurant with 80 seats, grazing.

Single dwelling.

☒ rovide a plan of the existing conditions. Photos are also helpful.

Example 4

Applicant and Owner Details

Provide details of the applicant and the owner of the land.

Applicant *

The person who wants the permit.

Name:

Title: Mr | First Name: Len | Surname: Browning

Organisation (if applicable): Responsible Developers P/L

Postal Address: | If it is a P.O. Box, enter the details here:

Unit No.: 4 | St. No.: 12 | St. Name: Ardour Lane

Suburb/Locality: Wycheproof | State: Vic | Postcode: 3527

Please provide at least one contact phone number *

Contact information for applicant OR contact person below

Business phone: 9123 4567 | Email: tcpl@bigpond.net.au

Mobile phone: 0412 345 678 | Fax: 9123 4567

Where the preferred contact person for the application is different from the applicant, provide the details of that person.

Contact person's details* Same as applicant ☐

Name:

Title: Mr | First Name: Andrew | Surname: Hodge

Organisation (if applicable): Town Planning Consultants

Postal Address: | If it is a P.O. Box, enter the details here:

Unit No.: | St. No.: | St. Name: PO Box 111

Suburb/Locality: Parkdale | State: Vic | Postcode: 3194

Owner *

The person or organisation who owns the land

Where the owner is different from the applicant, provide the details of that person or organisation.

Same as applicant ☑

Name:

Title: | First Name: | Surname:

Organisation (if applicable):

Postal Address: | If it is a P.O. Box, enter the details here:

Unit No.: | St. No.: | St. Name:

Suburb/Locality: | State: | Postcode:

Owner's Signature (Optional): | Date: day / month / year

16 October 2018

Planning Manager
Colac Otway Shire Council
PO Box 283,
Colac VIC 3250

Dear Sir/Madam,

Planning Permit Application, Proposed Telecommunications Facility outside 3765 Great Ocean Road, Wye River VIC 3234

A planning application was lodged previously and assessed under PP97/2017. However, this application has since lapsed. Please find attached a new planning permit application relating to the proposed replacement of an existing facility with a new Telecommunications Facility.

As a Licensed Carrier under the Commonwealth Telecommunications Act 1997, Telstra is also obliged to comply with the Industry Code; Communications Alliance Ltd C564:2001 *Industry Code – Mobile Phone Base Station Deployment* (refer to as the Deployment Code) in relation to the above proposal. Under the Deployment Code, Sections 4.1 and 4.2 are relevant to the preparation of the above planning permit application.

Telstra has applied the Precautionary Approach in the Selection and Design of the proposed site in accordance with Sections 4.1 and 4.2 of this Code.

To assist in your assessment of the application please find enclosed:

- A completed application form;
- Site plans and elevations; and
- A written report assessing the proposal against the relevant planning instruments, including:
  - A copy of the Precautionary Approach Assessment (4.1 and 4.2 of the Deployment Code);
  - A copy of the EME (Electromagnetic Energy) Report;
  - A map showing areas of Aboriginal Cultural Sensitivity; and
  - A copy of the EPBC Report.

To arrange immediate payment for this application, please contact Lauren Brayne directly on 03 8547 4173 for credit card payment over the phone.

Please do not hesitate to contact me immediately should you require any further information.

Yours faithfully

Kristy Zhang
Town Planner
Visionstream
on behalf of **Telstra**

Imaged Document Cover Sheet

The document following this cover sheet is an imaged document supplied by LANDATA®, Land Use Victoria.

Document Type	**Plan**
Document Identification	**CD087991Y**
Number of Pages (excluding this cover sheet)	**1**
Document Assembled	**30/07/2018 16:03**

CROWN DIAGRAM

CD087991Y

Location of Land

Parish : WONGARRA
Allotment : 2C

This plan has been created to assist in locating a Crown land parcel

Warning: No warranty is given as to the accuracy or completeness of this plan

Any derived dimensions are approximate

Standard Parcel Identifier (SPI) : 2C\PP3861

Vicmap Parcel PFI : 52497183

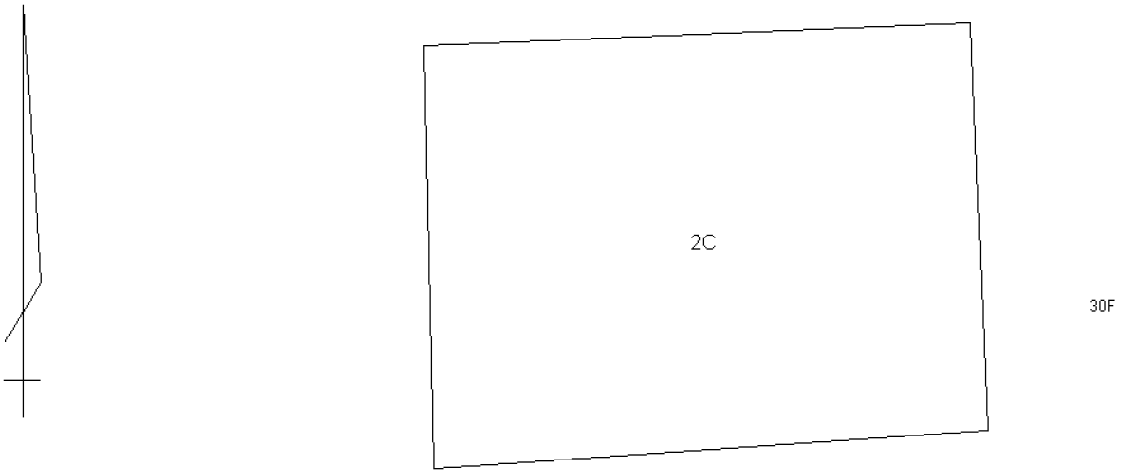
Coordinate Position

MGA : 751840, 5719040 (54)

Vicroads Directory Reference : 519 S7 (ed. 6)

Compiled from VICMAP cadastral mapping data

Date: 22/05/2009



SCALE
0 2 4 6 8 10
METRES

Sheet 1 of 1 Sheets

CROWN FOLIO STATEMENT

VOLUME 11783 FOLIO 922 Security no : 124073164248W
No CofT exists Produced 30/07/2018 04:01 pm
CROWN FOLIO

LAND DESCRIPTION

Crown Allotment 2C Parish of Wongarra.
Created by instrument MI228094J 06/08/2016

CROWN LAND ADMINISTRATOR

SECRETARY TO THE DEPARTMENT OF ENVIRONMENT, LAND, WATER AND PLANNING of 8 NICHOLSON STREET EAST MELBOURNE VIC 3002
MI228094J 06/08/2016

STATUS, ENCUMBRANCES AND NOTICES

RESERVATION MI228096E 06/08/2016
PERMANENT
PROTECTION OF THE COASTLINE
CPR20

DIAGRAM LOCATION

SEE CD087991Y FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

NIL

----------END OF CROWN FOLIO STATEMENT----------

Additional information: (not part of the Crown Folio Statement)

Street Address: 3765 GREAT OCEAN ROAD WYE RIVER VIC 3234

DOCUMENT END

Department of Environment, Land, Water & Planning

Electronic Instrument Statement

Produced: 30/07/2018 04:03:27 PM

Dealing Number: MI228096E

Rectification Date: 06/08/2016
Rectification Category: Crown Land Data Migration
Status: Registered

RECTIFICATION

Raised By: REGISTRAR OF TITLES
DX 250639 MELBOURNE

Folio Affected	CofT Supplied	Controlling Party
11783/922	No	

Details of Rectification

This Crown Permanent Reservation transaction was created as part of the crown land data migration. No instrument is available for this transaction.

Statement End.

RFNSA SITE No. 3221018

TN

EXISTING SIGN SECURED TO COMPOUND GATE USING STAINLESS STEEL STRAPS #13

EXISTING TELSTRA U/G POWER CABLE ROUTE (APPROX. 20.0m) TO CFA SHELTER

EXISTING HANDRAIL

EXISTING TELSTRA COMPOUND SECURITY FENCE WITH DOUBLE ACCESS GATES.

EXISTING TELSTRA EXCHANGE ROOM.

EXISTING O/H SERVICE MAINS TO BE UPGRADED FROM SINGLE PHASE TO 3 PHASE. REFER TO SHEET E2 FOR DETAILS.

EXISTING TELSTRA FEEDERS TO BE REMOVED AND ALL PROPOSED FEEDER CABLES TO BE INSTALLED TO PROPOSED MONOPOLE.

EXISTING TELSTRA P2 EARTH PIT (TYP.)

EXISTING TELSTRA 10.0m HIGH CONCRETE MONOPOLE WITH 2.5m STEEL EXTENSION TO BE REMOVED. REFER TO NOTES 6 & 7.

EXISTING CFA ANTENNA FEEDERS (2 OFF) TO BE REPLACED WITH LONGER FEEDERS AND RUN IN THE UPGRADED CABLE LADDER.

EXISTING MONOPOLE AND HEADFRAME TO BE REMOVED AFTER COMPLETION OF PROPOSED MONOPOLE / HEADFRAME INSTALLATION.

EXISTING SMR SHELTER TO ACCOMMODATE PROPOSED TELSTRA EQUIPMENT. REFER TO SHEET E1 FOR LAYOUT DETAILS.

PROPOSED TELSTRA LTE700 GPS ANTENNA (1 OFF) TO BE INSTALLED ON PROPOSED STANDARD MOUNT.

EXISTING TELSTRA P6 FIBRE PIT.

PROPOSED TELSTRA OUTDOOR 12.3 SPD BOX (1 OFF) BELOW FEEDER WINDOW.

EXISTING PIT.

EXISTING 300W CABLE TRAY TO BE RE-ROUTED AND RE-INSTATED TO PROPOSED MONOPOLE. REFER TO SHEETS T5 & T5-1 FOR DETAILS.

PROPOSED SIGNS TO BE UV STABLE STICKERS AND FIXED TO REAR OF ALL PROPOSED TELSTRA PANEL ANTENNAS (5 OFF) # 2

EXISTING O/H POWER ROUTE.

EXISTING POWER POLE

PROPOSED SIGN TO BE SECURED 1.5m AGL TO MONOPOLE USING STAINLESS STEEL STRAPS # 6

EXISTING 600W SMR GLAND WINDOW AND FEB TO ACCOMMODATE:
-PROPOSED LTE700 LCF12-50J FEEDERS (6 OFF).
-PROPOSED LTE700 / WCDMA850 LCF12-50J FEEDERS (2 OFF).
-PROPOSED WCDMA850 LCF12-50J FEEDERS (4 OFF).

PROPOSED TELSTRA POLE SQURE FOOTING (3.5m x 3.5m). REFER TO SHEET T2 FOR DETAILS.

PROPOSED TELSTRA PANEL ANTENNAS, TMA'S & RRUS ON PROPOSED HEADFRAME. REFER S1-1 FOR DETAILS.

EXISTING TOILET & CORRUGATED WALL TO BE RELOCATED AS REQUIRED.

EXISTING 300W CABLE LADDER TO BE RE-ROUTED TO PROPOSED MONOPOLE. REFER SHEETS T5 & T5-1 FOR DETAILS.

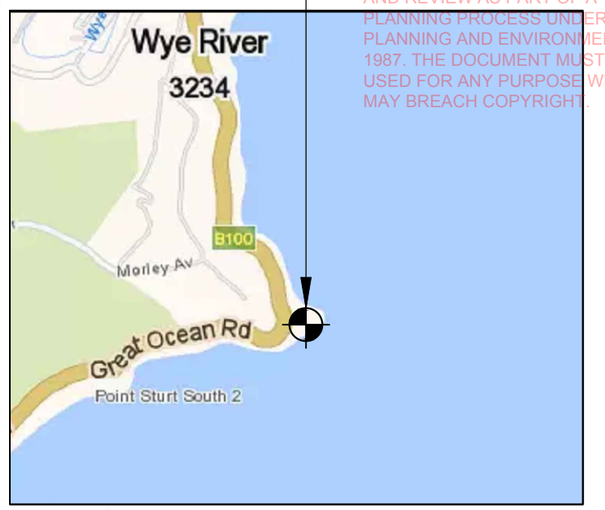
PROPOSED TELSTRA 15.0m HIGH ROCLA MONOPOLE WITH PROPOSED HEADFRAME.

3000

3000

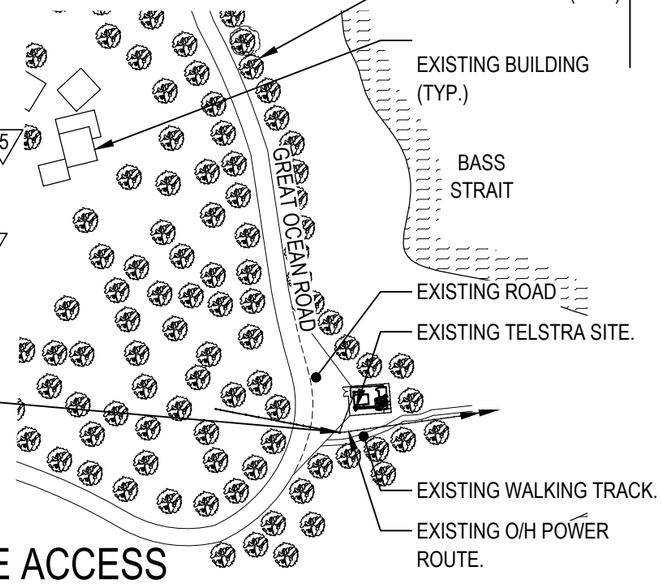
1250

1250



LOCALITY PLAN

NOT TO SCALE



NOTES :

1. ALL FEEDERS ACCESS POINTS ON THE STRUCTURE MUST BE BIRD PROOFED AS PER EXTERNAL PLANT POLICY 003615.
2. FOR EME SIGNS NOTED AS #X REFER TO 005486 DOCUMENTS FOR DETAILS.
3. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
4. HORIZONTAL CABLE LADDER IS RE-USED FOR THIS INSTALLATION. LOWER POSITION OF THE CABLE LADDER AS REQUIRED ALLOWS ADDITIONAL ROOM IN THE SHELTER GLAND WINDOW. FEEDERS ARE STACK-MOUNTED IN CABLE LADDER IF REQUIRED. PROVIDED RAISED LID IF REQUIRED.
5. STRUCTURES SITUATED IN CORROSIVE ENVIRONMENTS ARE PAINTED IN ACCORDANCE WITH 016159 11.1 - CANRAD CORROSION REGION TYPE IS E (VERY HIGH).
6. REMOVE AND REINSTATE GARDEN AND COMPOUND FENCING.
7. CUT OFF THE TOP AND BUTT SECTION OF THE POLE AND LEVEL FOUNDATION WITH THE GROUND, MAY REQUIRED TO BACKFILL BUTT SECTION WITH CONCRETE OR GRAVEL.
8. EXISTING GSM900 / WCDMA850 / LTE1800 EQUIPMENT IN EXCHANGE BUILDING TO BE RECOVERED, EXISTING WCDMA850 RUS TO BE RE-USED.

PROPERTY DESCRIPTION

ALLOTMENT: 2C
PARISH: WONGARRA
STATUS: CROWN LAND

SITE STRUCTURE CO-ORDINATES (GDA94) GPS READING ACCURACY: ±10m CENTRE OF MONOPOLE	
LATITUDE	-38.64150° (GDA94)
LONGITUDE	143.89350° (GDA94)

SITE LAYOUT

SCALE 1:100

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

COMPLIANCE BOX

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

SITE ACCESS

SCALE 1:2000

20m 0 20m 40m 60m 80m 100m SCALE 1:2000

5 FOR CONSTRUCTION

UNAPPROVED DRAWING

visionstream

TO BE READ IN CONJUNCTION WITH SHEETS S0, S0-1, S1-1, S3 & S3-1.

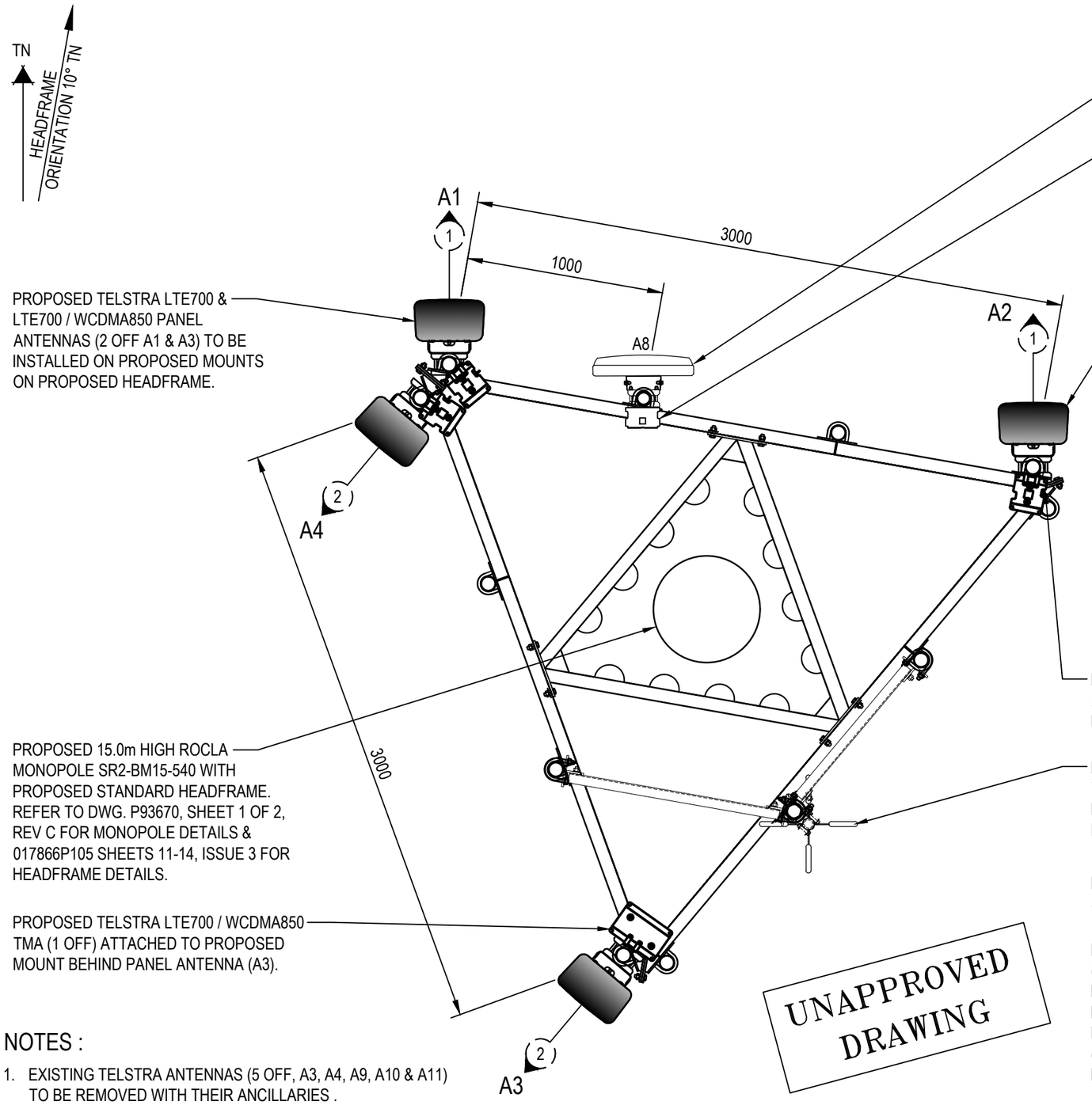
ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
	KK	KK	DBOR TYPE 1 PROJECT CP952232WYED	KK	KK	08.12.08	1
VT13241.01	KS	DMcK	FOR CONSTRUCTION - LTE1800 - 72001516W001SSMC	DM	LC	14.11.13	2
6180786	MB	NR	FOR CONSTRUCTION - CFA	MB	SA	18.07.14	3
6180786	MB	NR	CFA AS BUILT 401751WO01NC	MB	SA	18.07.14	4
VT17644.01	RH	MU	FOR CONSTRUCTION - 30060258W0216 VPL - LTE700	AS	JH	25.04.17	5

Telstra

MOBILE NETWORK SITE 26481
WYE RIVER
SITE LAYOUT AND ACCESS
3765 GREAT OCEAN RD, WYE RIVER, VIC 3234

DWG NO. V106479 SHT NO. S1

Cad file: V106479_FC.dwg A3



PROPOSED TELSTRA LTE700 & LTE700 / WCDMA850 PANEL ANTENNAS (2 OFF A1 & A3) TO BE INSTALLED ON PROPOSED MOUNTS ON PROPOSED HEADFRAME.

PROPOSED 15.0m HIGH ROCLA MONOPOLE SR2-BM15-540 WITH PROPOSED STANDARD HEADFRAME. REFER TO DWG. P93670, SHEET 1 OF 2, REV C FOR MONOPOLE DETAILS & 017866P105 SHEETS 11-14, ISSUE 3 FOR HEADFRAME DETAILS.

PROPOSED TELSTRA LTE700 / WCDMA850 TMA (1 OFF) ATTACHED TO PROPOSED MOUNT BEHIND PANEL ANTENNA (A3).

EXISTING TELSTRA WCDMA850 PANEL ANTENNA (1 OFF A8) TO BE RELOCATED & INSTALLED ON PROPOSED MOUNT ON PROPOSED HEADFRAME.

EXISTING TELSTRA WCDMA850 TMA'S (4 OFF) TO BE RELOCATED & INSTALLED BEHIND PANEL ANTENNA (A8) ON PROPOSED MOUNT.

PROPOSED TELSTRA LTE700 / LTE1800 PANEL ANTENNAS (2 OFF A2 & A4) TO BE INSTALLED ON PROPOSED MOUNTS ON PROPOSED HEADFRAME.

PROPOSED TELSTRA LTE700 TMA'S (3 OFF) ATTACHED TO PROPOSED MOUNTS BEHIND PANEL ANTENNAS (A1, A2 & A4).

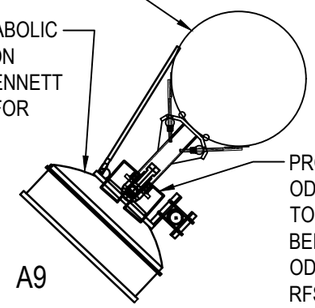
EXISTING CFA DIPOLE ANTENNAS (2 OFF A6a & A6b) TO BE RELOCATED ON PROPOSED MOUNT ON PROPOSED HEADFRAME. REFER TO SHEET T3-5 FOR CFA MOUNTING DETAILS.

PROPOSED 15.0m HIGH ROCLA MONOPOLE SR2-BM15-540.

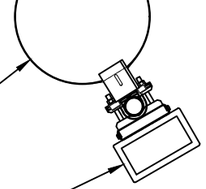
PROPOSED TELSTRA LTE1800 RRUS 32 (B3) (2 OFF) TO BE INSTALLED ON PROPOSED MOUNTS. REFER TO SHEET T3-4 FOR RRU MOUNTING DETAILS.
PROPOSED RRU INTERFACE BOXES (2 OFF) TO BE INSTALLED ON PROPOSED MOUNTS BELOW.

PROPOSED 15.0m HIGH ROCLA MONOPOLE SR2-BM15-540.

PROPOSED TELSTRA Ø600mm PARABOLIC DISH (1 OFF A9) TO BE INSTALLED ON PROPOSED MOUNT FOR LINK TO KENNETT RIVER. REFER TO DRG. 017866P88 FOR DISH MOUNT DETAILS.
(BY OTHERS)



PROPOSED TELSTRA ODU'S (2 OFF) ATTACHED TO PROPOSED MOUNT BEHIND DISH (A9). FOR ODU CLEARANCE REFER RFS DWG. 201503006 SHEET 1/1 FOR DETAILS. REFER TO 017866P88 FOR DISH MOUNTING DETAILS.



UNAPPROVED DRAWING

ANTENNA DISH LAYOUT AT EL 12.5m

SCALE 1:25

250 0 250 500 750 1000 1250 SCALE 1:25

RRU LAYOUT AT EL 13.5m

SCALE 1:25

250 0 250 500 750 1000 1250 SCALE 1:25

NOTES :

1. EXISTING TELSTRA ANTENNAS (5 OFF, A3, A4, A9, A10 & A11) TO BE REMOVED WITH THEIR ANCILLARIES .

ANTENNA LAYOUT AT EL 15.0m

SCALE 1:25

250 0 250 500 750 1000 1250 SCALE 1:25

FOR CONSTRUCTION

TO BE READ IN CONJUNCTION WITH SHEETS S0, S0-1, S1, S3 & S3-1.

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
VT13241.01	KS	DMcK	FOR CONSTRUCTION - LTE1800 - 72001516W001SSMC	DM	LC	14.11.13	1
VT17644.01	RH	MU	FOR CONSTRUCTION - 30060258W0216 VPL - LTE700	AS	JH	25.04.17	2

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

visionstream

Telstra

MOBILE NETWORK SITE 26481
WYE RIVER
ANTENNA LAYOUT
3765 GREAT OCEAN RD, WYE RIVER, VIC 3234

DWG NO. V106479 | SHT NO. S1-1

Cad file: V106479_FC.dwg A3

PROPOSED SIGNS TO BE UV STABLE STICKERS AND FIXED TO REAR OF ALL PROPOSED TELSTRA PANEL ANTENNAS (5 OFF) # 2

PROPOSED TELSTRA LTE700 / WCDMA850 TMA (1 OFF) ATTACHED TO PROPOSED MOUNT BEHIND PANEL ANTENNA (A3).

PROPOSED TELSTRA LTE1800 RRUS-32 (B3) (2 OFF) AND RRU INTERFACE BOXES (2 OFF) TO BE INSTALLED ON PROPOSED MOUNTS. REFER TO SHEET S1-1 FOR DETAILS.

PROPOSED TELSTRA Ø600mm PARABOLIC DISH (1 OFF A9) TO BE INSTALLED ON PROPOSED MOUNT FOR LINK TO KENNETT RIVER. REFER TO DRG. 017866P88 FOR DISH MOUNT DETAILS. (BY OTHERS)

PROPOSED TELSTRA ODU'S (2 OFF) ATTACHED TO PROPOSED MOUNT BEHIND DISH (A9). REFER TO SHEET S1-1 FOR DETAILS.

PROPOSED TELSTRA CABLE FEEDERS (12 OFF) & 7/8" HYBRID CABLES (2 OFF) TO BE RUN INTERNALLY OF MONOPOLE.

EXISTING TELSTRA ANTENNAS (5 OFF, A3, A4, A9, A10 & A11) TO BE REMOVED WITH THEIR ANCILLARIES .

EXISTING TELSTRA FEEDERS (22 OFF) TO BE REMOVED AND ALL PROPOSED LCF12-50J (12 OFF) FEEDER CABLES TO BE INSTALLED TO PROPOSED MONOPOLE

EXISTING TELSTRA 10.0m HIGH CONCRETE MONOPOLE WITH 2.5m STEEL EXTENSION TO BE REMOVED. REFER TO NOTES 6 & 7

EXISTING O/H POWER ROUTE.

EXISTING POWER POLE

EXISTING O/H SERVICE MAINS TO BE UPGRADED FROM SINGLE PHASE TO 3 PHASE. REFER TO SHEET E2 FOR DETAILS.

EXISTING TELSTRA EXCHANGE ROOM.

EXISTING SIGN SECURED TO COMPOUND GATE USING STAINLESS STEEL STRAPS #13

EXISTING CFA DIPOLE ANTENNAS (2 OFF, A6a & A6b) TO BE ELEVATED & RELOCATED ON PROPOSED MOUNT ON PROPOSED HEADFRAME. REFER TO SHEET T3-5 FOR CFA MOUNTING DETAILS.

EXISTING CFA ANTENNA FEEDERS (2 OFF) TO BE REPLACED WITH LONGER FEEDERS AND RUN IN THE UPGRADED CABLE LADDER.

UNAPPROVED DRAWING

PROPOSED TELSTRA LTE700 & LTE700 / WCDMA850 PANEL ANTENNAS (2 OFF, A1 & A3) TO BE INSTALLED ON PROPOSED MOUNTS ON PROPOSED HEADFRAME. REFER TO SHEET S1-1 FOR DETAILS.

PROPOSED TELSTRA LTE700 TMA'S (3 OFF) ATTACHED TO PROPOSED MOUNT BEHIND PANEL ANTENNAS (A1, A2 & A4).

E.L. 17.5m (±100mm) RL 22.2m A.H.D.
BASE OF RELOCATED CFA DIPOLE ANTENNAS (2 OFF, A6a & A6b)

E.L. 15.0m (±100mm) RL 20.7m A.H.D.
TOP OF PROPOSED POLE
C/L PROPOSED TELSTRA PANEL ANTENNAS (5 OFF, A1, A2, A3, A4 & A8)

PROPOSED TELSTRA LTE700 / LTE1800 PANEL ANTENNAS (2 OFF, A2 & A4) TO BE INSTALLED ON PROPOSED MOUNTS ON PROPOSED HEADFRAME.

E.L. 13.5m (±100mm) RL 19.2m A.H.D.
C/L PROPOSED TELSTRA LTE1800 RRUS 32 (2 OFF) & RRU INTERFACE BOXES (2 OFF)

E.L. 12.5m (±100mm) RL 18.2m A.H.D.
C/L PROPOSED TELSTRA Ø600 PARABOLIC DISH (1 OFF, A9)

EXISTING TELSTRA WCDMA850 PANEL ANTENNA (1 OFF A8) TO BE INSTALLED ON PROPOSED MOUNT ON PROPOSED HEADFRAME.

EXISTING TELSTRA WCDMA850 TMA'S (4 OFF) TO BE RELOCATED & INSTALLED BEHIND PANEL ANTENNA (A8) ON PROPOSED MOUNT.

PROPOSED 15.0m HIGH ROCLA MONOPOLE SR2-BM15-540 WITH PROPOSED HEADFRAME. REFER TO 017866P105 SHEETS 11-14, ISSUE 3 FOR DETAILS.

PROPOSED TELSTRA LTE700 GPS ANTENNA (1 OFF) TO BE INSTALLED ON PROPOSED STANDARD MOUNT.

REROUTE CABLE LADDER FROM SMR SHELTER TO PROPOSED MONOPOLE AS REQUIRED. REFER TO SHEET T5 & T5-1 FOR DETAILS.

PROPOSED TELSTRA OUTDOOR 12.3 SPD BOX (1 OFF) BELOW FEEDER WINDOW.

EXISTING 600W SMR GLAND WINDOW AND FEB TO ACCOMMODATE:
-PROPOSED LTE700 LCF12-50J FEEDERS (6 OFF).
-PROPOSED LTE700 / WCDMA850 LCF12-50J FEEDERS (2 OFF).
-PROPOSED WCDMA850 LCF12-50J FEEDERS (4 OFF).

EXISTING SMR SHELTER TO ACCOMMODATE PROPOSED TELSTRA EQUIPMENT. REFER TO SHEET E1 FOR LAYOUT DETAILS.

EXISTING TOILET & CORRUGATED WALL TO BE RELOCATED AS REQUIRED.

6 PROPOSED SIGN TO BE SECURED 1.5m AGL TO MONOPOLE USING STAINLESS STEEL STRAPS

E.L. 00.0m (±100mm) RL 5.7m A.H.D.
GROUND LEVEL

PROPOSED CABLE LADDER SUPPORT POSTS. REFER TO 017866P53 FOR DETAILS.

EXISTING 300W CABLE TRAY TO BE RE-ROUTED AND RE-INSTATED TO PROPOSED MONOPOLE. REFER TO SHEETS T5 & T5-1 FOR DETAILS.

PROPOSED TELSTRA POLE SQURE FOOTING (3.5m x 3.5m). REFER TO SHEET T2 FOR DETAILS.

FE

A A

E E

SOUTH ELEVATION

SCALE 1:100

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

visionstream

NOTES :

1. ALL FEEDERS ACCESS POINTS ON THE STRUCTURE MUST BE BIRD PROOFED AS PER EXTERNAL PLANT POLICY 003615.
2. FOR EME SIGNS NOTED AS #X REFER TO 005486 DOCUMENTS FOR DETAILS.
3. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
4. HORIZONTAL CABLE LADDER IS RE-USED FOR THIS INSTALLATION. LOWER POSITION OF THE CABLE LADDER AS REQUIRED ALLOWS ADDITIONAL ROOM IN THE SHELTER GLAND WINDOW. FEEDERS ARE STACK-MOUNTED IN CABLE LADDER IF REQUIRED. PROVIDED RAISED LID IF REQUIRED.
5. STRUCTURES SITUATED IN CORROSIVE ENVIRONMENTS ARE PAINTED IN ACCORDANCE WITH 016159 11.1 - CANRAD CORROSION REGION TYPE IS E (VERY HIGH).
6. REMOVE AND REINSTATE GARDEN AND COMPOUND FENCING.
7. CUT OFF THE TOP AND BUTT SECTION OF THE POLE AND LEVEL FOUNDATION WITH THE GROUND, MAY REQUIRED TO BACKFILL BUTT SECTION WITH CONCRETE OR GRAVEL.
8. EXISTING GSM900 / WCDMA850 / LTE1800 EQUIPMENT IN EXCHANGE BUILDING TO BE RECOVERED EXISTING WCDMA850 RUS TO BE RE-USED.

COMPLIANCE BOX

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

7 FOR CONSTRUCTION

TO BE READ IN CONJUNCTION WITH SHEETS S0, S0-1, S1, S1-1 & S3-1.

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
VT07704.01	DL	GA	ASBUILT 2ND CARRIER UPGRADE SP70566062W001NC	DL	DL	16.06.10	3
VT13241.01	KS	DMcK	FOR CONSTRUCTION - LTE1800 - 72001516W001SSMC	DM	LC	14.11.13	4
6180786	MB	NR	FOR CONSTRUCTION - CFA	MB	SA	18.07.14	5
6180786	MB	NR	CFA AS BUILT 401751WO01NC	MB	SA	18.07.14	6
VT17644.01	RH	MU	FOR CONSTRUCTION - 30060258W0216 VPL - LTE700	AS	JH	25.04.17	7

Telstra

MOBILE NETWORK SITE 26481
WYE RIVER
SOUTH ELEVATION
3765 GREAT OCEAN ROAD, WYE RIVER, VIC 3221

DWG NO. V106479 SHT NO. S3

Cad file: V106479_FC.dwg A3

TELSTRA ANTENNA CONFIGURATION TABLE

ANTENNA No	ANTENNA TYPE & SIZE H x W x D	ANTENNA ACTION REQUIRED	ANTENNA HEIGHT C/L A.G.L.	ANTENNA BEARING (x°T)	SECTOR NO. & TECHNOLOGY
A1	ARGUS RVVPX308.11B-T2 PANEL 2065 x 350 x 208mm	INSTALL	15.0m	0°	S1: LTE700 S1: LTE700
					SPARE SPARE
					SPARE SPARE
A2	ARGUS RVVPX308.11B-T2 PANEL 2065 x 350 x 208mm	INSTALL	15.0m	0°	S1: LTE700 S1: LTE700
					S1: LTE1800 S1: LTE1800
					S1: LTE1800 S1: LTE1800
A3	ARGUS RVVPX308.11B-T2 PANEL 2065 x 350 x 208mm	INSTALL	15.0m	220°	S2: LTE700 / S2: WCDMA850 S2: LTE700 / S2: WCDMA850
					SPARE SPARE
					SPARE SPARE
A4	ARGUS RVVPX308.11B-T2 PANEL 2065 x 350 x 208mm	INSTALL	15.0m	220°	S2: LTE700 S2: LTE700
					S2: LTE1800 S2: LTE1800
					S2: LTE1800 S2: LTE1800
A8	2CPX208R-V1 2090 x 504 x 118mm	RELOCATE	15.0m	0°	S6: WCDMA850 S6: WCDMA850
					S1: WCDMA850 S1: WCDMA850
A9	RFS SXC2-A190BS1A1 SOLID PARABOLIC DISH Ø600	INSTALL	12.5m	223.6°	KENNETT RIVER
A6a	CFA DIPOLE ANTENNA RFIBA40-41-DIN FOLDED DIPOLE 2 x 2 ARRAY	RELOCATE	17.5m	0°	-
A6b	CFA DIPOLE ANTENNA RFIBA40-41-DIN FOLDED DIPOLE 2 x 2 ARRAY	RELOCATE	19.5m	0°	-
A200	GPS ANTENNA KRE 101 2082/1 Ø68 x 96	INSTALL	BASE OF GPS 4.3m	0°	-
A3 (OLD)	CNA010H-00-CB	REMOVE	12.5m	0°	-
A4 (OLD)	CNA010H-00-CB	REMOVE	12.5m	0°	-

TELSTRA ANTENNA CONFIGURATION TABLE

ANTENNA No	ANTENNA TYPE & SIZE H x W x D	ANTENNA ACTION REQUIRED	ANTENNA HEIGHT C/L A.G.L.	ANTENNA BEARING (x°T)	SECTOR NO. & TECHNOLOGY
A9 (OLD)	ARGUS RVVPX310B2 PANEL 2533 x 353 x 209mm	REMOVE	9.5m	220°	- -
					- -
					- -
A10 (OLD)	2NPX210R-V1	REMOVE	10.7m	0°	- -
					- -
A11 (OLD)	2NPX210R-V1	REMOVE	8.3m	0°	- -
					- -

UNAPPROVED DRAWING

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

FOR CONSTRUCTION

TO BE READ IN CONJUNCTION WITH SHEETS S0, S0-1, S1, S1-1 & S3.

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
VT13241.01	KS	DMcK	FOR CONSTRUCTION - LTE1800 - 72001516W001SSMC	DM	LC	14.11.13	1
VT17644.01	RH	MU	FOR CONSTRUCTION - 30060258W0216 VPL - LTE700	AS	JH	25.04.17	2

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Telstra

MOBILE NETWORK SITE 26481
WYE RIVER
ANTENNA CONFIGURATION TABLE
3765 GREAT OCEAN ROAD, WYE RIVER, VIC 3221

DWG NO. V106479 SHT NO. S3-1

Cad file: V106479_FC.dwg A3

visionstream

Environmental EME Report

3765 GREAT OCEAN RD, WYE RIVER VIC 3234

This report provides a summary of Calculated RF EME Levels around the wireless base station

Date 2/2/2017 **RFNSA Site No. 3221018**

Introduction

The purpose of this report is to provide calculations of EME levels from the existing facilities at the site and any proposed additional facilities.

This report provides a summary of levels of radiofrequency (RF) electromagnetic energy (EME) around the wireless base station at 3765 GREAT OCEAN RD WYE RIVER VIC 3234. These levels have been calculated by Visionstream using methodology developed by the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA).

The maximum EME level calculated for the existing systems at this site is 3.88% of the public exposure limit and with proposed alterations to this site the calculated maximum EME level will be 2.87% of the public exposure limit.

The ARPANSA Standard

ARPANSA, an Australian Government agency in the Health and Ageing portfolio, has established a Radiation Protection Standard specifying limits for general public exposure to RF transmissions at frequencies used by wireless base stations. The Australian Communications and Media Authority (ACMA) mandates the exposure limits of the ARPANSA Standard.

How the EME is calculated in this report

The procedure used for these calculations is documented in the ARPANSA Technical Report "Radio Frequency EME Exposure Levels - Prediction Methodologies" which is available at http://www.arpansa.gov.au.

RF EME values are calculated at 1.5m above ground at various distances from the base station, assuming level ground.

The estimate is based on worst-case scenario, including:

- wireless base station transmitters for mobile and broadband data operating at maximum power
- simultaneous telephone calls and data transmission
- an unobstructed line of sight view to the antennas.

In practice, exposures are usually lower because:

- the presence of buildings, trees and other features of the environment reduces signal strength
- the base station automatically adjusts transmit power to the minimum required.

Maximum EME levels are estimated in 360° circular bands out to 500m from the base station.

These levels are cumulative and take into account emissions from all wireless base station antennas at this site.
The EME levels are presented in three different units:

- volts per metre (V/m) – the electric field component of the RF wave
- milliwatts per square metre (mW/m²) – the power density (or rate of flow of RF energy per unit area)
- percentage (%) of the ARPANSA Standard public exposure limit (the public exposure limit = 100%).

Results

The maximum EME level calculated for the existing systems at this site is 9.7 V/m; equivalent to 249.38 mW/m² or 3.88% of the public exposure limit.
The maximum EME level calculated for the existing and proposed systems at this site is 7.53 V/m; equivalent to 150.51 mW/m² or 2.87% of the public exposure limit.

Radio Systems at the Site

This base station currently has equipment for transmitting the following services:

Carrier	Radio Systems
Telstra	WCDMA850, LTE1800

It is proposed that this base station will have equipment for transmitting the following services:

Carrier	Radio Systems
Telstra	LTE900 (proposed), WCDMA850, LTE700 (proposed), LTE1800

Calculated EME Levels

This table provides calculations of RF EME at different distances from the base station for emissions from existing equipment alone and for emissions from existing equipment and proposed equipment combined.

Distance from the antennas at 3765 GREAT OCEAN RD in 360° circular bands	Maximum Cumulative EME Level at 1.5m above ground – all carriers at this site					
	Existing Equipment			Existing and Proposed Equipment		
	Electric Field V/m	Power Density mW/m²	% ARPANSA exposure limits	Electric Field V/m	Power Density mW/m²	% ARPANSA exposure limits
0m to 50m	9.7	249.38	3.88%	6.34	106.49	1.31%
50m to 100m	9.67	248.26	3.8%	7.53	150.51	2.87%
100m to 200m	5.98	94.72	1.41%	7.12	134.34	2.42%
200m to 300m	3.017	24.14	0.36%	3.75	37.24	0.66%
300m to 400m	2.02	10.82	0.16%	2.52	16.87	0.3%
400m to 500m	1.52	6.14	0.092%	1.89	9.45	0.17%
Maximum EME level	9.7	249.38	3.88	7.53	150.51	2.87
	49.26 m from the antennas at 3765 GREAT OCEAN RD			75.88 m from the antennas at 3765 GREAT OCEAN RD		

Calculated EME levels at other areas of interest

This table contains calculations of the maximum EME levels at selected areas of interest that have been identified through the consultation requirements of the Communications Alliance Ltd Deployment Code C564:2011 or via any other means. The calculations are performed over the indicated height range and include all existing and any proposed radio systems for this site.

Additional Locations		Height / Scan relative to location ground level	Maximum Cumulative EME Level All Carriers at this site Existing and Proposed Equipment		
			Electric Field V/m	Power Density mW/m²	% of ARPANSA exposure limits
1	No locations identified				

RF EME Exposure Standard

The calculated EME levels in this report have been expressed as percentages of the ARPANSA RF Standard and this table shows the actual RF EME limits used for the frequency bands available. At frequencies below 2000 MHz the limits vary across the band and the limit has been determined at the Assessment Frequency indicated. The four exposure limit figures quoted are equivalent values expressed in different units – volts per metre (V/m), watts per square metre (W/m²), microwatts per square centimetre (µW/cm²) and milliwatts per square metre (mW/m²). Note: 1 W/m² = 100 µW/cm² = 1000 mW/m².

Radio Systems	Frequency Band	Assessment Frequency	ARPANSA Exposure Limit (100% of Standard)
LTE 700	758 – 803 MHz	750 MHz	37.6 V/m = 3.75 W/m² = 375 µW/cm² = 3750 mW/m²
WCDMA850	870 – 890 MHz	900 MHz	41.1 V/m = 4.50 W/m² = 450 µW/cm² = 4500 mW/m²
GSM900, LTE900, WCDMA900	935 – 960 MHz	900 MHz	41.1 V/m = 4.50 W/m² = 450 µW/cm² = 4500 mW/m²
GSM1800, LTE1800	1805 – 1880 MHz	1800 MHz	58.1 V/m = 9.00 W/m² = 900 µW/cm² = 9000 mW/m²
LTE2100, WCDMA2100	2110 – 2170 MHz	2100 MHz	61.4 V/m = 10.00 W/m² = 1000 µW/cm² = 10000 mW/m²
LTE2300	2302 – 2400 MHz	2300 MHz	61.4 V/m = 10.00 W/m² = 1000 µW/cm² = 10000 mW/m²
LTE2600	2620 – 2690 MHz	2600 MHz	61.4 V/m = 10.00 W/m² = 1000 µW/cm² = 10000 mW/m²
LTE3500	3425 – 3575 MHz	3500 MHz	61.4 V/m = 10.00 W/m² = 1000 µW/cm² = 10000 mW/m²

Further Information

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).

Information about RF EME can be accessed at the ARPANSA website, http://www.arpansa.gov.au, including:

- Further explanation of this report in the document "Understanding the ARPANSA Environmental EME Report"
- The procedure used for the calculations in this report is documented in the ARPANSA Technical Report; "Radio Frequency EME Exposure Levels - Prediction Methodologies"
- the current RF EME exposure standard
  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]

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

The Communications Alliance Ltd Industry Code C564:2011 'Mobile Phone Base Station Deployment' is available from the Communications Alliance Ltd website, http://commsalliance.com.au .

Contact details for the Carriers (mobile phone companies) present at this site and the most recent version of this document are available online at the Radio Frequency National Site Archive, http://www.rfnsa.com.au.

Precautionary Approach Checklist –Infrastructure Design (Code Ref 4.2)

NOTE: In accordance with Sections 4.1 and 4.2 of the *Mobile Phone Base Station Deployment* Industry Code (C564:2011), on all existing sites with proposed amendment or addition of equipment only, the existing site needs to be re-assessed against Checklist 4.2 only.

Issue Date	**16 October 2018**	**Carrier**	**Telstra**	**Location**	**Outside 3765 GREAT OCEAN RD WYE RIVER VIC 3234 (Site Name: Wye River)**
Description of Infrastructure	**The proposal consists of:** • The replacement of an existing 10 metre telecommunications monopole with a new 15 metre telecommunications monopole with a triangular headframe; • The attachment to headframe of four (4) panel antennas, • Relocation of two (2) CFA dipole antennas from the existing monopole to the new pole; • Use of the existing Telstra equipment shelter to house electrical equipment associated with the facility; • Use of existing access off Great Ocean Road; • The installation of one (1) GPS antenna • Installation of 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.	A summary of the sites considered and reasons for selection of the preferred option will be made available to the public upon request in a timely manner.
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 capacity to the mobile phone services to the Wye River area. 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.

Precautionary Approach Checklist –Infrastructure Design (Code Ref 4.2)

NOTE: In accordance with Sections 4.1 and 4.2 of the *Mobile Phone Base Station Deployment* Industry Code (C564:2011), on all existing sites with proposed amendment or addition of equipment only, the existing site needs to be re-assessed against Checklist 4.2 only.

4.1.5 (c)	The likelihood of an area being a community sensitive location.	The proposal involves the removal of an existing telecommunications pole and the installation of a new pole with panel antennas at the above location. In addition, prior consideration of community sensitivity was undertaken when the site was established originally. Given location and proposed change from the existing nature of the area, this facility is not considered to be located in a community sensitive area.
4.1.5 (d)	The objective of avoiding community sensitive locations	Radiocommunications Infrastructure already exists at these premises. The objective has been achieved through co-location at the existing site to achieve mobile phone service to the community instead of establishing a new base station.
4.1.5 (e)	Relevant state and local government telecommunications planning policies	The facility will be installed under the provisions of the Federal Telecommunications Act and the *Telecommunications (Low-impact Facilities) Determination 1997*. Radiocommunications Infrastructure already exists at these premises. Considerations of the relevant state and local government telecommunications planning policies were undertaken when the site was established originally.
4.1.5 (f)	The outcomes of consultation processes with Councils and Interested and Affected parties as set out in Section 6.7	All submissions will be considered and responded to within a timely manner.
4.1.5 (g)	The heritage significance (built, cultural and natural)	Radiocommunications Infrastructure already exists at these premises. Review of the heritage significance of the area has been undertaken and the site is considered to be of Aboriginal significance. Given the existing disturbance of this site the heritage significance of the land will be significantly impacted.
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. Radio propagation analysis indicates that selecting appropriate antennas tilts and mounting heights will meet the service requirements for this facility
4.1.5 (i)	The availability of land and public utilities	Radiocommunications Infrastructure already exists at these premises. Considerations of land and public utilities was undertaken when the site was established originally.

Precautionary Approach Checklist –Infrastructure Design (Code Ref 4.2)

NOTE: In accordance with Sections 4.1 and 4.2 of the *Mobile Phone Base Station Deployment* Industry Code (C564:2011), on all existing sites with proposed amendment or addition of equipment only, the existing site needs to be re-assessed against Checklist 4.2 only.

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	Fibre transmission will be used and is available to this facility.
4.1.5 (k)	The radiofrequency interference the planned service may cause to other services	This is a co-locate facility and 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. We understand that if any interference issues have been identified, these have been resolved to that carrier's satisfaction in accordance with Telstra's processes.
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	This installation is at an existing site - Telstra has taken the opportunity to co-locate this facility.
4.1.5 (n)	Cost factors	Telstra has undertaken preliminary costing of this facility and are of the opinion these costs are reasonable.

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 the capacity of mobile phone services to the Wye River area.
4.2.3 (b)	the positioning of antennas to minimise obstruction of radio signals	The antennas have been located at the most appropriate location, so as to not interfere with existing radio signals. This location meets the objectives outlined in 4.2.3 (a).
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	This facility is described in the section on "description of infrastructure" outlined in the Precautionary Approach Checklist.
4.2.3 (e)	the objective of minimising power whilst meeting service	The transmit power settings at this facility will be set to accomplish the desired

Precautionary Approach Checklist –Infrastructure Design (Code Ref 4.2)

NOTE: In accordance with Sections 4.1 and 4.2 of the *Mobile Phone Base Station Deployment* Industry Code (C564:2011), on all existing sites with proposed amendment or addition of equipment only, the existing site needs to be re-assessed against Checklist 4.2 only.

	objectives	coverage, capacity and call quality. 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.
4.2.3 (f)	whether the costs of achieving this objective are reasonable	Telstra has undertaken 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)	EME assessment has been made in accordance with ARPANSA has been completed and is available the RF National Site Archive.

18 April 2019

Helen Evans
Colac Otways Shire Council
PO Box 283
Colac VIC 3250

Dear Helen,

Response to Request for Further Information – planning permit PP252/2018-1 – 3765 Great Ocean Road (Allot. 2C Parish of Wongarra), Wye River.

Preliminary Issues:

Section 8 of the planning report to be reviewed

Section 8 has been reviewed and corrected. Please see the relevant sections of the amended report attached.

Written consent of the application and the proposal.

Consent for the replacement facility was sought from the Department of Environment, Land, Water and Planning (DELWP) and the Otway Coast Committee (OCC). Written consent was received from DELWP and the OCC in support of the proposal and is attached with this response.

Is a permit required from Heritage Victoria?

Following Council's advice, Visionstream Australia contacted Heritage Victoria, who confirmed there was no additional permit triggers under state legislation. However, they noted that the Great Ocean Road is on the National Heritage register and suggested we refer the matter to the Commonwealth government, Department of the Environment and Energy (DEE) for consideration in terms of the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).

Visionstream Australia sought advice from the DEE regarding the referral process to assess and determine the development's potential impact on Matters of National Environmental Significance (MNES). The MNES being the nationally heritage listed Great Ocean Road. We sought expert advice from independent heritage consultants who recommended that due to the minor nature of the development, a self-assessment against the EPBC would be sufficient. As a result, we commissioned Biosis Pty Ltd to prepare an 'EPBC Act Significant Impact Self-Assessment'. It is considered we have met due diligence through the findings of this self-assessment against the EPBC Act. Please find attached Biosis's 'Significant Impact Self-Assessment' for your reference.

Please find below the information requested by Council under Section 54 of the *Planning and Environment Act 1987* ('the Act') in your email dated 19 November 2018.

1. Review and amend Section 8 and 10 of the Planning Report

As mentioned above, please see amendments in Section 8 and 10 of the amended report attached.

2. There is a new telecommunications facility at Harolds Road in Wye River. Please describe why/why this facility could not be co-located with your facility or vice-versa?

We believe the new telecommunications facility at Harolds Road is an Optus facility that is also accommodating a new Telstra facility. The Telstra development for the site at Harolds Road is being deployed under a separate program, which has different service and coverage objectives to the proposal being submitted at the Telstra exchange. The existing Telstra Exchange site not only covers the Wye River township, but also the Great Ocean Road and greater environ. Due to a number of structural issues, the current pole could not be extended or upgraded to accommodate the new technology required to meet current and future capacity demands. It was therefore proposed to replace the current facility with a stronger and taller structure. Telstra's Radio Frequency modelling also confirms that co-location with Optus's site will not provide the same coverage footprint, due to the area's undulating terrain and dense vegetation. Parts of the township and the Great Ocean Road will lose existing mobile coverage if the proposed facility was to co-locate with the Optus facility. Telecommunications sites deployed under different programs such as the Mobile Blackspot Program will seek to provide mobile coverage to different or additional areas. There is also no reason for co-location with another facility when the existing site can be upgraded. The replacement of the subject facility, wholly contained in the existing compound, will involve the least amount of ground disturbance or environmental impact when compared to new sites. Although co-location is preferred in the first instance, it is not always technically or operationally feasible, due to structural issues or different coverage requirements.

Furthermore, co-location can be done by other carriers on the replaced facility given Vodafone already exists on the subject site and will be relocated to the new pole. With the recent bushfires in the area Telstra has recognised the need to improve the coverage footprint for both sites (Harolds Road and the Telstra Exchange). It would be beneficial to have both sites in the area to provide seamless mobile coverage along the Great Ocean Road, the Wye River township and surrounding areas.

3. Please provide a photo montage showing visual impact from a) the Wye River Bridge and b) the end of Sturt Street.

Visionstream engaged an independent specialist to produce photo representations of the proposed site. Please find two photomontages showing the potential visual impact from the locations as requested below.

a) View from Wye River bridge looking south east towards the facility.

b) View from the end of Sturt Court looking south east.

4. Geotechnical Assessment/Landslip Risk Assessment in accordance with the application requirements specified in Schedule 1 to the Erosion Management Overlay for the buildings and works including vegetation removal

Visionstream engaged CMW Geosciences to produce a Geotech report in accordance with the requirements of Schedule 1 of the Erosion Management Overlay. Please find attached a Landslip Risk Assessment report which includes council's Form A – Geotechnical Declaration and Verification Development Application.

5. Written consent from the public land manager in accordance with Clause 36.03-3 & Clause 52.19-2

Consent for the replacement facility was sought from both the Colac Otway Committee and the Department of Environment, Land, Water and Planning being the public land manager of the subject site. The proposed development met the requirement of consent to use or develop coastal Crown land pursuant to *Section 68 of the Marine and Coastal Act 2018,* subject to conditions.

Please find attached written consent from the Department of Environment, Land, Water and Planning and the Otway Coast Committee for your reference.

6. Written advice if this development forms part of the Blackspot Programme.

We can confirm the proposed development is not part of the Blackspot Programme. This proposal is for the replacement of an existing facility at the Wye River Telstra Exchange that has been earmarked for upgrade to enhance and meet forecasted capacity demands.

7. Would noise and vibration emissions be limited to the construction phase (7am to 6pm).

We can confirm that the noise and vibration associated with the facility would be limited to the construction phase (7am – 6pm). Once installed, the noise level would be comparable to domestic air-conditioning units and background noise levels.

8. Written confirmation that no native vegetation will be removed or destroyed for the proposed development including during construction.

The works proposed will involve minimal environmental impact given the development is an existing use which seeks to use existing infrastructure and access. No native vegetation is proposed for removal. The only change being the replacement of the existing 10m pole with a taller 15m monopole that will accommodate new antennas.

We expect that the above information satisfies Council's request. However, please do not hesitate to contact me should you require further clarification on 03 9258 5743 or by email at kristy.zhang@visionstream.com.au.

Yours sincerely,

Kristy Zhang
Town Planner
Visionstream on behalf of **Telstra**

Planning Report

Application for a Planning Permit

Proposed Telecommunications Facility at
3765 Great Ocean Road, Wye River VIC 3234

Prepared on behalf of Telstra Corporation Limited by Visionstream Pty Ltd

October 2018

Table of contents

1 EXECUTIVE SUMMARY

1.1 Site and Proposal Details

Address of Site	3765 Great Ocean Road, Wye River VIC 3234
Legal Property Description	Allot. 2C PARISH OF WONGARRA
Local Authority	Colac Otway Shire Council
Permit Trigger	Clause 52.19-2
Zone and Overlay	Public Conservation and Resource Zone (PCRZ)
Use	Telecommunications Facility
Owner	Otway Coast Committee PO BOX 146 Apollo Bay VIC 3233

1.2 Applicant Details

Applicant	Telstra Corporation Limited ABN 051 775 556 C/- Visionstream Pty Ltd Locked Bag 4001 Moorabbin Vic 3189
Contact Person	Kristy Zhang Ph. 03 9258 5743 Kristy.zhang@visionstream.com
Our Reference	VT17644.01

2 INTRODUCTION

This report has been prepared by Visionstream on behalf of Telstra as supporting information to a Planning Permit Application for the replacement of a 10m monopole with a new 15m monopole at 3765 Great Ocean Road, Wye River VIC 3234, formally known as Allot. 2C PARISH OF WONGARRA.

Refer to Appendix 1 for Title details

This report addresses the merits of the development with regard to the provisions of the Colac Otway Planning Scheme

3 THE PROPOSED DEVELOPMENT

The proposed telecommunications facility at 3765 Great Ocean Road, Wye River 3234, is comprised of the following:

- The replacement of an existing 10 metre telecommunications monopole with a new 15 metre telecommunications monopole with a triangular headframe;
- The attachment to headframe of four (4) panel antennas;
- Relocation of two (2) CFA dipole antennas from the existing monopole to the new pole;
- Use of the existing Telstra equipment shelter to house electrical equipment associated with the facility;
- Use of existing access off Great Ocean Road;
- The installation of one (1) GPS antenna;
- Aboveground optical fibre and power supply routes as detailed on S-1 of the submitted plans.

Refer to Plans attached at Appendix 2.

4 PURPOSES OF THE PROPOSAL

There are three primary drivers for proposing the replacement of a telecommunications facility at 3765 Great Ocean Road, Wye River VIC 3234, as follows:

- Capacity relief to existing Telstra sites
  To provide much needed capacity relief for the existing Telstra site in Wye River and carry new local cellular traffic in its vicinity. Surrounding sites have been expanded to their 3G maximum capability and the upgrade of this existing site is required to meet the traffic demand and growth in the area; and

- Reliable NextG Telstra services
  Providing the depth of coverage required to enable reliable 4GX Telstra cellular services for local residents, businesses and other mobile users.

- Structural Integrity
  The existing structure at this location is a 10m telecommunication monopole, which is currently structurally unable to facilitate the equipment upgrade required to better service the Wye River area

Telstra's 4GX service is bringing higher speeds and extra 4G coverage to a range of communities across the nation. 4GX includes services provided over Telstra's new 700MHz spectrum and deliver higher typical mobile speeds on compatible devices, allowing more Australians to experience more reliable connections and ultra-fast mobile internet. It also combines Telstra's 1800MHz and 700MHz spectrum bands to provide even faster 4G mobile web speeds on compatible devices.

In 4GX areas, people with compatible devices can look forward to:

- The fastest 4G speeds in Australia – Customers with 4GX category 6 devices can enjoy download speeds of between 2Mbps and 100Mbps. Customers with 4GX category 4 devices can enjoy typical download speeds of between 2Mbps to 75Mbps.
- Extra 4G coverage – 4GX will boost in-building coverage for 4G services bringing speedy mobile web access to more offices, bedrooms and lifts. And in regional areas, 4GX can go further than Telstra's existing 4G frequencies creating better 4G coverage.

- More 4G to share – 4GX will double Telstra's 4G bandwidth allowing people to enjoy their favourite content with fewer slowdowns even in peak hour or in crowded places like shops or on the bus.

5 MOBILE TELECOMMUNICATIONS NETWORKS

A mobile telecommunications network is made up of multiple base stations covering a geographic area. They work by sending and receiving low power radio signals from their antennas to mobile phones and other mobile devices such as tablets, wireless dongles etc. Base stations are designed to provide service to the area immediately surrounding the base station – can be up to several kilometers. Depending on the technical objectives of a base station, the physical characteristics of each telecommunications facility; such as its height, number and size of antennas, equipment, cabling etc. will vary.

As a general rule, the higher the antennas at a base station, the greater it's range of coverage and its ability to relieve capacity issues. If this height is compromised, additional facilities, and thus more infrastructure will be required for any given locality. The further a facility is located away from its technically optimum position, the greater the compromise of service. This may result in coverage gaps and require additional or taller base stations to provide adequate service.

Each base station transmits and receives signals to and from mobile devices in the area. As the mobile device user moves around, their device will communicate with the nearest base station/facility 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 or maximum level of data usage) the user may not be able to place a call, experience a call "drop out" or a slowing data rate while attempting to download content.

There are three main factors that can cause the above:

- You may be too far away from a facility to receive a signal, or there may be objects blocking the signal from the nearest facility; such as, hills, large trees or even trees. To ensure optimum service the radio signals transmitted between the facility antennas and mobile devices need to be unimpeded, maintaining a "line-of-sight" between them.
- The facility may be handling as much data download and calls as it can handle – call drop-outs and slower data rates can occur when too many users are connected to a facility at once.
- The depth of coverage (which affects the ability to make calls inside buildings), may be insufficient in some local areas.

The current proposal to upgrade the current facility will form part of Telstra's NextG network solution in the Wye River area and will deliver essential mobile services (voice calling, SMS), as well as live video calling, video-based content including; news, finance and sports highlights, and high-speed wireless internet – wireless broadband. With a coverage footprint of more than 2.1 million square kilometers and covering more than 99% of the Australian population. Telstra's NextG is Australia's largest and fastest national mobile broadband network and as such requires more network facilities, located closer together to ensure a high quality signal strength to achieve reliable service and the fastest possible data transfer rates.

6 SITE AND SURROUNDING AREA

Wye River is located in the Colac Otway Shire region, situated between Lorne and Apollo Bay. The Great Ocean Road runs along the base of the mountainous region dividing the ocean from the forest.

Wye River is a small coastal town characterized by its heavily vegetated, undulating landscape situated high above the ocean shore. The Wye River contains a concentration of residential dwellings and temporary accommodation leading up the mountain along Morley Avenue. The elevation of these dwellings ranges from approximately 32m AHD to 95m ADH – all of which benefiting from views of the ocean to the east.

Overall, the Colac Otway region is recognized as an increasingly attractive place to live, work and particularly for tourism. Such growth requires increased infrastructure capacity, especially so for telecommunications, as there is an exponential growth in the mobile data use on smartphones, requiring additional infrastructure to provide adequate service provision to the expanding area.

Figure 1: Aerial View of Application Site and Surrounds – ***Source: Google Earth***

The proposed telecommunications facility replacement is to be located at the existing site at 3765 Great Ocean Road, Wye River. The existing structure at this location is a 10m telecommunication monopole, which is currently structurally unable to facilitate the equipment upgrade required to better service the Wye River area. The replacement facility will be located approximately 125m east of the nearest dwelling and will be situated approximately 27m lower in ground elevation to the nearest dwelling.

Figure 2: Ground View of existing facility – *Source: Visionstream PTY LTD*

7 KEY REGULATORY FRAMEWORK

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

7.1 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 exempt 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 defense facilities. These exemptions are detailed in the *Telecommunications (Low-impact Facilities) Determination 2018* 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.*

7.1.1 Telecommunications (Low-impact Facilities) Determination 2018

The Telecommunications (Low-impact Facilities) Determination came into effect on 1st July 1997 and the Amendment to the Determination (No.1 of 2012) came into effect on 23rd November 2013. The latest version is dated 2018.

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.

As the proposed development at Wye River does not fall under the Determination, it will require approval under State planning legislation.

7.2 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.

The proposal is not of National Environmental Significance, 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; or
- The environment of Commonwealth Marine area.

Refer to EPBC Act Protected Matters Report at Appendix 3.

7.3 Communications Alliance Ltd. Code C564: 2011 Industry Code – Mobile Phone Base Station Deployment

The new Communications Alliance Ltd. C564:2011 *Industry Code – Mobile Phone Base Station Deployment* (referred to as the Deployment Code) replaced the Australian Communications Industry Forum (ACIF) '*Industry Code - Deployment of Mobile Phone Network Infrastructure'* (more commonly referred to as the ACIF Code) in July 2012. The purpose of the revisions incorporated in the new Deployment Code are to provide certainty and clarity for all parties in the implementation of the Code, for example, with regard to the consultation process with Council's and communities and with regard to providing and updating RF EMR Health and Safety information, reports and signage in keeping with relevant standards.

Similar to the ACIF Code, the new 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 2018. It identifies varying levels of notification and/or consultation depending on the type and location of the infrastructure proposed.

The subject proposal, 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 4.1 Precautionary Approach Checklist which is attached at Appendix 4.

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 4 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 4.

7.4 EME and 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 Organization (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.

On numerous occasions over the past 10 years the Victorian Civil and Administrative Tribunal has ruled that in regard to EME, that it was obliged to apply the relevant regulatory standards as it finds them - not to pioneer standards of its own. It states that the creation of new standards is a matter for other authorities with special expertise such as the Australian Radiation Protection and Nuclear Safety Agency (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 is required to complete and make available an EME report which predicts the maximum environmental EME level the facility will emit. Telstra has undertaken a compliance report that predicts the maximum levels of radiofrequency EME from the proposed installation at 3765 Great Ocean Road, Wye River 3234. The maximum environmental EME level predicted from this proposed facility is substantially within the allowable limit under the ARPANSA standard.

Refer to the EME Report attached at Appendix 5.

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.

8 PLANNING ASSESSMENT

8.1 Basis of Planning Assessment for Telecommunications Facilities

Of particular importance when assessing planning permit applications for telecommunications facilities are the following Planning Scheme clauses:

- General Provisions: Clause 62 - Uses, buildings, works, subdivisions and demolition not requiring a permit, and
- Particular Provisions: Clause 52.19 - Telecommunications Facility

Clause 62.01-1: 'Uses not requiring a permit' states as follows:

> *"Any requirement in this scheme relating to the use of land does not apply to:*
>
> - *The use of land for a Telecommunications facility if the associated buildings and works meet the requirements of Clause 52.19.*

Similarly, Clause 62.02-1: 'Buildings and works not requiring a permit' states as follows:

> *"Any requirement in this scheme relating to the construction of a building or the construction or carrying out of works does not apply to:*
>
> - *Buildings and works associated with a telecommunications facility if the requirements of Clause 52.19 are met.*

However, the exemptions listed within Clause 62.01 and Clause 62.02 excludes the requirements of the Public Conservation and Resource Zone (PCRZ).

Under the table of uses in Clause 36.03-1 of the PCRZ, Telecommunications facilities typically falls under section 1 being 'any use listed in Clause 62.01' does not require a permit. Generally, telecommunications use and buildings and works as described above in Clause 62.01 and Clause 62.02-1 do not require a permit if it meets the requirements of Clause 52.19.

That is, if the requirements of Clause 52.19 are met, there is no permit trigger for use or buildings and works under either the zone or overlay which applies to the site. The only permit trigger is under Clause 52.19-2, which states as follows:

> *"A permit is required to construct a building or construct or carry out works for a Telecommunications facility."*

With regard to meeting the requirements of Clause 52.19 (which has caused a degree of confusion) some VCAT cases which have been heard in the aftermath of VC77 coming into effect have dealt with this matter and provide useful guidance. For example, the Tribunal Member had the following to say in Willo Farm Pty Ltd v South Gippsland SC [2011] VCAT 2092 (4th November 2011), a case relating to proposed telecommunications facility in Leongatha:

> *"Nonetheless I have some doubt that a permit is required for use. A telecommunications facility is a use of land listed in Clause 62.01 of the scheme. In the B1Z, a use listed in Clause 62.01 is a section 1 use provided the use '…meet[s] the requirements of clause 62.01'. Clause 62.01 provides that '[a]ny requirement…relating to the use of land does not apply to…the use of land for a telecommunications facility if the associated buildings and works meet the requirements of clause 52.19'. The drafting of these provisions is inelegant and has a degree of circularity. What are the requirements of clause 52.19? The relevant requirement is that a permit is required for specified facilities, such as those in this proceeding. Therefore, if a permit is granted, the requirements are met and the use is section 1 in the B1Z. It is unclear if this outcome was intended but, in my opinion, that is the effect of clause 62.01. Clause 62.01 does* ***not*** *provide that '[a]ny requirement…relating to the use of land does not apply to the use of land for a facility if the associated buildings and works do not*

require a permit under clause 52.19-2'. If it did, the effect of the clause would be quite different, and a permit would be required for use."

In this instance, the use of the land and/or buildings and works for a telecommunications facility is not exempt from the permit requirements of the PCRZ. Nevertheless, the proposed development relates to an existing use. Written consent to upgrade and replace the existing Telstra facility on behalf of the public land manager, being the Colac Otway Committee and the Department of Environment, Land, Water and Planning has been granted. As such, the proposed use and development of the land for telecommunications facility would require a permit.

A full assessment of the current proposals against the pertinent parts of the Planning Scheme is set out in the following sections.

8.2 State Planning Policy Framework (SPPF)

State Planning Policy Framework (SPPF) sets out the specific policies relating the environmental, social and economic factors. The section of the SPPF most relevant to this proposal is Clause 19.03-4 - Telecommunications. The objective of this is:

- *"To facilitate the orderly development, extension and maintenance of telecommunications infrastructure."*

Planning decisions should recognise that telecommunications are an essential utility service and should:

- *Facilitate the upgrading and maintenance of telecommunication facilities.*
- *Ensure that modern telecommunications facilities are widely accessible to business, industry and the community.*
- *Ensure the communications technology needs of business, domestic, entertainment and community services are met.*
- *Do not prohibit the use of land for a telecommunications facility in any zone.*
- *Encourage the continued deployment of broadband telecommunications services that are easily accessible by:*
- *Increasing and improving access for all sectors of the community to the broadband telecommunications trunk network.*
- *Supporting access to transport and other public corridors for the deployment of broadband networks in order to encourage infrastructure investment and reduce investor risk.*

Planning decisions should reflect a reasonable balance between the provision of important telecommunication services and the need to protect the environment from adverse impacts arising from such development. Development must also reflect consistency in infrastructure design and placement, taking into account, as relevant, the principles contained in *A Code of Practice for Telecommunications facilities in Victoria* for the design and siting of telecommunication facilities.

Apart from Clause 19.03 - 4, there is little specific reference to telecommunications infrastructure provision throughout the SPPF, however, it is clear through Clauses 12, 13, 15 and 19 in particular that the emphasis is placed on the balance between providing modern infrastructure to foster community connectivity, the efficient operation of existing business and attraction of new business, for example, against minimising any environmental impacts on such things as the landscape, water resources and cultural and built heritage.

In general, when considering proposals for telecommunications facilities against the SPPF, the responsible authority must seek a balance between the provision of important telecommunications services and the need to protect the environment from possible adverse impacts (e.g. visual intrusion) arising from telecommunications infrastructure. There is strong State policy support for improved telecommunications facilities if, when balancing improved telecommunications services with environmental impacts; including for example, visual impact and flood or fire hazard, a particular proposal provides a net community benefit.

8.3 Victorian Aboriginal Heritage Act 2006

The *Aboriginal Heritage Act 2006* commenced operation on 28 May 2007. The commencement of the Act proceeded as soon as practicable after the completion of the Regulations. The regulations are intended to

provide for the effective protection and management of Aboriginal cultural heritage in Victoria by - amongst other things- specifying the circumstances in which a cultural heritage management plan (CHMP) is required and prescribing standards for the preparation of CHMPS. Under the regulations, Telecommunications Facilities are not considered "High Impact" activities (Division 5, regulation 43) and therefore are exempt from the requirement to undertake a mandatory CHMP. In certain situations, the power line associated with the facility may not be exempt from the requirement to undertake a CHMP. As of 28th May 2009, the revised Act requires that underground lines (such as power routes) require a CHMP if over 100m in length, and located within an area of cultural sensitivity. Additionally, given the existing use of the telecommunications facility and compound at the subject site, the land is considered significantly disturbed, and the replacement of the existing telecommunications monopole with a new monopole is not understood to warrant a CHMP.

Telstra takes its obligations under the act seriously and assesses each site against the Cultural Heritage Sensitivity Maps provided by Aboriginal Affairs Victoria (AAV). If a site is in an area of aboriginal sensitivity, then Telstra will undertake a register check with AAV and consider further investigations to limit any impacts on any known or unknown heritage.

9 Local Planning Policy Framework (LPPF)

9.1.1 Municipal Strategic Statement (MSS)

The proposed telecommunications facility supports Council's aims and objectives outlined in its MSS by maintaining and enhancing the existing infrastructure within the Shire and specifically around its townships and villages. The current proposals also ensure that such infrastructure is appropriately located to meet Council and community expectations.

Additionally, the provision of greater 3G wireless capacity (and 4G capacity into the future) will ensure that in areas such as Wye River, residents and businesses will have access to quality voice and mobile data coverage and provision, with the current proposals ensuring the latest mobile technologies can be effectively accessed and harnessed by customers in this area in a similar manner to other dynamic communities across Victoria.

With the almost ubiquitous nature of smartphone use across the spectrum of society and particularly the need for reliable access to mobile data (the use of which has increased by approximately 170% over the past 12 months) by businesses, tourists and residents alike the provision of telecommunications infrastructure such as the current proposal is vital in achieving the vision as set out in the Colac Otway planning scheme outlined in Clause 19.

Overall, whilst the MSS does not deal directly with the provision of telecommunications facilities to the community, it emphasises the need to provide adequate infrastructure to reduce or minimize the fire risk in the Shire by appropriate design and development standards on use and development of land.

In addition, the MSS supports a growing population and housing areas, enhancing commercial and business opportunities, employment and tourism whilst endeavoring to protect the natural environment. It is submitted that the current proposal will assist in delivering on Council's aims and vision for the Colac Otway Council Region.

9.1.2 Local Planning Policies (LPP's)

There are no local planning policies contained within the Colac Otway Planning Scheme of specific relevance to the current proposal for telecommunications facilities.

9.2 Particular Provision: Clause 52.19 Telecommunications Facility

Pursuant to Clause 52.19-2 of the Colac Otway Planning Scheme the proposed facility requires a planning permit (i.e. the permit trigger) based on the below statement and due to the fact that the proposed facility does not meet any of the exemptions specified in Clause 52.19-2.

> *"A permit is required to construct a building or construct or carry out works for a Telecommunications facility."*

The exceptions of most relevant, regular consideration by planning authorities relate to telecommunications facilities which are considered low-impact under the Telecommunication (Low-impact) Facilities Determination

2018 or those facilities described in Section 5 of A Code of Practice for Telecommunications Facilities in Victoria.

The purpose of Clause 52.19 is:

- *To ensure that telecommunications infrastructure and services are provided in an efficient and cost effective manner to meet community needs.*
- *To ensure the application of consistent provisions for telecommunications facilities.*
- *To encourage an effective statewide telecommunications network in a manner consistent with the economic, environmental and social objectives of planning in Victoria as set out in Section 4 of the Planning and Environment Act 1987.*
- *To encourage the provision of telecommunications facilities with minimal impact in the amenity of the area.*

Before deciding on an application, in addition to the decision guidelines of Clause 65, Council must consider as appropriate:

The principles for the design, siting, construction and operation of a Telecommunications facility set out in A Code of Practice for Telecommunications Facilities in Victoria.

In Section 10.5.1 below, the proposed telecommunications facility is assessed against the principles for design, siting, construction and operation of a telecommunications facility as set out in Section 4 of *'A Code of Practice for Telecommunications Facilities in Victoria'*.

The effect of the proposal on adjacent land.

As part of the assessment against the principles set out in Section 4 of 'A Code of Practice for Telecommunications Facilities in Victoria' and the decision guidelines of Clause 65 of the Scheme, the effect of the proposal on adjacent land is examined in detail. In addition to the assessment against those principles, it is submitted that the current proposal will not affect the capacity of existing agricultural uses, nor residential and commercial buildings on adjacent land to continue with these uses. Nor will the proposed facility impact the possible future development of surrounding adjacent land for a variety of uses. In the context of the surrounding adjacent land uses which are predominantly agricultural, the effect on adjacent land of the proposed facility is considered reasonable.

If the Telecommunications facility is located in an Environmental Significance Overlay, a Vegetation Protection Overlay, a Significant Landscape Overlay, a Heritage Overlay, A Design and Development Overlay, or an Erosion Management Overlay, the decision guidelines in those overlays and the schedules to those overlays.

The proposed telecommunications facility is located within an Erosion Management Overlay (Schedule 1) and is addressed in Section 10.7.

The current proposals will meet the purpose of Clause 52.19 in that:

- The proposed facility will allow for the efficient provision of telecommunications services to the region in a cost effective manner to meet growing community needs;
- It meets the design and siting requirements as specified in Section 4 of the Victorian Code of Practice (see Section 10.5.1 below), ensuring that there is a consistent approach to the development of telecommunications facilities within the region and ensuring there is no unreasonable effect on adjacent land.
- It provides an improved telecommunications network in an area that is designed to reduce potential impact on surrounding uses. The facility will provide essential mobile services, whilst providing co-location opportunities to other carriers, reducing the overall impact of telecommunications facilities on the amenity of the area.

9.3 A Code of Practice for Telecommunications Facilities in Victoria (the Code)

The Code is an incorporated document in all planning schemes in Victoria and the purpose of the Code is to:

- *Set out the circumstances and requirements under which land may be developed for a telecommunications facility without the need for a planning permit.*

- *Set out the principles for the design, siting, construction and operation of a telecommunications facility which a responsible authority must consider when deciding on an application for a planning permit.*

Furthermore, the Code aims to:

- *Ensure that telecommunications infrastructure and services are provided in an efficient and cost effective manner to meet community needs.*
- *Ensure the application of consistent provisions for telecommunications facilities.*
- *Encourage an effective statewide telecommunications network in a manner consistent with the economic, environmental and social objectives of planning in Victoria as set out in section 4 of the Planning and Environment Act 1987.*
- *Encourage the provision of telecommunications facilities with minimal impact on the amenity of the area.*

Where the requirements of Section 5 of the Code are met, telecommunications facilities do not require a planning permit under the applicable planning scheme. The requirements of Sections 4 and 5 of the Code do not apply to a telecommunications facility already exempt under the Telecommunications Act or the Low-impact Determination (both Federal legislation).

Section 4 of the Code sets out principles for the design, siting, construction and operation of telecommunications facilities. The following four principles must be applied where relevant to the design, siting, construction and operation of any telecommunications facility that is not exempt under Commonwealth legislation.

Principle 1: A telecommunications facility should be sited to minimise visual impact.

Principle 2: Telecommunications facilities should be co-located wherever practical.

Principle 3: Health standards for exposure to radio emissions will be met.

Principle 4: Disturbance and risk relating to siting and construction be minimised.

How the proposed telecommunication facility will meet the four principles identified in the Code is addressed below:

A Telecommunications facility should be sited to minimise visual impact.

- The proposal is for the swap out of an existing 10m monopole for a new 15m monopole, which will have increased capabilities to house the antenna upgrade. While the proposal will result in a taller structure than what already exists, the increase of 5m is not considered a significant change – the visual difference will be minimal. Telstra will use existing telecommunications infrastructure, including the existing shelter on site.

Telecommunications facilities should be co-located wherever practical

- This proposal constitutes the swap out of an existing Telstra 10m monopole for a new 15m Telstra concrete monopole. The swap-out to a new monopole will provide opportunities for other telecommunications providers to co-locate on the structure in the future.

Health Standards for exposure to radio emissions will be met

- The proposed telecommunications facility has been designed and will be installed to ensure that the maximum human exposure levels to radio frequency emissions comply with Radiation Protection Standard- Maximum Exposure Levels to Radiofrequency Fields- 3kHz to 300GHz, Arpansa, May 2002.

Disturbance and risk relating to siting and construction should be minimised.

Construction activity and site location should comply with State environment protection policies and best practice environmental management guidelines.

- The construction activity and site location will comply with state environmental protection policies and best practice environmental management guidelines at the construction stage.
- Construction activities on site will be limited to installation and intermittent maintenance. There will be limited excavation and formwork required to install the tower and equipment shelter. Once the facility is

operational and integrated with the Telstra network, the facility requires minimal maintenance, with maintenance inspections typically carried out every six months.

9.4 Zoning

Under the Planning Scheme, the proposal is defined as a 'Telecommunications Facility'. Telecommunications Facilities are defined as:

> *Land used to accommodate any part of the infrastructure of a Telecommunications network. It includes any telecommunications line, equipment, apparatus, telecommunications tower, mast, antenna, tunnel, duct, hole, pit, pole, or other structure or thing used, or for use in or in connection with Telecommunications network.*

Public Conservation and Recreation Zone (PCRZ)

The subject land is located within the Public Conservation and Recreation Zone (PCRZ) under the Colac Otway Planning Scheme. The purpose of the Public Conservation and Recreation Zone is:

- *To implement the State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement and local planning policies.*
- *To protect and conserve the natural environment and natural processes for their historic, scientific, landscape, habitat or cultural values.*
- *To provide facilities which assist in public education and interpretation of the natural environment with minimal degradation of the natural environment or natural processes.*
- *To provide for appropriate resource based uses*

Under Clause 36.03-1, Table of Uses for the Public Conservation and Recreation Zone, a telecommunications facility is not specifically listed. However, given that the land on which the proposed works are located is currently used for a telecommunications facility, a permit for use is not required.

Under Clause 36.03-2, a permit is required to construct a building or construct or carry out works.

This does not apply to:

- A building or works shown in an Incorporated plan which applies to the land.
- A building or works carried out by or on behalf of a public land manager or Parks Victoria under the Local Government Act 1989, the Reference Areas Act 1978, the National Parks Act 1975, the Fisheries Act 1995, the Wildlife Act 1975, the Forest Act 1958, the Water Industry Act 1994, the Water Act 1989, the Marine Act 1988, the Port of Melbourne Authority Act 1958 or the Crown Land (Reserves) Act 1978.
- Subdivide land.

As the proposed works do not comply with any of the above criteria, a permit is therefore required for buildings and works associated with the proposed replacement of the Telstra facility.

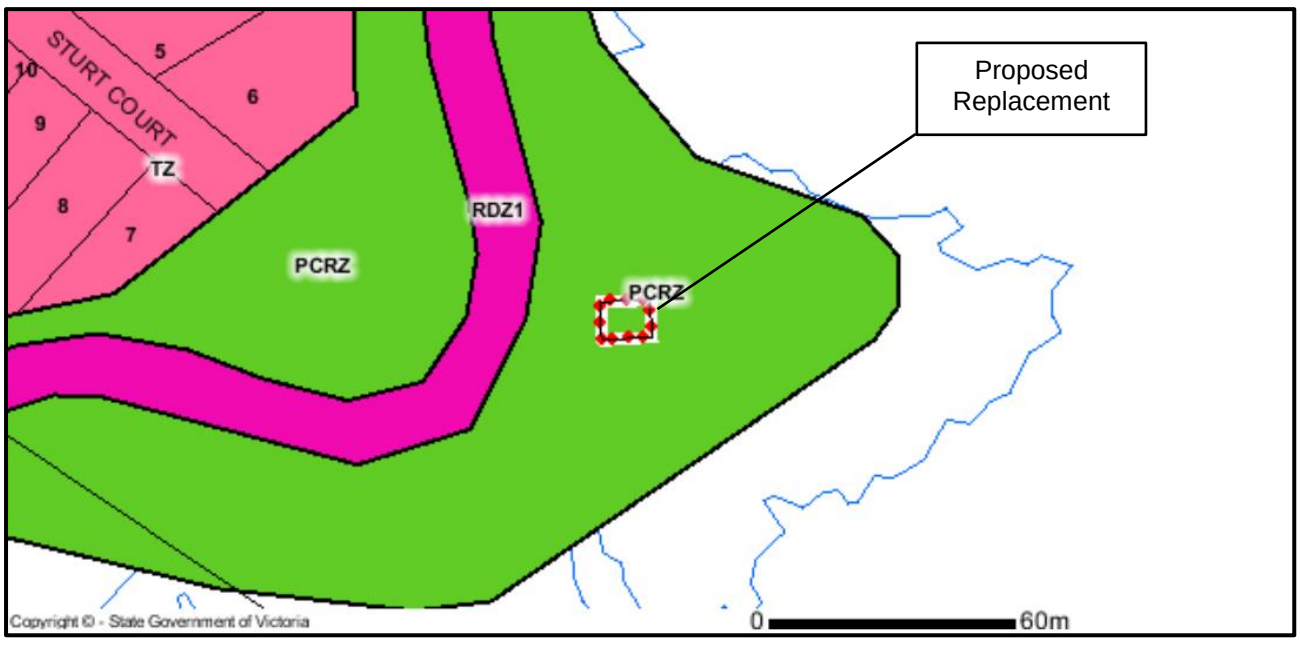

Figure 3: Zoning Map – ***Source: DELWP***

The proposed mobile telecommunications facility, by virtue of the relatively small area of land required for the facility, the existing nature of the land for a telecommunication facility, and the minimal structural alteration required for the upgrade, the proposed building and works will not be detrimental to the achievement of the Public Conservation and Recreation Zone objectives.

It is considered that the proposed mobile telecommunications base station will provide improved coverage to the local community, businesses, and passing motorists using the Great Ocean Road.

9.5 Overlays

Erosion Management Overlay (EMO1)

The site is within an Erosion Management Overlay – Schedule 1 (EMO1).

The purpose of this overlay is:

- *To implement the State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement and local planning policies.*
- *To protect areas prone to erosion, landslip or other land degradation processes, by minimising land disturbance and inappropriate development.*

Pursuant to Clause 44.01, a permit is required for buildings and works if earthworks exceed 1m in depth which is likely for this proposal.

A geotechnical/landslip Risk Assessment will be provided following the lodgement of this permit application with council.

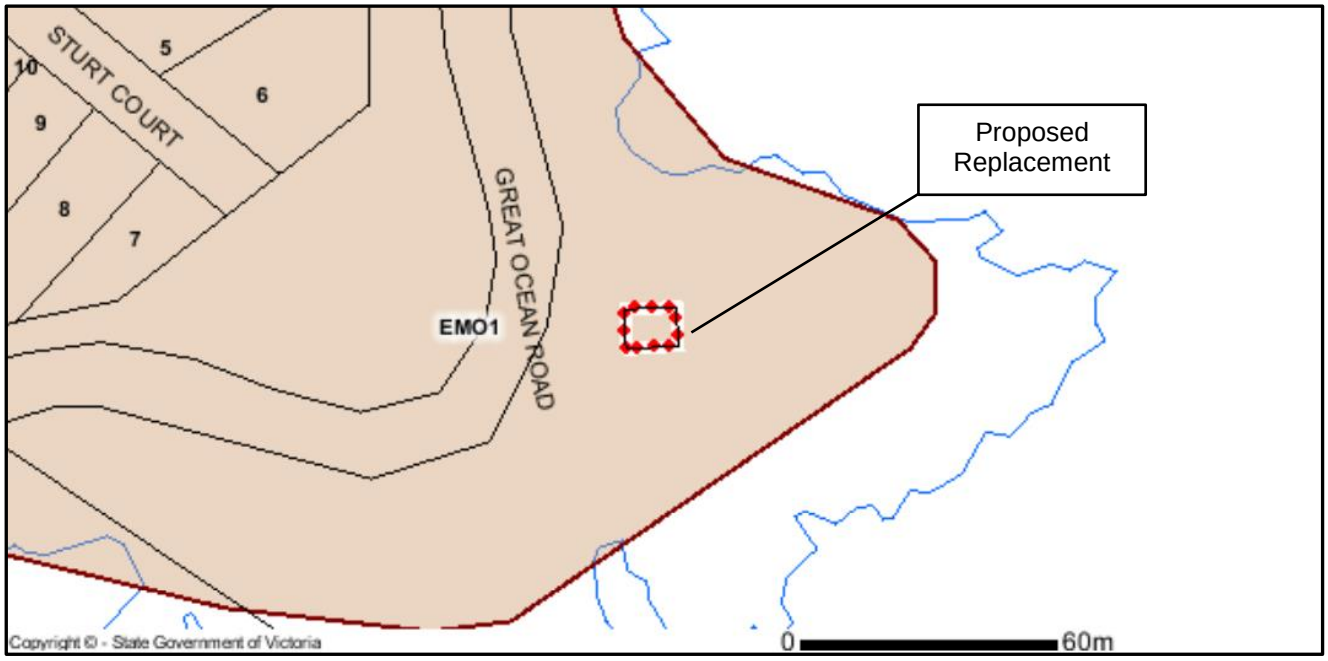

Figure 4: Overlay Map (Erosion Management Overlay) – Source: DELWP

Wildfire Management Overlay (WMO/BMO)

The site is within a Wildfire Management Overlay (WMO/BMO) and seeks to ensure that the development of land prioritises the protection of human life and strengthens community resilience to bushfire.

The use of a 'Telecommunications Facility' is not listed within the BMO, and therefore the proposal is exempt from requiring a planning permit under the BMO. Therefore, the BMO does not form part of the considerations of the proposal.

Nevertheless, objectives of this Overlay are:

- Ensure that the development of land prioritises the protection of human life and strengthens community resilience to bushfire.
- Identify areas where the bushfire hazard warrants bushfire protection measures to be implemented.
- Ensure development is only permitted where the risk to life and property from bushfire can be reduced to an acceptable level.

An application must be referred under Section 55 of the Act to the relevant fire authority.

The proposed Telstra facility has been designed so as not to pose bushfire risk. Rather, telecommunications facilities within bushfire prone areas can support communication channels for people during bushfire emergencies.

Once the Telstra facility is established, it may also provide opportunities for other communication service providers to co-locate on the existing structure in the future, further enhancing telecommunications during bushfires and emergencies.

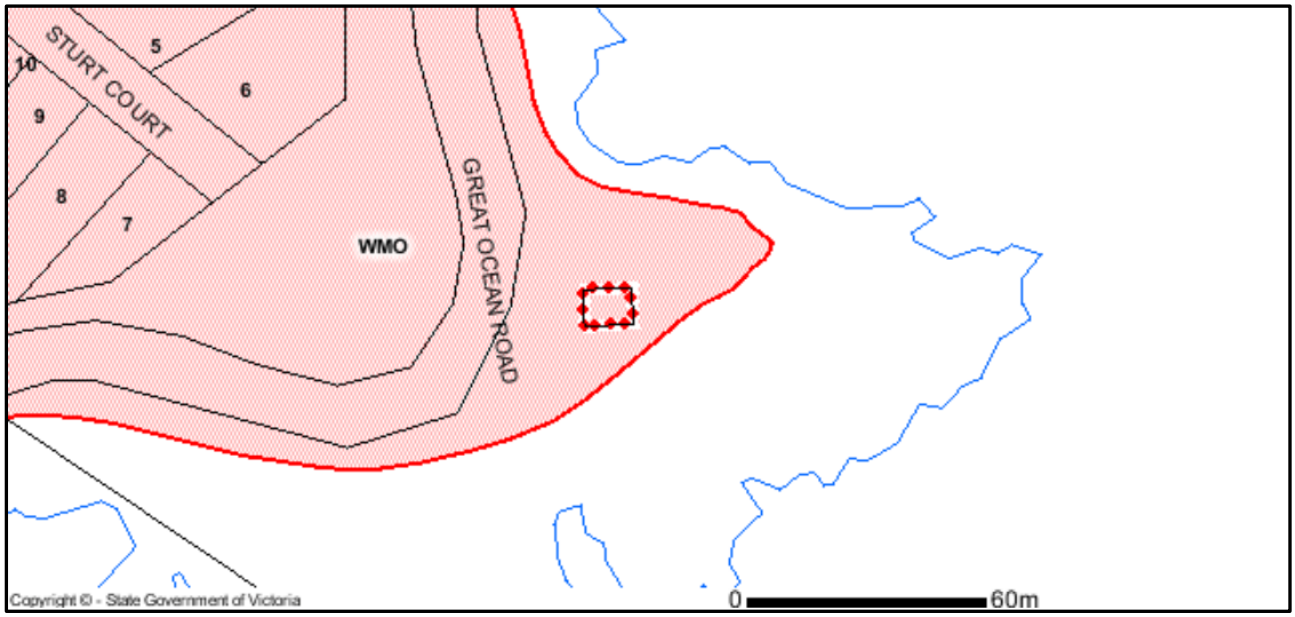

Figure 5: Overlay Map (Wildfire Management Overlay) – Source*: DELWP*

10 General Provisions: Clause 65 Decision Guidelines

It is submitted that the proposed telecommunications facility will produce acceptable outcomes in terms of the decision guidelines of this clause. The table below provides an assessment against the decision guidelines of Clause 65.01 which must be considered, as appropriate, by the responsible authority.

Decision Guidelines	Assessment of Current Proposal
The matters set out in Section 60 of the Act.	It is submitted that the current proposal is in accordance with the Colac Otway Planning Scheme and any relevant codes, policy documents and guidelines and will have a positive social and economic impact on the Wye River area. The proposed therefore, accords with Section 60 of the Act.
The State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement and local planning policies.	It is submitted that the current proposals accord with the SPPF and LPPF as detailed in Sections 8.2 and 9.1.1, which can be found on page 11 and 12 of this report. It is considered that there is strong State and local policy support for improved telecommunications facilities if, when balancing improved telecommunications services with environmental, including visual, impact, this particular proposal provides a net community benefit.
The purpose of the zones, overlays or other Provisions and any matter required to be considered in the zone, overlay or other provision.	The current proposal accords with the purposes of Clause 52.19: Telecommunications Facilities, contained within the Particular Provisions of the Scheme.
The orderly planning of the area.	The proposed facility will have minimal off-site impacts and will not negatively affect the orderly planning of the area for other land uses. The proposal entails the swap out of an existing facility. Furthermore, the current proposal will facilitate the orderly development, extension and maintenance of telecommunications infrastructure for the area.
The effect on the amenity of the area.	The effect on the amenity of the area has been assessed against the 4 principles in Section 4 of the Code (see Section 9.3 in this report on page 14). Notwithstanding the above, it is submitted that the current proposal's overall effect on the amenity of the area is well mitigated by the minimal nature of the facility's alteration.
The proximity of the land to any public land.	The land on which the current application is made will not significantly impact public land.
Factors likely to cause or contribute to land degradation, salinity or reduce water quality.	There are no factors relating to the current application which will cause or contribute to land degradation, salinity or reduce water quality.

Whether the proposed development is designed to maintain or improve the quality of stormwater within and exiting the site.	The proposed development will not affect the quality of stormwater in and out of the site. However, should Council deem the area to be prone to flooding or affect stormwater, the relevant referrals will be undertaken, and appropriate conditions included should a permit be issued.
The extent of character of native vegetation and the likelihood of its destruction.	There is no native vegetation on the site of the proposed facility.
Whether native vegetation is to be or can be protected, planted or allowed to regenerate.	The location of the current proposal will not impact on any native vegetation.
The degree of flood, erosion or fire hazard associated with the location of the land and the use, development or management of the land so as to minimise any such hazard.	Should Council deem the area to be prone to flooding, erosion or the use or development deemed a potential fire hazard, the relevant referrals will be undertaken, and appropriate conditions included should a permit be issued.

11 Conclusion

This application seeks to facilitate the upgrade of existing telecommunications infrastructure within the Wye River area. It achieves a swap out of an existing Telstra 10m monopole for a new Telstra 15m concrete monopole and the installation of antennas and ancillary equipment.

There is strong State policy support for telecommunications facilities if, when balancing improved telecommunications services with environmental impacts; including for example, visual impact and flood or fire hazard, a particular proposal provides a net community benefit.

The proposed works provide the community with reliable 4G access which in turn supports the various rural, commercial and tourist industries in the region and forms part of a wider plan to ensure reliable and accessible coverage during emergency situations such as bush fires.

The proposed telecommunications facility at 3765 Great Ocean Road, Wye River will form an integral component in Telstra's national 4GX network. This 4G service brings higher speeds and extra 4G coverage to a range of communities across the nation. 4GX will include services provided over Telstra's new 700MHz spectrum and deliver higher typical mobile speeds on compatible devices, allowing more Australians to experience more reliable connections and ultra-fast mobile internet.

Additionally, the proposed facility will provide reliable coverage essential for the protection of the fire prone areas in the region and ensuring quality and reliability of coverage for users.

The proposal will ensure that customers in Wye River and its surrounds will have access to the best possible mobile phone and mobile broadband service.

Telstra, together with Visionstream have undertaken an assessment of the relevant matters as required by the Telecommunications Act 1997, the Aboriginal Cultural Heritage Act 2006 and the Colac Otway Shire Planning Scheme. The proposal is considered appropriate in light of the relevant legislative, environmental, technical, radio coverage and public safety requirements.

The proposed facility is considered appropriate for the subject site for the following reasons:

- The proposal achieves the upgrade of existing Telstra infrastructure serving the Wye River community via a pole swap out.
- The proposal is consistent with the relevant provisions of the Colac Otway Shire Planning Scheme.
- The facility will ensure the provision of significantly improved mobile phone coverage and competition in regional and remote Australia, including along major transport routes, in small communities and in locations prone to experiencing natural disasters.
- The new facility will provide much needed capacity relief for the surrounding existing Telstra sites, and carry new local cellular traffic in its vicinity. Surrounding sites have been expanded to their maximum capability and this additional site is required to meet the traffic demand and mobile data usage growth in the Wye River area.
- The proposal will maintain and improve Telstra NextG communications services to the area, including voice calls, video calling and Wireless Broadband – a high speed wireless internet service via the 3G/4G phone network.
- The proposed installation will provide possible opportunities for future co-location on the monopole by other carriers.
- Emissions from the proposed facility will be significantly below the Australian Radiation Protection and Nuclear Safety Agency standards adopted by the Australian Communications and Media Authority.

The assessment of the proposal demonstrates that the proposal represents sound and proper town planning and it is respectively requested that permission is granted for this Permit application.

Appendix 1 – Title

Appendix 2 – Site Plans

Appendix 3 – EPBC Act Protected Matters Report

Appendix 4 – Section 4.1 and 4.2 Precautionary Approach Checklists

Appendix 5 – EME Report

Appendix 6 Aboriginal Heritage Areas of Sensitivity Map

Department of Environment, Land, Water & Planning

Department of Environment, Land, Water & Planning
Cnr Fenwick & Little Malop Street,
Geelong, Victoria 3220
Ph: 5226 4667
www.delwp.vic.gov.au

Our Ref: SP467147

25 March 2019

Mrs Kristy Zhang
Town Planner
Visionstream Australia Pty Ltd
20 Corporate Drive
Heatherton VIC 3202

Email: Kristy.Zhang@visionstream.com.au

Dear Kristy,

CONSENT FOR USE AND DEVELOPMENT OF COASTAL CROWN LAND - WYE RIVER TELECOMMUNICATIONS UPGRADE

Thank you for your correspondence of 10 December 2018 for consent to use or develop coastal Crown land pursuant to *Section 68* of the *Marine and Coastal Act 2018*.

The application is for upgrade of the Telstra Telecommunications tower in Wye River.

Pursuant to *Section 70* of the *Marine and Coastal Act 2018* and as delegated by the Minister, I consent to the proposed use and development subject to the conditions in the attached consent notice.

Note that the *Aboriginal Heritage Act 2006* requires that the discovery of Aboriginal cultural heritage places or objects on any public land in Victoria be reported to the Office of Aboriginal Victoria.

This consent also provides consent for approval of works under the lease, in accordance with clause 3.3 for Lessee Works on behalf on the Minister.

If you would like to discuss any further queries relating to this matter please contact Fraser Clatworthy, Environmental Planner, at the Anglesea Office on (03) 5220 2020

Yours sincerely,

Colleen White
Regional Director
Barwon South West

25 March 2019

Privacy Statement
Any personal information about you or a third party in your correspondence will be protected under the provisions of the Information Privacy Act 2000. It will only be used or disclosed to appropriate Ministerial, Statutory Authority, or departmental staff in regard to the purpose for which it was provided, unless required or authorised by law. Enquiries about access to information about you held by the Department should be directed to the Privacy Coordinator, Department of Environment, Land, Water and Planning, PO Box 500, East Melbourne, Victoria 8002.

VICTORIA State Government

Department of Environment Land Water and Planning

DELWP Ref: SP467147

CONSENT FOR USE AND DEVELOPMENT OF COASTAL CROWN LAND

CLAUSE 70 *MARINE AND COASTAL ACT 2018*

Crown Description: Crown Allotment 2C, Parish of Wongarra

Local Name: Wye River

Street Address: 3765 Great Ocean Road, Wye River 3221

CONSENT FOR: **WYE RIVER TELECOMMUNICATIONS UPGRADE**

Pursuant to *Part 7 Division 2* of the *Marine and Coastal Act 2018* and as delegated by the Minister, I consent to the proposed use and development subject to the following conditions:

1. Works are to be completed to the satisfaction of the Program Manager, Land and Built Environment, Department of Environment, Land, Water and Planning (the Manager).
2. All works are to be consistent with the application dated 10 December 2018.
3. Any proposed amendments to the works including changes to the design or siting must be referred to the Manager and written approval of the Delegate is required.
4. The work site is to be maintained to a safe standard to avoid public risk, and where practical public use is to be excluded from the works area using signs and appropriate barriers.
5. Prior to works commencing a Construction Environmental Management Plan (CEMP) is to be prepared and submitted to the Manager for approval. The plan must include measures to ensure that the works do not impact on the coastal environment and outline any cultural heritage protection measures.
6. Signage with contact details to answer any questions and concerns are to be displayed on site for two weeks before and after works and during construction.
7. All works are to be constructed to Australian Standards and to be certified for public use prior to public use.
8. The site is to be left in a clean and tidy condition at the completion of works.
9. All future maintenance is the responsibility of Telstra.
10. The consent will expire if the works are not completed within 2 years of the date of issue unless an extension of time is applied for and approval granted by the Delegate.
11. The works are subject to all other approvals.

Colleen White
Regional Director, Barwon South West
(as delegate for the Minister for Environment and Climate Change)

25/03/2019

VICTORIA State Government | Environment, Land, Water and Planning

OTWAY COAST COMMITTEE INC.
PO Box 146, Apollo Bay, Victoria 3233
Tel: 52 376 577
E-mail: occadmin@otwaycoast.org.au

Timothy Nguyen
Property Officer
Visionstream Pty Limited
20 Corporate Drive, Heatherton VIC 3202
E: Timothy.Nguyen@Visionstream.com.au

04th July 2017

Dear Timothy,

RE: Notice of Proposed Upgrade Works, Point Sturt, DELWP References: Licence No: 05101826, Crown Allotment 2C, Parish of Wongarra, Parcel id: P082203; Your Ref: 30765700

I am writing to advise you that the Otway Coast Committee (OCC) provide in principle support to Visionstream Pty Limited to undertake the proposed upgrade works in accordance with our lease Section 17D, Crown Land (Reserves) Act 1978.

This in principle approval is subject on the provision of Visionstream successfully completing the required Coastal Management Act Consent (CMAct) and that all conditions and requirements have been fully met and approved by both the Department of Environment, Land, Water and Planning (DELWP) and Otway Coast Committee.

All onsite works shall be in accordance and as defined within the Lease document and as requested by either DELWP and or the OCC.

In the meantime if you have any queries or require any additional information please do not hesitate in contacting me at any time.

Yours Sincerely

Rod Goring
Acting General Manager

Telstra Facility Upgrade, Wye River: EPBC Act Significant Impact Self-Assessment

Prepared for Visionstream Australia Pty Ltd

30 July 2018

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Summary

Biosis Pty Ltd was engaged by Visionstream Australia Pty Ltd to prepare a desktop significant impact self-assessment (SISA) for the proposed upgrade to the existing Telstra telecommunications facility on the Great Ocean Road, Wye River.

This SISA report assesses the potential impacts to matters protected under the *Environment Protection and Biodiversity Conservation Act 1999 (*EPBC Act) that have the potential to result from the proposed upgrade to the existing Telstra facility. The purpose of this report is to provide information on the Indigenous, historic and natural heritage values of the impact area, and provide advice for the management of these values during the upgrade of the telecommunications facility, in accordance with the EPBC Act.

This report contains a significant impact self-assessment (SISA) in accordance with the following EPBC Act policy document:

- Matters of National Environmental Significance - *Significant impact guidelines 1.1* EPBC Act 1999 (Commonwealth of Australia, 2013)

The Great Ocean Road and Scenic Environs are listed on the National Heritage List and is therefore protected as a Matter of National Environmental Significance under the EPBC Act. No additional Matters of National Environmental Significance are likely to be located within the project area.

The National Heritage values of the overall proposed works are limited, due to the previous construction and maintenance works which have occurred within the existing telecommunications facility. In addition, the telecommunications facility existed within the project area prior to the listing of the Great Ocean Road and Scenic Environs on the National Heritage list and is therefore considered as part of the values associated with the wider place.

The proposed impacts to EPBC Act National Heritage place, are not considered significant as defined by the *Significant Impact Guidelines* 1.1 (Commonwealth of Australia 2013). A referral to the Australian Government Minster for the Environment under the EPBC Act is therefore not required. No harm mitigation measures are considered necessary to adopt prior to and during the proposed works to reduce impacts to the MNES.

Recommendations

Based on this SISA, Biosis advises that:

- The proposed monopole replacement will not result in significant impacts to any Matter of National Environmental Significance – namely Great Ocean Road and Scenic Environs.
- An EPBC Act referral is unlikely to be required for the proposed activity.
- No avoidance, mitigation or management measures are considered necessary to adopt prior to and during works to reduce impacts to MNES.

1. Introduction

1.1 Project background

Biosis Pty Ltd was engaged by Visionstream Australia Pty Ltd to prepare a desktop significant impact self-assessment (SISA) for the proposed upgrade to the existing Telstra telecommunications facility on the Great Ocean Road, Wye River.

This SISA report assesses the potential impacts to matters protected under the *Environment Protection and Biodiversity Conservation Act 1999 (*EPBC Act) that have the potential to result from the proposed upgrade to the existing Telstra facility. The purpose of this report is to provide information on the Indigenous, historic and natural heritage values of the impact area, and provide advice for the management of these values during the upgrade of the telecommunications facility, in accordance with the EPBC Act.

The EPBC Act provides protection for matters of national environmental significance. Any action that is likely to result in a significant impact to a matter of national environmental significance (MNES) must be referred to the Australian Government Minister for the Environment to determine if further assessment and approval under the EPBC Act is required.

This report contains a significant impact self-assessment (SISA) in accordance with the following EPBC Act policy document:

- Matters of National Environmental Significance - S*ignificant impact guidelines 1.1* EPBC Act 1999 (Commonwealth of Australia, 2013)

This SISA has been informed by existing documentation relating to the National Heritage Listing of the Great Ocean Road and Scenic Environs and a desktop review of other MNES with the potential to occur within the study area.

1.2 Assessment objectives

The objectives of this investigation are to:

- Review relevant databases for flora, fauna and heritage information.
- Assess the impacts of the project in accordance with:
  - Matters of National Environmental Significance *Significant impact guidelines 1.1* of the EPBC Act 1999.
- Determine if the proposed works constitute a significant impact to MNES.

1.3 Location of the project area

The project area is limited to an existing Telstra telecommunications facility located at 3765 Great Ocean Road, Wye River, on Point Sturt, approximately 160 kilometres south-west of the Melbourne CBD. Wye River is located in the Colac Otway Shire region, situated between Lorne and Apollo Bay (Map 1). The project area is 116.8 square metres in size and is located within Crown land parcel 2C\PP3861 within the Parish of Wongarra.

The project area is predominately asphalted ground with an existing communications shed on the western portion of the area as shown in Figure 1 and Map 2. A cyclone wire fence surrounds the facility, while a timber

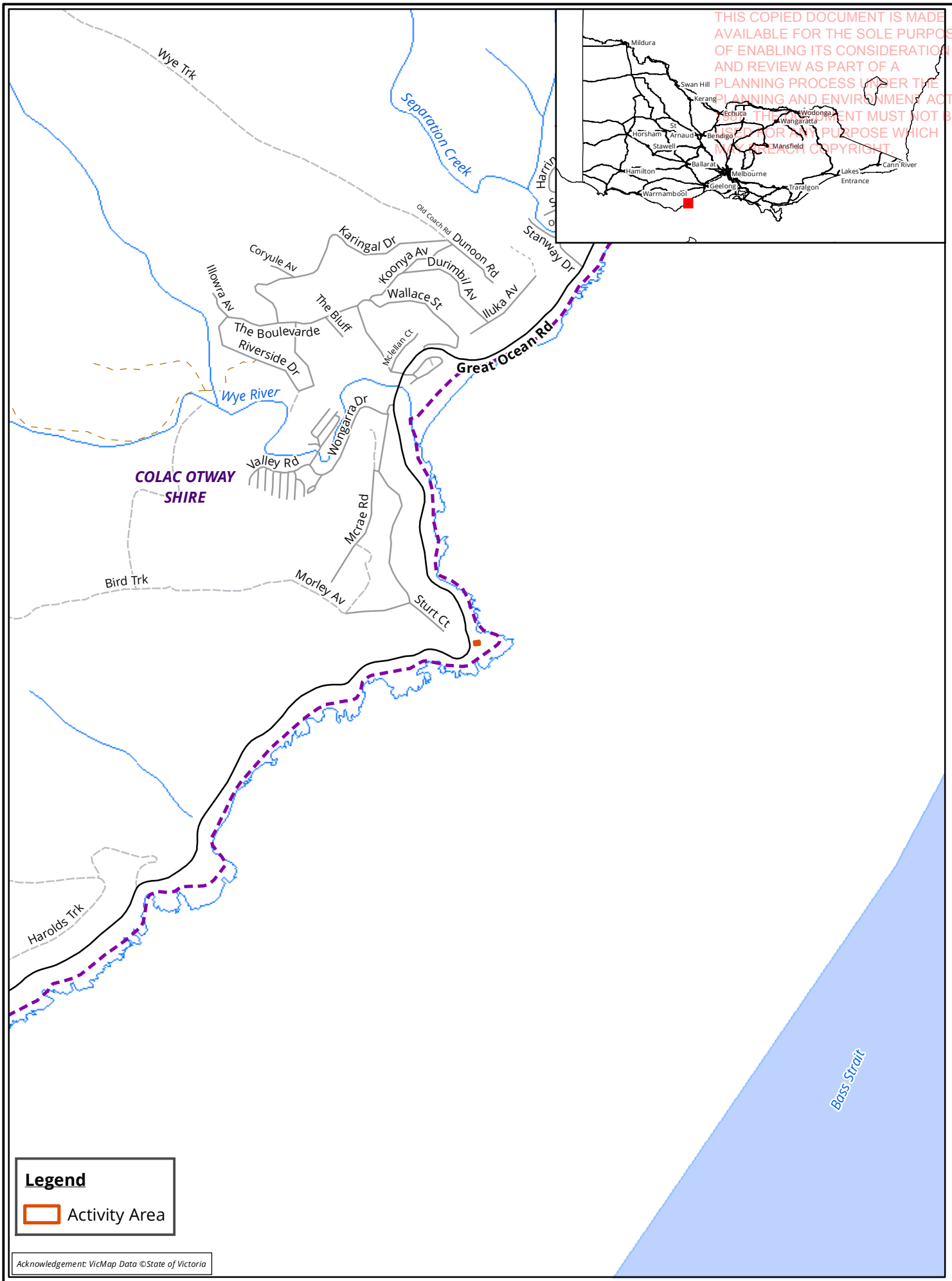
power pole and ARMCO crash rail are adjacent. The project area is bound by the Great Ocean Road to the west, and coastal vegetation to the north, east and south.

Figure 1 Existing telecommunications facility within the project area

1.4 Proposed works

The proposed works is limited to the replacement of an existing telecommunications monopole within the same telecommunications facility compound. The proposed works will consist of the following:

- The replacement of an existing 10 metre telecommunications monopole with a new 15 metres telecommunications monopole with a triangular headframe
- The attachment to headframe of five panel antennas, three Twin Tower Mounted Amplifiers (TMAs) and two Remote Radio Units (RRUs)
- Use of the existing Telstra equipment shelter to house electrical equipment associated with the facility
- Use of the existing access off Great Ocean Road
- The installation of one GPS antenna
- Above ground optical fibre and power supply routes.



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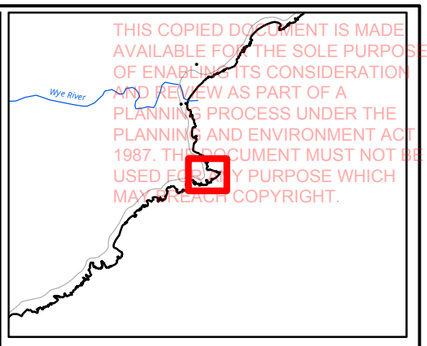
Map 1 Location of the Activity Area - 3765 Great Ocean Rd

Matter: 27283, CHMP No. #####
Date: 16 July 2018,
Checked by: KO, Drawn by: DK, Last edited by: dkazemi
Location: P:\27200s\27283\27283_M1_Locality.mxd

0 150 300 450 600
Metres
N
Scale 1:15,000 @ A4, GDA 1994 MGA Zone 55



Legend

Activity area

Acknowledgements: VicMap ©State of Victoria - Imagery- Nearmap

Map 2 Extent of the Activity Area

0 10 20 30 40 50

Metres
Scale: 1:1,000 @ A3
Coordinate System: GDA 1994 MGA Zone 55

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Matter: 27283,
Date: 16 July 2018,
Checked by: KO, Drawn by: DK, Last edited by: dkazemi
Location:P:\27200s\27283\27283_M2_Extent.mxd

2. Methods

2.1 Database review

In order to provide a context for the project area, information about flora fauna and heritage from within 5 kilometres of the study area (the 'local area') was obtained from relevant databases, maintained by the Australian Government Department of the Environment and Energy (DoEE). Records from the following databases were collated and reviewed:

- DoEE's Protected Matters Search Tool for matters protected by the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) (Appendix 3).

2.2 Definitions of significance

The significance of a species, ecological community or heritage place is determined by its listing status under Commonwealth legislation / policy.

Criteria for determining significance of species & ecological communities

National Significance
Listed as critically endangered, endangered or vulnerable under the EPBC Act
Listed as a National Heritage Property under the EPBC Act

Lists of significant species generated from the databases are provided in Appendix 1 (flora) and Appendix 2 (fauna). Species have been assessed to determine their likelihood of occurrence based on the process outlined below.

2.3 Determining likelihood of occurrence of significant species

Likelihood of occurrence indicates the potential for a species or ecological community to occur regularly within the project area. It is based on expert opinion, information in relevant biodiversity databases and reports, and an assessment of the habitats on site. Likelihood of occurrence is ranked as negligible, low, medium, high or recorded. The rationale for the rank assigned is provided for each species in Appendix 1 (flora) and Appendix 2 (fauna). Those species for which there is little or no suitable habitat within the project area are assigned a likelihood of low or negligible and are not considered further.

Only those species listed under the EPBC Act (hereafter referred to as 'listed species') are assessed to determine their likelihood of occurrence.

Species which have at least medium likelihood of occurrence are given further consideration in this report. The need for targeted survey for these species is also considered.

2.4 Mapping

Visionstream Australia Pty Ltd supplied draft site plans for the project which were utilised to determine the study area and potential impact area.

Mapping has been produced using a Geographic Information System (GIS).

3. Matters of National Environmental Significance

The EPBC Act applies to developments and associated activities that have the potential to significantly impact on Matters of National Environmental Significance (MNES) protected under the Act.

Link for further information including a guide to the referral process is available at: http://www.environment.gov.au/epbc/index.html.

MNES relevant to the project are summarised in Table 1. It includes an assessment against the EPBC Act policy statements published by the Australian Government which provide guidance on the practical application of EPBC Act.

Table 1 Assessment of project in relation to the EPBC Act

MNES	Project specifics	Assessment against significant impact guidelines
Listed threatened species	Seven flora and 43 fauna species are predicted to occur in the project search area. The likelihood of these species occurring in the study area is assessed in Appendix 2 (flora) and Appendix 3 (fauna).	The project area is located in an area containing existing infrastructure including a large gravel pad. There is limited to no habitat within the project area for any of the species listed in Appendix 1 and 2.
Listed threatened ecological communities	Two listed threatened ecological communities are predicted in the project search area: • Giant Kelp Marine Forests of South East Australia • Subtropical and Temperate Coastal Saltmarsh	Neither of these ecological communities occur within the project area and are not considered further within this report.
Migratory species	Thirty one migratory species have been predicted to occur in the project search area (Appendix 2).	While some of these species would be expected to use the study area on occasions, and some of them may do so regularly or may be resident, it does not provide important habitat for an ecologically significant proportion of any of these species.
National Heritage Places	The project area has been identified as being located within the Great Ocean Road and Scenic Environs National Heritage Place.	An assessment of the proposed project against the significant impact criteria for National Heritage Places is detailed in section 3.2. Based on the assessment in section 3.2 it is unlikely that the proposed monopole replacement will result in significant impacts to the Great Ocean Road and Scenic Environs National Heritage Place.

On the basis of criteria outlined in the relevant *Significant Impact Guidelines* it is considered unlikely that a significant impact on a Matter of National Environmental Significance would result from the proposed action.

3.1 National Heritage Listing – Great Ocean Road and Scenic Environs

The heritage values of the Great Ocean Road are as described in Table 2 taken from the Commonwealth of Australia Gazette (Commonwealth of Australia, 2011). The MNES in relation to the current project area are depicted on Map 3.

Table 2 Heritage values of the Great Ocean Road

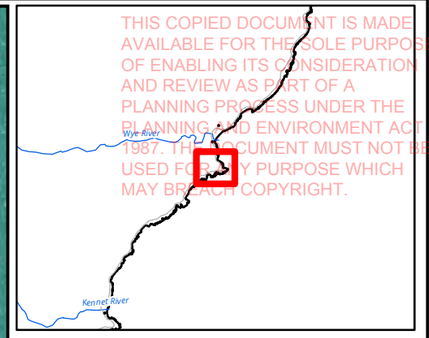
Criterion	Values
(a) **The place has outstanding heritage value to the nation because of the place's importance in the course, or pattern, of Australia's natural or cultural history**	The Great Ocean Road memorial road from Torquay to Allansford, a journey of 242 kms, is significant for commemoration of the service of First World War servicemen. The project was envisaged by the Victorian state government Country Roads Board and the Great ocean Road Trust, with the support of the federal government Repatriation Department, to provide work for First World War returned servicemen, as a utilitarian memorial to all Australian First World War servicemen, and as a gift to residents and tourists to enable access to the spectacular coastal landscape. The construction involved years of fundraising activities, including promotional movies, land sales and generous donations from the community. The works program employed more than 3,000 returned servicemen over a period of 13 years from 1919 to 1932. Gullies and other places along the road bear names given to them by returned servicemen after places where they had fought. Memorial plaques commemorating the work of men and the champions of the project are located at The Memorial Arch at Eastern View and at Mount Defiance. The construction of the memorial road combined substantial community fundraising efforts with the manual labour of returned servicemen. The road therefore represents a significant reminder of the participation of Australian servicemen in the First World War, the Australian community's appreciation of their service by its desire to commemorate the servicemen in a grand manner, and the support provided for the continuing welfare of servicemen upon their return to Australia. Evidence of its importance as a memorial road includes: the route within the existing road alignment of the Great Ocean Road from Torquay to Allansford, including the newer deviations through the Otway Ranges and the eastern headland at Port Campbell; the Memorial Arch at Eastern View; and the memorial plaques at Eastern View and Mount Defiance; as well as the hand-cut markings on the cliff faces adjacent to the road. Among the aims of the construction of the Great Ocean Road, and one of its achievements, was to make the west coast of Victoria accessible for recreational tourism. The Great Ocean Road Trust aspired to enable public access to the spectacular coastal vistas and adjacent landscapes through construction of the serpentine route through diverse natural environments. The construction of a road of this scale with recreational tourism among its aims illustrates an important stage in Australian tourism. To protect the coastal scenery the Victorian Town and Country Planning Board developed the Ocean Road Planning Scheme in 1955. The pioneering planning mechanism was established to control development and preserve the scenic landscape values along the Great Ocean Road. The Scheme was implemented in four local shires (South Barwon, Barrabol, Winchelsea and Otway), and the concept of protective coastal planning has been maintained in the region since its inception. The processes instigated by the Ocean Road Planning Scheme, and subsequent planning controls in the region, initiated an evolution in the protection of public and private

	land in Australia for its scenic environmental value. These processes led to principles which are now an integral aspect of environmental planning in Australia. The continuing protection provided by the planning system around the Great Ocean Road is testament to the success of this early model. The Otway Ranges Coastal Cretaceous site (from Lorne to Moonlight Head) contains several fossil sites including Dinosaur Cove, Australia's most famous polar dinosaur fossil site. The significance of the discovery of polar dinosaur fossils made Dinosaur Cove internationally renowned and stimulated wide public interest in fossils and dinosaurs in Australia.
(b) the place has outstanding heritage value to the nation because of the places possession of uncommon, rare of endangered aspects of Australia's natural or cultural history	The diversity of geomorphological features found in the single lithological unit of Port Campbell limestone is rare on a national scale (see also criterion (c) and criterion (d)). The Otway Ranges is one of only two places in Australia where polar dinosaur fossils are found. The polar dinosaur fossil record of this area is recognised as rare on both national and international scales (See also criterion (a) and criterion (c)).
(c) the place has outstanding heritage value to the nation because of the place's potential to yield information that will contribute to an understanding of Australia's natural or cultural history	The remains of the construction workers' camps in numerous locations along the Great Ocean Road have archaeological potential to provide information about the lives of the workers during the period of construction. The majority of records of the Great Ocean Road Trust were destroyed during the 1940s, resulting in a sparse documentary record relating to the workers and their camps and increasing the potential importance of material evidence from the camps. The size of certain of the camps and their existence throughout the 13 years of construction of the road creates the potential for unusually rich deposits of archaeological material relating to sustenance workers over a span of time. Archaeological investigation is likely to yield evidence of the camps and may provide insight into the working and living conditions of sustenance workers and those who supported them in remote locations during the inter-war period. The fossil record of the Otway Ranges Coastal Cretaceous site constitutes one of the very few known polar dinosaur assemblages from both hemisphere, and one of the most diverse. Dinosaur Cave is the first-discovered and best-known site within the Otway Ranges Coastal Cretaceous site and it internationally recognised for its contribution to human understanding of a polar environment in the Cretaceous period. The fossil record from this area includes an assemblage of velociraptors, flying pterosaurs, underwater plesiosaurs, oviraptors, primeval crocodiles, turtles and upright relatives of echidnas and platypus. The earlier finds from these sites continue to be analysed and new discoveries published by some of Australia's most pre-eminent palaeontologists. Palaeontological work continues in the Otway Ranges Coastal Cretaceous site. Further research combined with coastal erosion may lead to further palaeontological revelations in the future. More recent fossil discoveries near Bells Beach, including some by members of the public, are making a significant contribution to scientific understanding of the evolution of marine species from the late Oligocene period. They are also important in enabling public understanding of Australia's past, due to their accessibility and relative ease of discovery in the quickly eroding coastal environment. As they are analysed by palaeontologists, these discoveries are providing important insights into the evolution of baleen and toothed whales, as it is believed the extinct whale species *Janjacetus hunderi* represents a previously unknown offshoot of the evolutionary tree. As coastal erosion continues, it is possible that more finds will be made at Bells Beach, contributing further to the rich and significant fossil record of the Great Ocean Road coastline. The Cretaceous coast of the Otways displays geomorphological processes which continue to be

	the subject of innovative monitoring and research into erosion rates of shore platforms. This research has increased knowledge of the role of erosion in the geomorphological debate over the origins of these platforms. The monitoring sites and their precincts are of national significance. The Cape Otway coast has national significance for its Mesozoic rock platforms, volcanoclastic Mesozoic rock (which illustrates the environment prior to the breakup of Gondwana), its cliffs, marine terraces and its role in the study of platforms. In particular these include rock platforms and associated geomorphological features between Parker River and Point Lewis, between Moonlight Head and Milanesia Beach, and at Point Lewis, Cape Patton, View Point, Point Sturt, Artillery Rocks, Pebble Point, Point Franklin and Lion Headland.
(d) the place has outstanding heritage value to the nation because of the place's importance in demonstrating the principle characteristics of: (i) a class of Australia's natural or cultural places; or (ii) a class of Australia's natural or cultural environments	Exhibiting a diversity of frequently changing and dramatic landscapes, the Great Ocean Road is an exemplar route of scenic journey within Australia. Journeying from Torquay to Allansford, with a deviation at the eastern end to access Bells Beach, the specifically created scenic tourist route is Australia's most famous coastal drive. Attributes of the road which demonstrate the principle characteristics of this class of cultural place include the intentionally designed route of the road to facilitate public access to this spectacular coastline and provide view of diverse scenery from the road; its key viewpoints and scenic lookouts that are positioned to take advantage of the coastal vistas and hinterland backdrops; and the unobtrusively engineered road works such as cuttings, drainage, and retaining walls to allow a natural aesthetic to dominate. The Port Campbell Limestone coast (from Port Campbell National Park west to and including the Bay of Martyrs and Bays of Islands) is the definitive place in Australia to observe and study limestone geomorphology and coastal erosion and spectacular, well-publicised stack collapses, but also due to the contrast between the younger elements at the Bay of Islands and the more eroded elements at the Port Campbell end. The Port Campbell Limestone coast is of outstanding national significance for its remarkable range of features that are characteristic of limestone coastlines.
(e) the place has outstanding heritage value to the nation because of the place's importance in exhibiting particular aesthetic characteristics valued by a community or cultural group.	The Great Ocean Road and Scenic Environs demonstrates outstanding scenic landscape values and a diversity of natural landscapes. The scenic environs include all views from the Great Ocean Road and Great Ocean Walk. Included within the environs and of particular significance are the Twelve Apostles. This distinctive and spectacular group of rock formations is widely recognised by the Australian community, serving as an inspirational landscape capable of evoking strong emotional responses. The Bay of Islands and Bay of Martyrs, while less widely known, are similar, but younger, geomorphological formations and are also important aesthetic elements of the coastline. The coastline from Lorne to Kennett River offers among the world's most dramatic cliff and ocean scenery able to be viewed from a vehicle. Along the length of the Great Ocean Road, the pullover points and lookouts beside or nearby the road provide travellers with spectacular views of the coastline, hinterland, and Bass Strait seascape, framed only by cliffs, lighthouses, ad unencumbered by intrusive built structures. Lookout points for particularly significant aesthetic experiences include: Bells Beach South, Anglesea Scenic Lookout, Point Addis, Urquhart Bluff, Cinema Point, Teddys Lookout, Cape Patton Lookout, Mount Defiance, Marriner's Lookout, Cape Otway Lighthouse, Castle Cove, Joahanna Beach, The Gable, Gibson's Steps, the Twelve Apostles (several viewing areas), Loch Ard Gorge, The Arch, The Grotto, Peterborough Golf Course carpark lookout, Bay of Martyrs Lookout, and Bay of Islands Lookout and all views from the Great Ocean Walk. The diverse and ever changing scenery along the route is intrinsic to the vast appeal of this coastline. The serpentine road weaves around coastal cliffs, past curving beaches into seaside towns closely bordered by dense native vegetation, and in the Otway Ranges, through tall

	eucalypt forest with giant tree ferns. The coastal views are complemented by the high aesthetic values of the forest and waterfall scenery at the Maits Rest precinct and Melba Gully. The rolling rural landscape west of the Otway Ranges opens to the spectacular vista of the Twelve Apostles. The sea-carved rocky coast includes sheer cliff walls, island arches, blowholes, canyons and caves. Immediately inland along the rocky Port Campbell coast is coastal heath and scrub, swamp land and wetlands. The Great Ocean Road and Scenic Environs include some of the most featured Australian landscapes and seascapes in print, film and digital media. The region has inspired a number of works by significant artists photographers and writers including Arthur Streeton, Eugene con Guerard, Nicholas Chevalier, Jeffery Makin, Frank Hurley, Steve Parish, Ken Duncan and Myra Morris. Theatrical groups, musicians and filmmakers have also taken inspiration from the scenic journey and environment of the Great Ocean Road.
(g) the place has outstanding heritage value to the nation because of the place's strong or special association with a particular community or cultural group for social, cultural or spiritual reasons	Bells Beach is an internationally renowned surfing location which is strongly associated with the development of surfing and surf industry in Australia, and has considerable importance for the large Australian surfing community. The Bells Beach Surfing Recreation Reserve, declared in 1973, was the first of its kind in Australia and the first specifically proclaimed surfing reserve in the world. The unique surfing conditions at Bells Beach, and the international competitions held there, have been instrumental in the development of surfing technology here in Australia. In 1970 Bells Beach was the first Australian venue to the World Surfing Titles; and its Easter surfing tournament remains the worlds longest running international surfing carnival in the world. The landscape is highly valued by many Australians, and has obtained iconic status. For many Australians, the Great Ocean Road is synonymous with tourism and holidays, with over 7 million visits by Australians to the Great Ocean Road region annually. Visitors are attracted to the iconic, spectacular scenery experienced on the scenic journey and the accessibility of the historic shipwrecks along the coast which help deepen the visitor experience by interpreting themes of immigration, shipping and trade.
(h) the place has outstanding heritage value to the nation because of the place's special association with the life or works of a person, or group of persons, of importance in Australia's natural or cultural history	The Great Ocean Road has a special association with a large number of people whose life or works have national importance, including William T. B. McCormack, Howard Hitchcock, Edna Walling and the more than three thousand returned servicemen involved in the construction of the road. William Thomas Bartholomew McCormack was one of the founding members and Chairman of the Country Roads Board of Victoria. He designed and oversaw the difficult engineering and surveying works involved in the construction of the Great Ocean Road. McCormack memorably wrote that roads should 'follow the lines of nature' for aesthetic and practical reasons. Howard Hitchcock was a business man and Mayor of Geelong, and the inaugural Chairman of the Great Ocean Road Trust. Hitchcock's foresight, dedication and personal contributions to the Great Ocean Road scheme were integral to the project. His commitment to the construction of the Great Ocean Road was recognised by the installation of a memorial at Mount Defiance lookout; he was further recognised at the opening ceremony in 1932, and at the re-enactment on its 75th anniversary. Hitchcock's aspiration to create a permanent memorial drive, now one of the world's greatest scenic drives, resulted in a significant legacy to the Australian community. Edna Walling, one of the most influential early landscape designers in Australia, frequented the Great Ocean Road from the early 1920s for the inspiration and rejuvenation provided by coastal views and proximity to nature. The environment around the Great Ocean Road was one of the key factors in her increasing advocacy for the conservation and judicious use of native plants, especially in country gardens, along Australian roadsides, and in other public spaces.

More than three thousand returned servicemen were involved in the construction of the Great Ocean Road from 1919 – 1932. Repatriation programs employed returned servicemen around the country, and thousands applied for work in the construction teams for the Great Ocean Road. The men viewed their involvement as a lasting memorial to their fellow servicemen, and took great pride in their contribution. The men viewed their involvement as a lasting memorial to their fellow servicemen, and took great pride in their contribution. The road itself is considered a memorial to all Australian World War 1 servicemen, and also to the significant works of those returned servicemen involved in its construction.



Legend

National Heritage list ("Great Ocean Road and Scenic Environments")

Map 3 Location of Matters of National Environmental Significance within the Project Area

0 30 60 90 120 150

Metres
Scale: 1:2,500 @ A3
Coordinate System: GDA 1994 MGA Zone 55

N

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Matter: 27283,
Date: 16 July 2018,
Checked by: KO, Drawn by: DK, Last edited by: dkazemi
Location:P:\27200s\27283\27283_M3_Location_of_MNES.mxd

Acknowledgements: VicMap ©State of Victoria - Imagery- Nearmap

3.2 National Heritage Listing – Significant impact criteria

The proposed replacement of an existing telecommunications monopole, despite being located within the same telecommunications facility compound, requires works to occur within the boundary of the Great Ocean Road National Heritage listed place. An assessment against the relevant significant impact criteria was therefore undertaken to determine whether the proposed impacts to these areas are likely to result in a significant impact to the Great Ocean Road as per its National Heritage place listing.

The results of this assessment are provided in Table 3 below.

Table 3 Assessment of the proposed monopole replacement against Significant Impact Criteria for the National Heritage (Commonwealth of Australia, 2013)

	Significant Impact Criteria	Likelihood of Triggering	Notes
Significant Impact Guidelines for National Heritage places with natural heritage values (Commonwealth of Australia, 2013)			
Values associated with geology or landscapes	Damage, modify, alter or obscure important geological formations in a National Heritage place	Unlikely	The impacts of the proposed monopole replacement are small scale, short-term and highly localised to within the existing telecommunications facility. It is not considered that ground works will be a significant impact to geology or the surrounding landscape.
	Damage, modify, alter or obscure landforms or landscape features, for example, by clearing, excavating or infilling the land surface in a National Heritage place	Unlikely	
	Modify, alter or inhibit landscape processes, for example, by accelerating or increasing susceptibility to erosion, or stabilizing mobile landforms, such as sand dunes in a National Heritage place	Unlikely	
	Divert, impound or channelize a river, wetland or other water body in a National heritage place	Unlikely	
	Substantially increase concentrations of suspended sediment, nutrients, heavy metals, hydrocarbons, or other pollutants or substances in a river, wetland or water body in a National Heritage place; permanently damage or obscure rock art or other cultural or ceremonial features with World Heritage values	Unlikely	The proposed works will occur within the footprint of the existing telecommunications facility which has existed at the site since at least 2006. It is considered unlikely that the proposed replacement works will increase any pollutant or substances in any waterbodies within the National Heritage place. In additional there is no known obscure rock art or other cultural or ceremonial features with World Heritage values within the proposed works project area.

	Significant Impact Criteria	Likelihood of Triggering	Notes
Biological and ecological values	Modify or inhibit ecological processes in a National Heritage place	Unlikely	The impacts of the proposed monopole replacement are small scale, short-term and highly localised to within the existing telecommunications facility. It is unlikely that the proposed monopole replacement would modify or inhibit ecological processes. Visionstream have advised that the removal of native vegetation is not proposed, nonetheless if vegetation removal were to be required it would be small scale and not have an overall impact to biodiversity within the region. There is no important habitat located within the project area for listed flora and fauna species.
	Reduce the diversity or modify the composition of plant and animal species in a National Heritage place		
	Fragment or damage habitat important for the conservation of biological diversity in a National Heritage place		
	Cause a long-term reduction in rare, endemic or unique plant or animal populations or species in a National Heritage place		
	Fragment, isolate or substantially damage habitat for rare, endemic or unique animal populations or species in a National Heritage place		
Wilderness, aesthetic or other rare or unique environmental values	Involve construction of buildings, roads or other structures, vegetation clearance, or other actions with substantial and/or long-term impacts on relevant values	Not applicable	The proposed monopole is replacing existing infrastructure within the project area. The replacement of the existing 10 metre monopole with a new 15 metre monopole is unlikely to substantially alter the existing aesthetic values of the area.
	Introduce noise, odours, pollutants or other intrusive elements with substantial and/or long-term impacts on relevant values	Not applicable	There is not expected to be an increase in background noise levels from the current level present at the site.
Significant Impact Guidelines for National Heritage places with cultural heritage values (Commonwealth of Australia, 2013)			
Historic Heritage Values	Permanently remove, destroy, damage or substantially alter the fabric of a National Heritage place in a manner which is inconsistent with relevant values	Unlikely	The proposed works are limited to within an existing telecommunications facility constructed in the project area no later than 2006. The Great Ocean Road and Scenic Environs was included as a National Heritage listed place in 2011, therefore the proposed monopole upgrade within the telecommunications facility is not considered to be inconsistent with the relevant values of the National Heritage place.

	Significant Impact Criteria	Likelihood of Triggering	Notes
	Extend, renovate, refurbish or substantially alter a National Heritage place in a manner which is inconsistent with relevant values	Not applicable	The proposed works will not involve the extension, renovation or refurbishment of the National Heritage place in a manner inconsistent with relevant values.
	Permanently remove, destroy, damage or substantially disturb archaeological deposits or artefacts in a National Heritage place	Unlikely	The proposed works will not involve the removal, destruction or damage of any known archaeological deposits within the National Heritage place. The proposed works area has already undergone substantial earthworks which would have revealed any existing archaeological features.
	Involve activities in a National Heritage place with substantial and/or long-term impacts on its values	Unlikely	It is not considered that the proposed works will alter that current activities preformed within the current project area. As such there will be no substantial and/or long-term impacts on the values of the National Heritage place.
	Involve the construction of buildings or other structures within, adjacent to, or within important sight lines of a National Heritage place which are inconsistent with relevant values	Unlikely	The proposed works will involve the replacement of an existing monopole, exceeding the current height by 1.5 metres representing a relatively minor change in bulk and scale, however it is not considered that this modification will impact on sight lines in a way that is inconsistent with the relevant values of the National Heritage place.
	Make notable changes to the layout, spaces, form or species composition of a garden, landscape or setting of a National Heritage place in a manner which is inconsistent with relevant values	Unlikely	The proposed works will not involve any garden or landscape works, as such the setting of the National Heritage place will not be changed in a manner that is inconsistent with relevant values.
Other cultural heritage values	Restrict or inhibit the continuing use of a National Heritage place as a cultural or ceremonial site causing its values to notably diminish over time	Unlikely	The proposed works will not restrict or inhibit continuing use of the National Heritage place as a cultural or ceremonial site. No records of the point being used as a ceremonial site are known, however access to the Point will remain outside of the current project area.
	Permanently diminish the cultural value of a National Heritage place for a community or group to which its National Heritage values relate	Unlikely	The proposed works are occurring within an existing telecommunications facility, the proposed works will not cause permanent damage to the cultural value of the National Heritage place.
	Destroy or damage cultural or	Unlikely	The proposed works are occurring within an

	Significant Impact Criteria	Likelihood of Triggering	Notes
	ceremonial, artefacts, features or objects in a National Heritage place		existing telecommunications facility which has caused significant disturbance and would have previously destroyed any cultural, ceremonial, artefacts, features or objects that might have existed within the project area. As such, it is considered unlikely that the proposed works will destroy or damage any cultural or ceremonial, artefacts, features or objects in the National Heritage place.
	Notably diminish the value of a National Heritage place in demonstrating creative or technical achievements	Unlikely	The proposed works will not result in a notable diminishment of value to the National Heritage place in demonstrating creative or technical achievements.
Significant Impact Guidelines for National Heritage places with Indigenous heritage values (Commonwealth of Australia, 2013)			
Indigenous heritage values	Restrict or inhibit the continuing use of a National Heritage place as a cultural or ceremonial site causing its values to notably diminish over time	Unlikely	The proposed works will only result in highly localised and short-term impacts to a location which has no previously identified tangible Indigenous heritage values The proposed works will not impact on any know intangible values for the area.
	Permanently diminish the cultural value of a National Heritage place for an Indigenous group to which its National Heritage values relate	Unlikely	Previously identified tangible Indigenous heritage values remain *in situ* across the surrounding point and will not be harmed by the proposed works. As such the cultural value of the National Heritage place will not be diminished.
	Alter the setting of a National Heritage place in a manner which is inconsistent with relevant values	Unlikely	The proposed works will not alter the setting of the National Heritage place in a manner that is inconsistent with relevant values.
	Remove, destroy, damage or substantially disturb archaeological deposits or cultural artefacts in a National Heritage place	Unlikely	Previously identified tangible Indigenous heritage values remain *in situ* across the surrounding point and will not be harmed by the proposed works. As such, no archaeological deposits or cultural artefacts within the National Heritage place will be removed, destroyed, damaged or substantially disturbed by the proposed works.
	Destroy, damage or permanently obscure rock art or other cultural or ceremonial, artefacts, features or objects in a National Heritage	Not applicable	There are no Indigenous rock art or other cultural or ceremonial artefacts, features or objects located within the project area. As such no destruction, damage or permanent

	Significant Impact Criteria	Likelihood of Triggering	Notes
	place		obscuring will occur.
	Notably diminish the value of a National Heritage place in demonstrating creative or technical achievement	Not applicable	The proposed works will not result in a notable diminishment of value to the National Heritage place in demonstrating creative or technical achievements.
	Permanently remove, destroy, damage or substantially alter Indigenous built structures in a National Heritage place	Not applicable	There are no Indigenous built structures located within the project area, as such no Indigenous structures will be removed, destroyed, damaged or substantially altered by the proposed works.
	Involve activities in a National Heritage place with substantial and/or long-term impacts on the values of the place	Not applicable	It is not considered that the proposed works will alter that current activities preformed within the current project area. As such there will be no substantial and/or long-term impacts on the values of the National Heritage place.

4. Conclusion and Recommendations

The Great Ocean Road and Scenic Environs are listed on the National Heritage List and is therefore protected as a Matter of National Environmental Significance under the EPBC Act. No additional Matters of National Environmental Significance are likely to be located within the project area.

The proposed works will be limited to the area within the boundary of an existing telecommunications facility located at 3765 Great Ocean Road, Wye River, on Point Sturt. This facility has been located within the proposed works area since at least 2008, with reference to this existing as a telephone exchange before 1980. As such this facility has been in existence since prior to the listing of the Great Ocean Road and Scenic Environs on the National Heritage list in May 2011. As such it is considered that the telecommunications facility and existing monopole form part of the existing environment of the Great Ocean Road and Scenic Environs and a replacement of the existing pole is not a significant impact to the MNES.

Based on information contained within this report, the proposed monopole replacement will not result in significant impacts to any Matters of National Environmental Significance within the proposed works area – namely the Great Ocean Road and Scenic Environs National Heritage Place. It is therefore unlikely that a referral under the EPBC Act would be required.

No avoidance, mitigation or management measures are considered necessary to adopt prior to and during works to reduce impacts to MNES.

References

Commonwealth of Australia. (2009). *Significant impact guidelines for the vulnerable Growling Grass Frog (Litoria raniformis) Nationally threatened species and ecological communities EPBC Act policy statement 3.14.* Canberra: Department of Environment, Water, Heritage & the Arts, Australian Government.

Commonwealth of Australia. (2011). *Commonwealth of Australia Special Gazette - Environment Protection and Biodiversity Conservation Act 1999. Inclusion of a place in the National Heritage List. Great Ocean Road and Scenic Environs (substitution).* Canberra: Commonwealth of Australia. Retrieved from https://www.environment.gov.au/system/files/pages/5f562eba-4627-458a-af03-428b159fda90/files/gor-assessment.pdf

Commonwealth of Australia. (2013). *Actions on, or impacting upon, Commonwealth land, and actions by Commonwealth agencies: Significant impact guidelines 1.2, Environment Protection and Biodiversity Conservation Act 1999.* Canberra: Australian Government Department of Sustainability, Environment, Water, Population and Communities.

Appendices

Appendix 1 Flora

Notes to tables:

EPBC Act: CR - Critically Endangered EN - Endangered VU - Vulnerable PMST – Protected Matters Search Tool	**DEPI 2014a:** e - endangered v - vulnerable r - rare k - poorly known
FFG Act: L - listed as threatened under FFG Act P - protected under the FFG Act (public land only)	

A1.1 Listed flora species

The following table includes the listed flora species that have potential to occur within the study area. The list of species is sourced from the Victorian Biodiversity Atlas and the Protected Matters Search Tool (DoE; accessed on 20/07/2018).

Table A1.1 Listed flora species recorded / predicted to occur within 5 km of the study area

Scientific name	Common name	Conservation status			Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	VIC	FFG				
National significance								
Amphibromus fluitans	River Swamp Wallaby-grass	VU			PMST	Swampy areas, mainly along the Murray River between Wodonga and Echuca with scattered records from southern Victoria.	Negligible	No suitable habitat within the study area.
Glycine latrobeana	Clover Glycine	VU	v	L	PMST	Grasslands and grassy woodlands, particularly those dominated by Kangaroo Grass.	Negligible	No suitable habitat within the study area.
Leiocarpa gatesii	Wrinkled Buttons	VU	v	L	PMST	Typically within dry open forest on hillsides in association with Messmate *Eucalyptus obliqua*.	Negligible	No suitable habitat within the study area.
Prasophyllum frenchii	Maroon Leek-orchid	EN	e	L	PMST	Grassland and grassy woodland environments on sandy or black clay loam soils that are generally damp but well drained.	Low	No suitable habitat within the study area.

Prasophyllum spicatum	Dense Leek-orchid	VU	e		PMST	Heath and heathy woodlands.	Low	No suitable habitat within the study area.
Pterostylis chlorogramma	Green-striped Greenhood	VU	v	L	PMST	Heathy woodland; more specific habitat requirements are poorly known.	Low	No suitable habitat within the study area.
Pterostylis cucullata	Leafy Greenhood	VU	v	L	PMST	Sand dune scrubs in coastal areas, and inland on slopes and river flats in moist foothill and montane forests.	Low	No suitable habitat within the study area.

Appendix 2 Fauna

Notes to tables:

EPBC Act:	**DSE 2009, DSE 2013:**
EX - Extinct CR - Critically Endangered EN - Endangered VU - Vulnerable CD - Conservation dependent	ex - extinct cr - critically endangered en - endangered vu - vulnerable nt - near threatened dd - data deficient rx - regionally extinct
FFG Act: L - listed as threatened under FFG Act N - nominated for listing as threatened I - determined ineligible for listing	

A2.1 Listed fauna species

The following table includes a list of the listed fauna species that have potential to occur within the study area. The list of species is sourced from the Victorian Biodiversity Atlas and the Protected Matters Search Tool (DoE; accessed on 20/07/2018). Marine species have been excluded from this assessment as there is no likelihood of them occurring in the project area.

Table A2.1 Listed fauna species recorded, or predicted to occur, within 5 km of the study area

Scientific name	Common name	Conservation status			Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	VIC	FFG				
National significance								
Limosa lapponica menzbieri	Northern Siberian Bar-tailed Godwit	CR			PMST	Large intertidal sandflats, banks, mudflats, estuaries, inlets, sewage farms, saltworks, harbours, coastal lagoons and bays.	**Negligible**	No suitable habitat within the study area.
Anthochaera phrygia	Regent Honeyeater	CR	cr	L	PMST	A range of dry woodlands and forests dominated by nectar-producing tree species.	**Negligible**	No suitable habitat within the study area.
Neophema chrysogaster	Orange-bellied Parrot	CR	cr	L	PMST	Coastal vegetation including saltmarshes, dunes, pastures, shrublands, sewage plants, saltworks, islands, and beaches.	**Negligible**	No suitable habitat within the study area.
Miniopterus orianae bassanii	Southern Bent-wing Bat	CR	cr	L	PMST	Woodlands, grasslands, pasture especially near wetlands. Roosts in caves, crevices in cliff faces and in mines.	**Low**	May fly over airspace located within the project area, however there is limited suitable habitat within the project area for the species.

Scientific name	Common name	Conservation status			Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	VIC	FFG				
Calidris ferruginea	Curlew Sandpiper	CR	en	L	PMST	Large intertidal sandflats, banks, mudflats, estuaries, inlets, sewage farms, saltworks, harbours, coastal lagoons and bays.	**Negligible**	No suitable habitat within the study area.
Lathamus discolor	Swift Parrot	CR	en	L	PMST	A range of forests and woodlands, especially those supporting nectar-producing tree species. Also well-treed urban areas.	**Low**	Limited suitable habitat within the study area.
Numenius madagascariensis	Eastern Curlew	CR	vu	L	PMST	Large intertidal sandflats, banks, mudflats, estuaries, inlets, sewage farms, saltworks, harbours, coastal lagoons and bays.	**Negligible**	No suitable habitat within the study area.
Diomedea sanfordi	Northern Royal Albatross	EN			PMST	The Northern Royal Albatross is marine, pelagic species and its habitat includes subantarctic, subtropical, and occasionally Antarctic waters (Marchant & Higgins 1990). The species nests on flat or gently sloping ground, on slopes, ridges, gullies and plateaux of large islands, and on the summits of islets (Bailey & Sorensen 1962; Dawson 1973; Westerkov 1963). Northern royal albatrosses (D. e. sanfordi) commonly nest on Campbell Island and the Auckland Islands.	**Negligible**	No suitable habitat within the study area.

Scientific name	Common name	Conservation status			Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	VIC	FFG				
Pterodroma leucoptera	Gould's Petrel	EN			PMST	The Gould's Petrel is a marine pelagic spending the majority of its time at sea. It has breeding colonies on Cabbage Tree Island and Boondelbah Island.	**Negligible**	No suitable habitat within the study area.
Calidris canutus	Red Knot	EN	en		PMST	Large intertidal sandflats, banks, mudflats, estuaries, inlets, sewage farms, saltworks, harbours, coastal lagoons and bays.	**Negligible**	No suitable habitat within the study area.
Rostratula australis	Australian Painted Snipe	EN	cr	L	PMST	Shallows of well-vegetated freshwater wetlands.	**Negligible**	No suitable habitat within the study area.
Pseudomys fumeus	Smoky Mouse	EN	cr	L	PMST	Coastal heath and heathy woodland, wet forest, sub-alpine heath and dry sclerophyll forest.	**Negligible**	No suitable habitat within the study area.
Botaurus poiciloptilus	Australasian Bittern	EN	en	L	PMST	Shallow freshwater and brackish wetlands with abundant emergent aquatic vegetation.	**Negligible**	No suitable habitat within the study area.
Dasyurus maculatus maculatus (SE mainland population)	Spot-tailed Quoll	EN	en	L	PMST	Rainforest and wet and dry sclerophyll forests and woodlands.	**Negligible**	No suitable habitat within the study area.
Isoodon obesulus obesulus	Southern Brown Bandicoot (eastern)	EN	nt	L	PMST	Heathland, shrubland, sedgeland, heathy open forest and woodland; also exotic vegetation, such as blackberry thickets and rank grasses where native vegetation has been removed.	**Low**	No suitable habitat within the study area.

Scientific name	Common name	Conservation status			Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	VIC	FFG				
Macronectes giganteus	Southern Giant-Petrel	EN	vu	L	PMST	Adults of this species are present all year round at Antarctic breeding colonies, from where immature birds disperse, some as far north as subtropical areas.	**Negligible**	No suitable habitat within the study area.
Thalassarche cauta	Shy Albatross	EN	vu	L	PMST	The Shy Albatross is a marine pelagic species inhabiting sub-Antarctic and subtropical waters, spending the majority of their time at sea. Occasionally it is observed in continental shelf waters in bays and harbours.	**Negligible**	No suitable habitat within the study area.
Thalassarche chrysostoma	Grey-headed Albatross	EN	vu	L	PMST	Occurs in warmer areas over winter, its breeding grounds are found in the Antarctic and subantarctic islands. Generally forages over the open oceans, there have been a small number of records over inshore and offshore areas along the Victorian coast.	**Negligible**	No suitable habitat within the study area.
Halobaena caerulea	Blue Petrel	VU			PMST	A marine species, usually pelagic but sometimes observed over shallow waters. A regular visitor to southern Australian waters.	**Negligible**	No suitable habitat within the study area.
Limosa lapponica baueri	Western Alaskan Bar-tailed Godwit	VU			PMST	Large intertidal sandflats, banks, mudflats, estuaries, inlets, sewage farms, saltworks, harbours, coastal lagoons and bays.	**Negligible**	No suitable habitat within the study area.

Scientific name	Common name	Conservation status			Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	VIC	FFG				
Pterodroma mollis	Soft-plumaged Petrel	VU			PMST	A marine, oceanic species that breeds on islands including islands off Tasmania. Burrows among tussock grass and ferns on slopes and valleys.	**Negligible**	No suitable habitat within the study area.
Thalassarche bulleri	Pacific Albatross	VU			PMST	Buller's Albatross breeds in New Zealand and is a seasonal visitor to Victorian coastal waters where it occurs in pelagic and inshore waters.	**Negligible**	No suitable habitat within the study area.
Thalassarche bulleri platei	Northern Buller's Albatross	VU			PMST	In Australia, the species occurs over inshore, offshore and pelagic waters (Blaber 1986; Carter 1977; Rogers 1969) and off the coast of south-east Tasmania. The birds breed on subtropical and subantarctic islands and rock stacks in the New Zealand region, on sparsely vegetated slopes, cliff tops and ledges on rocky islands or stacks (Dawson 1973; Robertson 1974; Wright 1984).	**Negligible**	No suitable habitat within the study area.
Thalassarche steadi	White-capped Albatross	VU			PMST	The White-capped Albatross is a marine species and occurs in subantarctic and subtropical waters.Birds nest on slopes vegetated with tussock and succulents on Auckland Island (Marchant & Higgins 1990).	**Negligible**	No suitable habitat within the study area.

Scientific name	Common name	Conservation status			Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	VIC	FFG				
Thalassarche melanophris impavida	Campbell Albatross	VU			PMST	Occurs in open marine waters of southern and south eastern Australia. Breeding occurs on Campbell Island, New Zealand.	**Negligible**	No suitable habitat within the study area.
Thalassarche salvini	Salvin's Albatross	VU			PMST	Salvin's Albatross is a marine species occurring in subantarctic and subtropical waters (Marchant & Higgins 1990). Salvin's Albatross nest's on level or gently sloping ledges, summits, slopes and caves of rocky islets and stacks, usually in broken terrain with little soil and vegetation (Brothers 1979a, 1979b; Fleming 1939; Green 1974; Miskelly 1984).	**Negligible**	No suitable habitat within the study area.
Pachyptila turtur subantarctica	Fairy Prion	VU	vu		PMST	The southern subspecies of the Fairy Prion is a marine bird, found mostly in temperate and subantarctic seas. The southern subspecies of the Fairy Prion breeds on islands and rock stacks. It burrows in soil, or uses crevices and caves in cliffs or rock falls. The subspecies can also nest in scrub, herbland, tussock or pasture (Marchant & Higgins 1990).	**Negligible**	No suitable habitat within the study area.
Thalassarche melanophris	Black-browed Albatross	VU	vu, I	I	PMST	Breeds in antarctic and sub-antarctic islands, but commonly occurs in pelagic waters off the coast of Victoria.	**Negligible**	No suitable habitat within the study area.

Scientific name	Common name	Conservation status			Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	VIC	FFG				
Diomedea antipodensis	Antipodean Albatross	VU		L	PMST	A marine, pelagic species that ranges widely throughout the Pacific region of the Southern Ocean. It visits off-shore waters of southern Australia.	**Negligible**	No suitable habitat within the study area.
Phoebetria fusca	Sooty Albatross	VU		L	PMST	Subantarctic and subtropical marine waters.	**Negligible**	No suitable habitat within the study area.
Diomedea exulans	Wandering Albatross	VU	en	L	PMST	Occurs from Antarctic to subtropical areas in the southern hemisphere. In Australia, observed over continental shelves often in areas of continental upwellings. Regularly recorded feeding in sheltered harbours, often gathering at sewerage outfalls.	**Negligible**	No suitable habitat within the study area.
Sternula nereis	Fairy Tern	VU	en	L	PMST	Fairy Terns inhabit coastal environments including intertidal mudflats, sand flats and beaches. Nests above high-water mark on sandy shell-grit beaches.	**Low**	No suitable habitat within the study area.
Galaxiella pusilla	Dwarf Galaxias	VU	en	L	PMST	Slow-flowing or still freshwater wetlands such as swamps, drains and backwaters of streams.	**Negligible**	No suitable habitat within the study area.
Litoria raniformis	Growling Grass Frog	VU	en	L	PMST	Still or slow-flowing waterbodies and surrounding terrestrial vegetation.	**Negligible**	No suitable habitat within the study area.
Mastacomys fuscus mordicus	Broad-toothed Rat	VU	en	L	PMST	Sub-alpine Woodland, Heathland, Sedgeland, and sedge-dominated areas within forest.	**Negligible**	No suitable habitat within the study area.

Scientific name	Common name	Conservation status			Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	VIC	FFG				
Potorous tridactylus tridactylus	Long-nosed Potoroo	VU	en	L	PMST	Forest, heathy woodlands and heathlands.	**Negligible**	No suitable habitat within the study area.
Macronectes halli	Northern Giant-Petrel	VU	nt	L	PMST	Breeds in coastal habitats on subantarctic islands. Dispersal movements of juveniles are poorly known but have been observed along temperate coastal areas of Australia. Often seen around sewer outfalls or seal and penguin colonies.	**Negligible**	No suitable habitat within the study area.
Antechinus minimus maritimus	Swamp Antechinus	VU	nt	L	PMST	Dense wet heath and heathy woodland, sedgeland and dense tussock grassland.	**Low**	No suitable habitat within the study area.
Diomedea epomophora	Royal Albatross	VU	vu	L	PMST	A marine, pelagic species that ranges widely throughout the Pacific region of the Southern Ocean. It visits off-shore waters of southern Australia.	**Negligible**	No suitable habitat within the study area.
Grantiella picta	Painted Honeyeater	VU	vu	L	PMST	Dry open woodlands and forests. Typically forages for fruit and nectar in mistletoes and in tree canopies.	**Low**	No suitable habitat within the study area.
Thinornis rubricollis	Hooded Plover	VU	vu	L	PMST	Sandy ocean beaches, estuaries and inland lakes.	**Low**	No suitable habitat within the study area.
Prototroctes maraena	Australian Grayling	VU	vu	L	PMST	Adults inhabit cool, clear, freshwater streams.	**Negligible**	No suitable habitat within the study area.

Scientific name	Common name	Conservation status			Other records	Habitat description	Likely occurrence in study area	Rationale for likelihood ranking
		EPBC	VIC	FFG				
Pteropus poliocephalus	Grey-headed Flying-fox	VU	vu	L	PMST	Rainforest, wet and dry sclerophyll forest, woodland and urban areas.	**Low**	Limited suitable habitat within the study area.

A2.2 Migratory species (EPBC Act listed)

Table A2.2 Migratory fauna species recorded or predicted to occur within 5 km of the study area

Scientific name	Common name	Most recent record
Actitis hypoleucos	Common Sandpiper	PMST
Apus pacificus	Fork-tailed Swift	PMST
Ardenna carneipes	Flesh-footed Shearwater	PMST
Calidris acuminata	Sharp-tailed Sandpiper	PMST
Calidris canutus	Red Knot	PMST
Calidris ferruginea	Curlew Sandpiper	PMST
Calidris melanotos	Pectoral Sandpiper	PMST
Diomedea antipodensis	Antipodean Albatross	PMST
Diomedea epomophora	Southern Royal Albatross	PMST
Diomedea exulans	Wandering Albatross	PMST
Diomedea sanfordi	Northern Royal Albatross	PMST
Gallinago hardwickii	Latham's Snipe	PMST
Hirundapus caudacutus	White-throated Needletail	PMST
Limosa lapponica	Bar-tailed Godwit	PMST
Macronectes giganteus	Southern Giant-Petrel	PMST
Macronectes halli	Northern Giant Petrel	PMST
Monarcha melanopsis	Black-faced Monarch	PMST
Motacilla flava	Yellow Wagtail	PMST
Myiagra cyanoleuca	Satin Flycatcher	PMST
Numenius madagascariensis	Eastern Curlew	PMST
Pandion haliaetus	Osprey	PMST
Phoebetria fusca	Sooty Albatross	PMST
Rhipidura rufifrons	Rufous Fantail	PMST
Sternula albifrons	Little Tern	PMST
Thalassarche bulleri	Buller's Albatross	PMST
Thalassarche cauta	Tasmanian Shy Albatross	PMST
Thalassarche chrysostoma	Grey-headed Albatross	PMST
Thalassarche impavida	Campbell Albatross	PMST
Thalassarche melanophris	Black-browed Albatross	PMST
Thalassarche salvini	Salvin's Albatross	PMST
Thalassarche steadi	White-capped Albatross	PMST

Appendix 3 EPBC Act Protected Matters Search Tool Report

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 is available about Environment Assessments and the EPBC Act including significance guidelines, forms and application process details.

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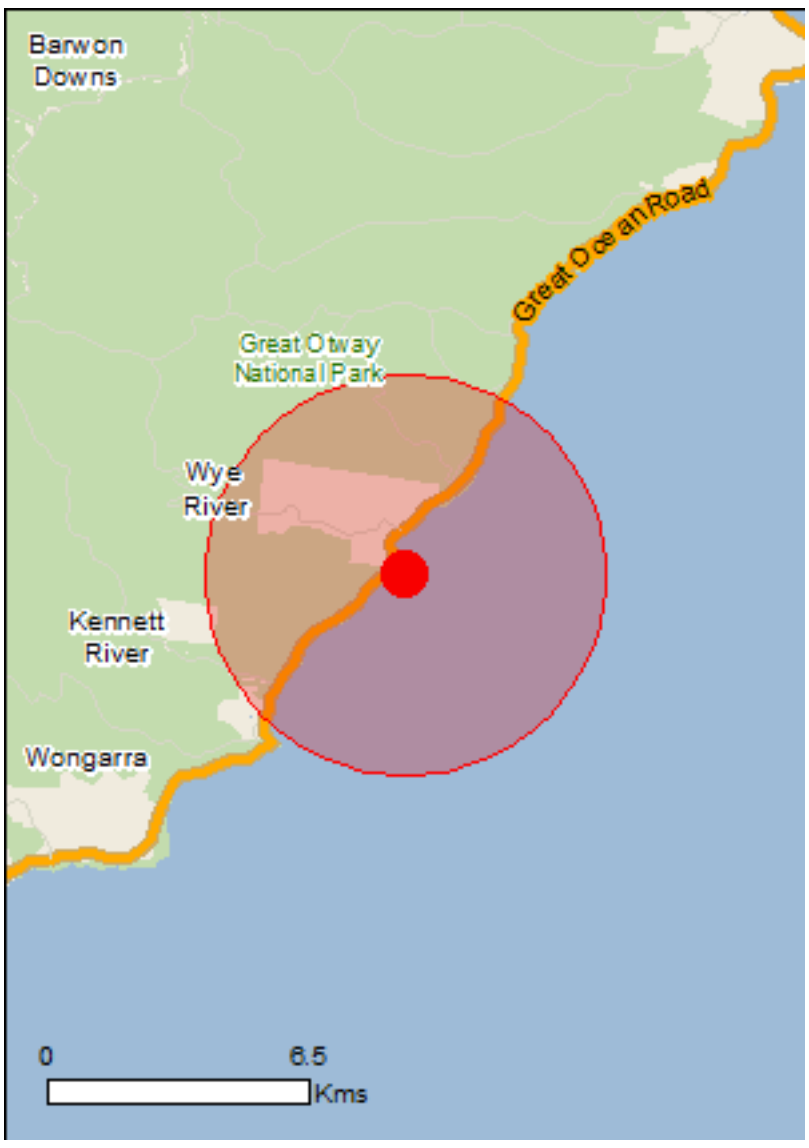

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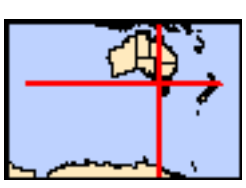

Summary

Matters of National Environmental 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.

World Heritage Properties:	None
National Heritage Places:	1
Wetlands of International Importance:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	2
Listed Threatened Species:	59
Listed Migratory Species:	44

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. Information on the new heritage laws can be found at http://www.environment.gov.au/heritage

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.

Commonwealth Land:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	76
Whales and Other Cetaceans:	13
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None

Extra Information

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

State and Territory Reserves:	1
Regional Forest Agreements:	1
Invasive Species:	30
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

National Heritage Properties [Resource Information]

Name	State	Status
Historic		
Great Ocean Road and Scenic Environs	VIC	Listed place

Listed 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
Giant Kelp Marine Forests of South East Australia	Endangered	Community may occur within area
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area

Listed Threatened Species [Resource Information]

Name	Status	Type of Presence
Birds		
Anthochaera phrygia		
Regent Honeyeater [82338]	Critically Endangered	Species or species habitat may occur within area
Botaurus poiciloptilus		
Australasian Bittern [1001]	Endangered	Species or species habitat likely to occur within area
Calidris canutus		
Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area
Calidris ferruginea		
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Diomedea antipodensis		
Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea epomophora		
Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans		
Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi		
Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Grantiella picta		
Painted Honeyeater [470]	Vulnerable	Species or species habitat may occur within area

Name	Status	Type of Presence
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area
Limosa lapponica baueri Bar-tailed Godwit (baueri), Western Alaskan Bar-tailed Godwit [86380]	Vulnerable	Species or species habitat may occur within area
Limosa lapponica menzbieri Northern Siberian Bar-tailed Godwit, Bar-tailed Godwit (menzbieri) [86432]	Critically Endangered	Species or species habitat may occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Neophema chrysogaster Orange-bellied Parrot [747]	Critically Endangered	Migration route likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat likely to occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Pterodroma leucoptera leucoptera Gould's Petrel, Australian Gould's Petrel [26033]	Endangered	Species or species habitat may occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Breeding likely to occur within area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area
Thalassarche bulleri platei Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta cauta Shy Albatross, Tasmanian Shy Albatross [82345]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche cauta steadi White-capped Albatross [82344]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche chrysostoma Grey-headed Albatross [66491]	Endangered	Species or species habitat may occur within

Name	Status	Type of Presence
		area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thinornis rubricollis rubricollis Hooded Plover (eastern) [66726]	Vulnerable	Species or species habitat likely to occur within area
Fish		
Galaxiella pusilla Eastern Dwarf Galaxias, Dwarf Galaxias [56790]	Vulnerable	Species or species habitat likely to occur within area
Prototroctes maraena Australian Grayling [26179]	Vulnerable	Species or species habitat likely to occur within area
Frogs		
Litoria raniformis Growling Grass Frog, Southern Bell Frog, Green and Golden Frog, Warty Swamp Frog [1828]	Vulnerable	Species or species habitat likely to occur within area
Mammals		
Antechinus minimus maritimus Swamp Antechinus (mainland) [83086]	Vulnerable	Species or species habitat likely to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour 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 known to occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat known to occur within area
Isoodon obesulus obesulus Southern Brown Bandicoot (eastern), Southern Brown Bandicoot (south-eastern) [68050]	Endangered	Species or species habitat likely to occur within area
Mastacomys fuscus mordicus Broad-toothed Rat (mainland), Tooarrana [87617]	Vulnerable	Species or species habitat likely to occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
Miniopterus orianae bassanii Southern Bent-wing Bat [87645]	Critically Endangered	Species or species habitat likely to occur within area

Name	Status	Type of Presence
[Potorous tridactylus tridactylus](#) Long-nosed Potoroo (SE mainland) [66645]	Vulnerable	Species or species habitat known to occur within area
[Pseudomys fumeus](#) Smoky Mouse, Konoom [88]	Endangered	Species or species habitat likely to occur within area
[Pteropus poliocephalus](#) Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour may occur within area
Plants		
[Amphibromus fluitans](#) River Swamp Wallaby-grass, Floating Swamp Wallaby-grass [19215]	Vulnerable	Species or species habitat may occur within area
[Glycine latrobeana](#) Clover Glycine, Purple Clover [13910]	Vulnerable	Species or species habitat likely to occur within area
[Leiocarpa gatesii](#) Wrinkled Buttons [76212]	Vulnerable	Species or species habitat likely to occur within area
[Prasophyllum frenchii](#) Maroon Leek-orchid, Slaty Leek-orchid, Stout Leek-orchid, French's Leek-orchid, Swamp Leek-orchid [9704]	Endangered	Species or species habitat likely to occur within area
[Prasophyllum spicatum](#) Dense Leek-orchid [55146]	Vulnerable	Species or species habitat likely to occur within area
[Pterostylis chlorogramma](#) Green-striped Greenhood [56510]	Vulnerable	Species or species habitat may occur within area
[Pterostylis cucullata](#) Leafy Greenhood [15459]	Vulnerable	Species or species habitat may occur within area
Reptiles		
[Caretta caretta](#) Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area
[Chelonia mydas](#) Green Turtle [1765]	Vulnerable	Breeding likely to occur within area
[Dermochelys coriacea](#) Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Sharks		
[Carcharodon carcharias](#) White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area

Listed 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
[Ardenna carneipes](#) Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area
[Diomedea antipodensis](#) Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely

Name	Threatened	Type of Presence to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Sternula albifrons Little Tern [82849]		Species or species habitat may occur within area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta Tasmanian Shy Albatross [89224]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Thalassarche chrysostoma Grey-headed Albatross [66491]	Endangered	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Migratory Marine Species		
Balaena glacialis australis Southern Right Whale [75529]	Endangered*	Species or species habitat known to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely

Name	Threatened	Type of Presence
		to occur within area
[Caperea marginata](#) Pygmy Right Whale [39]		Foraging, feeding or related behaviour may occur within area
[Carcharodon carcharias](#) White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
[Caretta caretta](#) Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area
[Chelonia mydas](#) Green Turtle [1765]	Vulnerable	Breeding likely to occur within area
[Dermochelys coriacea](#) Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
[Lagenorhynchus obscurus](#) Dusky Dolphin [43]		Species or species habitat may occur within area
[Lamna nasus](#) Porbeagle, Mackerel Shark [83288]		Species or species habitat likely to occur within area
[Megaptera novaeangliae](#) Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
[Orcinus orca](#) Killer Whale, Orca [46]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
[Hirundapus caudacutus](#) White-throated Needletail [682]		Species or species habitat likely to occur within area
[Monarcha melanopsis](#) Black-faced Monarch [609]		Species or species habitat likely to occur within area
[Motacilla flava](#) Yellow Wagtail [644]		Species or species habitat may 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 known to occur within area
Migratory Wetlands Species		
[Actitis hypoleucos](#) Common Sandpiper [59309]		Species or species habitat may occur within area
[Calidris acuminata](#) Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
[Calidris canutus](#) Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area
[Calidris ferruginea](#) Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area

Name	Threatened	Type of Presence
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		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		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
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 known to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Catharacta skua Great Skua [59472]		Species or species habitat may occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Name	Threatened	Type of Presence
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to 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 known to occur within area
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area
Hirundapus caudacutus White-throated Needletail [682]		Species or species habitat likely to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat may occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may 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
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Neophema chrysogaster Orange-bellied Parrot [747]	Critically Endangered	Migration route likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat likely to occur within area
Pandion haliaetus Osprey [952]		Species or species

Name	Threatened	Type of Presence
		habitat may occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area
Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [1043]		Foraging, feeding or related behaviour likely to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat may occur within area
Sterna albifrons Little Tern [813]		Species or species habitat may occur within area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta Tasmanian Shy Albatross [89224]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Thalassarche chrysostoma Grey-headed Albatross [66491]	Endangered	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche sp. nov. Pacific Albatross [66511]	Vulnerable*	Species or species habitat may occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Thinornis rubricollis Hooded Plover [59510]		Species or species habitat likely to occur within area
Thinornis rubricollis rubricollis Hooded Plover (eastern) [66726]	Vulnerable	Species or species habitat likely to occur within area
Fish		
Heraldia nocturna Upside-down Pipefish, Eastern Upside-down Pipefish, Eastern Upside-down Pipefish [66227]		Species or species habitat may occur within area
Hippocampus abdominalis Big-belly Seahorse, Eastern Potbelly Seahorse,		Species or species

Name	Threatened	Type of Presence
New Zealand Potbelly Seahorse [66233]		habitat may occur within area
Hippocampus breviceps Short-head Seahorse, Short-snouted Seahorse [66235]		Species or species habitat may occur within area
Hippocampus minotaur Bullneck Seahorse [66705]		Species or species habitat may occur within area
Histiogamphelus briggsii Crested Pipefish, Briggs' Crested Pipefish, Briggs' Pipefish [66242]		Species or species habitat may occur within area
Histiogamphelus cristatus Rhino Pipefish, Macleay's Crested Pipefish, Ring-back Pipefish [66243]		Species or species habitat may occur within area
Hypselognathus rostratus Knifesnout Pipefish, Knife-snouted Pipefish [66245]		Species or species habitat may occur within area
Kaupus costatus Deepbody Pipefish, Deep-bodied Pipefish [66246]		Species or species habitat may occur within area
Leptoichthys fistularius Brushtail Pipefish [66248]		Species or species habitat may occur within area
Lissocampus caudalis Australian Smooth Pipefish, Smooth Pipefish [66249]		Species or species habitat may occur within area
Lissocampus runa Javelin Pipefish [66251]		Species or species habitat may occur within area
Maroubra perserrata Sawtooth Pipefish [66252]		Species or species habitat may occur within area
Mitotichthys mollisoni Mollison's Pipefish [66260]		Species or species habitat may occur within area
Mitotichthys semistriatus Halfbanded Pipefish [66261]		Species or species habitat may occur within area
Notiocampus ruber Red Pipefish [66265]		Species or species habitat may occur within area
Phycodurus eques Leafy Seadragon [66267]		Species or species habitat may occur within area
Phyllopteryx taeniolatus Common Seadragon, Weedy Seadragon [66268]		Species or species habitat may occur within area
Pugnaso curtirostris Pugnose Pipefish, Pug-nosed Pipefish [66269]		Species or species habitat may occur within area
Solegnathus robustus Robust Pipehorse, Robust Spiny Pipehorse [66274]		Species or species habitat may occur within area
Solegnathus spinosissimus Spiny Pipehorse, Australian Spiny Pipehorse [66275]		Species or species habitat may occur within

Name	Threatened	Type of Presence area
[Stigmatopora argus](#) Spotted Pipefish, Gulf Pipefish, Peacock Pipefish [66276]		Species or species habitat may occur within area
[Stigmatopora nigra](#) Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area
[Stipecampus cristatus](#) Ringback Pipefish, Ring-backed Pipefish [66278]		Species or species habitat may occur within area
[Urocampus carinirostris](#) Hairy Pipefish [66282]		Species or species habitat may occur within area
[Vanacampus margaritifer](#) Mother-of-pearl Pipefish [66283]		Species or species habitat may occur within area
[Vanacampus phillipi](#) Port Phillip Pipefish [66284]		Species or species habitat may occur within area
Mammals		
[Arctocephalus forsteri](#) Long-nosed Fur-seal, New Zealand Fur-seal [20]		Species or species habitat may occur within area
[Arctocephalus pusillus](#) Australian Fur-seal, Australo-African Fur-seal [21]		Species or species habitat may occur within area
Reptiles		
[Caretta caretta](#) Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area
[Chelonia mydas](#) Green Turtle [1765]	Vulnerable	Breeding likely to occur within area
[Dermochelys coriacea](#) Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area

Whales and other Cetaceans [Resource Information]

Name	Status	Type of Presence
Mammals		
[Balaenoptera acutorostrata](#) Minke Whale [33]		Species or species habitat may occur within area
[Balaenoptera borealis](#) Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
[Balaenoptera musculus](#) Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
[Balaenoptera physalus](#) Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
[Caperea marginata](#) Pygmy Right Whale [39]		Foraging, feeding or related behaviour may occur within area
[Delphinus delphis](#) Common Dophin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area

Name	Status	Type of Presence
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat known to occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat likely to occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area

Extra Information

State and Territory Reserves [Resource Information]

Name	State
Great Otway National Park	VIC

Regional Forest Agreements [Resource Information]

Note that all areas with completed RFAs have been included.

Name	State
West Victoria RFA	Victoria

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, 2001.

Name	Status	Type of Presence
Birds		
Acridotheres tristis Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Alauda arvensis Skylark [656]		Species or species habitat likely to occur within area
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Carduelis carduelis European Goldfinch [403]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Carduelis chloris European Greenfinch [404]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Turdus merula Common Blackbird, Eurasian Blackbird [596]		Species or species habitat likely to occur within area
Mammals		
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Capra hircus Goat [2]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Lepus capensis Brown Hare [127]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		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
Asparagus scandens Asparagus Fern, Climbing Asparagus Fern [23255]		Species or species habitat likely to occur within area
Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]		Species or species habitat may occur within

Name	Status	Type of Presence
		area
Chrysanthemoides monilifera subsp. monilifera Boneseed [16905]		Species or species habitat likely to occur within area
Cytisus scoparius Broom, English Broom, Scotch Broom, Common Broom, Scottish Broom, Spanish Broom [5934]		Species or species habitat likely to occur within area
Genista monspessulana Montpellier Broom, Cape Broom, Canary Broom, Common Broom, French Broom, Soft Broom [20126]		Species or species habitat likely to occur within area
Lycium ferocissimum African Boxthorn, Boxthorn [19235]		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
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

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 and National Heritage properties, Wetlands of International and National 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 resolutions.

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 information sources.

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.

Threatened, migratory and marine species distributions have been derived through a variety of methods. Where distributions are well known and if time permits, maps are derived using either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc) together with point locations and described habitat; or environmental modelling (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where very little information is available for species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc). In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More reliable distribution mapping methods are used to update these distributions as time permits.

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.

Coordinates

-38.64143 143.89359

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:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian 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, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-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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19 October 2018

EXISTING MOBILE NETWORK SITE 26481
3765 GREAT OCEAN ROAD
WYE RIVER, VICTORIA, 3234
LANDSLIDE RISK ASSESSMENT

CIVILTEST PTY. LTD.

Ref. MEL2018-0211AB Rev0

Table of Contents

Appendices

EXECUTIVE SUMMARY

This geotechnical report reviews previous investigations at the existing Mobile Network Site 26481, at 3765 Great Ocean Road, Wye River and provides a Geotechnical Assessment on the slope stability of the proposed development site.

As the existing Mobile Network Site is located nearby known areas of land instability and adjacent slopes greater than 14 degrees (25%) in inferred Eumeralla Formation, a Landslide Risk Assessment (LRA) in accordance to 'Schedule 1 to the Erosion Management Overlay (EMO1)' is required.

CMW were provided with a previous geotechnical investigation report for the existing Mobile Network Site, issued by Civiltest (Doc Ref. 1131012) on 23 October 2013. The report denotes the existing soil profile to consist of crushed rock FILL (0.1m thick) and SAND/SILT FILL (0.4m - 0.6m thick) followed by natural silty CLAY (0.5m thick), overlying weathered ROCK. No groundwater was observed.

The Civiltest report states a site classification of **Class M** as defined in AS2870-2011, and anticipates that the seasonal surface movement will not exceed 40mm.

Additionally, a desk study of the site was conducted, followed by an on-site assessment of potential landslide risk and evidence of previous land instability.

The LRA was then undertaken, based on the Australian Geomechanics Society guidelines (Vol 42, 2007). The risk to life has been assessed as '***tolerable***' and the risk to property has been assessed as '***moderate***'. The site is therefore assessed as suitable for the proposed development providing that the recommended engineering, construction and maintenance measures are followed.

1 INTRODUCTION

CMW Geosciences (East Coast) Pty Ltd (CMW) was authorised by Civiltest Pty Ltd (Civiltest) to carry out a Landslide Risk Assessment (LRA) for the existing Mobile Network Site 26481 located at 3765 Great Ocean Road, Wye River, VIC 3234 by way of a Purchase Order (no. 2975) dated 19 September 2018.

The subject site currently contains an existing 10.0 m high concrete monopole with various adjacent equipment exchange shelters, as indicated within **Appendix A** (provided drawings – V106479, Issue 8). It is understood that headframe antennas on the existing monopole are to be upgraded and a new 15.0 m high Rocla monopole SR2-BM15-540 is to be constructed with associated head frame antennas.

It is understood that as the existing Mobile Network Site is located nearby known areas of land instability a Landslide Risk Assessment (LRA) in accordance to 'Schedule 1 to the Erosion Management Overlay (EMO1)' is required as part of the redevelopment works.

The scope of work and associated terms and conditions of our engagement were detailed in our services proposal letter referenced MEL2018-0211AA Rev0, dated 22 August 2018.

2 SCOPE OF WORK

As detailed in our proposal letter, the instructed scope of work to be completed by CMW was defined as follows:

- Hazard analysis to assess how the landslide risk can be reduced, avoided or otherwise controlled through the process of;
  - Desktop study of existing data including previous landslide information, geology and geomorphology and rainfall;
  - Field assessment of the topography, geological setting or, nearby visible landslide evidence;
  - Landslide characterisation of potential occurrence including volume, location and potential travel distance onsite or ingress on the site;
  - Frequency analysis to assess current/future landslide risk management (LRM);
- Consequence analysis to assess elements at risk, temporal spatial probability, consequence to property and consequence to persons;
- Qualitative and quantitative risk estimation;
- Risk assessment and evaluation to form tolerable risk criteria;
- Risk mitigation including mitigation principles and guidance on good engineering practice for hillside design and construction; and
- Provide a Geotechnical Declaration and Verification Development Application.

3 LANDSLIDE SUSCEPTIBILITY

The existing Mobile Network Site 26481 is located within an Erosion Management Overlay (EMO) area under the Colac Otway Planning Scheme, which identifies the area as having sufficiently high risk of potential instability to warrant specific review of landslip risk. It is therefore subject to 'Schedule 1 to the Erosion Management Overlay' (EMO1).

This document states that a written Landslide Risk Assessment (LRA) is required where a site is located on or adjacent to slopes which:

- are steeper than 9 degrees (15.8%) in Gellibrand Marl Narrawaturk Marl and the Yaugher Volcanic group, the unnamed coastal lagoon deposits and lake and swamp deposits; or
- are steeper than 14 degrees (25%) in all other geologies including the spatially extensive Eumeralla Formation (Otway Group); or
- exhibit evidence of possible or past landsliding on or immediately adjacent to the site.

Initial investigations using the Corangamite Soil Health Knowledge Base shows that the site has a landslide risk rating of 'Very High 2' (CLRA 2003), and that nearby areas have recorded evidence of land instability.

Additionally, the compound is located adjacent to slopes greater than 14° in inferred Eumeralla Formation which warrants a Landslide Risk Assessment (LRA), in accordance with 'Schedule 1 to the Erosion Management Overlay' (EMO1). EM01 requires that LRA's be undertaken in accordance with the Australian Geomechanics Society (AGS) Guidelines (Volume 42 No 1 March 2007).

4 PREVIOUS INVESTIGATIONS

Civiltest issued a Geotechnical Report (Ref. 1131012) for the existing Mobile Network Site 26481 on 23 October 2013.

The scope of works included undertaking relevant insitu soil tests, logging of test bores (1 x borehole to 2.2m and 1 x test pit to 1.1m) and recommending suitable bearing capacities and founding depths for the proposed structure.

5 SITE ASSESSMENT METHODS AND FINDINGS

5.1 Desk Study

There is a large amount of data available online relating to landslide risk in the Corangamite region, which covers the subject site, including reports outlining detailed landslide inventories and landslide hazards. These reports and investigations, in addition to the on-site assessment, have been used to assess the landslide risk for the existing mobile network site.

The following sources have been utilised to gather and analyse data for this Landslide Risk Assessment:

- Corangamite Catchment Management Authority - landslide information (landslide inventory and estimated risk) and relevant site data (site slope, geology, rainfall etc.)
- CeRDI Federation University Landslide and Erosion Database;
- Investigation reports and assessments published online and through the CMW internal database;
- Colac Otway database of Landslide Risk Assessments;
- Reference documents noted in the 'Schedule 1 to the Erosion Management Overlay' (EMO1);
- Google Earth – visual aid for desk study; and
- Visualing Victoria's Groundwater online database;

5.1.1 Geology and Geomorphology

Geological Survey of Victoria map sheets indicate Wye River and the surrounding area as being comprised of Early Cretaceous Otway Group, Eumeralla Formation (volcaniclastic sandstone and shales), overlain by fluvial, braided stream deposits.

The Early Cretaceous Otway Group is considered highly prone to landslides, which can occur within the soil and rock materials, regardless of weathering condition (Wood, 1982).

The Otway region is also susceptible to erosion processes driven by uplift of the Otway ranges and through relatively recent sea level fluctuations. Differing climates have also driven landslide and erosion events, with wetter climates increasing land instability (Cooney, 1980; Dahlaus and Miner, 2003).

5.1.2 Sub-surface Conditions

Table 1 summarises the sub-surface materials and conditions encountered during the Civiltest ground investigation, presented in the Civiltest Geotechnical Report 1131012 issued on 23 October 2013.

Table 1: Summary of Soil Stratigraphy from Civiltest Geotechnical Report (1131012)

Inferred Unit/Layer	Description	Depth[1] (below existing surface level), m
Fill	FILL: crushed rock, medium dense, moist	0 – 0.1
Fill	FILL: Silty SAND: medium dense, dark grey, moist	0.1 – 0.5
Natural	Silty CLAY: stiff, brown mottled grey, moist	0.5 – 1.0
Natural	Extremely Weathered ROCK: low strength, brown, moist	1.0 – 1.8
Natural	ROCK: low strength, pale brown, dry	1.8 – 2.2

Groundwater was not observed in the borehole or test pit.

Due to the limited area covered by the geotechnical investigation at this site, a cross-section sketch indicating sub-surface conditions has not been presented. However, on-site observations of rock outcropping (as discussed in Section 5.2.1.3, below) indicates the presence of shallow soil layers across the slopes adjacent to the site.

5.1.2.1 Site Classification

The Civiltest Geotechnical Report (1131012) showed an assessed site classification, CLASS M – with respect to foundation construction (Australia Standard 2870 – 2011 Residential Slabs and Footings).

However, the report (1131012) notes that this classification is technically not relevantto the proposed type of structure as it is not residential and is given as a guide only. It is anticipated that the seasonal surface movement at this site will not exceed 40mm.

5.1.3 Rainfall

The Corangamite region has a recorded average annual rainfall of 773mm. This relatively heavy rainfall has been seen as playing a major role in the activation of large-scale landslides in the

surrounding area, with a heavy rainfall period playing a part in the 1952 Lake Elizabeth landslide (Cooney, 1980) which occurred approximately 15km from site In this case, rainfall figures reached more than double the mean.

Wye River experiences higher rainfall than the regional average, with an average annual rainfall of approximately 1000mm.

It is worth noting that the region's average rainfall has declined significantly in recent times. Between 1998 and 2007 the region's average rainfall was 12% below the 1961 to 1990 average. It has been suggested that due to the change in conditions, that the large-scale ancient landslide events recorded in the area are unlikely to repeat (Cooney,1980).

5.1.4 General Review of Nearby Land Instability

The surrounding Corangamite Catchment Management Authority (CCMA) region is an area prone to many processes of land degradation, including landslides, erosion and other forms of earth and rock movement.

Due to the susceptible nature of the surrounding land, numerous studies and investigations have been completed, mostly focusing on the mapping of previous landslides. Through these efforts, over 10,600 instances of landslide and erosion have been mapped throughout the Corangamite region. In particular, the Otway Ranges has been seen to be a major area of landslide susceptibility, with 3189 landslide features recorded in the Shire of Colac Otway (Miner, A.S., 2007).

It is generally accepted that this region of land instability is a result of dissected drainage profiles due to recent sea regression, along with a relatively high annual rainfall. However, additional factors that may contribute to land instability include presence of previous failure, slope steepness, rock weathering and specific orientation of bedding and joints (Cooney, 1980; Dahlhaus and Miner, 2002).

A map of recorded landslides in the Wye River area are presented in **Appendix B**.

5.2 On-site Assessment

In addition to the study of available landslide data, an on-site observation of the site and nearby areas of interest was undertaken. Areas of interest include recorded landslide locations along the Great Ocean Road and nearby areas with evident geotechnical remediation.

5.2.1 Site Observations

The site is situated 20m off the Great Ocean Road, between the road and the rocky shoreline. The mobile tower and adjoining shelter are located on a surface with a very slight slope towards the ocean (<5°). The compound area itself is clear of vegetation and covered in gravel. There is also an adjacent carpark pavement area between the compound and the Great Ocean Road.

5.2.1.1 Adjacent Slopes

Rocky, vegetated slopes (greater than 14°) lead to the shoreline on the compound's north (shown in Figure 1) and south sides (shown in Figure 2).

Figure 1. Adjacent slope to the north of the compound.

These slopes are approximately 5-10m away from the site compound and exhibit no observable significant signs of slope instability. The slopes are heavily vegetated, with medium to large size shrubs and long grasses covering the surface.

The eastern side slopes more gently towards the shoreline with a pedestrian walkway and beach stairs. This area is also densely vegetated.

Figure 2. Adjacent slope to the south side of the compound.

5.2.1.2 Nearby signs of land instability

To the west of the compound, across the Great Ocean Road, there is a steep uphill slope with areas of exposed rock.

On the exposed rock area, there is evidence of geotechnical remediation in the form of geotechnical netting to prevent rock falls and minor landslips in the shallow soils. The exposed rock area is approximately 20m to the east of the Mobile Network Site compound and extends to the south, following the Great Ocean Road's edge.

Small patches of fresh vegetation (small shrubs and wild flowers) are present on the cliff-face above the Great Ocean Road. Above the cliff-face is a slope (approximately 20°), which is heavily vegetated with grasses and small shrubs for approximately 30m before transitioning to dense vegetation of small to medium sized trees.

5.2.1.3 Rock outcrops

Large sedimentary rock outcrops can be seen downhill of the site compound, along the shoreline. Vegetation is present in patches which may be beneficial to the land stability of the shallow soils.

Additional site photographs, showing the compound, nearby slopes, nearby rock outcrops and geotechnical remediation in the area can be seen in **Appendix C.**

5.3 Interpreted Section

Based on available information and the on-site assessment, geological maps and sections have been generated for consideration of landslides risks on the subject site. These figures are contained in **Appendix D** and makes reference to the potential failure modes detailed in Section 6, below.

6 RISK ASSESSMENT

The following three methods of failure have been identified as conceivable landslide events that have a possibility of effecting the site.

1. **Gradual, down-hill creep of shallow soil layers.**

Creep is a common form of landslide event throughout the Otway region, which involves the slow down-hill movement of shallow soil layers. Indicators of creep are usually noted before any serious failure, due to the extremely slow nature of the landslide event. However, damage can be substantial over longer time periods.

Creep may occur towards the shoreline adjacent to the proposed mobile tower. However, as the compound is situated on a relatively flat area and is at least 5m away from the adjacent slopes, the effects of soil creep on the structure will be minimal.

The dense vegetation present immediately surrounding the lease area (including on the adjacent slopes) may be beneficial to land stability. The growth of grasses and shrubs should be continued in the immediate area.

2. **Small to medium size rotational or translational failure.**

Rotational or translational failures may occur in adverse conditions, such as after prolonged wet periods or earthquakes. Prolonged wet periods have been stated as one of the major causes of landslide events within the region (Cooney, 1980). Our site inspection did not observe any evidence of recent landslides of this nature in the vicinity. However, the location of this site has a high average annual rainfall (over 1000mm annually), and therefore it is conceivable that such a failure may occur.

If shallow foundations are utilised, there may be a possibility of failure beneath the structure. As the Civiltest Geotechnical Report 1131012 indicates a shallow upper clay layer of 1m thickness overlying extremely weathered rock, this mode of failure is assessed as ‘’possible’’.

3. **Large-scale deep-seated failures of the slope.**

Large-scale deep-seated failures have occurred throughout the Otway region, however are generally rare and tend to occur after periods of exceptional rainfall. These failures occur along weaknesses in the underlying rock layers or in poorly drained regions. Cooney (1980) suggests that the large-scale landslides that have happened in the past are unlikely to repeat due to the change in climate conditions.

4. **Rockfall from adjacent exposed rock area (uphill of compound)**

There is evidence of rockfall and consequent geotechnical remediation across exposed rock faces on the Great Ocean Road and in the Wye River area.

An exposed rockface is present due west of the compound site, across the Great Ocean Road. This area has already been remediated with geotechnical netting, to prevent rockfall from spilling onto the road adjacent.

6.1 Estimation of qualitative risk of damage to property

The following risk assessment has been based on measurements and observations of the site, as well as past literature and conclusions from other researchers and authorities. In accordance with the

terminology and procedures from AGS Guidelines (2007), the level of ''risk to property'' for the proposed development site has been assessed as ''*moderate*''.

The risk to property is summarised in Table 2 below, with assessments of the likelihood and consequence of each landslide event included.

Table 2: Risk to Property

Possible Landslide Event	Likelihood	Consequence	Risk to Property
1. Down-slope creep of the upper, shallow layers	Likely	Minor	Moderate
2a. Shallow rotational or translational failure (uphill of compound)	Possible	Minor	Moderate
2b. Shallow rotational or translational failure (beneath compound)	Possible	Medium	Moderate
3. Deep-seated failure (debris/rock slide)	Rare	Catastrophic	Moderate
4. Rockfall from adjacent exposed rock area (uphill of compound)	Likely	Minor	Moderate

*For an explanation of the terms used within the above table, refer to **Appendix E**.

6.2 Estimation of quantitative risk of loss of life

Where there is any risk of loss of life due to landslide, AGS guidelines recommend a quantitative risk of loss of life. This risk must not exceed a value of 10^{-4} per annum for risk to life to be considered '*tolerable*'. This value is calculated from the following:

$$\mathbf{R}_{(LoL)} = \mathbf{P}_{(H)} \times \mathbf{P}_{(S:H)} \times \mathbf{P}_{(T:S)} \times \mathbf{V}_{(D:T)}$$

Where,

$\mathbf{R}_{(LoL)}$ is the risk (annual probability of loss of life (death) of an individual).

$\mathbf{P}_{(H)}$ is the annual probability of the landslide.

$\mathbf{P}_{(S:H)}$ is the probability of spatial impact of the landslide impacting a building (location) taking into account the travel distance and travel direction given the event.

$\mathbf{P}_{(T:S)}$ is the temporal spatial probability (e.g. of the building or location being occupied by the individual) given the spatial impact and allowing for the possibility of evacuation given there is warning of the landslide occurrence.

$\mathbf{V}_{(D:T)}$ is the vulnerability of the individual (probability of loss of life of the individual given the impact).

The risk to life is summarised in Table 3 below, with assessments of the likelihood and consequence of each landslide event included.

Table 3: Risk to Life

Failure Mode / Possible Event	$P_{(H)}$	$P_{(S:H)}$	$P_{(T:S)}$	$V_{(D:T)}$	R
1. Down-slope creep of the upper, shallow layers.	10^{-3}	<0.01	<0.01	0	0
2a. Shallow rotational or translational failure (uphill of development)	10^{-2}	0.001	0.01	0.05	5×10^{-9}
2b. Shallow rotational or translational failure (beneath development)	10^{-2}	0.1	0.01	0.5	5×10^{-6}
3. Deep-seated failure (debris/rock slide)	10^{-5}	1	0.01	1.0	1×10^{-7}
4. Rockfall from adjacent exposed rock area (uphill of compound)*	10^{-2}	0	0.01	0.05	0

*Rock fall areas to the west of the compound are currently contained via geotechnical netting. Risk may increase if the current geotechnical remediation is damaged or removed.

6.3 Explanation of quantitative risk to life calculations

The assessed risk to life (**'R'** value) summarised in Table 3 is achieved by multiplying the first four variables. These calculations refer to a person nearby the proposed monopole development, such as a maintenance worker or a member of the public in the immediate pavement carpark area. These risks refer to the instance in which the person is in the most hazardous position possible (i.e. under the impact region of a fallen monopole or caught between the landslide and the monopole).

The values used for $P_{(H)}$ and $P_{(S:H)}$ are derived from Appendix C of the AGS Guidelines (2007), which can be seen within **Appendix E** of this report.

A $\mathbf{P}_{(S:H)}$ value of 0 (zero) was adopted for the landslide event '4. Rockfall from adjacent exposed rock area (uphill of compound)'. This is because geotechnical netting is currently in place on the adjacent rock face, which would inhibit the landslide event impacting the site. If the geotechnical netting becomes damaged or is removed, this value would need to be reassessed

The site likely to be occupied only for routine maintenance visits months apart and thus an expected occupancy inside the compound is considered very low (<0.01). However, a conservative approach was adopted for the value for $\mathbf{P}_{(T:S)}$, based on an occupancy of 1 person / week visiting for 1.5 hours.

$\mathbf{V}_{(D:T)}$ values were derived from Appendix F in the AGS Guidelines (2007), which can be seen within **Appendix E** of this report. The value of 0 (zero) given to the landslide event '1. Down-slope creep of upper, shallow layers' is given due to the extremely slow nature of failure and that it is usually noticed well before it becomes hazardous.

The value of 1 was given to the other landslide event '3. Deep-seated failure (debris/rock slide)' to depict the worse-case scenario of a fatal landslide (person buried or monopole collapse and impact).

7 SUMMARY OF RISKS AND CONCLUSIONS

The proposed development site has been assessed to have possible risks of loss of life and risks to property due to landslide events. For risk to life, the AGS Guidelines specify '*tolerable risk*' as a risk value below 1 x 10^{-4} / annum (existing slopes or existing developments) and 1 x 10^{-5} / annum (landslide areas or constructed slopes). The risk to life for the proposed development site has been assessed 5 x 10^{-6} and is therefore within the limits of '***tolerable'*** risk. The risk to property has been assessed as '***moderate***'.

Rockfall is likely to occur to the west of the site, however as long as the geotechnical netting is maintained, free from damage and not removed from the rock face, rockfall will be retained and will not impact the existing mobile network site.

It is likely that small-scale landslide events will occur, such as creep, however the dense vegetation on the slope may increase instability. Therefore, it is important to minimise removal of vegetation throughout the site in construction and future maintenance.

It is also possible that vegetation will be removed in the surrounding area for future bush fire protection. As the existing mobile network site is located adjacent to densely vegetated slopes, the impact of vegetation removal for bush fire prevention may be considerable. Trees adjacent to the compound should be permitted to grow as large trees have a binding effect on the upper soil structure and improve slope stability through increased soil suction (Yttrup, P.J., 2017).

Additionally, if the surrounding area is impacted by a bush fire, the sandstone underlying the larger slope area may deteriorate in strength, as has been documented in the nearby Wye River area (Yttrup, P.J., 2017). This may lead to an increase in slope instability of the site. If bush fire does affect the area in the future, this LRA should be revisited.

8 RECOMMENDATIONS

It is not possible to eliminate the risk associated with landslides for this site, however, the risk can be largely reduced through good engineering design, appropriate construction considerations and frequent site maintenance.

Attached in **Appendix F** is the Australian Geoguide LR8 (Construction Practice), which should be followed to ensure good hillside construction practices.

8.1 Site Drainage

Due to the risk of landslide at this site it is important to maintain the appropriate site drainage in both the construction and post-construction periods, to ensure the continued stability of the site. Suitable site drainage can reduce soil saturation and erosion that can trigger landslide events.

Water must not be permitted to pond in footing excavations for any length of time. It is essential that no water be allowed to pond against the monopole and equipment shelter footings once they have been constructed.

The ground surface adjacent to the footings should be graded once the footing construction has been completed to provide at least 1 in 20 over the first 2m. Alternatively, all water run-off should be collected and channelled away from the footings.

8.2 Effluent Disposal

No effluent is expected to be generated at this site.

8.3 Site Vegetation

Slope stability can be greatly improved through the presence of suitable vegetation, which can reduce moisture content and minimise erosion.

If removal of vegetation around the monopole and equipment shelter is necessary for further construction, it is advised to revegetate these areas post-construction to aid in maintaining slope stability.

8.4 Site Excavations

Based on the ground conditions encountered in the borehole, it is anticipated that the excavation of bored piles is likely to be difficult below a depth of approximately 1.0m and consideration to the drilling techniques used would be required. Excavation for shallow footings, which we understand are preferred, into the fill or natural clay would be relatively easy with conventional excavation equipment. Deeper excavation or surface preparation of less than extremely weathered rock may require the use of mechanical breaking.

8.5 Batter Stability

Excavation exceeding 0.75m depth in soil must be battered back at slopes no greater than 1V (Vertical) : 1H (Horizontal). Unsupported excavations deeper than 1m should be assessed on site by a Geotechnical Engineer for slope instability risk. Use of heavy machinery adjacent to the open excavations must be avoided.

8.6 Design and Construction Supervision

CMW has extensive experience in the detailed design of pile foundations, pad and shallow footings and would be pleased to undertake this work to optimise the foundation solutions for the project. If required, CMW Geosciences can assist in the detailed design or the review of designs prepared by other parties.

It is recommended that an experienced Geotechnical Engineer be present during construction to verify the validity of the assumptions made by the designer as to the subsurface conditions encountered.

9 CONCLUSION

This site location is assessed as suitable for the proposed development, providing that the recommendations measures for engineering, construction and maintenance are followed. This is based on the landslide risk assessment presented above, and the assessed '***tolerable***' risk to loss of life and '***moderate***' risk to property as defined in the AGS Guidelines.

10 CLOSURE

The findings contained within this report are the result of limited discrete investigations conducted in accordance with normal practices and standards. To the best of our knowledge, they represent a reasonable interpretation of the general condition of the site. Under no circumstances, can it be considered that these findings represent the actual state of the ground conditions away from our investigation locations.

If the ground conditions encountered during construction are significantly different from those described in this report and on which the conclusions and recommendations were based, then we must be notified immediately. Foreseeable changes in ground condition may include flooding and erosion, planting or removal of vegetation and other nearby construction.

This report has been prepared for use by Civiltest in relation to the existing Mobile Network Site 26481, in accordance with generally accepted consulting practice. No other warranty, expressed or implied, is made as to the professional advice included in this report. Use of this report by parties other than Civiltest is at their risk as it may not contain sufficient information for any other purposes.

For and on behalf of
CMW Geosciences (East Coast)

Tyson Gillies
Geotechnical Engineer

David Kolber
Associate Geotechnical Engineer

Distribution: 1 copy to Civiltest (electronic)
Original held by CMW Geosciences (East Coast)

11 REFERENCES

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Cooney, A.M., 1980. 'Otway Range Landslide susceptibility study - first progress report', *Geological Survey of Victoria*, Unpublished Report 1980/76.

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Miner A.S., 2007. 'Erosion and Landslide Inventory for the CCMA Region', *The Department of Primary Industries*, Report No: 357.1/01/07.

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Appendix A
Provided Drawings

DRAWING/DOCUMENT DESCRIPTION	DRAWING NUMBER	SHEET NO.	ISSUE NO.	ISSUE DATE	DRAWING STATUS				
					CANCELLED	PRELIMINARY	FOR CONSTRUCTION	AS BUILT	REFERENCE ONLY
SITE SPECIFIC NOTES SHEET 1 OF 2	V106479	S0	2	25/04/17			✓		
SITE SPECIFIC NOTES SHEET 2 OF 2	V106479	S0-1	1	25/04/17			✓		
SITE LAYOUT AND ACCESS	V106479	S1	5	25/04/17			✓		
ANTENNA LAYOUT	V106479	S1-1	2	25/04/17			✓		
SITE LAYOUT	V106479	S2	2	31/03/09	✓				
SOUTH ELEVATION	V106479	S3	7	25/04/17			✓		
ANTENNA CONFIGURATION TABLE	V106479	S3-1	2	25/04/17			✓		
SITE EARTHING PLAN	V106479	G4	2	18/07/14				✓	
SITE EARTHING DETAILS AND CONNECTIONS	V106479	G4-1	2	18/07/14				✓	
EQUIPMENT LAYOUT - SMR	V106479	E1	3	25/04/17			✓		
AC POWER CONNECTION	V106479	E2	1	13/02/18			✓		
45RU PATHFINDER RACK LAYOUT	V106479	E5	3	25/04/17			✓		
SMR RACK LAYOUT	V106479	E5-1	1	17/07/14				✓	
SLAB FOOTING DETAILS - EQUIPMENT SHELTER	V106479	H1	2	18/07/14				✓	
STRUCTURE FOOTING DETAILS	V106479	T2	1	25/04/17			✓		
10M 12KN CONCRETE POLE + 3M EXT DIPOLE & OMNI MOUNTS	V106479	T3	1	15/11/13				✓	
10M 12KN CONCRETE POLE + 3M EXT DIPOLE & OMNI MOUNTS	V106479	T3-1	1	15/11/13				✓	
10M 12KN CONCRETE POLE + 3M EXT DIPOLE & OMNI MOUNTS	V106479	T3-2	1	15/11/13				✓	
10M 12KN CONCRETE POLE + 3M EXT DIPOLE & OMNI MOUNTS	V106479	T3-3	1	15/11/13				✓	
RRU POLE MOUNT DETAILS	V106479	T3-4	1	25/04/17			✓		
CFA DIPOLE ANTENNA MOUNT DETAILS	V106479	T3-5	1	25/04/17			✓		
CABLE LADDER SUPPORT DETAILS	V106479	T5	2	18/07/14					✓
CABLE LADDER ATTACHMENT TO POLE - DETAILS	V106479	T5-1	2	18/07/14					✓
GEOTECHNICAL REPORT PROJECT NO. VT13241.01	V106479	Z1-1	1	15/11/13				✓	
AS BUILT CONSTRUCTION CERTIFICATION PROJECT NO. VT13241.01	V106479	Z1-3	1	23/01/14				✓	
STRUCTURAL DESIGN CERTIFICATION - DESIGN ONLY PROJECT NO. VT13241.01	V106479	Z1-4	1	15/11/13				✓	
GEOTECHNICAL REPORT NO. 18103-1 PROJECT NO. 6180786	V106479	Z1-5	1	20/01/14				✓	
STRUCTURAL CERTIFICATION & REPORT DESIGN ONLY PROJECT 6180786	V106479	Z1-6	1	21/03/14				✓	
AS BUILT STRUCTURAL & EME COMPLIANCE CERTIFICATION PROJECT NO. VT13241.01	V106479	Z1-7	1	11/06/14				✓	
STRUCTURAL AS BUILT CERTIFICATION PROJECT NO. 6180786	V106479	Z1-8	1	17/07/14				✓	
STRUCTURAL & EME AS BUILT CERTIFICATION PROJECT 6180786	V106479	Z1-9	1	17/07/14				✓	
STRUCTURAL DESIGN CERTIFICATION (F01) PROJECT NO. VT17644.01	V106479	Z1-10	1	20/02/18			✓		
EARTHING TEST REPORT PROJECT 6180786	V106479	Z5	1	17/07/14				✓	

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WYE RIVER

Node Manager Address ID 26481

ADDRESS: 3765 GREAT OCEAN RD
WYE RIVER
VIC 3234

visionstream

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
VT17644.01	RH	MU	FOR CONSTRUCTION - 30060258W0216 VPL - LTE700	AS	JH	25.04.17	8

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MOBILE NETWORK SITE 26481
WYE RIVER
DRAWING INDEX AND DOCUMENT CONTROL SHEET 1
3765 GREAT OCEAN RD, WYE RIVER, VIC 3234

DWG NO. V106479 | SHT NO. DC .

Cad file: V106479_FC.dwg | A3

DRAWING/DOCUMENT DESCRIPTION	DRAWING NUMBER	SHEET NO.	ISSUE NO.	ISSUE DATE	DRAWING STATUS				
					CANCELLED	PRELIMINARY	FOR CONSTRUCTION	AS BUILT	REFERENCE ONLY
ELECTRICAL COMPLIANCE AS BUILT CERTIFICATION PROJECT 6180786	V106479	Z7	1	17/07/14				✓	
EQUIPMENT LAYOUT	VX3926/11	2	18	19/03/15					✓
STANDARD REFERENCE DRAWINGS									
STANDARD CONSTRUCTION NOTES	017866P05	1	2	19/11/10			✓		
CABLE LADDER SUPPORT DETAILS	017866P53	1	2	21/09/12			✓		
PARABOLIC ANTENNA MOUNTING DETAILS FOR CONCRETE MONOPOLE	017866P88	1	3	23/01/14			✓		
DUAL PANEL ANTENNA MOUNTING DETAILS FOR MONOPOLE	017866P94	1	2	19/08/13			✓		
TRIANGULAR HEADRAME TO SUIT ROCLA CONCRETE POLE TOPS ASSEMBY & PARTS LIST	017866P105	11	3	30/04/13			✓		
TRIANGULAR HEADRAME TO SUIT ROCLA CONCRETE POLE TOPS HEADFRAME SUBASSEMBLIES 12 A & 12 B	017866P105	12	1	28/05/10			✓		
TRIANGULAR HEADRAME TO SUIT ROCLA CONCRETE POLE TOPS FABRICATION DETAILS	017866P105	13	1	28/05/10			✓		
TRIANGULAR HEADRAME TO SUIT ROCLA CONCRETE POLE TOPS FABRICATION DETAILS	017866P105	14	3	28/05/10			✓		
DC POWER LINE DIAGRAM MK3.2 SHELTER SP22-HC POWER SYSTEM	017866P124	5	1	30/07/14			✓		
MOBILE NETWORK SITE STANDARD DRAWING 45 RU PATHFINDER RACK LAYOUT LTE700 - OPTION 1	017866P131	11	3	16/10/14			✓		
FEEDER EARTHING DETAILS	017866P201	11	2	13/05/15			✓		
RRU FEEDER EARTHING DETAILS	017886P201	12	3	13/09/13			✓		
ROCLA STANDARD RANGE BASE MOUNTED SR2 COMMUNICATION POLES GENERAL ASSEMBLY	P93670	1	REV C	23/12/15			✓		
SR2 HOLD-DOWN BOLT ASSEMBLY FOR COMMUNICATION POLES	P94662	1	A	29/06/16			✓		
SR2 HOLD-DOWN BOLT ASSEMBLY FOR COMMUNICATION POLES	P94662	2	A	29/06/16			✓		
RFS SCX3-ASIA2	201503006	1/1	B	06/05/15			✓		

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WYE RIVER

Node Manager Address ID 26481

ADDRESS: 3765 GREAT OCEAN RD
WYE RIVER
VIC 3234

UNAPPROVED DRAWING

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ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
VT17644.01	RH	MU	FOR CONSTRUCTION - 30060258W0216 VPL - LTE700	AS	JH	25.04.17	1

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MOBILE NETWORK SITE 26481
WYE RIVER
DRAWING INDEX AND DOCUMENT CONTROL SHEET 2
3765 GREAT OCEAN RD, WYE RIVER, VIC 3234

DWG NO. V106479 | SHT NO. DC-1 .

Cad file: V106479_FC.dwg A3

SITE SPECIFIC NOTES

EQUIPMENT ROOM - SMR SHELTER

TYPE: EXISTING SMR EQUIPMENT SHELTER
SIZE (mm): 3000 (W) x 2500 (L)
SUPPORT TYPE: CONCRETE SLAB
FTDB REFERENCE FTDB00074044

STRUCTURE

TYPE: PROPOSED TELSTRA ROCLA MONOPOLE
MODEL NO.: SR2-BM15-540
COLOUR: GALVANISED FINISH
REFERENCE DRAWING: P 93670 SHEET 1 OF 2, REV C

2

HEADFRAME

TYPE: PROPOSED STANDARD TRIANGULAR HEADFRAME
MODEL NO.: TO SUIT POLE TYPE SR2-BM15-540
COLOUR: GALVANISED FINISH
REFERENCE DRAWING: 017866P105 SHEETS 11-14, ISSUE 3

2

ANTENNA ACCESS

TELSTRA: ELEVATED WORK PLATFORM

ANTENNA MOUNTS

TYPE: PROPOSED STEEL PIPES
COLOUR: GALVANISED FINISH
REFERENCE DRAWING: 017866P105, SHEETS 11-14, ISSUE 3 & DWG. 017866P88 SHEET 1, ISSUE 3 & T3-4 & T3-5

2

POWER SUPPLY

PROPOSED 50A / 3 PHASE AC POWER SUPPLY METERED SEPARATELY AS DIRECTED BY LOCAL SUPPLY AUTHORITY DIAL 1100 BEFORE YOU DIG. REFER TO SHEETS S1 & E2 FOR DETAILS.

2

PROPERTY SIGNAGE

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

2

RET DESIGN

REFER TO RF SCHEMATIC DIAGRAM ON SDB

SITE ACCESS

SITE IS ADJACENT TO THE GREAT OCEAN RD
24 HOUR ACCESS
REFER TO SHEET S1

SITE SIGNAGE

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

WORKPLACE HEALTH & SAFETY

ASBESTOS CONTAINING MATERIALS WERE IDENTIFIED DURING INSPECTION & DESIGN STAGES, SUBSEQUENTLY CONFIRMED BY REVIEW OF THE TELSTRA REGISTER OF ASBESTOS MATERIALS. ALL NECESSARY CONTROLS WILL NEED TO BE IN PLACE DURING THE CONSTRUCTION PHASE TO CONTROL THIS IDENTIFIED HAZARD.

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 INDICATIVELY ONLY. LOCATION OF ALL RELEVANT EXISTING SERVICES SHALL BE IDENTIFIED AND CONFIRMED PRIOR TO COMMENCING WORK. THE CONTRACTOR TO LIAISE WITH RELEVANT AUTHORITIES FOR DIRECTIONS AND PERMITS REQUIRED.
   DIAL BEFORE YOU DIG 1100.
4. FEEDER CONNECTION DETAILS, ELECTRICAL AND MECHANICAL TILTS ARE TO BE OBTAINED FROM CANRAD REPORTS.
5. CONSTRUCTORS ARE TO BE AWARE OF TELSTRA DOCUMENT 007338-C8-11 AND IN PARTICULAR CLAUSE 7.3 & 10.3 WHICH DESCRIBES REQUIREMENTS PERSONNEL MUST UNDERTAKE IN RESPECT TO ASBESTOS MANAGEMENT AT TELSTRA FACILITIES.

SITE REFERENCE DETAILS

OCCUPIER	SITE NAME	SITE CODE
TELSTRA	WYE RIVER EXCHANGE	26481
VODAFONE	WYE RIVER	1164
VODAFONE HUTCHINSON AUSTRALIA	WYE RIVER	UM1164
RFNSA SITE NUMBER - 3221018 STRUCTURE OWNER - TELSTRA		

SERVICES LEGEND

—T—T—T—	OPTICAL FIBRE ABOVE GROUND
—T—T—T—	OPTICAL FIBRE BELOW GROUND
—E—E—	ABOVE GROUND ELECTRICAL SUPPLY
—E—E—	BELOW GROUND ELECTRICAL SUPPLY
—G—G—	GAS SUPPLY BELOW GROUND
—HV—HV—HV—	HIGH VOLTAGE ELECTRICAL SUPPLY
—W—W—W—W—W—	WATER SUPPLY ABOVE GROUND
—W—W—	WATER SUPPLY BELOW GROUND
—S—S—	SEWER LINE
—SW—	STORM WATER
—FE—FE—	ABOVE GROUND FEEDER CABLES
—FE—FE—	BELOW GROUND FEEDER CABLES

1 / A1 — EXISTING TELSTRA ANTENNA SECTOR

1 / A1 — PROPOSED TELSTRA ANTENNA SECTOR

UNAPPROVED DRAWING

2 FOR CONSTRUCTION

TO BE READ IN CONJUNCTION WITH SHEETS S0-1, S1, S1-1, S3 & S3-1.

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
VT17644.01	RH	MU	FOR CONSTRUCTION - 30060258W0216 VPL - LTE700	AS	JH	25.04.17	2

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

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MOBILE NETWORK SITE 26481
WYE RIVER
SITE SPECIFIC NOTES SHEET 1 OF 2
3765 GREAT OCEAN RD, WYE RIVER, VIC 3234

DWG NO. V106479 | SHT NO. S0 .

Cad file: V106479_FC.dwg | A3

EQUIPMENT NOTES - PROJECT NO. WA08778.01

ITEM	EQUIPMENT	EQUIPMENT DETAILS	EXISTING	PROPOSED	TOTAL	REFERENCE DWG
1	FEEDERS (LTE700 / WCDMA850)	LCF12-50J	0	12	12	SHEET S1 & S3
2	ELTEK 12.3 SPD BOX	WALL MOUNTED 350 (w) x 150 (d) x 350 (h)	0	1	1	SHEET S1, S3 & E1
3	ERICSSON RRUS32 (B3) 4 x 40W	291 (w) x 162 (d) x 586 (h)	0	2	2	SHEET S1 & S3
4	RRU INTERFACE JUNCTION BOX (LTE1800) WARREN BROWN TC4039 MOBILE 02	300 (w) x 110 (d) x 230 (h)	0	2	2	SHEET S1-1 & S3
5	ERICSSON (INDOOR) UNIT RBS6202 (LTE700)	500 (w) x 525 (d) x 568mm (h) SUPPORT TYPE 45RU PATHFINDER RACK	0	2	2	SHEET E1
6	TRIASX TOWER MOUNTED AMPLIFIER (WCDMA850)	DDLNA - TMA0004F1V1	4	0	4	SHEET S1-1 & S3
7	45RU PATHFINDER RACK (WCDMA850 & LTE700 / LTE1800)	530 (w) x 2200mm (h)	0	2	2	017866P131 SHEET 11
8	KAELUS DUAL DUPLEX TWIN TMA	TWIN TMA2036F00V1-1	6	-6	0	-
9	KAELUS IM FILTERS (WCDMA850)	KAELUS DDF0035F1V1	0	3	3	SHEET E1 & E5
10	KAELUS TOWER MOUNTED AMPLIFIER (LTE700)	TWIN TMA2094 F01V2-1	0	3	3	SHEET E5
11	KAELUS TOWER MOUNTED AMPLIFIER (WCDMA850)	TWIN TMA2105F01V1-1	0	1	1	SHEET E5
12	KAELUS COMBINER	TWIN DBC 0086F1V2-1	0	4	4	-
13	KAELUS IM FILTER RACK (WCDMA850)	-	1	-1	0	-
14	ELTEK SP22-HC PSU	-	0	1	1	SHEET E1
15	RECTIFIERS	FLAT PACK 2 HF 2.0kW	0	4	4	-
16	BATTERIES	190Ah	0	8	8	-
17	DC-DC CONVERTER	FLAT PACK 2 HF 1.3kW	0	3	3	-
18	HYBRID CABLE 7/8" (LTE1800)	WARREN BROWN HYBRID CABLE 7/8"	0	2	2	-
19	RADIO UNIT	RUS-02 (B28)	0	4	4	SHEET E5
20	RADIO UNIT	RUS-02 (B5)	0	3	3	SHEET E5
21	ERICSSON SITE INTEGRATION UNIT (SIU)	482 (w) x 350 (d) x 45mm (h)	0	2	2	SHEET E5
22	DUW-31 (WCDMA850)	-	0	1	1	SHEET E5
23	BB5216	-	0	1	1	SHEET E5
24	R503#1	-	0	1	1	SHEET E5
25	GPS ANTENNA (LTE700)	ERICSSON 12/1551-LZA7016009 UENJ	0	1	1	SHEETS S1, S3 & E1
26	GPS RECEIVER SYSTEM	-	0	1	1	SHEET E5

UNAPPROVED DRAWING

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

SITE DESIGN BRIEF VT17644.01 ISSUE 01 DATED 02/12/2016

FOR CONSTRUCTION

TO BE READ IN CONJUNCTION WITH SHEETS S0, S1, S1-1, S3 & S3-1.

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
WA08778.01	RH	MU	FOR CONSTRUCTION - 30053775W0070 VPL - LTE700 / WCDMA850	AS	JH	25.04.17	1

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MOBILE NETWORK SITE 26481
WYE RIVER
SITE SPECIFIC NOTES SHEET 2 OF 2
3765 GREAT OCEAN RD, WYE RIVER, VIC 3234

DWG NO. V106479 SHT NO. S0-1

Cad file: V106479_FC.dwg A3V

RFNSA SITE No. 3221018

TN

EXISTING SIGN SECURED TO COMPOUND GATE USING STAINLESS STEEL STRAPS #13

EXISTING TELSTRA U/G POWER CABLE ROUTE (APPROX. 20.0m) TO CFA SHELTER

EXISTING HANDRAIL

EXISTING TELSTRA COMPOUND SECURITY FENCE WITH DOUBLE ACCESS GATES.

EXISTING TELSTRA EXCHANGE ROOM.

EXISTING O/H SERVICE MAINS TO BE UPGRADED FROM SINGLE PHASE TO 3 PHASE. REFER TO SHEET E2 FOR DETAILS.

EXISTING TELSTRA FEEDERS TO BE REMOVED AND ALL PROPOSED FEEDER CABLES TO BE INSTALLED TO PROPOSED MONOPOLE.

EXISTING TELSTRA P2 EARTH PIT (TYP.)

EXISTING TELSTRA 10.0m HIGH CONCRETE MONOPOLE WITH 2.5m STEEL EXTENSION TO BE REMOVED. REFER TO NOTES 6 & 7.

EXISTING CFA ANTENNA FEEDERS (2 OFF) TO BE REPLACED WITH LONGER FEEDERS AND RUN IN THE UPGRADED CABLE LADDER.

EXISTING MONOPOLE AND HEADFRAME TO BE REMOVED AFTER COMPLETION OF PROPOSED MONOPOLE / HEADFRAME INSTALLATION.

EXISTING SMR SHELTER TO ACCOMMODATE PROPOSED TELSTRA EQUIPMENT. REFER TO SHEET E1 FOR LAYOUT DETAILS.

PROPOSED TELSTRA LTE700 GPS ANTENNA (1 OFF) TO BE INSTALLED ON PROPOSED STANDARD MOUNT.

EXISTING TELSTRA P6 FIBRE PIT.

PROPOSED TELSTRA OUTDOOR 12.3 SPD BOX (1 OFF) BELOW FEEDER WINDOW.

EXISTING PIT.

EXISTING 300W CABLE TRAY TO BE RE-ROUTED AND RE-INSTATED TO PROPOSED MONOPOLE. REFER TO SHEETS T5 & T5-1 FOR DETAILS.

PROPOSED SIGNS TO BE UV STABLE STICKERS AND FIXED TO REAR OF ALL PROPOSED TELSTRA PANEL ANTENNAS (5 OFF) # 2

EXISTING O/H POWER ROUTE.

EXISTING POWER POLE

PROPOSED SIGN TO BE SECURED 1.5m AGL TO MONOPOLE USING STAINLESS STEEL STRAPS # 6

EXISTING 600W SMR GLAND WINDOW AND FEB TO ACCOMMODATE:
-PROPOSED LTE700 LCF12-50J FEEDERS (6 OFF).
-PROPOSED LTE700 / WCDMA850 LCF12-50J FEEDERS (2 OFF).
-PROPOSED WCDMA850 LCF12-50J FEEDERS (4 OFF).

PROPOSED TELSTRA POLE SQURE FOOTING (3.5m x 3.5m). REFER TO SHEET T2 FOR DETAILS.

PROPOSED TELSTRA PANEL ANTENNAS, TMA'S & RRUS ON PROPOSED HEADFRAME. REFER S1-1 FOR DETAILS.

EXISTING TOILET & CORRUGATED WALL TO BE RELOCATED AS REQUIRED.

EXISTING 300W CABLE LADDER TO BE RE-ROUTED TO PROPOSED MONOPOLE. REFER SHEETS T5 & T5-1 FOR DETAILS.

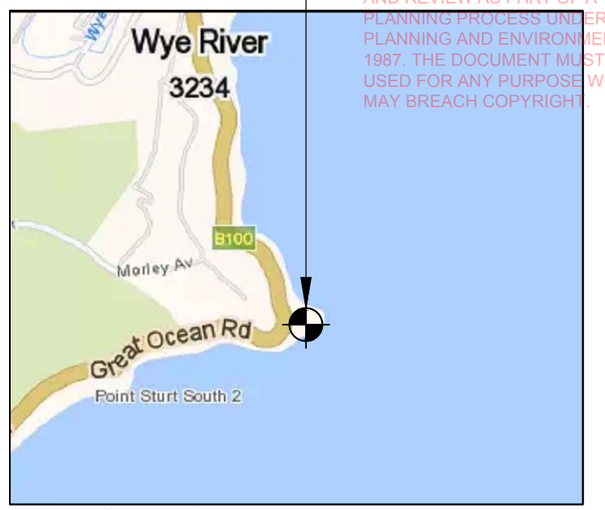
PROPOSED TELSTRA 15.0m HIGH ROCLA MONOPOLE WITH PROPOSED HEADFRAME.

3000

3000

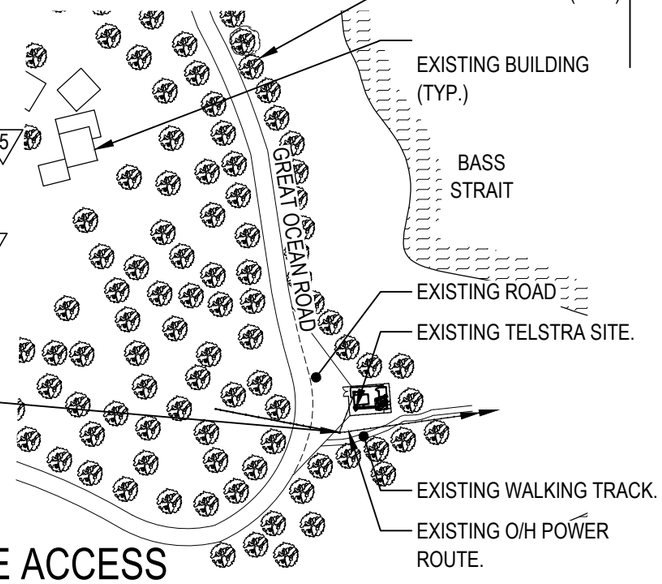
1250

1250



LOCALITY PLAN

NOT TO SCALE



NOTES :

1. ALL FEEDERS ACCESS POINTS ON THE STRUCTURE MUST BE BIRD PROOFED AS PER EXTERNAL PLANT POLICY 003615.
2. FOR EME SIGNS NOTED AS #X REFER TO 005486 DOCUMENTS FOR DETAILS.
3. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
4. HORIZONTAL CABLE LADDER IS RE-USED FOR THIS INSTALLATION. LOWER POSITION OF THE CABLE LADDER AS REQUIRED ALLOWS ADDITIONAL ROOM IN THE SHELTER GLAND WINDOW. FEEDERS ARE STACK-MOUNTED IN CABLE LADDER IF REQUIRED. PROVIDED RAISED LID IF REQUIRED.
5. STRUCTURES SITUATED IN CORROSIVE ENVIRONMENTS ARE PAINTED IN ACCORDANCE WITH 016159 11.1 - CANRAD CORROSION REGION TYPE IS E (VERY HIGH).
6. REMOVE AND REINSTATE GARDEN AND COMPOUND FENCING.
7. CUT OFF THE TOP AND BUTT SECTION OF THE POLE AND LEVEL FOUNDATION WITH THE GROUND, MAY REQUIRED TO BACKFILL BUTT SECTION WITH CONCRETE OR GRAVEL.
8. EXISTING GSM900 / WCDMA850 / LTE1800 EQUIPMENT IN EXCHANGE BUILDING TO BE RECOVERED, EXISTING WCDMA850 RUS TO BE RE-USED.

PROPERTY DESCRIPTION

ALLOTMENT: 2C
PARISH: WONGARRA
STATUS: CROWN LAND

SITE STRUCTURE CO-ORDINATES (GDA94) GPS READING ACCURACY: ±10m CENTRE OF MONOPOLE	
LATITUDE	-38.64150° (GDA94)
LONGITUDE	143.89350° (GDA94)

SITE LAYOUT

SCALE 1:100

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

COMPLIANCE BOX

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

SITE ACCESS

SCALE 1:2000

20m 0 20m 40m 60m 80m 100m SCALE 1:2000

5 FOR CONSTRUCTION

UNAPPROVED DRAWING

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TO BE READ IN CONJUNCTION WITH SHEETS S0, S0-1, S1-1, S3 & S3-1.

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
	KK	KK	DBOR TYPE 1 PROJECT CP952232WYED	KK	KK	08.12.08	1
VT13241.01	KS	DMcK	FOR CONSTRUCTION - LTE1800 - 72001516W001SSMC	DM	LC	14.11.13	2
6180786	MB	NR	FOR CONSTRUCTION - CFA	MB	SA	18.07.14	3
6180786	MB	NR	CFA AS BUILT 401751WO01NC	MB	SA	18.07.14	4
VT17644.01	RH	MU	FOR CONSTRUCTION - 30060258W0216 VPL - LTE700	AS	JH	25.04.17	5

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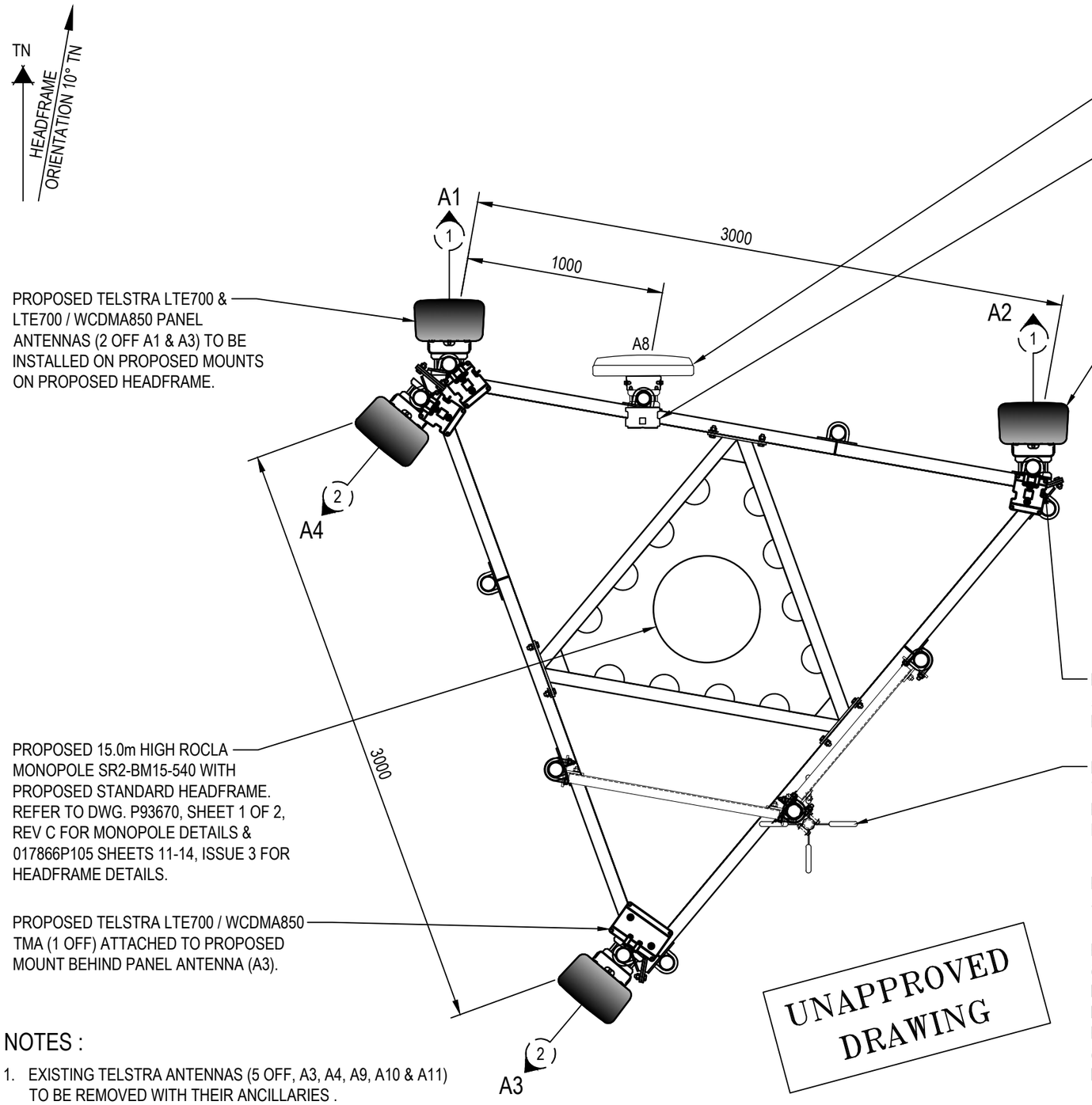
MOBILE NETWORK SITE 26481
WYE RIVER
SITE LAYOUT AND ACCESS
3765 GREAT OCEAN RD, WYE RIVER, VIC 3234

DWG NO. V106479 SHT NO. S1

Cad file: V106479_FC.dwg A3



PROPOSED TELSTRA LTE700 & LTE700 / WCDMA850 PANEL ANTENNAS (2 OFF A1 & A3) TO BE INSTALLED ON PROPOSED MOUNTS ON PROPOSED HEADFRAME.

PROPOSED 15.0m HIGH ROCLA MONOPOLE SR2-BM15-540 WITH PROPOSED STANDARD HEADFRAME. REFER TO DWG. P93670, SHEET 1 OF 2, REV C FOR MONOPOLE DETAILS & 017866P105 SHEETS 11-14, ISSUE 3 FOR HEADFRAME DETAILS.

PROPOSED TELSTRA LTE700 / WCDMA850 TMA (1 OFF) ATTACHED TO PROPOSED MOUNT BEHIND PANEL ANTENNA (A3).

EXISTING TELSTRA WCDMA850 PANEL ANTENNA (1 OFF A8) TO BE RELOCATED & INSTALLED ON PROPOSED MOUNT ON PROPOSED HEADFRAME.

EXISTING TELSTRA WCDMA850 TMA'S (4 OFF) TO BE RELOCATED & INSTALLED BEHIND PANEL ANTENNA (A8) ON PROPOSED MOUNT.

PROPOSED TELSTRA LTE700 / LTE1800 PANEL ANTENNAS (2 OFF A2 & A4) TO BE INSTALLED ON PROPOSED MOUNTS ON PROPOSED HEADFRAME.

PROPOSED TELSTRA LTE700 TMA'S (3 OFF) ATTACHED TO PROPOSED MOUNTS BEHIND PANEL ANTENNAS (A1, A2 & A4).

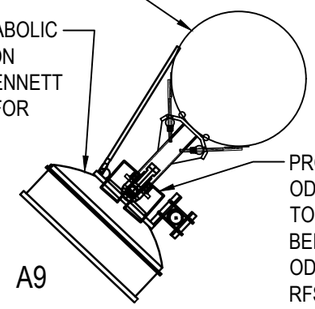
EXISTING CFA DIPOLE ANTENNAS (2 OFF A6a & A6b) TO BE RELOCATED ON PROPOSED MOUNT ON PROPOSED HEADFRAME. REFER TO SHEET T3-5 FOR CFA MOUNTING DETAILS.

PROPOSED 15.0m HIGH ROCLA MONOPOLE SR2-BM15-540.

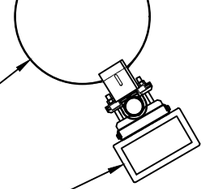
PROPOSED TELSTRA LTE1800 RRUS 32 (B3) (2 OFF) TO BE INSTALLED ON PROPOSED MOUNTS. REFER TO SHEET T3-4 FOR RRU MOUNTING DETAILS.
PROPOSED RRU INTERFACE BOXES (2 OFF) TO BE INSTALLED ON PROPOSED MOUNTS BELOW.

PROPOSED 15.0m HIGH ROCLA MONOPOLE SR2-BM15-540.

PROPOSED TELSTRA Ø600mm PARABOLIC DISH (1 OFF A9) TO BE INSTALLED ON PROPOSED MOUNT FOR LINK TO KENNETT RIVER. REFER TO DRG. 017866P88 FOR DISH MOUNT DETAILS.
(BY OTHERS)



PROPOSED TELSTRA ODU'S (2 OFF) ATTACHED TO PROPOSED MOUNT BEHIND DISH (A9). FOR ODU CLEARANCE REFER RFS DWG. 201503006 SHEET 1/1 FOR DETAILS. REFER TO 017866P88 FOR DISH MOUNTING DETAILS.



UNAPPROVED DRAWING

NOTES :

1. EXISTING TELSTRA ANTENNAS (5 OFF, A3, A4, A9, A10 & A11) TO BE REMOVED WITH THEIR ANCILLARIES .

ANTENNA DISH LAYOUT AT EL 12.5m

SCALE 1:25

250 0 250 500 750 1000 1250 SCALE 1:25

RRU LAYOUT AT EL 13.5m

SCALE 1:25

250 0 250 500 750 1000 1250 SCALE 1:25

ANTENNA LAYOUT AT EL 15.0m

SCALE 1:25

250 0 250 500 750 1000 1250 SCALE 1:25

FOR CONSTRUCTION

TO BE READ IN CONJUNCTION WITH SHEETS S0, S0-1, S1, S3 & S3-1.

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
VT13241.01	KS	DMcK	FOR CONSTRUCTION - LTE1800 - 72001516W001SSMC	DM	LC	14.11.13	1
VT17644.01	RH	MU	FOR CONSTRUCTION - 30060258W0216 VPL - LTE700	AS	JH	25.04.17	2

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

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Telstra

MOBILE NETWORK SITE 26481
WYE RIVER
ANTENNA LAYOUT
3765 GREAT OCEAN RD, WYE RIVER, VIC 3234

DWG NO. V106479 | SHT NO. S1-1

Cad file: V106479_FC.dwg A3

PROPOSED SIGNS TO BE UV STABLE STICKERS AND FIXED TO REAR OF ALL PROPOSED TELSTRA PANEL ANTENNAS (5 OFF) # 2

PROPOSED TELSTRA LTE700 / WCDMA850 TMA (1 OFF) ATTACHED TO PROPOSED MOUNT BEHIND PANEL ANTENNA (A3).

PROPOSED TELSTRA LTE1800 RRUS-32 (B3) (2 OFF) AND RRU INTERFACE BOXES (2 OFF) TO BE INSTALLED ON PROPOSED MOUNTS. REFER TO SHEET S1-1 FOR DETAILS.

PROPOSED TELSTRA Ø600mm PARABOLIC DISH (1 OFF A9) TO BE INSTALLED ON PROPOSED MOUNT FOR LINK TO KENNETT RIVER. REFER TO DRG. 017866P88 FOR DISH MOUNT DETAILS. (BY OTHERS)

PROPOSED TELSTRA ODU'S (2 OFF) ATTACHED TO PROPOSED MOUNT BEHIND DISH (A9). REFER TO SHEET S1-1 FOR DETAILS.

PROPOSED TELSTRA CABLE FEEDERS (12 OFF) & 7/8" HYBRID CABLES (2 OFF) TO BE RUN INTERNALLY OF MONOPOLE.

EXISTING TELSTRA ANTENNAS (5 OFF, A3, A4, A9, A10 & A11) TO BE REMOVED WITH THEIR ANCILLARIES .

EXISTING TELSTRA FEEDERS (22 OFF) TO BE REMOVED AND ALL PROPOSED LCF12-50J (12 OFF) FEEDER CABLES TO BE INSTALLED TO PROPOSED MONOPOLE

EXISTING TELSTRA 10.0m HIGH CONCRETE MONOPOLE WITH 2.5m STEEL EXTENSION TO BE REMOVED. REFER TO NOTES 6 & 7

EXISTING O/H POWER ROUTE.

EXISTING POWER POLE

EXISTING O/H SERVICE MAINS TO BE UPGRADED FROM SINGLE PHASE TO 3 PHASE. REFER TO SHEET E2 FOR DETAILS.

EXISTING TELSTRA EXCHANGE ROOM.

EXISTING SIGN SECURED TO COMPOUND GATE USING STAINLESS STEEL STRAPS #13

EXISTING CFA DIPOLE ANTENNAS (2 OFF, A6a & A6b) TO BE ELEVATED & RELOCATED ON PROPOSED MOUNT ON PROPOSED HEADFRAME. REFER TO SHEET T3-5 FOR CFA MOUNTING DETAILS.

EXISTING CFA ANTENNA FEEDERS (2 OFF) TO BE REPLACED WITH LONGER FEEDERS AND RUN IN THE UPGRADED CABLE LADDER.

UNAPPROVED DRAWING

PROPOSED TELSTRA LTE700 & LTE700 / WCDMA850 PANEL ANTENNAS (2 OFF, A1 & A3) TO BE INSTALLED ON PROPOSED MOUNTS ON PROPOSED HEADFRAME. REFER TO SHEET S1-1 FOR DETAILS.

PROPOSED TELSTRA LTE700 TMA'S (3 OFF) ATTACHED TO PROPOSED MOUNT BEHIND PANEL ANTENNAS (A1, A2 & A4).

E.L. 17.5m (±100mm) RL 22.2m A.H.D.
BASE OF RELOCATED CFA DIPOLE ANTENNAS (2 OFF, A6a & A6b)

E.L. 15.0m (±100mm) RL 20.7m A.H.D.
TOP OF PROPOSED POLE
C/L PROPOSED TELSTRA PANEL ANTENNAS (5 OFF, A1, A2, A3, A4 & A8)

PROPOSED TELSTRA LTE700 / LTE1800 PANEL ANTENNAS (2 OFF, A2 & A4) TO BE INSTALLED ON PROPOSED MOUNTS ON PROPOSED HEADFRAME.

E.L. 13.5m (±100mm) RL 19.2m A.H.D.
C/L PROPOSED TELSTRA LTE1800 RRUS 32 (2 OFF) & RRU INTERFACE BOXES (2 OFF)

E.L. 12.5m (±100mm) RL 18.2m A.H.D.
C/L PROPOSED TELSTRA Ø600 PARABOLIC DISH (1 OFF, A9)

EXISTING TELSTRA WCDMA850 PANEL ANTENNA (1 OFF A8) TO BE INSTALLED ON PROPOSED MOUNT ON PROPOSED HEADFRAME.

EXISTING TELSTRA WCDMA850 TMA'S (4 OFF) TO BE RELOCATED & INSTALLED BEHIND PANEL ANTENNA (A8) ON PROPOSED MOUNT.

PROPOSED 15.0m HIGH ROCLA MONOPOLE SR2-BM15-540 WITH PROPOSED HEADFRAME. REFER TO 017866P105 SHEETS 11-14, ISSUE 3 FOR DETAILS.

PROPOSED TELSTRA LTE700 GPS ANTENNA (1 OFF) TO BE INSTALLED ON PROPOSED STANDARD MOUNT.

REROUTE CABLE LADDER FROM SMR SHELTER TO PROPOSED MONOPOLE AS REQUIRED. REFER TO SHEET T5 & T5-1 FOR DETAILS.

PROPOSED TELSTRA OUTDOOR 12.3 SPD BOX (1 OFF) BELOW FEEDER WINDOW.

EXISTING 600W SMR GLAND WINDOW AND FEB TO ACCOMMODATE:
-PROPOSED LTE700 LCF12-50J FEEDERS (6 OFF).
-PROPOSED LTE700 / WCDMA850 LCF12-50J FEEDERS (2 OFF).
-PROPOSED WCDMA850 LCF12-50J FEEDERS (4 OFF).

EXISTING SMR SHELTER TO ACCOMMODATE PROPOSED TELSTRA EQUIPMENT. REFER TO SHEET E1 FOR LAYOUT DETAILS.

EXISTING TOILET & CORRUGATED WALL TO BE RELOCATED AS REQUIRED.

6 PROPOSED SIGN TO BE SECURED 1.5m AGL TO MONOPOLE USING STAINLESS STEEL STRAPS

E.L. 00.0m (±100mm) RL 5.7m A.H.D.
GROUND LEVEL

PROPOSED CABLE LADDER SUPPORT POSTS. REFER TO 017866P53 FOR DETAILS.

EXISTING 300W CABLE TRAY TO BE RE-ROUTED AND RE-INSTATED TO PROPOSED MONOPOLE. REFER TO SHEETS T5 & T5-1 FOR DETAILS.

PROPOSED TELSTRA POLE SQURE FOOTING (3.5m x 3.5m). REFER TO SHEET T2 FOR DETAILS.

FE

A A

E E

SOUTH ELEVATION

SCALE 1:100

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

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NOTES :

1. ALL FEEDERS ACCESS POINTS ON THE STRUCTURE MUST BE BIRD PROOFED AS PER EXTERNAL PLANT POLICY 003615.
2. FOR EME SIGNS NOTED AS #X REFER TO 005486 DOCUMENTS FOR DETAILS.
3. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
4. HORIZONTAL CABLE LADDER IS RE-USED FOR THIS INSTALLATION. LOWER POSITION OF THE CABLE LADDER AS REQUIRED ALLOWS ADDITIONAL ROOM IN THE SHELTER GLAND WINDOW. FEEDERS ARE STACK-MOUNTED IN CABLE LADDER IF REQUIRED. PROVIDED RAISED LID IF REQUIRED.
5. STRUCTURES SITUATED IN CORROSIVE ENVIRONMENTS ARE PAINTED IN ACCORDANCE WITH 016159 11.1 - CANRAD CORROSION REGION TYPE IS E (VERY HIGH).
6. REMOVE AND REINSTATE GARDEN AND COMPOUND FENCING.
7. CUT OFF THE TOP AND BUTT SECTION OF THE POLE AND LEVEL FOUNDATION WITH THE GROUND, MAY REQUIRED TO BACKFILL BUTT SECTION WITH CONCRETE OR GRAVEL.
8. EXISTING GSM900 / WCDMA850 / LTE1800 EQUIPMENT IN EXCHANGE BUILDING TO BE RECOVERED EXISTING WCDMA850 RUS TO BE RE-USED.

COMPLIANCE BOX

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

7 FOR CONSTRUCTION

TO BE READ IN CONJUNCTION WITH SHEETS S0, S0-1, S1, S1-1 & S3-1.

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
VT07704.01	DL	GA	ASBUILT 2ND CARRIER UPGRADE SP70566062W001NC	DL	DL	16.06.10	3
VT13241.01	KS	DMcK	FOR CONSTRUCTION - LTE1800 - 72001516W001SSMC	DM	LC	14.11.13	4
6180786	MB	NR	FOR CONSTRUCTION - CFA	MB	SA	18.07.14	5
6180786	MB	NR	CFA AS BUILT 401751WO01NC	MB	SA	18.07.14	6
VT17644.01	RH	MU	FOR CONSTRUCTION - 30060258W0216 VPL - LTE700	AS	JH	25.04.17	7

Telstra

MOBILE NETWORK SITE 26481
WYE RIVER
SOUTH ELEVATION
3765 GREAT OCEAN ROAD, WYE RIVER, VIC 3221

DWG NO. V106479 SHT NO. S3

Cad file: V106479_FC.dwg A3

TELSTRA ANTENNA CONFIGURATION TABLE

ANTENNA No	ANTENNA TYPE & SIZE H x W x D	ANTENNA ACTION REQUIRED	ANTENNA HEIGHT C/L A.G.L.	ANTENNA BEARING (x°T)	SECTOR NO. & TECHNOLOGY
A1	ARGUS RVVPX308.11B-T2 PANEL 2065 x 350 x 208mm	INSTALL	15.0m	0°	S1: LTE700 S1: LTE700
					SPARE SPARE
					SPARE SPARE
A2	ARGUS RVVPX308.11B-T2 PANEL 2065 x 350 x 208mm	INSTALL	15.0m	0°	S1: LTE700 S1: LTE700
					S1: LTE1800 S1: LTE1800
					S1: LTE1800 S1: LTE1800
A3	ARGUS RVVPX308.11B-T2 PANEL 2065 x 350 x 208mm	INSTALL	15.0m	220°	S2: LTE700 / S2: WCDMA850 S2: LTE700 / S2: WCDMA850
					SPARE SPARE
					SPARE SPARE
A4	ARGUS RVVPX308.11B-T2 PANEL 2065 x 350 x 208mm	INSTALL	15.0m	220°	S2: LTE700 S2: LTE700
					S2: LTE1800 S2: LTE1800
					S2: LTE1800 S2: LTE1800
A8	2CPX208R-V1 2090 x 504 x 118mm	RELOCATE	15.0m	0°	S6: WCDMA850 S6: WCDMA850
					S1: WCDMA850 S1: WCDMA850
A9	RFS SXC2-A190BS1A1 SOLID PARABOLIC DISH Ø600	INSTALL	12.5m	223.6°	KENNETT RIVER
A6a	CFA DIPOLE ANTENNA RFIBA40-41-DIN FOLDED DIPOLE 2 x 2 ARRAY	RELOCATE	17.5m	0°	-
A6b	CFA DIPOLE ANTENNA RFIBA40-41-DIN FOLDED DIPOLE 2 x 2 ARRAY	RELOCATE	19.5m	0°	-
A200	GPS ANTENNA KRE 101 2082/1 Ø68 x 96	INSTALL	BASE OF GPS 4.3m	0°	-
A3 (OLD)	CNA010H-00-CB	REMOVE	12.5m	0°	-
A4 (OLD)	CNA010H-00-CB	REMOVE	12.5m	0°	-

TELSTRA ANTENNA CONFIGURATION TABLE

ANTENNA No	ANTENNA TYPE & SIZE H x W x D	ANTENNA ACTION REQUIRED	ANTENNA HEIGHT C/L A.G.L.	ANTENNA BEARING (x°T)	SECTOR NO. & TECHNOLOGY
A9 (OLD)	ARGUS RVVPX310B2 PANEL 2533 x 353 x 209mm	REMOVE	9.5m	220°	- -
					- -
					- -
A10 (OLD)	2NPX210R-V1	REMOVE	10.7m	0°	- -
					- -
A11 (OLD)	2NPX210R-V1	REMOVE	8.3m	0°	- -
					- -

UNAPPROVED DRAWING

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

FOR CONSTRUCTION

TO BE READ IN CONJUNCTION WITH SHEETS S0, S0-1, S1, S1-1 & S3.

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
VT13241.01	KS	DMcK	FOR CONSTRUCTION - LTE1800 - 72001516W001SSMC	DM	LC	14.11.13	1
VT17644.01	RH	MU	FOR CONSTRUCTION - 30060258W0216 VPL - LTE700	AS	JH	25.04.17	2

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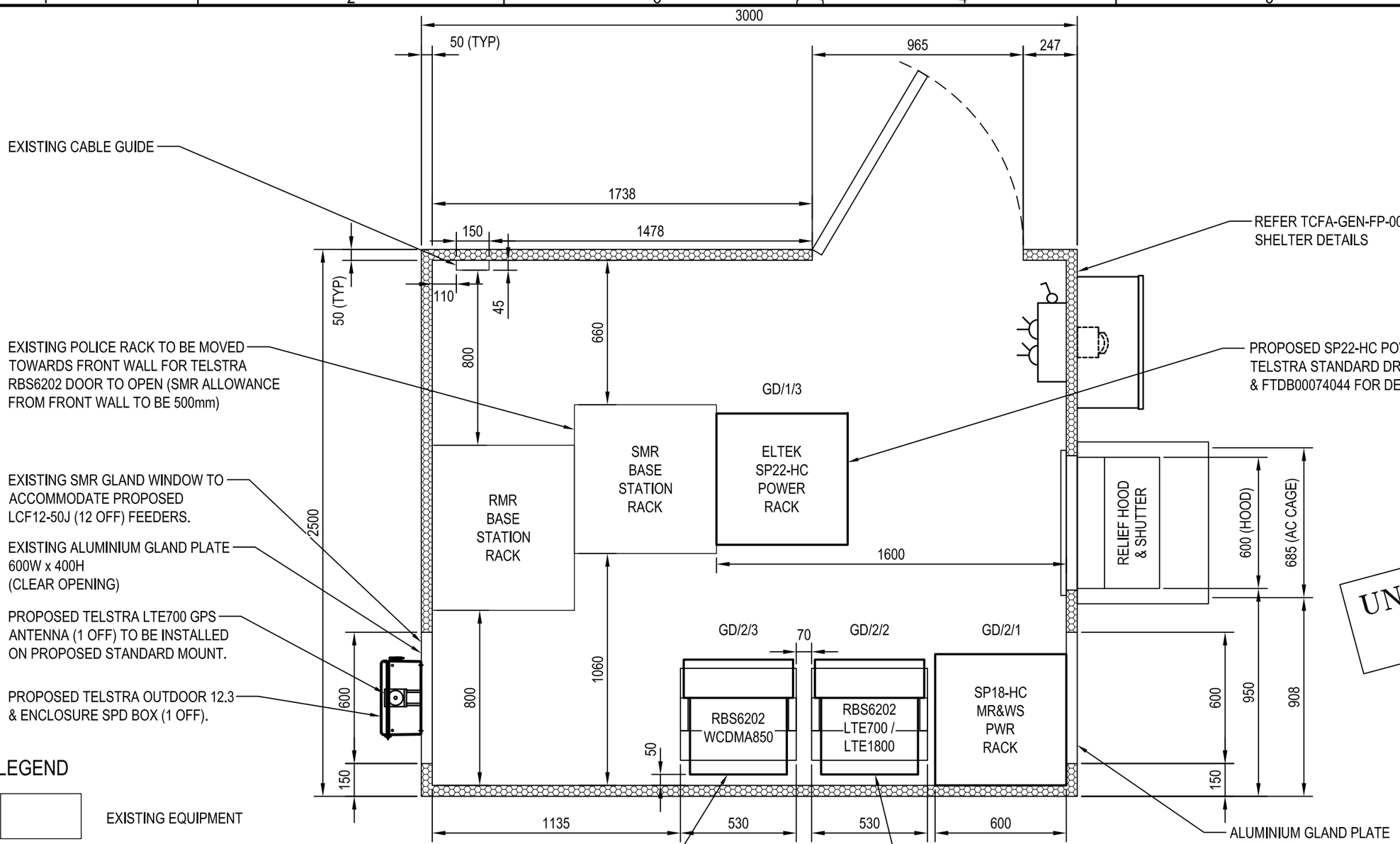
Telstra

MOBILE NETWORK SITE 26481
WYE RIVER
ANTENNA CONFIGURATION TABLE
3765 GREAT OCEAN ROAD, WYE RIVER, VIC 3221

DWG NO. V106479 SHT NO. S3-1

Cad file: V106479_FC.dwg A3



UNAPPROVED DRAWING

LEGEND

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

EQUIPMENT LAYOUT

SCALE 1:20

200 0 1000 SCALE 1:20

NOTES :

1. FOR SITE SPECIFIC NOTES REFER TO SHEETS S0.
2. REFER TO ICS-3-2 DRAWINGS IN CADLINK NATIONAL DATABASE.
3. MITS POSITIONS IN FORMAT XX/X/XX WHERE SHELTER ON GROUND PREFIX GD/1/01 AND SHELTER ON ROOFTOP PREFIX RT/1/01. REFERENCE SP000511 NUMBERING, LABELLING AND DATA ENTRY REQUIREMENTS OF NETWORK INVENTORY.
4. REFER FTDB00074044 APPROVAL FOR DETAILS TELSTRA MOBILES TO FUND AND INSTALL PROPOSED SP22-HC POWER RACK.

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

FOR CONSTRUCTION

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
6180786	MB	NR	CFA AS BUILT 401751W001NC	MB	SA	18.01.14	2
VT17644.01	RH	MU	FOR CONSTRUCTION - 30060258W0216 VPL - LTE700	AS	JH	25.04.17	3

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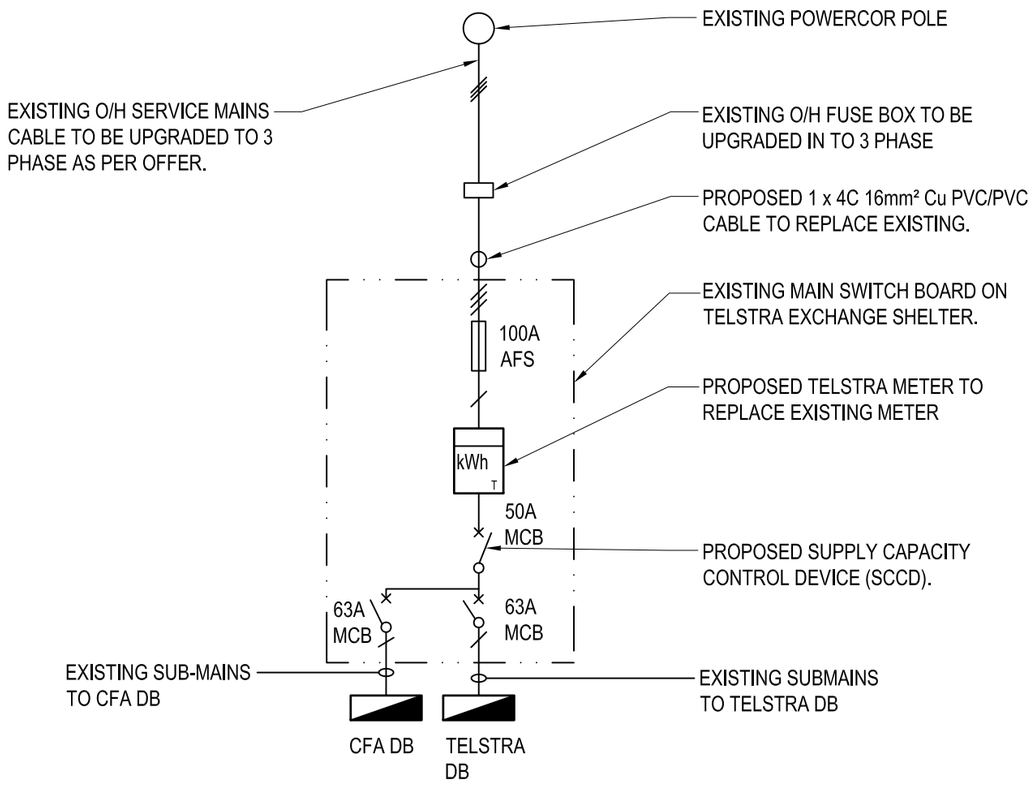
MOBILE NETWORK SITE 26481
WYE RIVER
EQUIPMENT LAYOUT - SMR
3765 GREAT OCEAN ROAD, WYE RIVER, VIC 3221

DWG NO. V106479 SHT NO. E1 .

Cad file: V106479_FC.dwg A3



LEGEND:

- kWh T — POLYPHASE METER, T = TELSTRA
- EARTH BAR/NEUTRAL BAR
- GENERATOR INLET SOCKET / EMERGENCY GENERATOR SOCKET
- CIRCUIT BREAKER
- DENOTES NO. OF PHASES
- AUTHORITY FUSES SERVICE
- TRANSIENT SURGE PROTECTOR ERICO TDX 100
- DISTRIBUTION BOARD

ELECTRICAL INSTALLATION

1. MAIN SUPPLY
   PROPOSED TELSTRA 50A/3 PHASE SUPPLY SHALL BE OBTAINED EXISTING POWERCOR POS.
   POWERCOR OFFER REFERENCE NUMBER 306438967.

2. CONSUMER MAINS
   EXISTING CONSUMER MAINS TO BE RECOVERED.
   PROPOSED 1 x 4C 16mm² Cu PVC/PVC CONSUMER MAINS CABLE TO BE INSTALLED IN PVC CONDUIT FROM PROPOSED SERVICE FUSE TO EXISTING TELSTRA MAIN SWITCH BOARD (MSB). APPROXIMATE CABLE RUN SHALL BE 20.0m WITH ALLOWABLE VOLTAGE DROP OF 2.1%.

3. SITE MAIN SWITCH BOARD (MSB)
   EXISTING SINGLE PHASE SERVICE FUSE TO BE UPGRADED TO THREE PHASE.
   EXISTING SINGLE PHASE METER TO BE UPGRADED TO THREE PHASE METER.
   EXISTING SCCD SINGLE PHASE 63A MCB TO BE UPGRADED TO THREE PHASE 50A MCB.
   EXISTING TELSTRA EXCHANGE MCB TO BE UPGRADED TO 63A SINGLE PHASE.
   EXISTING CFA MCB TO BE UPGRADED TO 63A SINGLE PHASE.

4. GENERAL NOTES
   - ALL WORKS SHALL COMPLY WITH AS 3000, AS3015 & AS1786 AND SERVICE & INSTALLATION RULES VIC.
   - THE CONTRACTOR IS TO BALANCE LOADS AND CREATE DISTRIBUTION LEGEND.
   - THE CONTRACTOR IS TO CHECK FAULT CURRENT RATINGS OF PROTECTIVE EQUIPMENT INSTALLED ARE ADEQUATE FOR PROSPECTIVE FAULTS LEVELS.

UNAPPROVED DRAWING

FOR CONSTRUCTION

SINGLE LINE DIAGRAM

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

visionstream

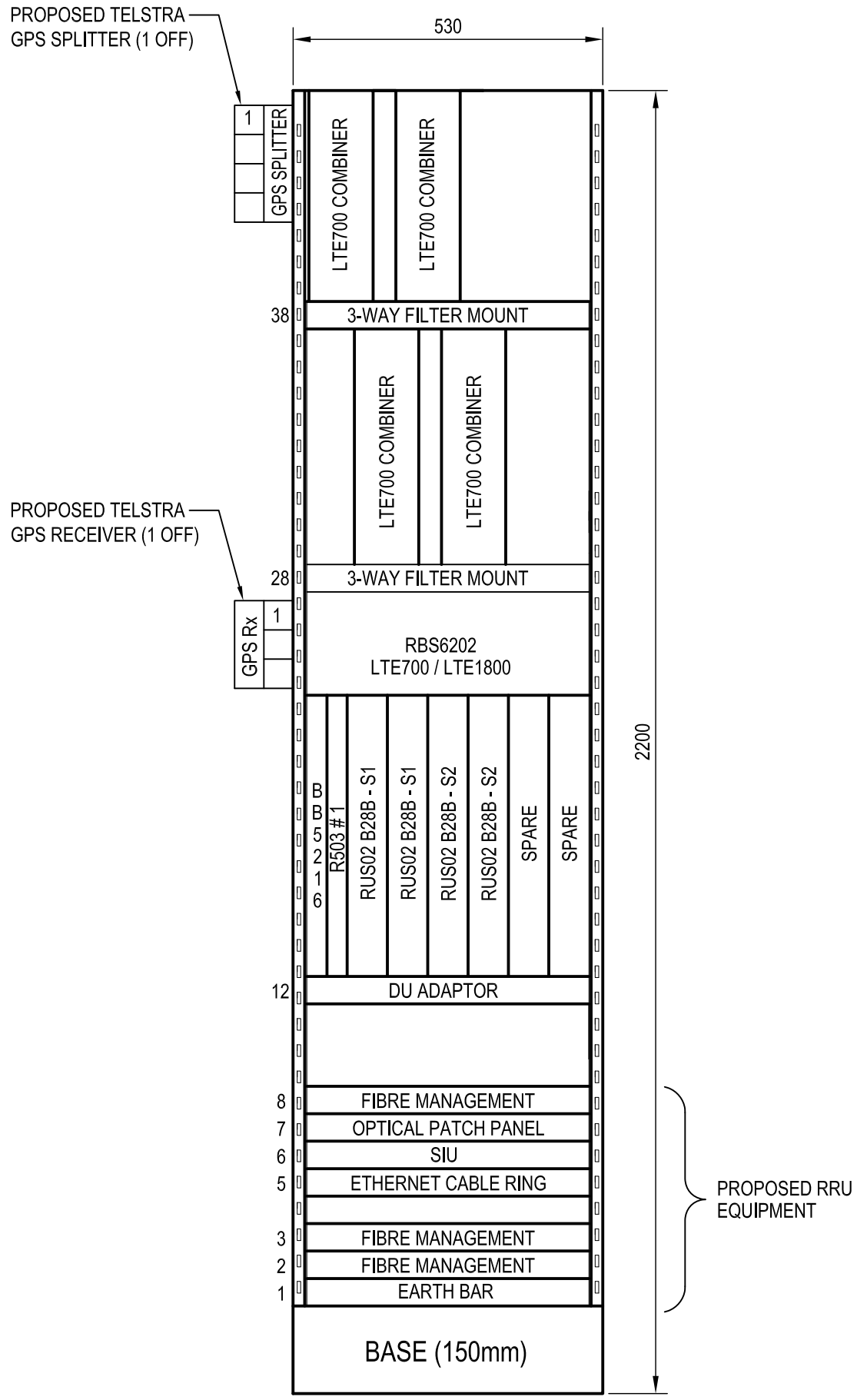
ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
VT17644.01	RH	MU	FOR CONSTRUCTION - 30060258W0216 VPL - LTE700	AS	JH	13.02.18	1

Telstra

MOBILE NETWORK SITE 26481
WYE RIVER
AC POWER CONNECTION
3765 GREAT OCEAN ROAD, WYE RIVER, VIC 3221

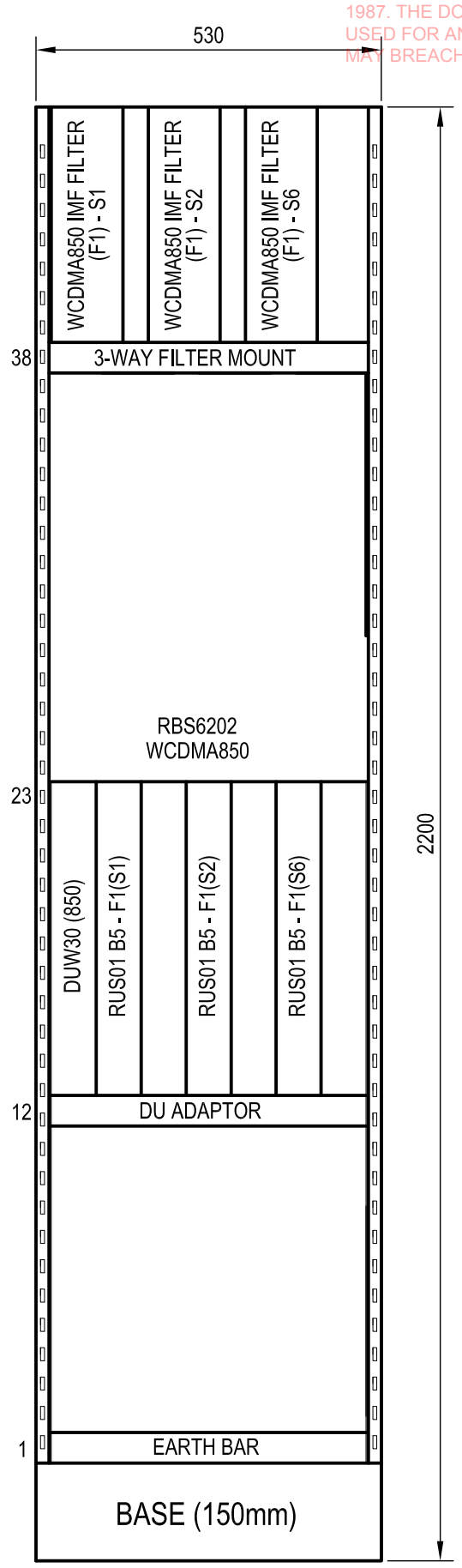
DWG NO. V106479 | SHT NO. E2 .

Cad file: V106479_FC.dwg | A3



GD/2/2

45RU PATHFINDER RACK



GD/2/3

45RU PATHFINDER RACK

RACK LAYOUT

NOT TO SCALE

COMPLIANCE BOX

COMPLETED AS PER DESIGN ☐

ALTERATIONS IN RED ☐

NAME (PRINT)

SIGNATURE DATE

UNAPPROVED DRAWING

GENERAL NOTES:

1. REFER TO SHEET S0 AND S0-1 FOR SITE SPECIFIC NOTE.
2. INDICATIVE 45RU PATHFINDER RACK SHOWN FOR LAYOUT PURPOSES ONLY.
3. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SPECIFIED OTHERWISE.
4. REFER TO DOCUMENT CIN0005 LTE700 SITE ENGINEERING GUIDELINES FOR FURTHER INFORMATION.

FOR CONSTRUCTION

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
VT17644.01	RH	MU	FOR CONSTRUCTION - 30060258W0216 VPL - LTE700	AS	JH	25.04.17	3

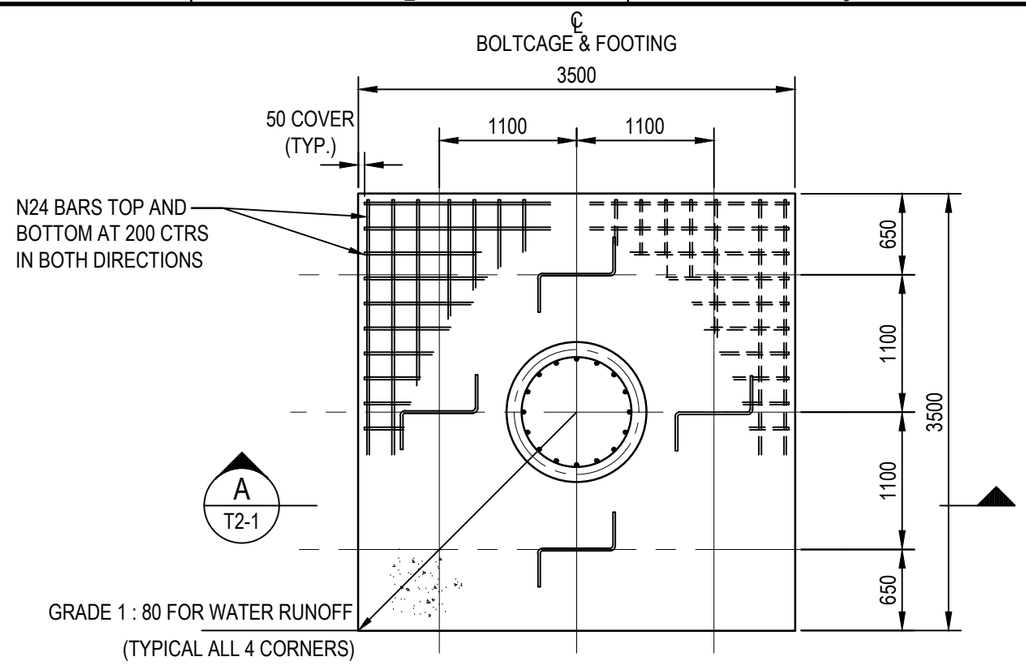
visionstream

Telstra

MOBILE NETWORK SITE 26481
WYE RIVER
45RU PATHFINDER RACK LAYOUT
3765 GREAT OCEAN ROAD, WYE RIVER, VIC 3221

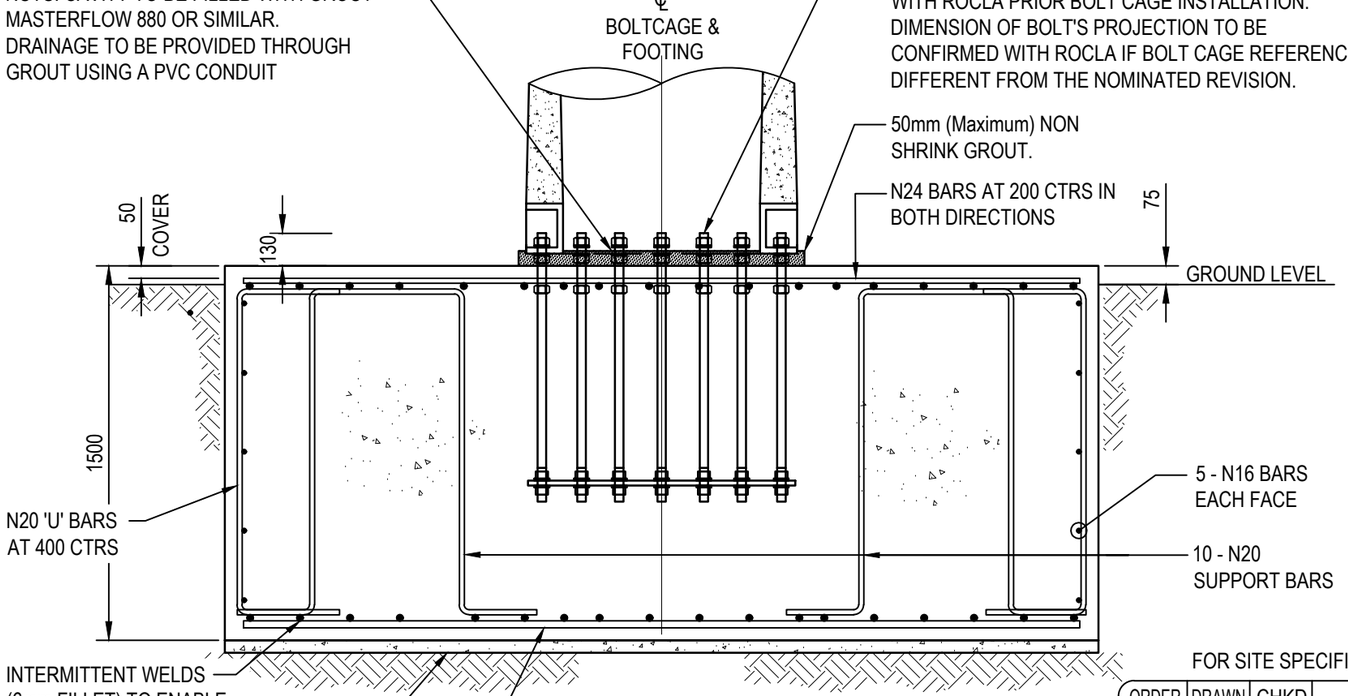
DWG NO. V106479 SHT NO. E5

Cad file: V106479_FC.dwg A3V



FOOTING PLAN

SCALE 1:50



SECTION

SCALE 1:50

A
-

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GENERAL

G1. COAT ABOVE GROUND CONCRETE EMBEDDED STEELWORK WITH DULUX (DUREBILD STE/GF) OR SIMILAR 75mm ABOVE AND BELOW LEVEL OF CONCRETE.

G2. ALLOW FOR A FALL 1:80 ALL ROUND FOR WATER RUNOFF.

G3. AFTER POLE INSTALLATION, POLE BASE SHALL BE GROUTED UNDERNEATH WITH (MASTERFLOW 880 OR SIMILAR) NON-SHRINK GROUT MIN. F'c = 60 MPa.

CONCRETE

C1. THE CONCRETE MIX SHALL INCORPORATE A PROPORTION OF FLY ASH THAT IS 25% BY MASS OF THE TOTAL CEMENTITIOUS MATERIALS AND SHALL COMPLY WITH THE AUSTRALIAN STANDARD AS3582.1.

C2. MINIMUM CONCRETE COVER TO REINFORCEMENT TO BE 50mm U.N.O.

C3. CONCRETE STRENGTH F'c = 40MPa AT 28 DAYS.

REINFORCEMENT

R1. N DENOTES DEFORMED BARS GRADE D500N TO AS4671.

R2. R DENOTES PLAIN BARS GRADE 250 TO AS3679.1.

R3. REINFORCEMENT DIMENSIONS TAKEN FROM CENTRELINE.

R4. REINFORCEMENT IS REPRESENTED DIAGRAMMATICALLY AND NOT NECESSARILY IN TRUE PROJECTION.

R5. MINIMUM COG LENGTH TO BE 300mm U.N.O.

STEEL

St1. BOLTS GALVANISED TO AS1214.

St2. ALL WELDING TO BE CATEGORY SP TO AS1554.

REPORTED SOIL CONDITIONS

S1. GEOTECHNICAL REPORT BY CIVIL TEST REF: 113102 (DATED 23/10/2013) DETAILS OF GEOTECHNICAL CONDITIONS.

S2. HOLD CONSTRUCTION AND CONSULT DESIGNERS IF GROUND CONDITIONS VARY FROM THOSE DESCRIBED IN CIVIL TEST REF: 113102 (DATED 23/10/2013)

EXCAVATION

E1. UNDER NO CIRCUMSTANCES SHALL PERSONNEL ENTER THE OPEN EXCAVATION IF DEPTH GREATER THAN 1500mm UNLESS SHORING IS INSTALLED.

E2. EXCAVATION SPOIL SHALL BE PLACED A MINIMUM OF 2000mm FROM EDGE OF EXCAVATION.

E3. NO HEAVY VEHICLES (i.e.. CONCRETE TRUCKS, etc.) SHALL COME WITHIN 2000mm FROM EDGE OF EXCAVATION.

COMPLIANCE BOX

COMPLETED AS PER DESIGN ☐

ALTERATIONS IN RED ☐

NAME (PRINT)

SIGNATURE DATE

250 0 250 500 750 1000 1250 SCALE 1:25

500 0 2500 SCALE 1:50

UNAPPROVED DRAWING

FOR CONSTRUCTION

FOR SITE SPECIFIC NOTES REFER TO SHEET S0.

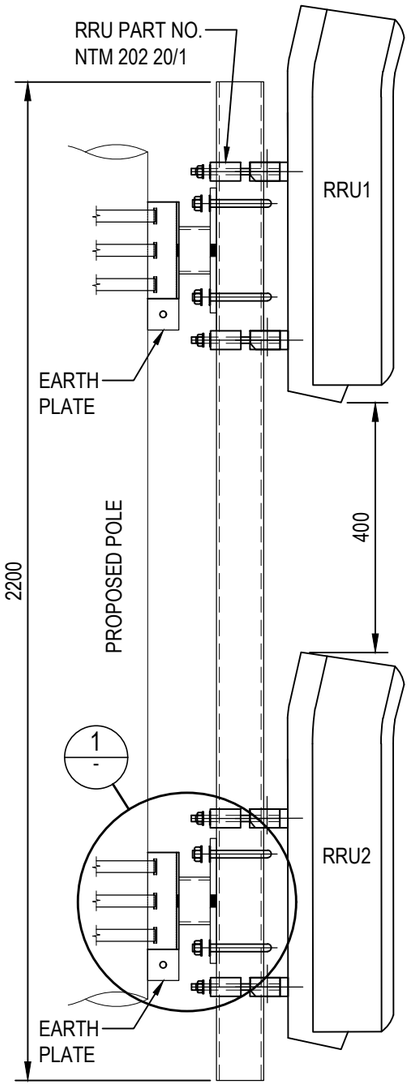
ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
VT17644.01	RH	MU	FOR CONSTRUCTION - 30060258W0216 VPL - LTE700	AS	JH	25.04.17	1

Telstra

MOBILE NETWORK SITE 26481
WYE RIVER
STRUCTURE FOOTING DETAILS
3765 GREAT OCEAN ROAD, WYE RIVER, VIC 3221

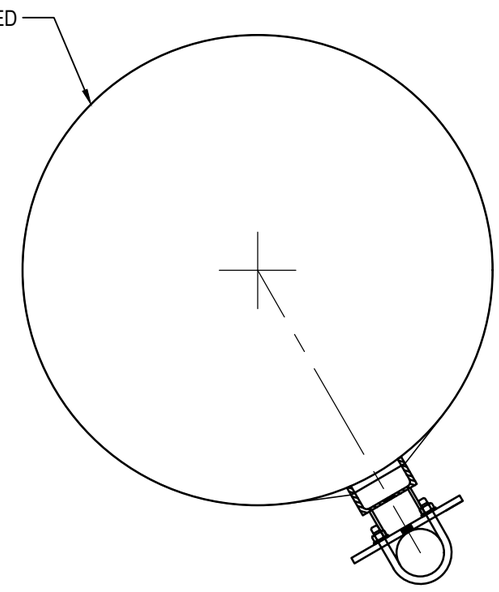
DWG NO. V106479 SHT NO. T2

Cad file: V106479_FC.dwg A3



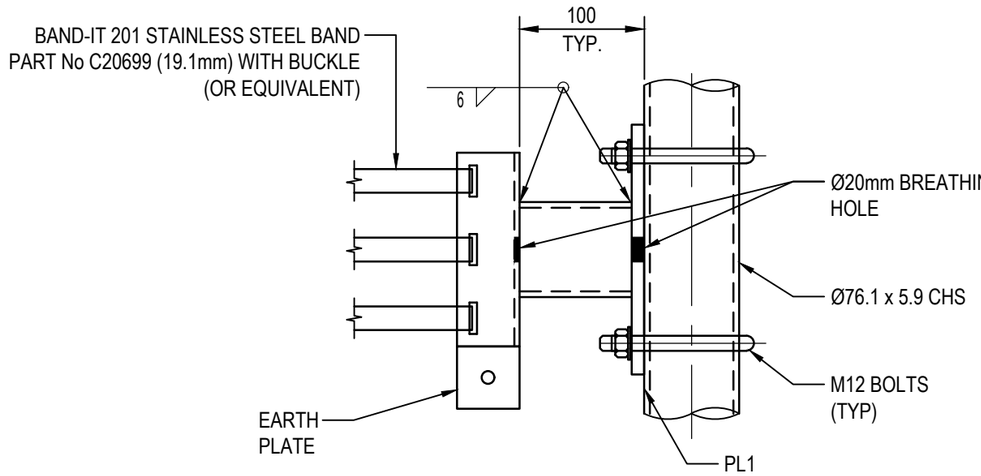
RRU POLE MOUNT ELEVATION

SCALE 1:10



RRU POLE MOUNT PLAN

SCALE 1:10



DETAILS 1

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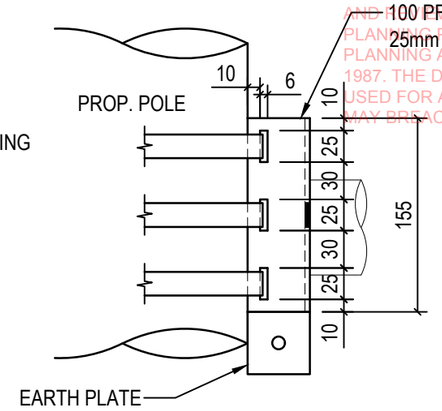

100 PFC DETAILS

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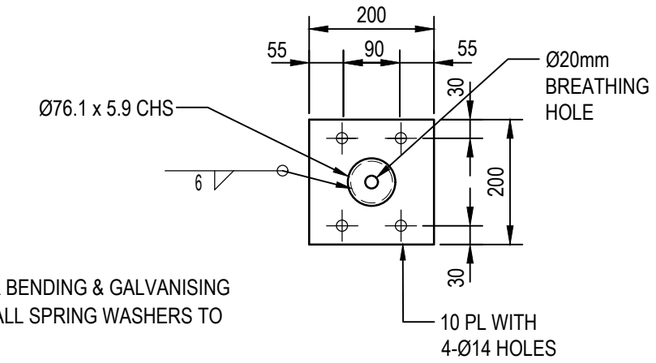
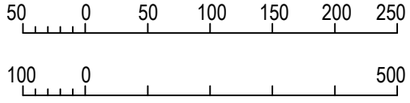


PL1 DETAILS

SCALE 1:10

NOTES:

1. ALL SIZE ARE IN MILLIMETRES
2. U-BOLT TO BE HOT BENT AT 900°C. ALLOW TO AIR COOL AFTER BENDING & GALVANISING
3. HIGH STRENGTH BOLTS TO AS 1252 (1996) GRADE 8.8/S U.N.O. ALL SPRING WASHERS TO AS 1968 (1976).
4. ALL BOLTS INCLUDING U-BOLTS AND V-BOLTS TO BE SUPPLIED WITH CORRESPONDING NUTS, SPRING WASHERS.
5. ALL HOLLOW SECTIONS TO AS 1163 (2009) GRADE C250LO U.N.O.
   ALL HOT ROLLED STEEL TO AS 3678 (2011) & AS 3679.1 (2010) GRADE 300 U.N.O.
6. ALL STEELWORK WORKMANSHIP TO BE IN ACCORDANCE WITH AS 4100 (1998)
7. ALL WELDING TO BE CATEGORY SP TO AS 1554 (2004)
   ALL WELDS TO BE 6mm CONTINUOUS FILLET WELDS U.N.O.
8. ALL STEELWORK TO BE HOT DIP GALVANISED TO AS 4680, AS 1559 & AS 1214
9. APPLY 2 COATS OF ZINC RICH PAINT TO ALL FRESHLY CUT, WELDED OR DRILLED STEEL ON SITE, REMOVE ALL SWARF, BURRS & SHARP EDGES
10. ALL CHS'S HAVE 5mm END PLATES AT EACH END.
    THE BTM END PLATE HAS Ø20mm BREATHING HOLE



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COMPLIANCE BOX

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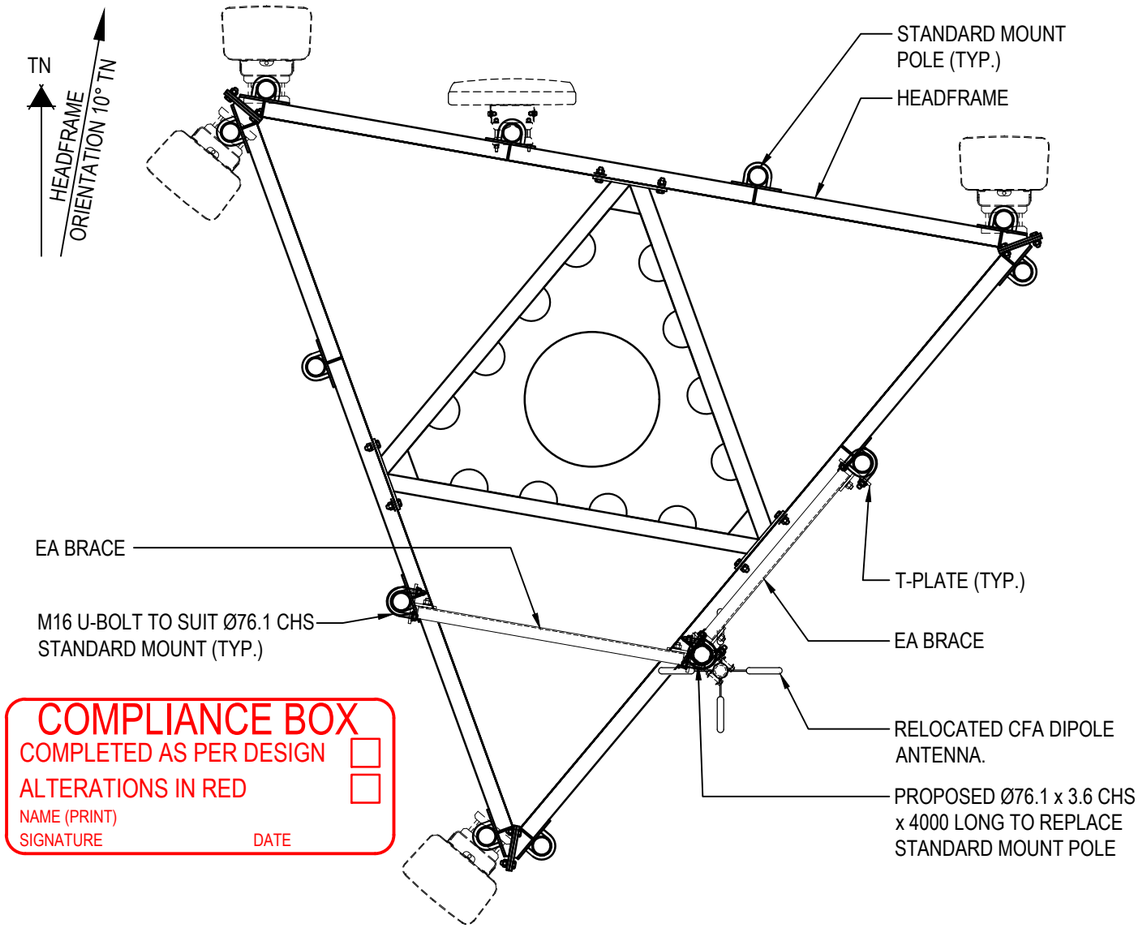
ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
VT17644.01	RH	MU	FOR CONSTRUCTION - 30060258W0216 VPL - LTE700	AS	JH	25.04.17	1

Telstra

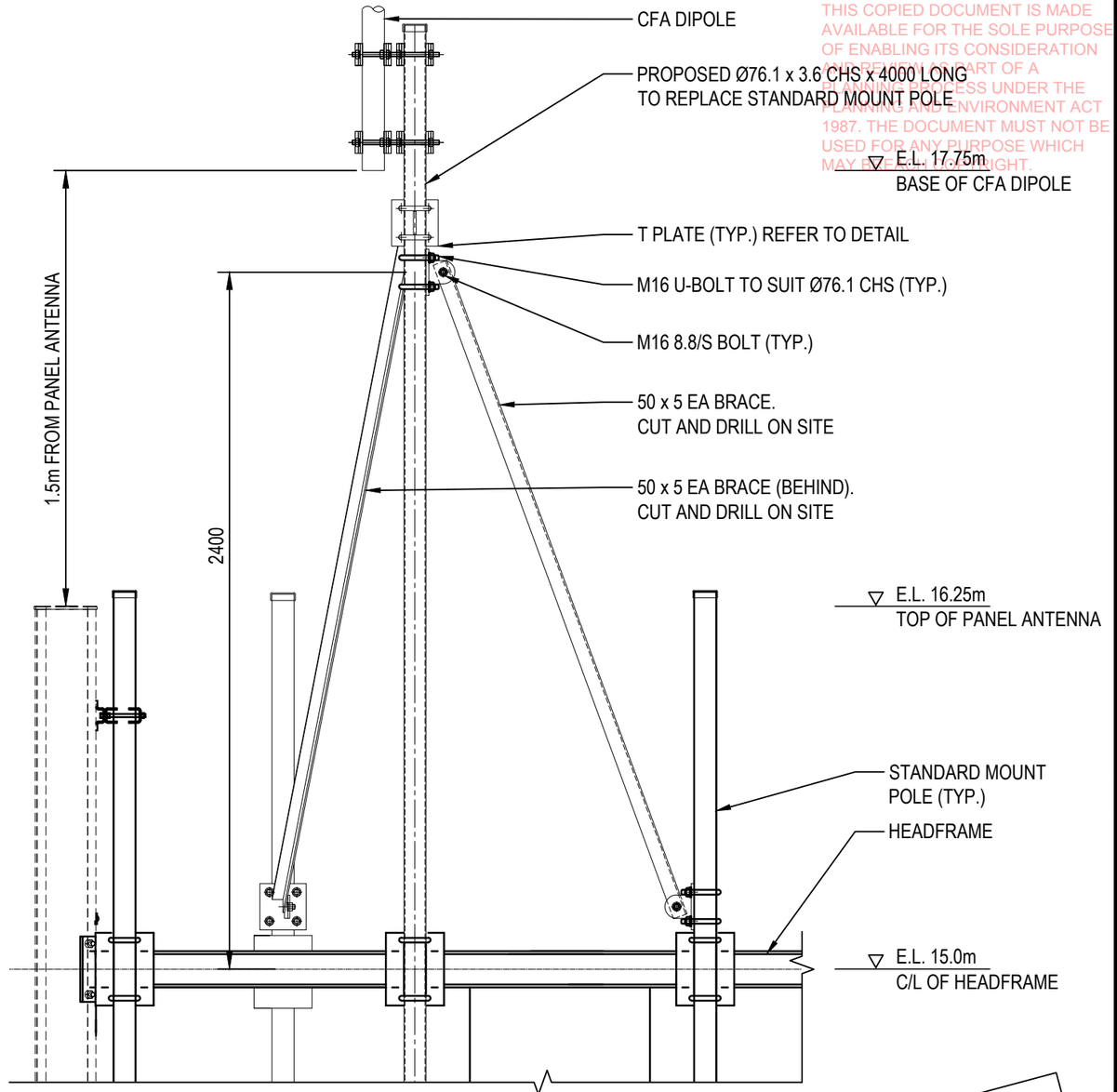
MOBILE NETWORK SITE 26481
WYE RIVER
RRU POLE MOUNT DETAILS
3765 GREAT OCEAN ROAD, WYE RIVER, VIC 3221

DWG NO. V106479 SHT NO. T3-4

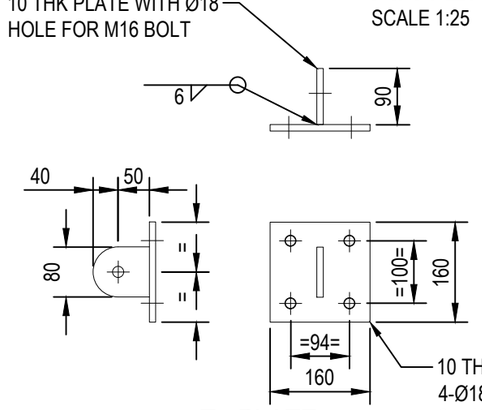
Cad file: V106479_FC.dwg A3



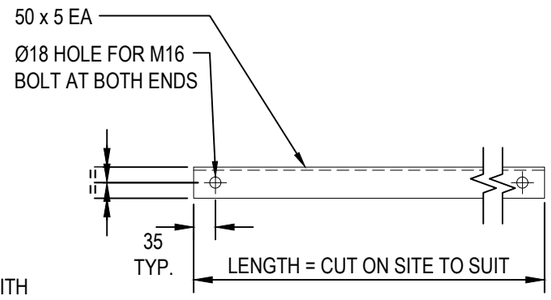
ANTENNA LAYOUT AT EL 15.0m
SCALE 1:25



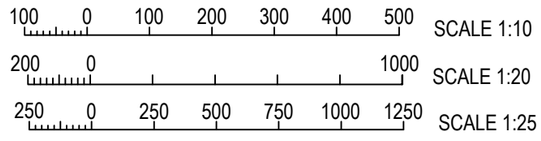
CFA DIPOLE ANTENNA MOUNT ELEVATION
SCALE 1:20



T - PLATE
SCALE 1:10



EA BRACE
SCALE 1:10



UNAPPROVED DRAWING

FOR CONSTRUCTION

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

NOTES:
1. REFER TO TELSTRA STANDARD 017866P05 SHT NO.1 ISSUE 2 FOR STRUCTURAL STEEL NOTES.
2. PROVIDE GALV. PUSH CAP FOR ALL VERTICAL CHS POLE.
3. ALL U-BOLTS SUPPLIED COMPLETE WITH CORRESPONDING NUTS & SPRING WASHERS.
4. APPLY 2 COATS OF ZINC RICH PAINT TO ALL FRESHLY CUT, WELDED OR DRILLED STEEL ON SITE, REMOVE ALL SWARF, BURRS & SHARP EDGES

visionstream

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
VT17644.01	RH	MU	FOR CONSTRUCTION - 30060258W0216 VPL - LTE700	AS	JH	25.04.17	1

Telstra

MOBILE NETWORK SITE 26481
WYE RIVER
CFA DIPOLE ANTENNA MOUNT DETAILS
3765 GREAT OCEAN RD, WYE RIVER, VIC 3234

DWG NO. V106479
SHT NO. T3-5

Cad file: V106479_FC.dwg
A3

Appendix B
Recorded Landslide Maps

RECORDED LANDSLIDES – WYE RIVER

Client: Civiltest Pty Ltd
Project: Wye River Mobile Tower
Location: 3765 Great Ocean Road, Wye River
Project ID: MEL2018-0211
Date: 15/10/18

Taken by: TG	Position: 54H 749289, 5715795		Page 1 of 2
Checked by: DK	Elevation: Existing Ground Level		

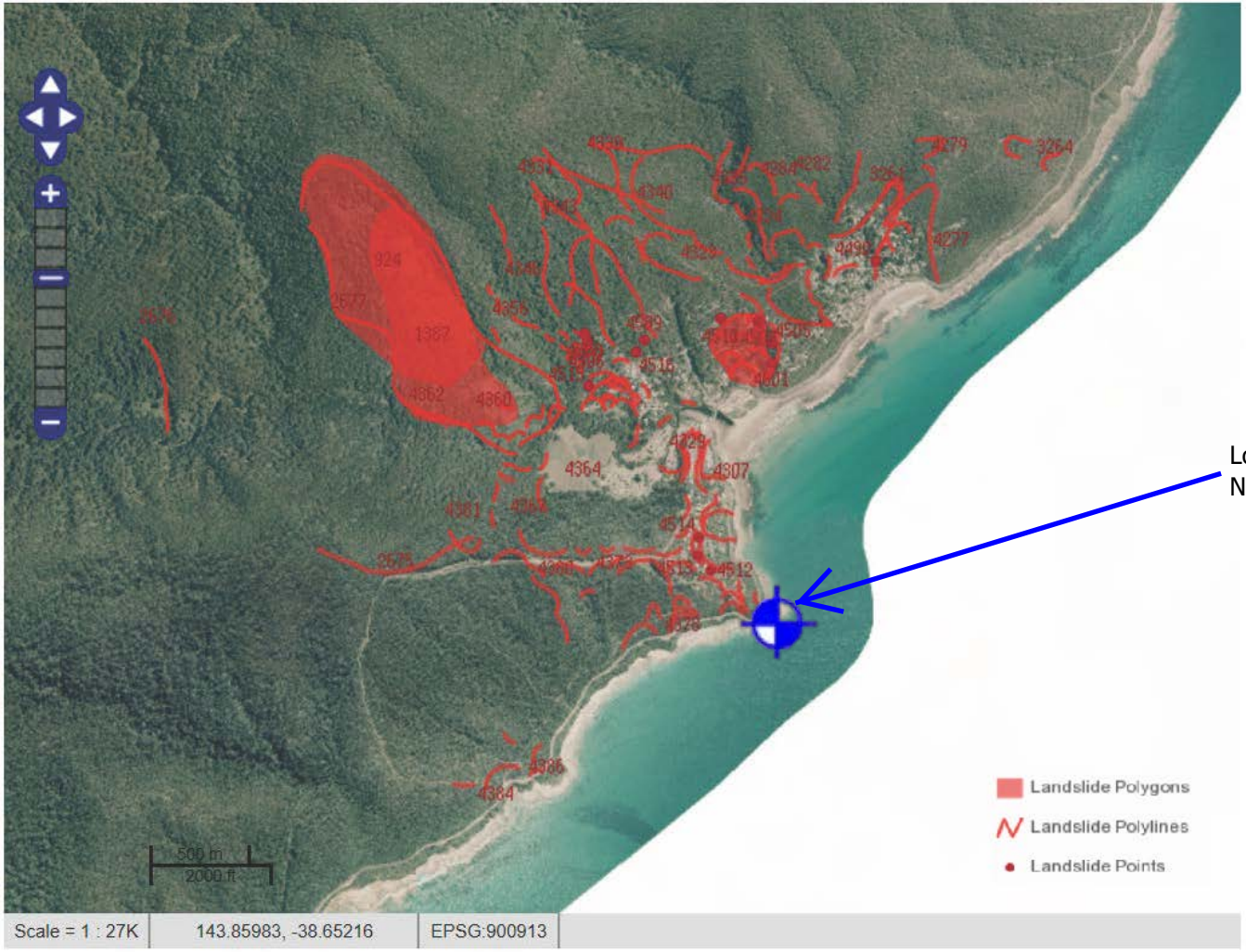


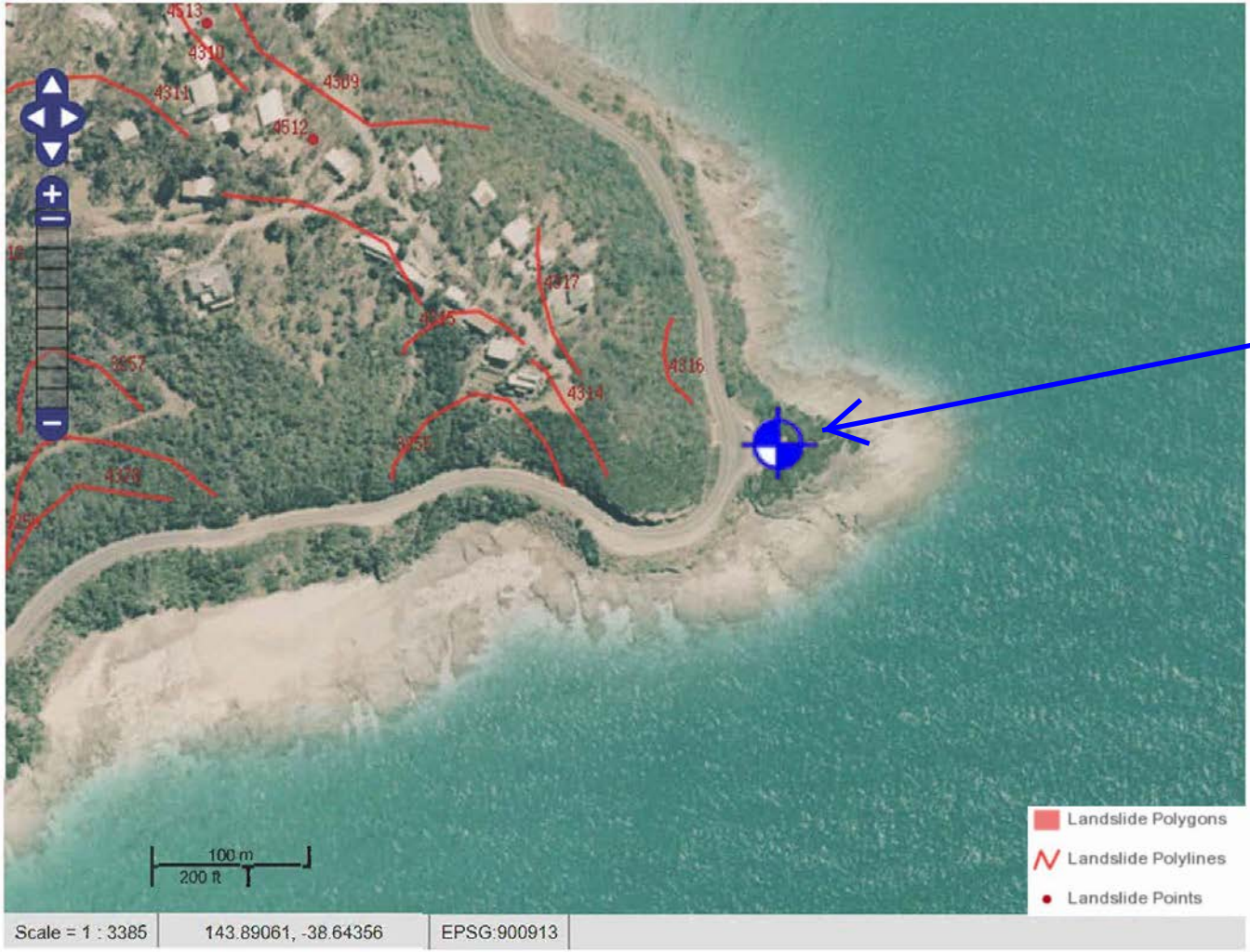
Figure 1. Recorded landslide events in the Wye River area (image taken from UB Spatial Erosion and Landslide database).

RECORDED LANDSLIDES – WYE RIVER

Client: Civiltest Pty Ltd
Project: Wye River Mobile Tower
Location: 3765 Great Ocean Road, Wye River
Project ID: MEL2018-0211
Date: 15/10/18

CMW Geosciences

Taken by: TG	Position: 54H 749289, 5715795		Page 2 of 2
Checked by: DK	Elevation: Existing Ground Level		



Location of existing Mobile Network Site 26481

Figure 2. Recorded landslide events nearby the mobile network site (image taken from UB Spatial Erosion and Landslide database).

Appendix C
Site Photographs

SITE PHOTOGRAPHS

Client: Civiltest
Project: Wye River Mobile Tower
Location: 3765 Great Ocean Road, Wye River
Project ID: MEL2018-0211
Date: 27/09/2018

Taken by: TG			Page 1 of 5
Checked by: DK			

Photo 1: Looking north-east over the mobile network compound.

Photo 2: Looking south-east over the compound.

SITE PHOTOGRAPHS

Client: Civiltest
Project: Wye River Mobile Tower
Location: 3765 Great Ocean Road, Wye River
Project ID: MEL2018-0211
Date: 27/09/2018

Taken by: TG			Page 2 of 5
Checked by: DK			

Photo 3: Looking west over the mobile compound. Dense vegetation east of the compound.

Photo 4: Slope to the west of the site, across the Great Ocean Road. Note geotechnical netting in place.

SITE PHOTOGRAPHS

Client: Civiltest
Project: Wye River Mobile Tower
Location: 3765 Great Ocean Road, Wye River
Project ID: MEL2018-0211
Date: 27/09/2018

Taken by: TG			Page 3 of 5
Checked by: DK			

Photo 5: Extension of the geotechnical netting in Photo 4, south on the Great Ocean Road.

Photo 6: Geofabric placed on slopes around Wye River - north of the site.

SITE PHOTOGRAPHS

Client: Civiltest
Project: Wye River Mobile Tower
Location: 3765 Great Ocean Road, Wye River
Project ID: MEL2018-0211
Date: 27/09/2018

Taken by: TG			Page 4 of 5
Checked by: DK			

Photo 7: Gabion Walls placed in areas around Wye River – north of the site.

Photo 8: Looking west over the compound, from the shore.

SITE PHOTOGRAPHS

Client: Civiltest
Project: Wye River Mobile Tower
Location: 3765 Great Ocean Road, Wye River
Project ID: MEL2018-0211
Date: 27/09/2018

CMW Geosciences

Taken by: TG			Page 5 of 5
Checked by: DK			

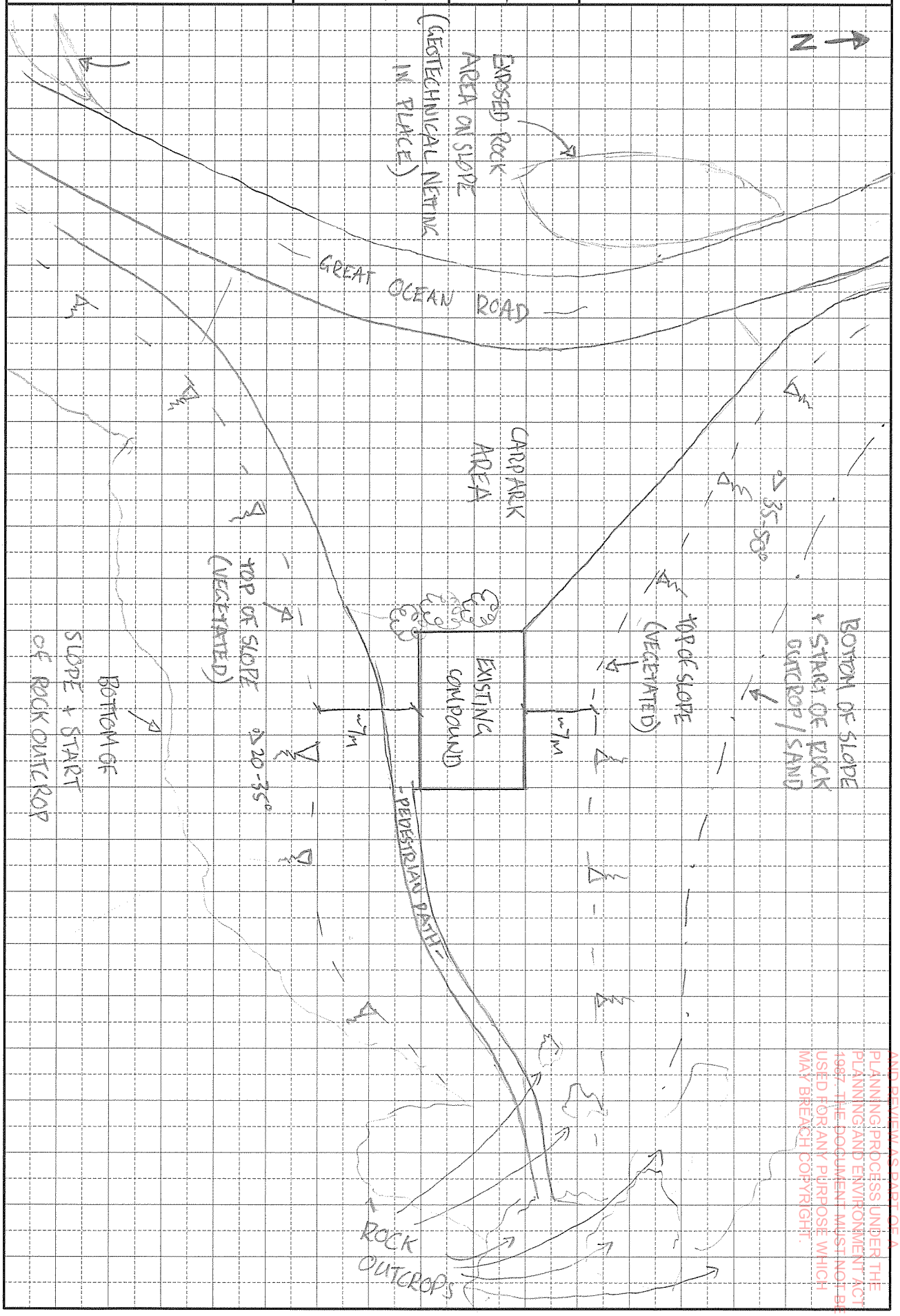
Photo 9: Rock outcrops along the shoreline to the east of the site.

Photo 8: Rock outcrops among the vegetation to the east of the site.

Appendix D
Site Plan and Cross-section Sketches

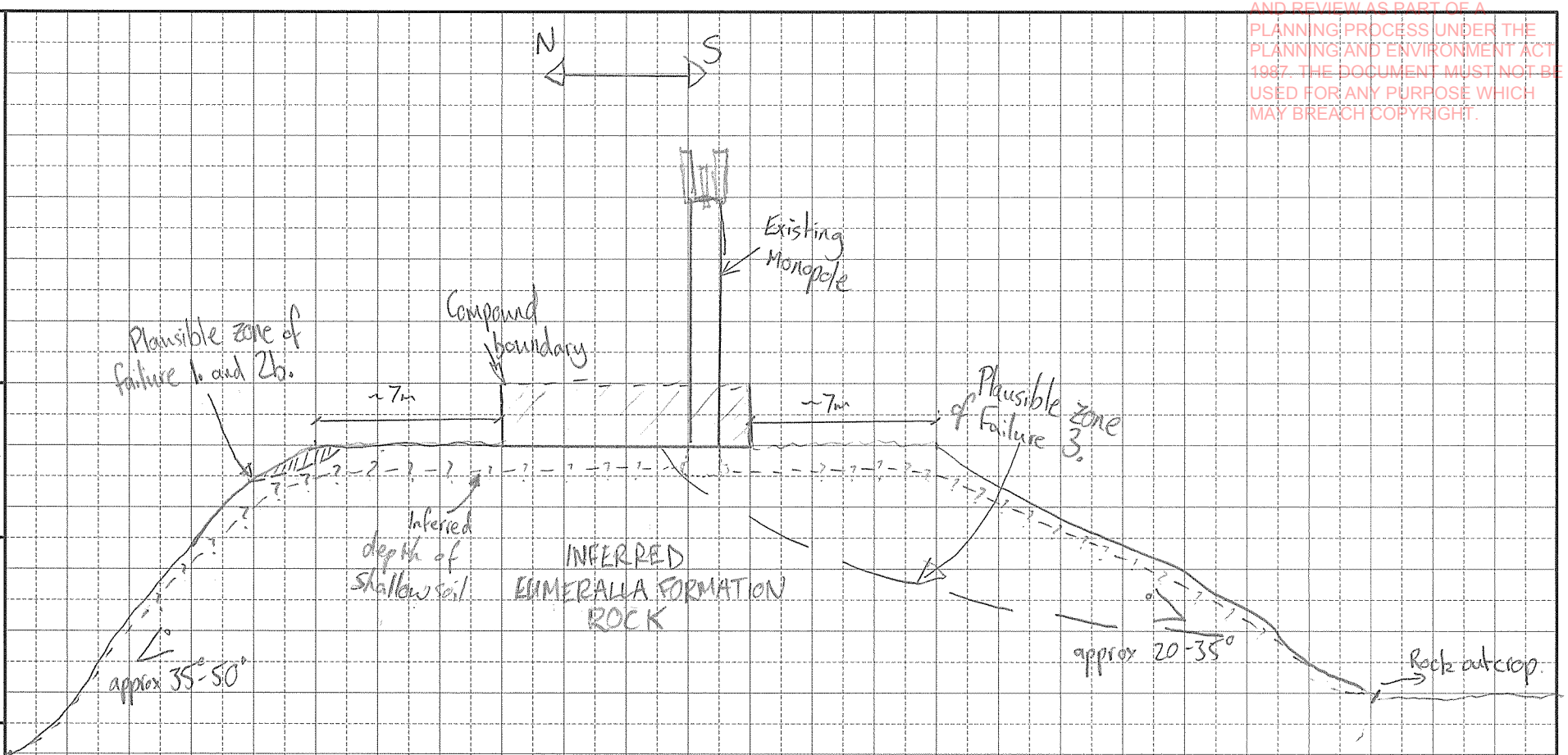
Project: Wye River Landslide Assessment	Designed: TC
Client: Civiltest Pty Ltd.	Checked: DK
Project No: MEL2018-0211	Date: 16/10/18
	Page: 1/3

CMW Geosciences



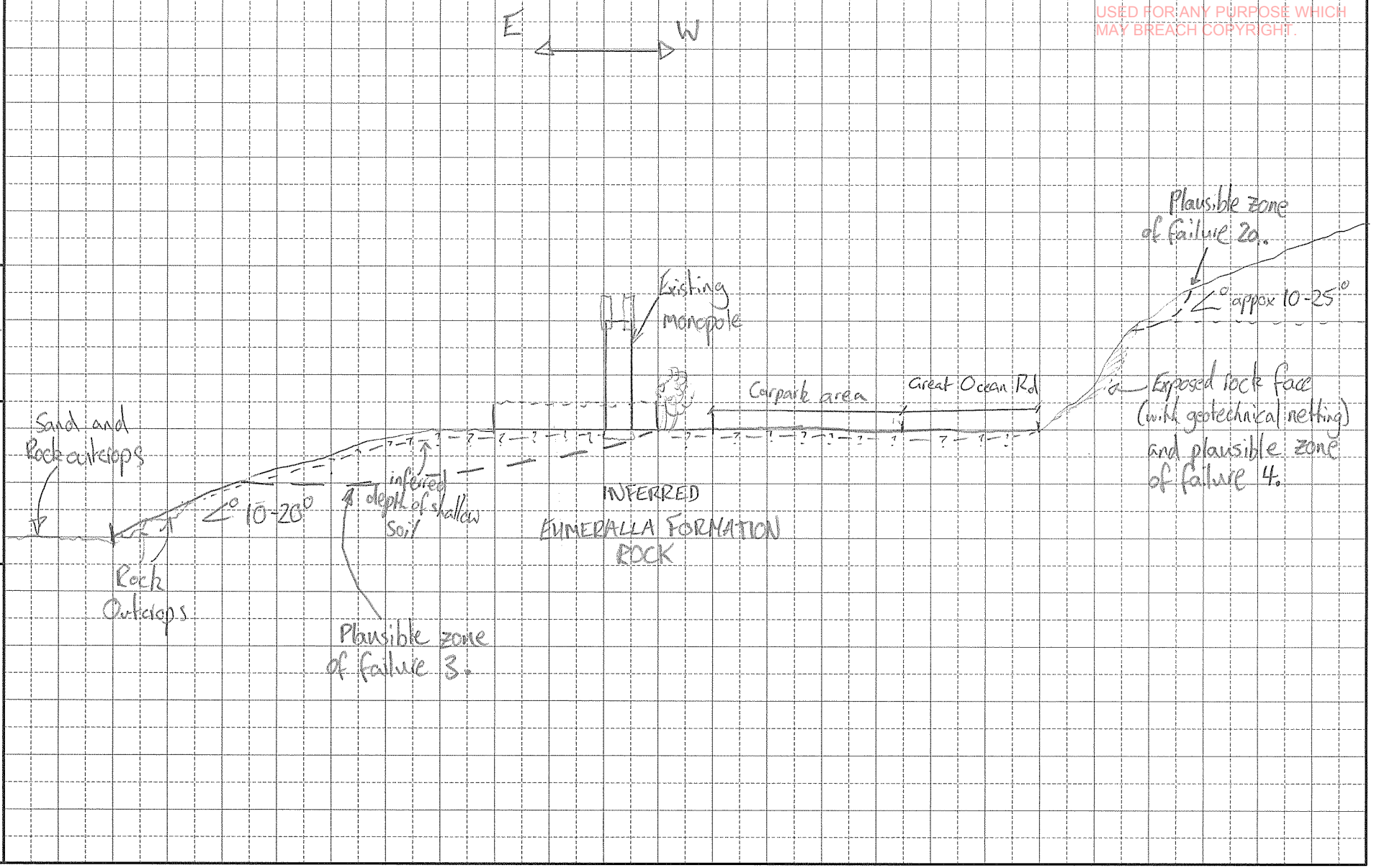
CMW Geosciences

Project: Wye River Landslide Assessment
Client: Civiltest Pty Ltd
Project No: NEL2018-0211
Date: 18/10/18
Designed: TK
Checked: DK
Page: 2/3



CMW Geosciences

Project: Wye River Landslide Assessment
Client: Cumulus Pty. Ltd
Project No: MEL2018-0211
Date: 18/10/18
Page: 3/3
Designed: TG
Checked: DK



Appendix E
Risk Assessment Tables (AGS Guidelines)

PRACTICE NOTE GUIDELINES FOR LANDSLIDE RISK MANAGEMENT 2007

APPENDIX C: LANDSLIDE RISK ASSESSMENT

QUALITATIVE TERMINOLOGY FOR USE IN ASSESSING RISK TO PROPERTY

QUALITATIVE MEASURES OF LIKELIHOOD

Approximate Annual Probability		Implied Indicative Landslide Recurrence Interval		Description	Descriptor	Level
Indicative Value	Notional Boundary					
10^{-1}	$5x10^{-2}$	10 years	20 years	The event is expected to occur over the design life.	ALMOST CERTAIN	A
10^{-2}	$5x10^{-3}$	100 years	200 years	The event will probably occur under adverse conditions over the design life.	LIKELY	B
10^{-3}	$5x10^{-4}$	1000 years	2000 years	The event could occur under adverse conditions over the design life.	POSSIBLE	C
10^{-4}	$5x10^{-5}$	10,000 years	20,000 years	The event might occur under very adverse circumstances over the design life.	UNLIKELY	D
10^{-5}	$5x10^{-6}$	100,000 years	200,000 years	The event is conceivable but only under exceptional circumstances over the design life.	RARE	E
10^{-6}		1,000,000 years		The event is inconceivable or fanciful over the design life.	BARELY CREDIBLE	F

Note: (1) The table should be used from left to right; use Approximate Annual Probability or Description to assign Descriptor, not *vice versa*.

QUALITATIVE MEASURES OF CONSEQUENCES TO PROPERTY

Approximate Cost of Damage		Description	Descriptor	Level
Indicative Value	Notional Boundary			
200%	100%	Structure(s) completely destroyed and/or large scale damage requiring major engineering works for stabilisation. Could cause at least one adjacent property major consequence damage.	CATASTROPHIC	1
60%	40%	Extensive damage to most of structure, and/or extending beyond site boundaries requiring significant stabilisation works. Could cause at least one adjacent property medium consequence damage.	MAJOR	2
20%	10%	Moderate damage to some of structure, and/or significant part of site requiring large stabilisation works. Could cause at least one adjacent property minor consequence damage.	MEDIUM	3
5%	1%	Limited damage to part of structure, and/or part of site requiring some reinstatement stabilisation works.	MINOR	4
0.5%		Little damage. (Note for high probability event (Almost Certain), this category may be subdivided at a notional boundary of 0.1%. See Risk Matrix.)	INSIGNIFICANT	5

Notes: (2) The Approximate Cost of Damage is expressed as a percentage of market value, being the cost of the improved value of the unaffected property which includes the land plus the unaffected structures.

(3) The Approximate Cost is to be an estimate of the direct cost of the damage, such as the cost of reinstatement of the damaged portion of the property (land plus structures), stabilisation works required to render the site to tolerable risk level for the landslide which has occurred and professional design fees, and consequential costs such as legal fees, temporary accommodation. It does not include additional stabilisation works to address other landslides which may affect the property.

(4) The table should be used from left to right; use Approximate Cost of Damage or Description to assign Descriptor, not vice versa

APPENDIX C: – QUALITATIVE TERMINOLOGY FOR USE IN ASSESSING RISK TO PROPERTY (CONTINUED)

QUALITATIVE RISK ANALYSIS MATRIX – LEVEL OF RISK TO PROPERTY

LIKELIHOOD		CONSEQUENCES TO PROPERTY (With Indicative Approximate Cost of Damage)				
	Indicative Value of Approximate Annual Probability	1: CATASTROPHIC 200%	2: MAJOR 60%	3: MEDIUM 20%	4: MINOR 5%	5: INSIGNIFICANT 0.5%
A – ALMOST CERTAIN	10^{-1}	VH	VH	VH	H	M or **L** (5)
B - LIKELY	10^{-2}	VH	VH	H	M	**L**
C - POSSIBLE	10^{-3}	VH	H	M	M	**VL**
D - UNLIKELY	10^{-4}	H	M	**L**	**L**	**VL**
E - RARE	10^{-5}	M	**L**	**L**	**VL**	**VL**
F - BARELY CREDIBLE	10^{-6}	**L**	**VL**	**VL**	**VL**	**VL**

Notes: (5) For Cell A5, may be subdivided such that a consequence of less than 0.1% is Low Risk.
(6) When considering a risk assessment it must be clearly stated whether it is for existing conditions or with risk control measures which may not be implemented at the current time.

RISK LEVEL IMPLICATIONS

Risk Level		Example Implications (7)
VH	VERY HIGH RISK	Unacceptable without treatment. Extensive detailed investigation and research, planning and implementation of treatment options essential to reduce risk to Low; may be too expensive and not practical. Work likely to cost more than value of the property.
H	HIGH RISK	Unacceptable without treatment. Detailed investigation, planning and implementation of treatment options required to reduce risk to Low. Work would cost a substantial sum in relation to the value of the property.
M	MODERATE RISK	May be tolerated in certain circumstances (subject to regulator's approval) but requires investigation, planning and implementation of treatment options to reduce the risk to Low. Treatment options to reduce to Low risk should be implemented as soon as practicable.
L	LOW RISK	Usually acceptable to regulators. Where treatment has been required to reduce the risk to this level, ongoing maintenance is required.
VL	VERY LOW RISK	Acceptable. Manage by normal slope maintenance procedures.

Note: (7) The implications for a particular situation are to be determined by all parties to the risk assessment and may depend on the nature of the property at risk; these are only given as a general guide.

APPENDIX F- EXAMPLE OF VULNERABILITY VALUES

SUMMARY OF HONG KONG VULNERABILITY RANGES FOR PERSONS, AND RECOMMENDED VALUES FOR LOSS OF LIFE FOR LANDSLIDING IN SIMILAR SITUATIONS

The following table is adapted from P J Finlay, G R Mostyn & R Fell (1999). *Landslides: Prediction of Travel Distance and Guidelines for Vulnerability of Persons*. Proc 8th. Australia New Zealand Conference on Geomechanics, Hobart. Australian Geomechanics Society, ISBN 1 86445 0029, Vol 1, pp.105-113.

Case	Range in Data	Recommended Value	Comments
Person in Open Space			
If struck by a rockfall	0.1 – 0.7	0.5	May be injured but unlikely to cause death
If buried by debris	0.8 – 1.0	1.0	Death by asphyxia almost certain
If not buried	0.1 – 0.5	0.1	High chance of survival
Persons in a Vehicle			
If the vehicle is buried/crushed	0.9 – 1.0	1.0	Death is almost certain
If the vehicle is damaged only	0 – 0.3	0.3	High chance of survival
Person in a Building			
If the building collapses	0.9 – 1.0	1.0	Death is almost certain
If the building is inundated with debris and the person buried	0.8 – 1.0	1.0	Death is highly likely
If the debris strikes the building only	0 – 0.1	0.05	Very high chance of survival

EXAMPLE OF VULNERABILITY VALUES FOR DESTRUCTION OF PEOPLE, BUILDINGS AND ROADS

The following table is adapted from Marion Michael-Leiba, Fred Baynes, Greg Scott & Ken Granger (2002). *Quantitative Landslide Risk Assessment of Cairns*. Australian Geomechanics, June 2002.

Geomorphic Unit	Vulnerability Values		
	People	Buildings	Roads
Hill slopes	0.05	0.25	0.3
Proximal debris fan	0.5	1.0	1.0
Distal debris fan	0.05	0.1	0.3

EXAMPLE OF VULNERABILITY VALUES FOR LIFE FOR ROCKFALLS AND DEBRIS FLOWS FOR LAWRENCE HARGRAVE DRIVE PROJECT, COALCLIFF TO CLIFTON AREA, AUSTRALIA

The following table is adapted from R A Wilson, A T Moon, M Hendricks & I E Stewart (2005). *Application of quantitative risk assessment to the Lawrence Hargrave Drive Project, New South Wales,Australia*. Landslide Risk Management - Hungr, Fell, Couture & Eberhardt (eds) 2005. Taylor & Francis Group, London, ISBN 04 1538 043X.

Order of magnitude of landslide crossing road (m^3)	**Rockfalls from Scarborough Cliff**		**Debris flow from Northern Amphitheatre**	
	Landslide hits car	**Car hits landslide**	**Landslide hits car**	**Car hits landslide**
0.03	0.05	0.006	–	–
0.3	0.1	0.002	–	–
3	0.3	0.03	0.001	–
30	0.7	0.03	0.01	0.001
300	1	0.03	0.1	0.003
3,000	1	0.03	1	0.003

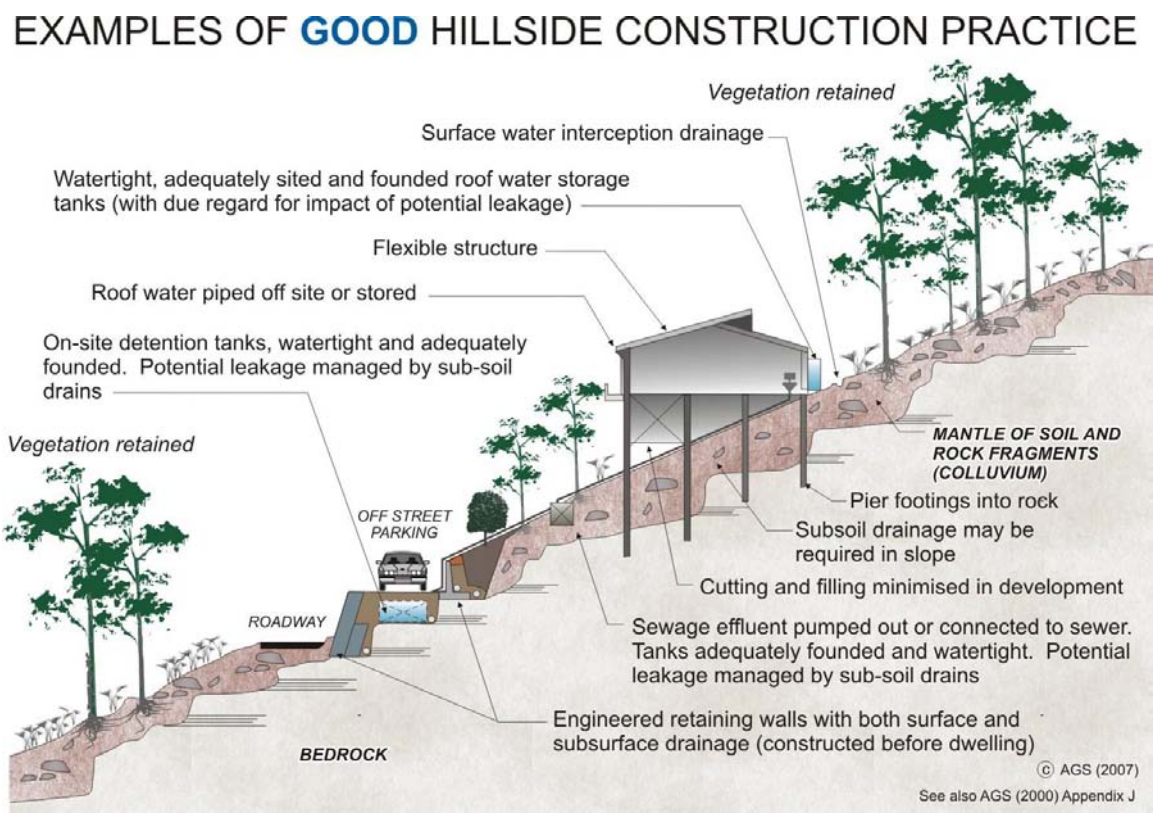
NOTE: The above data should be applied with common sense, taking into account the circumstances of the landslide being studied. Judgment may indicate values other than the recommended value are appropriate for a particular case.

Appendix F
Australian Geoguide LR8

AUSTRALIAN GEOGUIDE LR8 (CONSTRUCTION PRACTICE)

HILLSIDE CONSTRUCTION PRACTICE

Sensible development practices are required when building on hillsides, particularly if the hillside has more than a low risk of instability (GeoGuide LR7). Only building techniques intended to maintain, or reduce, the overall level of landslide risk should be considered. Examples of good hillside construction practice are illustrated below.



WHY ARE THESE PRACTICES GOOD?

Roadways and parking areas - are paved and incorporate kerbs which prevent water discharging straight into the hillside (GeoGuide LR5).

Cuttings - are supported by retaining walls (GeoGuide LR6).

Retaining walls - are engineer designed to withstand the lateral earth pressures and surcharges expected, and include drains to prevent water pressures developing in the backfill. Where the ground slopes steeply down towards the high side of a retaining wall, the disturbing force (see GeoGuide LR6) can be two or more times that in level ground. Retaining walls must be designed taking these forces into account.

Sewage - whether treated or not is either taken away in pipes or contained in properly founded tanks so it cannot soak into the ground.

Surface water - from roofs and other hard surfaces is piped away to a suitable discharge point rather than being allowed to infiltrate into the ground. Preferably, the discharge point will be in a natural creek where ground water exits, rather than enters, the ground. Shallow, lined, drains on the surface can fulfil the same purpose (GeoGuide LR5).

Surface loads - are minimised. No fill embankments have been built. The house is a lightweight structure. Foundation loads have been taken down below the level at which a landslide is likely to occur and, preferably, to rock. This sort of construction is probably not applicable to soil slopes (GeoGuide LR3). If you are uncertain whether your site has rock near the surface, or is essentially a soil slope, you should engage a geotechnical practitioner to find out.

Flexible structures - have been used because they can tolerate a certain amount of movement with minimal signs of distress and maintain their functionality.

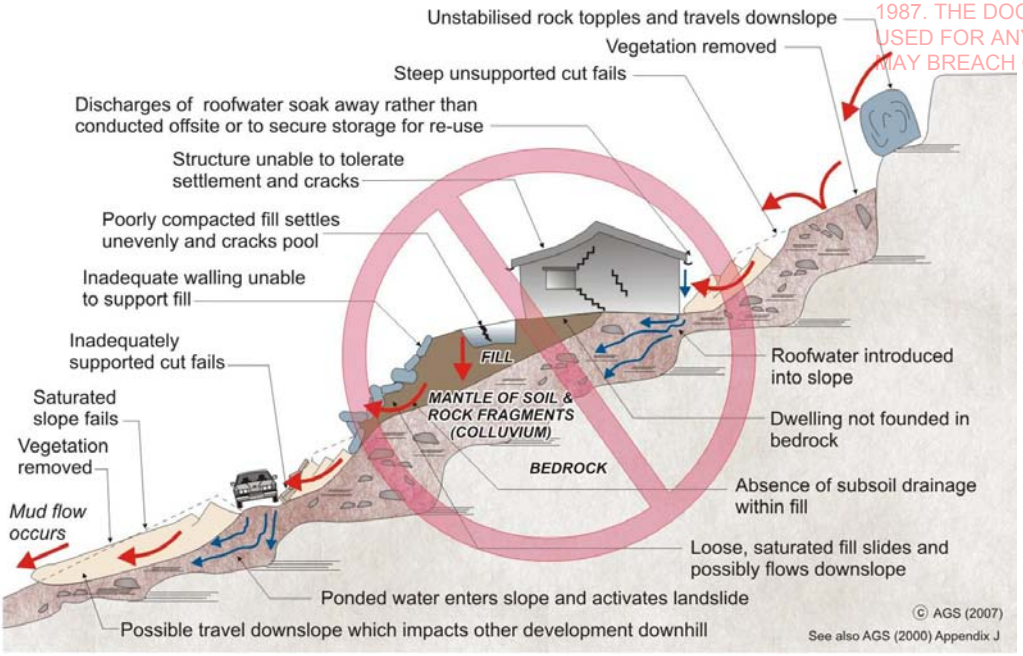
Vegetation clearance - on soil slopes has been kept to a reasonable minimum. Trees, and to a lesser extent smaller vegetation, take large quantities of water out of the ground every day. This lowers the ground water table, which in turn helps to maintain the stability of the slope. Large scale clearing can result in a rise in water table with a consequent increase in the likelihood of a landslide (GeoGuide LR5). An exception may have to be made to this rule on steep rock slopes where trees have little effect on the water table, but their roots pose a landslide hazard by dislodging boulders.

Possible effects of ignoring good construction practices are illustrated on page 2. Unfortunately, these poor construction practices are not as unusual as you might think and are often chosen because, on the face of it, they will save the developer, or owner, money. You should not lose sight of the fact that the cost and anguish associated with any one of the disasters illustrated, is likely to more than wipe out any apparent savings at the outset.

ADOPT GOOD PRACTICE ON HILLSIDE SITES

AUSTRALIAN GEOGUIDE LR8 (CONSTRUCTION PRACTICE)

EXAMPLES OF **POOR** HILLSIDE CONSTRUCTION PRACTICE



WHY ARE THESE PRACTICES POOR?

Roadways and parking areas - are unsurfaced and lack proper table drains (gutters) causing surface water to pond and soak into the ground.

Cut and fill - has been used to balance earthworks quantities and level the site leaving unstable cut faces and added large surface loads to the ground. Failure to compact the fill properly has led to settlement, which will probably continue for several years after completion. The house and pool have been built on the fill and have settled with it and cracked. Leakage from the cracked pool and the applied surface loads from the fill have combined to cause landslides.

Retaining walls - have been avoided, to minimise cost, and hand placed rock walls used instead. Without applying engineering design principles, the walls have failed to provide the required support to the ground and have failed, creating a very dangerous situation.

A heavy, rigid, house - has been built on shallow, conventional, footings. Not only has the brickwork cracked because of the resulting ground movements, but it has also become involved in a man-made landslide.

Soak-away drainage - has been used for sewage and surface water run-off from roofs and pavements. This water soaks into the ground and raises the water table (GeoGuide LR5). Subsoil drains that run along the contours should be avoided for the same reason. If felt necessary, subsoil drains should run steeply downhill in a chevron, or herring bone, pattern. This may conflict with the requirements for effluent and surface water disposal (GeoGuide LR9) and if so, you will need to seek professional advice.

Rock debris - from landslides higher up on the slope seems likely to pass through the site. Such locations are often referred to by geotechnical practitioners as "debris flow paths". Rock is normally even denser than ordinary fill, so even quite modest boulders are likely to weigh many tonnes and do a lot of damage once they start to roll. Boulders have been known to travel hundreds of metres downhill leaving behind a trail of destruction.

Vegetation - has been completely cleared, leading to a possible rise in the water table and increased landslide risk (GeoGuide LR5).

DON'T CUT CORNERS ON HILLSIDE SITES - OBTAIN ADVICE FROM A GEOTECHNICAL PRACTITIONER

More information relevant to your particular situation may be found in other Australian GeoGuides:

- GeoGuide LR1 - Introduction
- GeoGuide LR2 - Landslides
- GeoGuide LR3 - Landslides in Soil
- GeoGuide LR4 - Landslides in Rock
- GeoGuide LR5 - Water & Drainage
- GeoGuide LR6 - Retaining Walls
- GeoGuide LR7 - Landslide Risk
- GeoGuide LR9 - Effluent & Surface Water Disposal

GeoGuide LR10 - Coastal Landslides

- GeoGuide LR11 - Record Keeping

The Australian GeoGuides (LR series) are a set of publications intended for property owners; local councils; planning authorities; developers; insurers; lawyers and, in fact, anyone who lives with, or has an interest in, a natural or engineered slope, a cutting, or an excavation. They are intended to help you understand why slopes and retaining structures can be a hazard and what can be done with appropriate professional advice and local council approval (if required) to remove, reduce, or minimise the risk they represent. The GeoGuides have been prepared by the Australian Geomechanics Society, a specialist technical society within Engineers Australia, the national peak body for all engineering disciplines in Australia, whose members are professional geotechnical engineers and engineering geologists with a particular interest in ground engineering. The GeoGuides have been funded under the Australian governments' National Disaster Mitigation Program.

Appendix G
Form A Declaration

FORM	A	**Geotechnical Declaration and Verification Development Application**
Office Use Only		

Colac Otway SHIRE

To be submitted with planning application. It must accompany the Geotechnical Assessment and/or Landslip Risk Assessment. This form is essential to verify that the Geotechnical Assessment and/or Landslip Risk Assessment has been prepared in accordance with Cl 44.01 of the Colac Otway Planning Scheme and that the author of the Assessment/s is a geotechnical engineer or engineering geologist as defined by this clause.

Section 1	**Related Application**
Planning Application Number (if known)	
Site Address	3765 Great Ocean Road, Wye River VIC
Applicant	Visionstream

Section 2	**Geotechnical Assessment and /or Landslip Risk Assessment**	
Details	*Report Title:* Existing Mobile Network Site 254811: Landslide Risk Assessment.	
	Author's Company/ Organisation Name: CMW Geosciences	*Report Reference No:* MELZ018-0211 AB Rev0
	Author: Tyson Gillies	*Dated:* 15/10/2018

Section 3		**Checklist**
Geotechnical Requirements (Tick as appropriate either Yes or No)		**The following checklist covers the minimum requirements to be addressed in a Geotechnical Assessment and/or Landslip Risk Assessment. The report must also cover any additional matters required by Clause 44.01. This checklist must accompany each report. Each item is to be cross-referenced to the section or page of the Geotechnical Assessment and/or Landslip Risk Assessment which addresses that item.**
☑ Yes	☐ No	A review of readily available history of slope instability in the site or related land as per < 6.1 >
☑ Yes	☐ No	An assessment of the risk posed by all reasonably identifiable geotechnical hazards as per < Section 7 >
☑ Yes	☐ No	Plans and sections of the site and related land as per < Appendix A >
☑ Yes	☐ No	Presentation of a geological model as per < Section 6.1 >
☑ Yes	☐ No	Photographs and/or drawings of the site as per < Appendix D >
☑ Yes	☐ No	A conclusion as to whether the site is suitable for the development proposed to be carried out either conditionally or unconditionally as per < Section 8 >
☐ Yes	☐ No	If any items above are ticked No, an explanation is to be included in the report to justify why < >
		Is the approval subject to recommendations and conditions relevant to:
☑ Yes	☐ No	Selection and construction of footing systems.
☑ Yes	☐ No	Earthworks.
☑ Yes	☐ No	Surface and sub surface drainage.
☑ Yes	☐ No	Recommendations for the selection of structural systems consistent with the geotechnical assessment of the risk.
☑ Yes	☐ No	Any conditions that may be required for the ongoing mitigation and maintenance of the site and the proposal from a geotechnical viewpoint.
☐ Yes	☑ No	Highlighting and detailing the inspection regime to provide the <PCA> and builder with adequate notification for all necessary inspections.
50 Years		State the Design Life of the Structure adopted in the Geotechnical Assessment and/or the Landslip Risk Assessment.
☑ Yes	☐ No	Are the risk mitigation measures as recommended in the Geotechnical Assessment and/or the Landslip Risk Assessment suitable for the design life of the structure?
NOTE:		**<Add Reference> - Add in the relevant section or page number of the listed Geotechnical Assessment and/or Landslip Risk Assessment which addresses each item**

FORM A — Geotechnical Declaration and Verification Development Application

Section 4 — List of Drawings referenced in Geotechnical Assessment and/or Landslip Risk Assessment

Design Documents	Description	Plan or Document No.	Revision or Version No.	Date	Author
	Site Access, Location, Layout + Antenna (For Construction Drawings).	V106479	Issue 2	25/4/17	RH

Section 5 — Declaration

Declaration (Tick all that apply)		
		I am a geotechnical engineer or engineering geologist as defined by the Colac Otway Planning Scheme and on behalf of the company below:
☑ Yes	☐ No	I am aware that the Geotechnical Assessment and/or Landslip Risk Assessment I have either prepared or am technically verifying (referenced above) is to be submitted in support of a planning application for the proposed development site (referenced above) and its findings will be relied upon by the Colac Otway Shire Council in determining the planning application
☑ Yes	☐ N/A	I prepared the Geotechnical Assessment and/or Landslip Risk Assessment referenced above in accordance with the Colac Otway Planning Scheme and the AGS Guidelines 2007 as defined in the planning scheme.
☑ Yes	☐ N/A	I technically verify that the Geotechnical Assessment and/or Landslip Risk Assessment referenced above has been prepared in accordance with the Colac Otway Planning Scheme and the AGS Guidelines 2007 as appropriate.
☑ Yes	☐ No	I technically verify that the Geotechnical Assessment prepared for the planning application for the site confirms the land can meet the acceptable risk criteria specified in the schedule to Clause 44.01 of the Colac Otway Planning Scheme taking into account the total development and site disturbance proposed.
☑ Yes	☐ No ☐ N/A	I technically verify that the Landslip Risk Assessment prepared for the planning application for the site confirms the land can meet the tolerable risk criteria specified in the schedule to Clause 44.01 of the Colac Otway Planning Scheme taking into account the total development and site disturbance proposed.

Section 6 — Geotechnical Engineer or Engineering Geologist Details

Company/ Organisation Name	CMW Geosciences (East Coast)	
Name (Company Representative)	Surname: GILLIES	Dr / (Mr) / Mrs / Ms / Miss
	Given Name(s) TYSON JEFFREY	
	Chartered Professional Status —	Registration Number —
Signature	T. Gillies	Dated: 18 / 01 / 2018.

Reference: AGS Guidelines 2007c *"Practice Note Guidelines for Landslide Risk Management"*, Australian Geomechanics Society, Australian Geomechanics. V42. N1 March 2007.

Note: N/A = Not Applicable