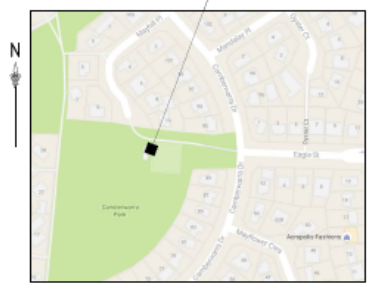
LOCATION PLAN

SITE ADDRESS

63 CAMBERWARRA DRIVE
CRAIGIE
WA 6025

PROPOSED OPTUS BASE STATION



LOCALITY MAP

PROPOSED OPTUS MONOPOLE

1. PROPOSED OPTUS 28m HIGH SLIMLINE MONOPOLE WITH 3m HIGH TURRET HEADFRAME. REFER TO ROCLA/ROAM/LeBLANC/FEC MONOPOLE CERTIFICATE № (TBA, MANUFACTURER TO CONFIRM AT DETAIL DESIGN STAGE).
2. PROPOSED OPTUS ANTENNAS TO BE INSTALLED ON PROPOSED TURRET HEADFRAME AT EL 30.0m.
3. MONOPOLE AND HEADFRAME DETAILS, INCLUDING ANTENNA MOUNTS, FEEDER CABLE SUPPORTS, SHALL BE DESIGNED IN ACCORDANCE WITH THE "OPTUS TOWER SPECIFICATION" (OSD-030).
4. ANTENNA MAINTENANCE ACCESS BY QUALIFIED PERSONNEL ONLY (EG. VIA LADDER AND STEP PEGS WITH FALL ARREST SYSTEM PROVIDED ON MONOPOLE.
5. REFER TO CONSULTANT'S GEOTECHNICAL INVESTIGATION REPORT FOR SUBSOIL CONDITIONS.

EQUIPMENT SHELTER / FITOUT

PROPOSED 3 BAY ODU AND 1 BAY ODU FUTURE ON CONCRETE SLAB.

TRANSMISSION

THIS SITE SHALL BE LINKED TO THE NETWORK VIA FIBRE.

REMOTE ELECTRONIC TILT

RET CONTROL FOR THIS SITE TO BE INSTALLED AS PER OPTUS (OM38040) RET/MHA DEPLOYMENT GUIDE LATEST REVISION.

CONSTRUCTION SITE ACCESS

ACCESS IS VIA CAMBERWARRA DRIVE AND PAVED WALKWAY.

EXISTING SITE HAZARDS

1. MANUAL HANDLING
2. SLIP, TRIP AND FALLS
3. ELECTRICAL HAZARDS
4. WEATHER / LIGHTNING
5. SUN EXPOSURE
6. WILDLIFE / INSECTS

WHS SAFETY IN DESIGN RISK ASSESSMENT

ALL HAZARDS ASSOCIATED WITH THE DESIGN OF THE PROPOSED WORKS AS WELL AS ANY EXISTING OR LEGACY DOCUMENTATION "OM38346 - MRD WHS SAFETY IN DESIGN RISK ASSESSMENT MATRIX.

SITE SIGNAGE

1. SITE SIGNAGE SHALL BE IN ACCORDANCE WITH OSD-170 (GROUND SITE).
2. SPECIFY SPECIAL REQUIREMENTS REQUIRED BY SITE PROVIDER, LOCAL AUTHORITY, ETC.

EME EXCLUSION ZONES

1. REFER TO RADIO COMMUNICATIONS SITE MANAGEMENT BOOK (RCSMB) FOR LATEST EME EXCLUSION ZONES FOR EXISTING AND PROPOSED ANTENNAS AT THIS SITE.
2. REFER TO DRAWING P8437-G3 FOR CONTROL MEASURES AT THIS SITE (IF APPLICABLE).

GENERAL

1. THE CONTRACTOR SHALL COMPLY WITH ALL THE RELEVANT OPTUS CONSTRUCTION STANDARDS AND SPECIFICATIONS.
2. ALL INFORMATION TO BE CHECKED ON SITE PRIOR TO FABRICATION AND CONSTRUCTION.

Rev	Date	Revision Details						
01	12.01.18	ISSUED NOT FOR CONSTRUCTION (ROAD AND RAIL)	SSPC Consultant	JH CAD	- Designer	- Verifier	DP Approver	

servicestream MOBILE COMMUNICATIONS
Level 3, 7-9 Clough Drive, Malaga WA 6090
T +61 8 9258 1500 | F +61 8 9258 5400 | www.servicestream.com.au

Client: OPTUS

Project: MOBILE NETWORK AUSTRALIA
SITE No:- P8437
CRAIGIE
63 CAMBERWARRA DRIVE, CRAIGIE

Drawing Title: SITE SPECIFICATIONS

Drawing Status: NOT FOR CONSTRUCTION | Drawing No.: P8437-G1 | Revision: 01

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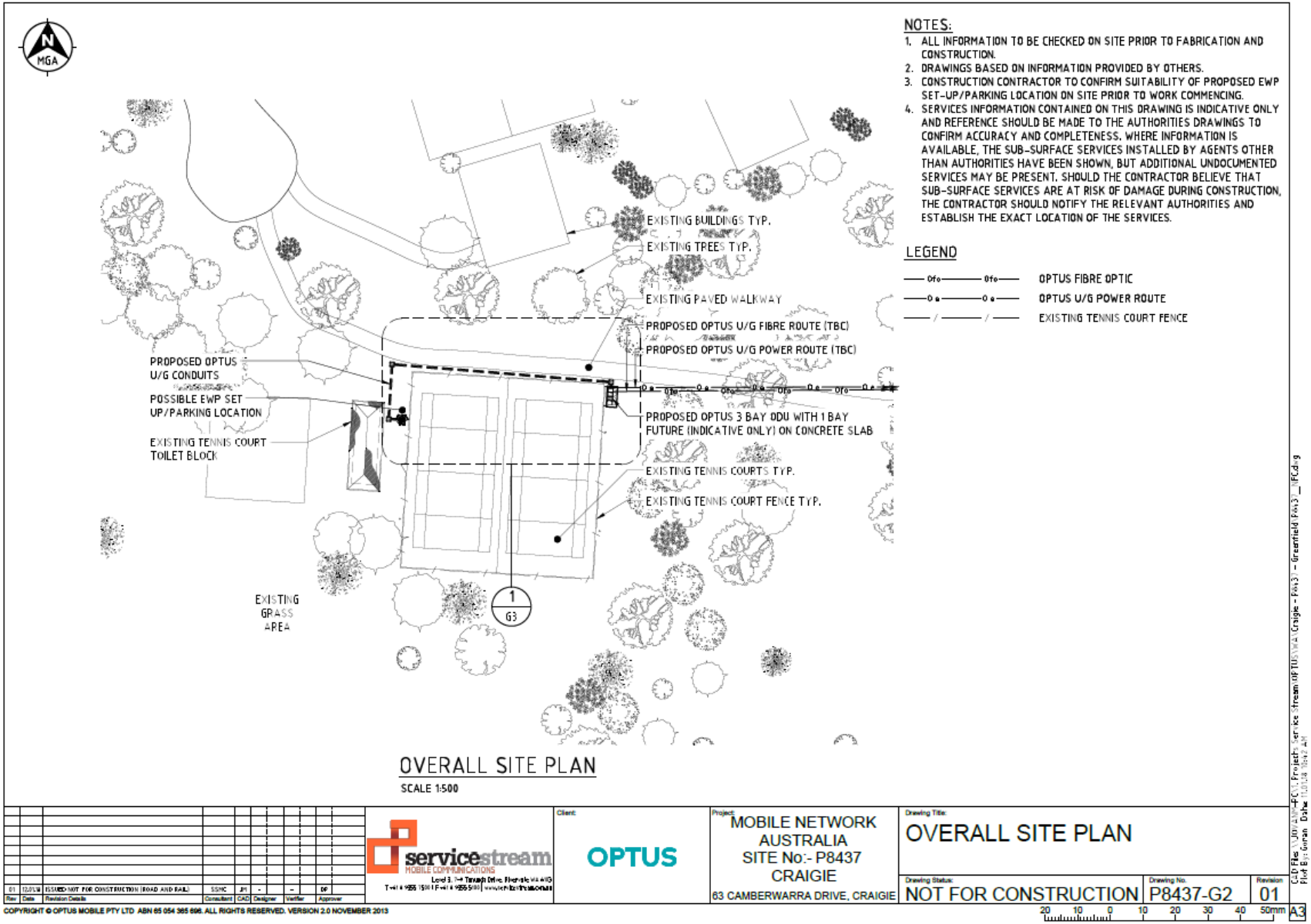
N
MGA
NOTES:
1. ALL INFORMATION TO BE CHECKED ON SITE PRIOR TO FABRICATION AND CONSTRUCTION.
2. DRAWINGS BASED ON INFORMATION PROVIDED BY OTHERS.
3. CONSTRUCTION CONTRACTOR TO CONFIRM SUITABILITY OF PROPOSED EWP SET-UP/PARKING LOCATION ON SITE PRIOR TO WORK COMMENCING.
4. SERVICES INFORMATION CONTAINED ON THIS DRAWING IS INDICATIVE ONLY AND REFERENCE SHOULD BE MADE TO THE AUTHORITIES DRAWINGS TO CONFIRM ACCURACY AND COMPLETENESS. WHERE INFORMATION IS AVAILABLE, THE SUB-SURFACE SERVICES INSTALLED BY AGENTS OTHER THAN AUTHORITIES HAVE BEEN SHOWN, BUT ADDITIONAL UNDOCUMENTED SERVICES MAY BE PRESENT. SHOULD THE CONTRACTOR BELIEVE THAT SUB-SURFACE SERVICES ARE AT RISK OF DAMAGE DURING CONSTRUCTION, THE CONTRACTOR SHOULD NOTIFY THE RELEVANT AUTHORITIES AND ESTABLISH THE EXACT LOCATION OF THE SERVICES.
LEGEND
OPTUS FIBRE OPTIC
OPTUS U/G POWER ROUTE
EXISTING TENNIS COURT FENCE
EXISTING BUILDINGS TYP.
EXISTING TREES TYP.
EXISTING PAVED WALKWAY
PROPOSED OPTUS U/G FIBRE ROUTE (TBC)
PROPOSED OPTUS U/G POWER ROUTE (TBC)
PROPOSED OPTUS U/G CONDUITS
POSSIBLE EWP SET UP/PARKING LOCATION
EXISTING TENNIS COURT TOILET BLOCK
PROPOSED OPTUS 3 BAY DDU WITH 1 BAY FUTURE (INDICATIVE ONLY) ON CONCRETE SLAB
EXISTING TENNIS COURTS TYP.
EXISTING TENNIS COURT FENCE TYP.
EXISTING GRASS AREA
1
G3
OVERALL SITE PLAN
SCALE 1:500
01 12.01.18 ISSUED NOT FOR CONSTRUCTION (ROAD AND RAIL) SSMC JPI - - DF
servicestream MOBILE COMMUNICATIONS
Level 3, 114 Tenah Drive, Phoenix WA 6163
T+61 8 9358 1500 F+61 8 9358 5180 www.servicestream.com.au
Client: OPTUS
Project: MOBILE NETWORK AUSTRALIA SITE No:- P8437 CRAIGIE
63 CAMBERWARRA DRIVE, CRAIGIE
Drawing Title: OVERALL SITE PLAN
Drawing Status: NOT FOR CONSTRUCTION
Drawing No. P8437-G2
Revision 01
COPYRIGHT © OPTUS MOBILE PTY LTD ABN 65 054 365 696. ALL RIGHTS RESERVED. VERSION 2.0 NOVEMBER 2013
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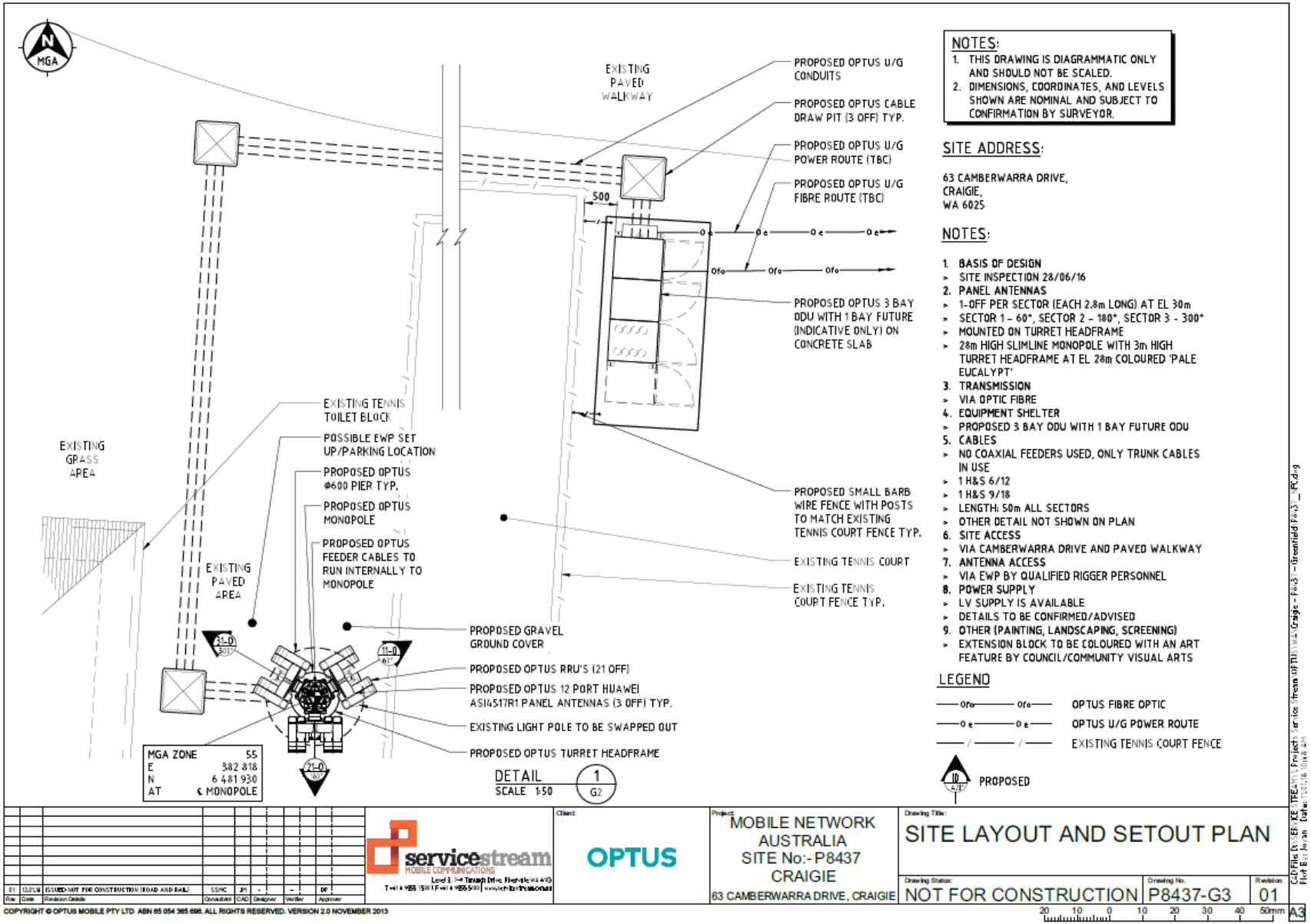
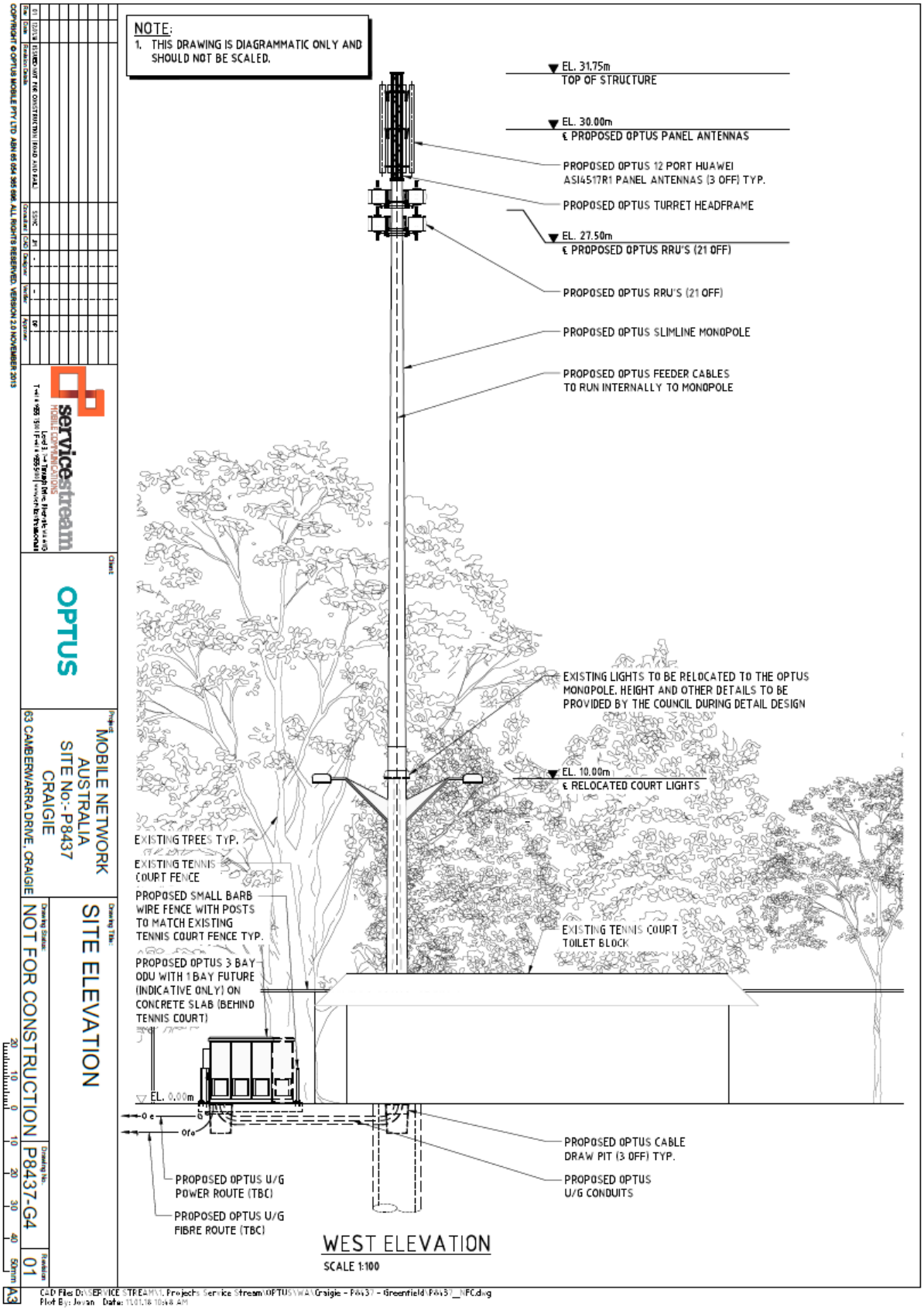
A3




NOTE:
1. THIS DRAWING IS DIAGRAMMATIC ONLY AND SHOULD NOT BE SCALED.
EL. 31.75m
TOP OF STRUCTURE
EL. 30.00m
℄ PROPOSED OPTUS PANEL ANTENNAS
PROPOSED OPTUS 12 PORT HUAWEI ASI4517R1 PANEL ANTENNAS (3 OFF) TYP.
PROPOSED OPTUS TURRET HEADFRAME
EL. 27.50m
℄ PROPOSED OPTUS RRU'S (21 OFF)
PROPOSED OPTUS RRU'S (21 OFF)
PROPOSED OPTUS SLIMLINE MONOPOLE
PROPOSED OPTUS FEEDER CABLES TO RUN INTERNALLY TO MONOPOLE
EXISTING LIGHTS TO BE RELOCATED TO THE OPTUS MONOPOLE. HEIGHT AND OTHER DETAILS TO BE PROVIDED BY THE COUNCIL DURING DETAIL DESIGN
EL. 10.00m
℄ RELOCATED COURT LIGHTS
EXISTING TREES TYP.
EXISTING TENNIS COURT FENCE
PROPOSED SMALL BARB WIRE FENCE WITH POSTS TO MATCH EXISTING TENNIS COURT FENCE TYP.
EXISTING TENNIS COURT TOILET BLOCK
PROPOSED OPTUS 3 BAY ODU WITH 1 BAY FUTURE (INDICATIVE ONLY) ON CONCRETE SLAB (BEHIND TENNIS COURT)
EL. 0.00m
PROPOSED OPTUS CABLE DRAW PIT (3 OFF) TYP.
PROPOSED OPTUS U/G CONDUITS
PROPOSED OPTUS U/G POWER ROUTE (TBC)
PROPOSED OPTUS U/G FIBRE ROUTE (TBC)
WEST ELEVATION
SCALE 1:100
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servicestream
MOBILE COMMUNICATIONS
OPTUS
MOBILE NETWORK AUSTRALIA
SITE No:- P8437
CRAIGIE
63 CAMBERWARRA DRIVE, CRAIGIE
SITE ELEVATION
NOT FOR CONSTRUCTION
P8437-G4
01
A3

BEFORE

AFTER

PLANNING SOLUTIONS | PS
URBAN & REGIONAL PLANNING

SCALE	NTS @ A4
DATE	9 February 2018
FILE	18\209.4373 Photomontage.dwg
REVISION	2D R/REV0.9 02.2018
	1\DRAFT\1st Draft\1 2.05.2017

PHOTOMONTAGE - 1

63 CAMBERWARRA DRIVE,
CRAIGIE, WA

BEFORE

AFTER

PLANNING SOLUTIONS | PS
URBAN & REGIONAL PLANNING

SCALE	NTS @A4
DATE	9 February 2018
FILE	18 0209 4 373 Photomontage.dwg
REVISION	2D R/REV0 9.02.2018 1D R/First Draft 12.05.2017

PHOTOMONTAGE - 2

63 CAMBERWARRA DRIVE,
CRAIGIE, WA

BEFORE

AFTER

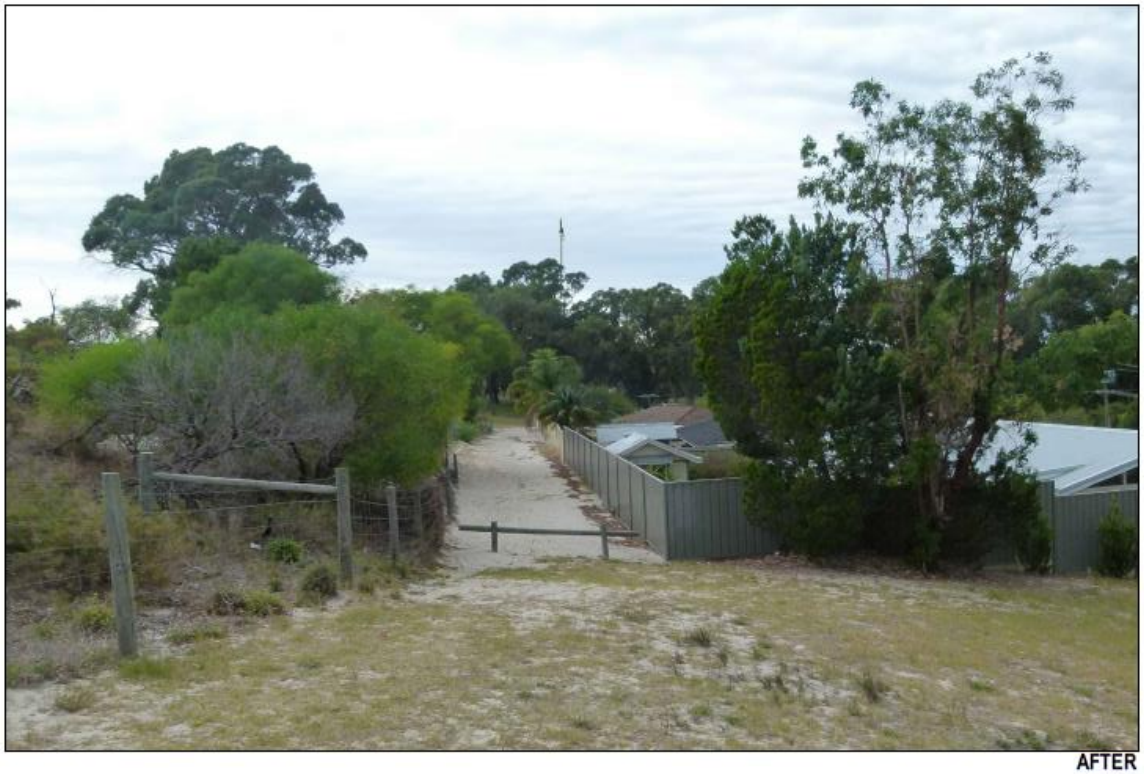
PLANNING SOLUTIONS | PS
URBAN & REGIONAL PLANNING

SCALE NTS @A4
DATE 30 March 2018
FILE 180330 4373 Photomontage.dwg
REVISION 1/DR/First Draft/5.03.2018

PHOTOMONTAGE - 1

63 CAMBERWARRA DRIVE,
CRAIGIE, WA

BEFORE



AFTER

PLANNING SOLUTIONS | PS
URBAN & REGIONAL PLANNING

SCALE NTS @A4
DATE 20 March 2018
FILE 180320 4373 Photomontage.dwg
REVISION 1/DR/First Draft/19.03.2018

PHOTOMONTAGE - 2

63 CAMBERWARRA DRIVE,
CRAIGIE, WA

Department of Planning

Western Australian Planning Commission

STATE PLANNING POLICY 5.2

Telecommunications Infrastructure

September 2015

Prepared under Part Three of the Planning and Development Act 2005 by the Western Australian Planning Commission

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This document is available in alternative formats on application to Communication Services.

CONTENTS

click to follow

1. CITATION

This is a State Planning Policy prepared under Part 3 of the *Planning and Development Act 2005*. This policy may be cited as *State Planning Policy 5.2: Telecommunications Infrastructure Policy*.

After this policy has been gazetted, Statement of Planning Policy 5.2 Telecommunications Infrastructure (2004) will be repealed.

2. POLICY INTENT

Installation of telecommunications network infrastructure usually involves the development of land and/or alteration to the appearance of buildings or structures, which may have visual impacts. This planning policy aims to balance the need for effective telecommunications services and effective roll-out of networks, with the community interest in protecting the visual character of local areas. Using a set of land use planning policy measures, the policy intends to provide clear guidance pertaining to the siting, location and design of telecommunications infrastructure.

3. BACKGROUND

Adequate and reliable telecommunications are essential for all aspects of contemporary community life, from supporting the State's economy to creating and maintaining connected and cohesive social networks. Contact between emergency services and the community increasingly relies on the telecommunications networks.

The importance of telecommunications services in Western Australia is recognised in the Western Australian Planning Commission's (WAPC's) *State Planning Strategy 2050* (2014), which advocates for the provision of an effective state-wide telecommunications network. This network includes both above and below ground infrastructure to support both fixed line and wireless telecommunications.

3.1 Electromagnetic Emissions (EME)

The use of mobile telephones has raised public concern about possible health issues associated with exposure to electromagnetic emissions. However, telecommunications carriers must comply with the Australian Communications and Media Authority (ACMA) *Radiocommunications Licence Conditions (Apparatus Licence) Determination 2003*. These licence conditions make mandatory the limits in the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) *Radiofrequency* (RF) *Standard* which sets limits for human exposure to RF electromagnetic fields from all sources, including telecommunications infrastructure. ARPANSA is the primary Commonwealth agency responsible for protecting the health and safety of people and the environment from the harmful effects of radiation.

Measurement surveys undertaken by ARPANSA demonstrate that environmental radiofrequency levels near base stations for the mobile telephone network are extremely low. The ARPANSA surveys reported that typical exposures to radiofrequency fields were well below one per cent of the Standard's public exposure limits. It concluded that *"given the very low levels recorded and the relatively low power of these types of transmitters, it is unlikely that the radiofrequency radiation from base stations would cause any adverse health effects, based on current medical research"*.

Standards set by ARPANSA incorporate substantial safety margins to address human health and safety matters; therefore it is not within the scope of this Policy to address health and safety matters. Based on ARPANSA's findings, setback distances for telecommunications infrastructure are not to be set out in local planning schemes or local planning policies to address health or safety standards for human exposure to electromagnetic emissions.

3.2 Where this policy applies

This policy applies throughout Western Australia in respect to above and below ground telecommunications infrastructure other than those facilities exempted under the Commonwealth *Telecommunications Act 1997* (Telecommunications Act). (See Section 3.5 Policy Exemptions for further information)

All other facilities constitute 'development' under the *Planning and Development Act 2005* and development approval may be required from the relevant planning authority. Separate approval may also be required from other government agencies under other legislation.

3.3 Above ground telecommunications infrastructure

For the purposes of this policy, above ground telecommunications infrastructure refers to any line, equipment, apparatus, tower, antenna or any other structure that is visible above ground level.

3.3.1 Mobile telephone networks

Mobile telephone networks operate through base stations, which incorporate a radio transmitter, a receiver and an antenna. Base stations provide coverage to a geographic area known as a 'cell', which may vary in size but generally has a radius of up to 10 kilometres. Each cell has its own transceiver which sends and receives radio signals throughout its specified zone.

The location of new mobile telephone base stations needs to be carefully considered in relation to existing base stations, to ensure that the network functions effectively. Mobile telephone antennas generally need to be mounted clear of surrounding obstructions like trees and buildings to avoid loss of reception and to allow each mobile telephone base station to cover its intended cell with minimum transmitter power. They must also be sited where they will not interfere with neighbouring cells. The more base stations of a particular carrier there are in an area, the smaller the cells, which means the power and energy levels of each station are generally lower. In areas of high mobile use there are many small cells to meet traffic demands, maintaining service quality and capacity. Antennas do not need to be very high and can be installed on building roofs or small poles. If additional base stations are needed in areas where mobile network coverage already exists, demand may be met by adding more panels to existing towers, or by constructing new towers. In areas of low mobile use, the cells are larger and the antennae are mounted on taller masts and towers.

As telecommunications networks expand due to increasing demand for mobile telephone and data services, the location, siting and design of proposed facilities becomes critical.

3.3.2 National Broadband Network fixed wireless broadband towers

National Broadband Network (NBN) fixed wireless broadband towers are usually bigger than mobile phone towers, and are more likely to be required in metropolitan fringe and regional areas.

Fixed wireless technology can transmit data at broadband speeds using radio signals instead of cables. This technology uses fixed transmission towers or base stations to communicate 'over the air' with the NBN installed equipment within the home or business. Line of sight from the tower to the equipment at the home or business is essential. Western Australia is a vast state with complex geography and fixed wireless technology enables access to NBN services in locations that are difficult or not cost effective to reach with fixed line technology.

3.3.3 Amateur radio equipment

The amateur service is designed primarily to facilitate hobby radio communications and for technical experimentation and operates on specified frequency bands. Amateur radio operators communicate using transmission modes including, but not limited to, Morse code, telephony and data.

Anyone can listen to the amateur bands using a receiver, but to transmit, operator qualifications and a licence issued by the Australian Communications and Media Association (ACMA) are required.

An amateur apparatus licence is issued to authorise a station that:

a) is operated for the purposes of self-training in radio communications; intercommunication using radio communications; and technical investigation into radio communications by persons who do so solely with a personal aim, and who have no pecuniary interest in the outcome of the operations of the station;

b) is operated on amateur frequencies or amateur frequency bands; and

c) may participate in the amateur-satellite service.

3.4 Below ground telecommunications infrastructure

For the purposes of this policy, below ground infrastructure refers to pit and pipe infrastructure used to house fixed line (fibre, Hybrid Fibre Coaxial, copper) to carry voice and data services.

In accordance with the Fibre Deployment Amendment 2011 to the Telecommunications Act, developers that are corporations are required to provide fibre-ready pit and pipe infrastructure to new developments that are within the National Broadband Network Corporations' (NBN Co) fibre footprint.

Developers of all new developments are encouraged to engage with a telecommunications carrier to ensure that pit and pipe infrastructure complies with industry specifications or any standards set by the ACMA.

3.5 Policy exemptions

Some telecommunications facilities are exempted from development approval under the Telecommunications Act.

Schedule 3 of the Telecommunications Act and related subordinate legislation provides telecommunications carriers with powers to enter land to inspect land, maintain facilities and install certain types of facilities (known as low-impact facilities), and immunity from some state and territory laws, including planning laws, when carrying out these activities.

Schedule 3 of the Telecommunications Act includes:

- low-impact facilities described in the Telecommunications *(Low-Impact Facilities) Determination 1997* and all existing and future amendments, when installed by a carrier;
- a temporary defence facility; and
- a facility authorised by a Facilities Installation Permit issued under the Telecommunication Act.

Carriers seeking to install low-impact facilities are required to comply with Schedule 3 of the Telecommunications Act and the Telecommunications Code of Practice 1997.

3.6 When this policy should be applied

Due regard should be given to this policy by State and local government planning decision-makers for:

a) The preparation and assessment of local planning schemes and local planning policies;
b) The preparation of local structure plans; and
c) Development proposals for telecommunications infrastructure.

3.7 Relationship of this policy to Commonwealth legislation

The Telecommunications Act provides the regulatory framework for the Australian telecommunications industry. All telecommunications carriers and service providers must comply with the Act and its subordinate legislation. The ACMA is empowered through the Telecommunications Act to regulate and monitor the performance of the industry, and reports to the Minister for Communications annually.

Relevant amendments to the Telecommunications Act include:

- *Telecommunications Legislation Amendment (Fibre Deployment) Act 2011* - This amendment to the Telecommunications Act provides a framework for the roll-out of the National Broadband Network, specifically the deployment of optical fibre lines and fibre-ready infrastructure.

Other relevant Commonwealth legislation and subordinate codes include:

- *National Broadband Network Companies Act 2011* – This Act provides a regulatory framework for NBN Corporations that promotes the long term interests of end-users of carriage services or of services provided by means of carriage services; and
- *Mobile Phone Base Station Deployment Industry Code (C564:2011)* – This code applies a precautionary approach to the deployment of mobile telephone infrastructure to ensure that the exposure of the community to EME is minimised. It also sets out a consultation procedure for infrastructure development that does not require development approval (low impact facilities).

This policy complements the Telecommunications Act and other relevant and subordinate legislation.

4. POLICY OBJECTIVES

The objectives of this policy are to:

a) facilitate the provision of telecommunications infrastructure in an efficient and environmentally responsible manner to meet community needs;

b) manage the environmental, cultural heritage, visual and social impacts of telecommunications infrastructure;

c) ensure that telecommunications infrastructure is included in relevant planning processes as essential infrastructure for business, personal and emergency reasons; and,

d) promote a consistent approach in the preparation, assessment and determination of planning decisions for telecommunications infrastructure.

5. POLICY MEASURES

5.1 Visual impacts

For telecommunications infrastructure to be effective, structures are generally located prominently, at high points in the landscape or on top of buildings, where they are more likely to be visible to the public.

The planning authority may exercise discretion in addressing the visual impacts of telecommunications infrastructure. Visual impacts of an infrastructure development proposal should be assessed by applying the following set of policy measures to guide the location, siting and design of the structure.

5.1.1 The benefit of improved telecommunications services should be balanced with the visual impact on the surrounding area.

i) Assessment of the visual impact of development proposals for telecommunications infrastructure should be made on a case by case basis;

ii) Telecommunications infrastructure should be sited and designed to minimise visual impact and whenever possible:

   a) be located where it will not be prominently visible from significant viewing locations such as scenic routes, lookouts and recreation sites;

   b) be located to avoid detracting from a significant view of a heritage item or place, a landmark, a streetscape, vista or a panorama, whether viewed from public or private land;

   c) not be located on sites where environmental, cultural heritage, social and visual landscape values maybe compromised and

   d) display design features, including scale, materials, external colours and finishes that are sympathetic to the surrounding landscape;

iii) In addition to the existing exemptions under the Telecommunication Act, local governments should consider exempting telecommunications infrastructure from the requirement for development approval where:

   a) The infrastructure has a maximum height of 30 metres from finished ground level;

   b) The proposal complies with the policy measures outlined in this policy; and

   c) The proponent has undertaken notification of the proposal in a similar manner to 'low impact facilities' as defined and set out in the Mobile Phone Base Station Deployment Industry Code (C564:2011);

iv) Telecommunications infrastructure should be located where it will facilitate continuous network coverage and/or improved telecommunications services to the community; and

v) Telecommunications infrastructure should be co-located and whenever possible:

   a) Cables and lines should be located within an existing underground conduit or duct; and

   B) Overhead lines and towers should be co-located with existing infrastructure and/or within existing infrastructure corridors and/or mounted on existing or proposed buildings.

Section 6.3.1 provides guidance on what applicants should submit in support of a development application to assist planning assessment.

6. IMPLEMENTATION

This policy is given effect by the *Planning and Development Act 2005*. Telecommunications infrastructure should be included as a relevant planning consideration in the preparation and assessment of local planning schemes and local planning policies, structure plans (at the local level) and development applications.

6.1 Local planning schemes and local planning policies

When preparing or reviewing local planning schemes or local planning policies, local governments should ensure that:

a) Telecommunications infrastructure is included in the zoning table as a land use;

b) Telecommunications infrastructure is not designated as a 'use not permitted' (X) by the scheme in any zone in the zoning table;

c) In zones where the location of telecommunications infrastructure is supported, telecommunications infrastructure is designated as a permitted use (P) in the zoning table;

d) In zones where telecommunications infrastructure is permitted, the Scheme provides guidance on development approval exemptions;

e) Buffer zones and/or setback distances are not included in local planning schemes or local planning policies; and

a) Schemes and policies adhere to the policy measures outlined in Section 5 of this policy.

6.2 Structure planning at the local level

a) In the preparation and assessment of structure plans at the local level, consideration should be given to the need for telecommunications services in supporting documentation. Early consideration of wireless and mobile phone telecommunication system requirements allows for them to be incorporated into the design process and mitigate any potential visual impacts to the community.

6.3 Development

In considering a development application, the local government should give consideration to:

a) The extent to which the proposal adheres to the policy measures outlined in Section 5 of this policy

b) The need for services to be located to optimise coverage; and

c) Documentation to be submitted under Section 6.3.1 of this Policy.

The advertising period for a development proposal should be no more than 21 days.

6.3.1 Information to be submitted when lodging a development application

In addition to the requirements for development applications under the relevant local planning scheme, development applications for telecommunications infrastructure are to include the following information:

a) a report demonstrating compliance with the Mobile Phone Base Station Deployment Industry Code (C564:2011), excluding Sections 6 and 7 (which only apply to developments that do not require development approval);

b) a statement and/or a map indicating the extent to which the proposed facility addresses the network capacity for future demand and/or current gaps in service;

c) a statement about the extent to which the proposed facility complies with any relevant local planning scheme or planning policy adopted under a scheme and (if applicable) justification for any variation from the relevant scheme or policy provisions;

d) plans and coloured graphic illustrations, including photo simulations, showing the type of facility and its relationship with adjacent development, including the proposal's elevations showing the extent, height and appearance, proposed materials and colour, any screening or fencing, and any external lighting;

e) details of any significant environmental constraints, including those associated with the species, condition and significance of any vegetation to be removed;

f) map and a statement about where the proposed facility is to be located. If the facility is proposed within an infrastructure easement or corridor, consultation with other users is to be demonstrated; and

g) a statement explaining how the proposed facility addresses the policy measures for the location, siting and design of telecommunications infrastructure set out in Section 5.1.1 of this Policy.

CONTENTS

7. DEFINITIONS

Telecommunications Carrier has the same meaning given to the term in the *Telecommunications Act 1997.*

Fibre-ready Facility has the same meaning given to the term in the *Telecommunications Act 1997.*

Relevant health and safety standard means health and safety standards specified for the installation and operation of telecommunications facilities under the:

- *(Commonwealth) Telecommunications Code of Practice 1997;*
- *(Commonwealth) Radiocommunications Act 1992;*
- *Mobile Phone Base Station Deployment Industry Code (C564:2011) (this is a document prepared by the Communications Alliance and registered with the ACMA as an Industry Code)*

Telecommunications infrastructure means any part of the infrastructure of a telecommunications network and includes any line, equipment, apparatus, tower, antenna, tunnel, duct, hole, pit, or other structure used, or for use, in or in connection with a telecommunications network.

Service provider has the same meaning given to the term in the *Telecommunications Act 1997*

National Broadband Network has the same meaning given to the term in the *National Broadband Companies Act 2011*

National Broadband Network Corporation has the same meaning given to the term in the *National Broadband Companies Act 2011*

Radiocommunications has the same meaning given to the term in the *Radiocommunications Act 1992*

Pit and pipe infrastructure refers to pits and conduits installed in subdivisions to house fixed line telecommunications cable.

Fibre-ready facility has the same meaning given to the term in the *Telecommunications Act 1997*

Carriage services include services for carrying communications, for example telephone services, Internet access services and Voice over Internet Protocol (VoIP) services.

Telecommunications Infrastructure Local Planning Policy

Planning Policy

Responsible Directorate: Planning and Community Development

Objective: To outline the City's position on the installation of telecommunications infrastructure in the City of Joondalup.

1. Authority:

This Policy has been prepared in accordance with the deemed provisions of the *Planning and Development (Local Planning Scheme) Regulations 2015,* which allows a local government to prepare local planning policies relating to planning or development within the Local Planning Scheme area.

2. Application:

This policy applies throughout the City of Joondalup in respect to all above ground telecommunications infrastructure other than those facilities that are exempted under the Commonwealth *Telecommunications Act 1997* (including low-impact facilities).

3. Definitions:

"above ground telecommunications infrastructure" refers to any line, equipment, apparatus, tower, antenna or any other structure that is visible above ground level.

"low-impact facility" means a facility used for telecommunications as described in Section 3.1 - Facilities of the *Telecommunications (Low-impact Facilities) Determination Act 1997.*

Note: Under the *Telecommunications Act 1997* certain facilities cannot be low-impact facilities, namely designated overhead lines, a tower that is not attached to a building, a tower attached to a building and more than 5 metres high, an extension to a tower that has previously been extended, and/or an extension to a tower if the extension is more than 5 metres high.

"telecommunications carrier" means a telecommunications company that is licensed by the Australian Communications and Media Authority as a carrier.

"telecommunications infrastructure" as defined in State Planning Policy 5.2 *Telecommunications Infrastructure* means any part of the infrastructure of a telecommunications

network and includes any line, equipment, apparatus, tower, antenna, tunnel, duct, hole, pit or other structure used, or for use, in or in connection with a telecommunications network.

Note: Telecommunications infrastructure, under this policy, does not include facilities covered by the City's *Satellite Dishes, Aerials and Radio Equipment Policy*.

4. Statement:

This policy is complementary to State Planning Policy 5.2: *Telecommunications Infrastructure* (SPP 5.2). In assessing development applications for telecommunications infrastructure (non low-impact) the City is required to have due regard to SPP 5.2, including visual impact considerations on a case by case basis.

However, SPP 5.2 makes it clear that telecommunications carrier licences incorporate standards set by the Australian Radiation Protection and Nuclear Safety Agency and those licences include substantial safety margins to address human health. It is therefore not within the scope of SPP 5.2, local planning schemes or local planning policy to address health and safety matters, or to outline setback or buffer distances for telecommunications infrastructure.

5. Details:

5.1. Installation of Low-Impact Telecommunications Facilities:

The City recognises that it is bound by Federal legislation relating to telecommunications infrastructure and that it has no jurisdiction over the location, installation, or upgrading of low-impact facilities. The City will, however, provide comment when notified of a carrier's intent to install low-impact facilities by way of encouraging background colour matching and the removal of obsolete infrastructure.

5.2. Installation of Other Telecommunications Infrastructure:

The City recognises the right of landowners/applicants to submit development applications for telecommunication infrastructure deemed to be other than low-impact under the *Telecommunications Act 1997*. The City also acknowledges its obligation to make a recommendation to the Western Australian Planning Commission (WAPC) or determine the application in its own right.

Upon receiving a development application for telecommunications infrastructure, which is not a low-impact facility, the City will advertise the proposal for a 21–day period and consult with the local community surrounding the proposed site. Owners and occupiers of property within a radius of 400 metres from the location of the proposed facility will be advised in writing, at the cost of the applicant, and afforded an opportunity to make a submission prior to the matter being considered at a Council Meeting.

In making a recommendation to the WAPC or in determining the application, the Council will have due regard to:

- the provisions outlined in State Planning Policy 5.2: *Telecommunications Infrastructure*
- compliance with the *Telecommunications Code of Practice 1997*
- the topography of the site and surrounding area, the size, height and type of the proposed facility, the location and density of surrounding vegetation, and the general visibility of the proposal from surrounding development

- the merits of the particular proposal, including the need for services to be located to optimise coverage
- submissions received in response to public consultation, noting that submissions on health or safety grounds cannot be considered.

Creation Date:	December 2002 Formerly: • *Telecommunications Facilities* • *Installation of Telecommunications Facilities*
Amendments:	CJ166-08/12; CJ098-06/16
Related Documentation:	• *City of Joondalup District Planning Scheme No. 2* • *Telecommunications Act 1997* • *Telecommunications Code of Practice 1997* • *Telecommunications (Low-impact Facilities) Determination Act 1997* • *Planning and Development Act 2005* • *State Planning Policy No. 5.2: Telecommunications Infrastructure* • *Planning and Development (Local Planning Schemes) Regulations 2015*

Environmental EME Report

Lot 11608 Camberwarra Drive, CRAIGIE WA 6025

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

Date 23/1/2017 **RFNSA Site No. 6025014**

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 Lot 11608 Camberwarra Drive CRAIGIE WA 6025. These levels have been calculated by Radhaz Consulting using methodology developed by the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA).

The maximum EME level calculated for the proposed systems at this site is 0.74% 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 proposed systems at this site is 4.68 V/m; equivalent to 58.084 mW/m² or 0.74% of the public exposure limit.

Radio Systems at the Site

There are currently no existing radio systems for this site.

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

Carrier	Radio Systems
Optus	LTE700 (proposed), WCDMA900 (proposed), LTE1800 (proposed), WCDMA2100 (proposed), LTE2600 (proposed), LTE2300 (proposed)

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 Lot 11608 Camberwarra Drive in 360° circular bands	Maximum Cumulative EME Level at 1.5m above ground – all carriers at this site					
	Existing Equipment			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				3.25	27.95	0.36%
50m to 100m				2.86	21.65	0.26%
100m to 200m				4.67	57.82	0.74%
200m to 300m				4.68	58.084	0.74%
300m to 400m				3.51	32.73	0.41%
400m to 500m				2.65	18.69	0.24%
Maximum EME level				4.68	58.084	0.74
				201.2 m from the antennas at Lot 11608 Camberwarra Drive		

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	Camberwarra Park playground	0m to 3m	2.11	11.79	0.13%
2	2-storey residential	0m to 6m	3.24	27.78	0.33%
3	2-storey residential	0m to 6m	5.078	68.39	0.89%
4	2-storey residential	0m to 6m	5.28	73.95	0.97%
5	Craigie Heights High School	0m to 3m	3.32	29.16	0.37%

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).

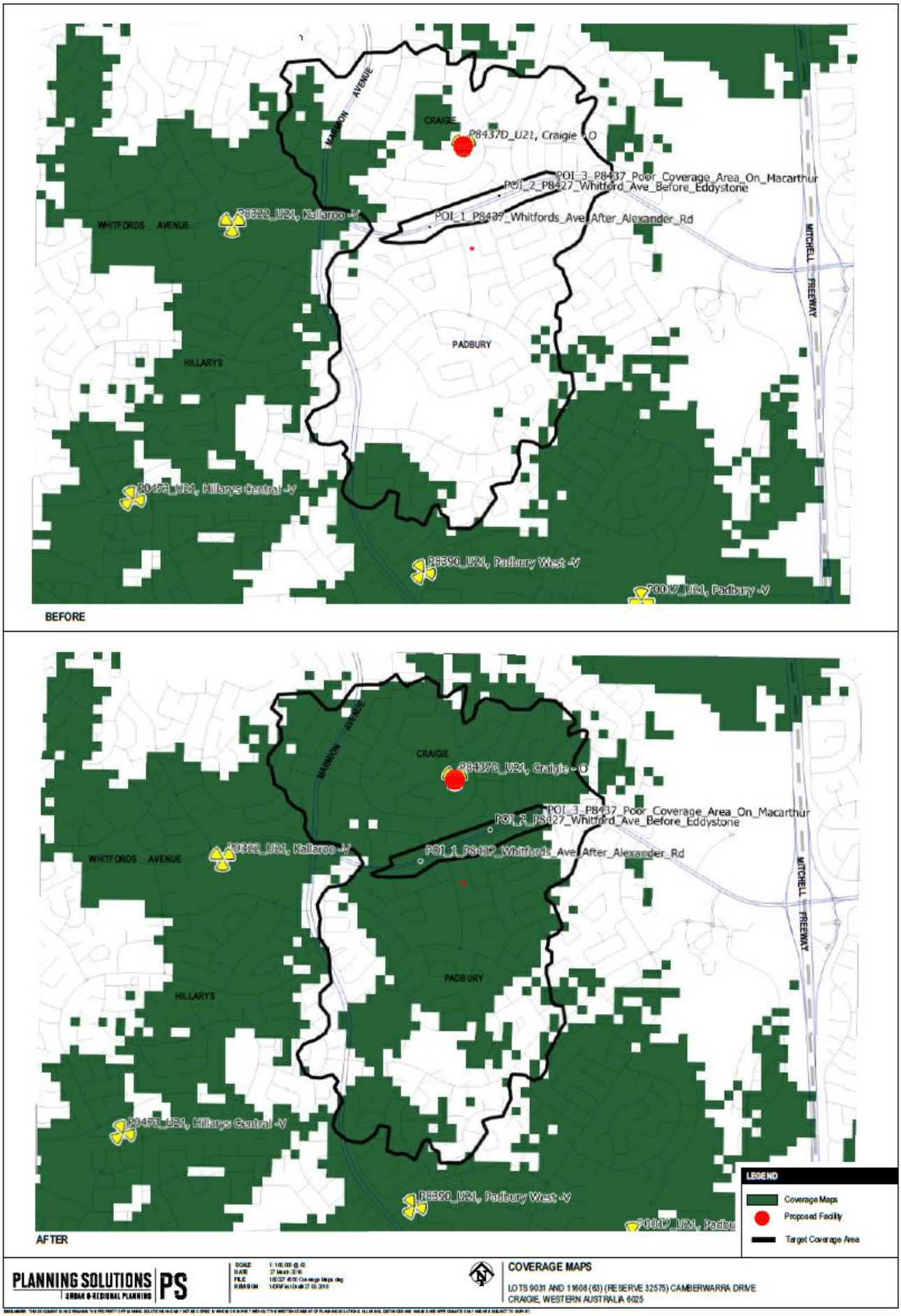
Information about RF EME can be accessed at the ARPANSA website, http://www.arpansa.gov.au, including:

- 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.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CRAIGIE
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POI_1_P8437_Whitfords_Ave_After_Alexander_Rd
WHITFORDS AVENUE
P0322_U21, Kallaroo -V
MITCHELL FREEWAY
PADBURY
HILLARYS
P0473_U21, Hillarys Central -V
P8390_U21, Padbury West -V
P0017_U21, Padbury -V
BEFORE
AFTER
LEGEND
Coverage Maps
Proposed Facility
Target Coverage Area
PLANNING SOLUTIONS
URBAN & REGIONAL PLANNING
COVERAGE MAPS
LOTS 9031 AND 19008 (63) (RESERVE 32575) CAMBERWARRA DRIVE
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