Prepared for:	Shire of Goomalling
Attention:	CEO: Samuel Bryce ceo@goomalling.wa.gov.au goshire@goomalling.wa.gov.au
Date:	8 April 2026
Site Location:	Site reference: RCP3-012-A [Koonongorring Site] Address: Lot 13104 on DP133733 (accessed off Dowerin-Konnongorring Road), Konnongorring

Commercial in Confidence

Vision Statement

To be the first choice for broadband internet in regional Western Australia by providing first-class infrastructure with a consistent focus on excellent customer service and ongoing regional community consultation to ensure our program meets the needs of country WA.

Background

CRISP Wireless is a Network owner/operator licensee for Fixed Wireless Broadband and NBN services in Western Australia.

We provide a unique telecommunications solution that utilises Point-to-Point secured wireless connectivity between sites as well as community wireless services and subscriber broadband.

Quality Information

Prepared for:

Koonongorring Site (RCP3-012-A)

Prepared by:

CRISP Wireless Pty Ltd

Address: PO Box 1004, Narrogin WA 6312

Email: lballard@crispwireless.com.au

Document number:

Revision	Revision Date	Details	Authorisation		
			Prepared By	Reviewed By	Authorised By
A	07/04/2026	Proposal	Heidi Cowcher	Leigh Ballard	Leigh Ballard

Proposal

CRISP Wireless is continuing the expansion of our fixed wireless network across the Wheatbelt. It is proposed that a 40-metre communications tower be built at Lot 13104 on DP133733 (accessed off Dowerin-Koonongorring Rd), Koonongorring in the Shire of Goomalling. This proposed tower is part of a wider network across the region that is being established to improve telecommunications connectivity for Wheatbelt-based residents.

An agreement has been entered into with the landowner for the installation of this telecommunications infrastructure to be located on the subject land in the form of a 40m telecommunications tower, together with a container to house the communication equipment with solar panels on top for power provision.

The development application is made in accordance with the *Planning and Development Act 2005* for assessment under the Shire of Goomalling Town Planning Scheme 3. The subject land is in the Rural 3 – General Farming zone.

The proposed work is defined as *Telecommunications Infrastructure* for the purposes of this development application; however, this Scheme does not have this use defined. It may be that Council will accept the definition of *Industry – Light*, however this will be at Council's discretion as per Clause 3.2.5 (described in more detail in the following section). The site proposed will not affect, nor impact, current farming practices.

Under the TPS, the Zoning tables specify the uses permitted in various zones. The permissibility of any use is determined by considering the zoning table and cross-referencing it with the proposed works. The installation of Industry – Light (if that definition is acceptable to Council) under the zoning table is an 'SA' use and is therefore only permitted at the discretion of the Council following advertising, and then Council are required to determine the planning approval.

A summary of the subject land is provided in the table below:

Address of subject land	Lot 13104 on DP133733
Real Property Description	13104/DP133733
Area of Subject Land	91.3074 ha
Existing buildings on Subject Land	General farming related infrastructure
Road Frontages	Dowerin-Konnongorring Road & Northam-Pithara Road
Zone	Rural 3 – General Farming zone
Overlays	Bushfire-Prone Area, Native Vegetation
Landowners	Badjyn Pty Ltd (Directors: William James Bynon & Jamie Darren Bynon)
Easements/Encumbrances	1. The land the subject of this Certificate of Title excludes all portions of the lot described above except that portion shown in the sketch of the superseded paper version of this title. See Volume 1975 Folio 197. As to Lot 13104 on DP133733, Lot 13106 on DP133739 only. 2. N990371 – Mortgage to Westpac Banking Corporation (registered 20/9/2018) 3. P875786 – Caveat by the Register of Titles (lodged 2/2/2024).

The site is highlighted on the following maps:

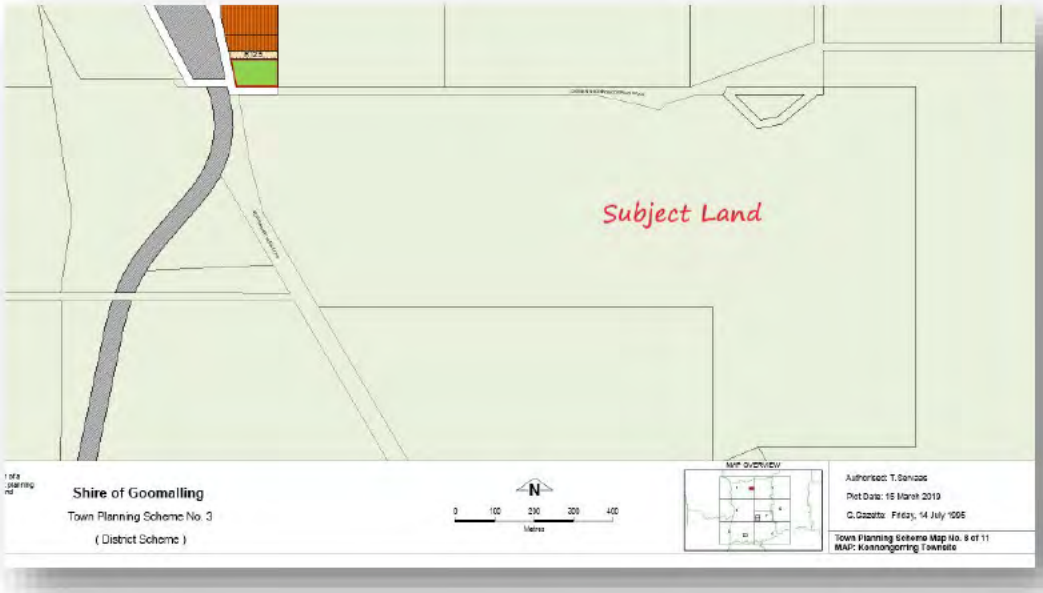


Fig 1: Shire of Goomalling Town Planning Scheme 3 (Map 8 – Koonongorring townsite *Source: Shire of Goomalling*

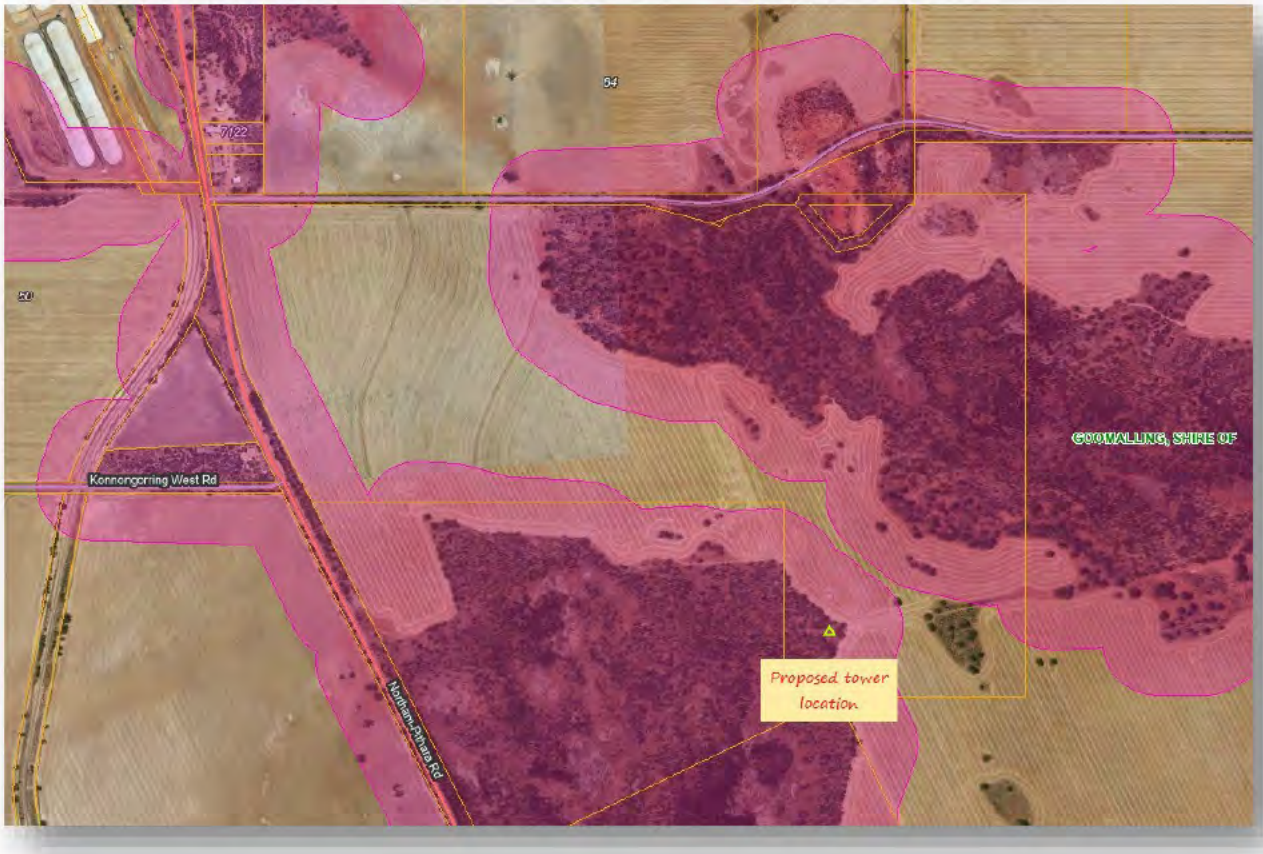


Figure 2: Map of Bushfire Prone Area (*Source: Landgate SLIP*)

Figure 3: Native Vegetation Extent *(Source: DPIRD WA Remnant Vegetation Mapping)*

The telecommunications infrastructure will consist of the following:

- A 40m steel tower, as shown in **Attachment 5.**
- A combination of Dual Pole Parabolic Antennas (Dishes) and Sector Antennas as shown in **Attachment 6.**
- A sea container housing the communications equipment; and
- Solar panels to power the system on the roof of the sea container.

The tower is proposed to be built towards the southern boundary of the lot, with an estimated setback of 84m to the western boundary and 850m from the Northam-Pithara and the Dowerin-Konnongorring Roads respectively. The boundary setback is shown in the Site Plan in **Attachment 4**. The TPS prescribes the setback requirements as being 50m from the road and 20m from all other boundaries. Both of these required setbacks have been achieved.

The subject land is located within the mapped remnant vegetation in an open area; however, no vegetation clearing is required for the construction of the tower. It is always preferential to locate the infrastructure in an area that is already cleared to minimise any environmental impacts. All construction will endeavour to manage the existing vegetation on the lot, and site the tower and container in an already cleared area. In this instance, the site is a relatively clear site, as evidenced in the mapping.

Access to the site will be via Dowerin-Konnongorring Road, via an existing farm laneway system. No special construction is required as the property is reasonably accessible as it is. Access to the site during construction will amount to one semi-trailer accessing the site on one occasion (total of two 'movements' – one in and one out); followed by one six-wheeler Hiab accessing the site on one occasion (total of two 'movements' – one in and one out); and then lastly one commercial ute on two occasions (total of four 'movements' – two in and two out) – with construction anticipated to take two days.

At the completion of construction, it is highly unlikely that the applicant will be required to access the site for ongoing maintenance as much can be undertaken via the remote access software by our experienced and qualified technicians. However, if a need arises, it will be by a light vehicle (commercial ute) and would be on one occasion (total of two 'movements' – one in and one out). It is not proposed to establish formalised parking given the very infrequent nature of the access required to the tower once construction is complete and the tower is 'live'.

Please refer to the attached Site Plan in **Attachment 4** showing the location of the proposed tower and associated infrastructure, the proposed access location and the access pathway.

As the proposed tower is for wireless broadband only and does not transmit electromagnetic waves/fields to mobile phones, it does not emit electromagnetic radiation and does not require an Environmental EME (Electromagnetic Energy) Report to be prepared or provided to support the development application.

Figure 5: Photo of Tower and Communication Hut (Source: CRISP Wireless)

Planning Scheme and other Legislation

The Planning Scheme

The proposed use will be assessed against the Shire of Goomalling Town Planning Scheme 3 (*the Planning Scheme*).

The TPS does not include a definition for 'telecommunications industry' in the scheme definitions. However, the closest is 'Industry – Light' – which is defined as: any industry:

a) In which the processes carried on, the machinery used, and the goods or commodities carried to and from the premises will not cause any injury to, or will not adversely affect the amenity of the locality by reason of the emission of light, noise, electrical interference, vibration, smell, fumes, smoke, vapour, steam, soot, ash, dust, waste water or other waste products; and
b) The establishment of which will not or the conduct of which does not impose an undue load on any existing or projected service for the supply or provision of water, gas, electricity, sewerage facilities, or any other like services.

Clause 3.2.5 of the Scheme states: If the use of land for a particular purpose is not specifically mentioned in the Zoning Table and cannot reasonably be determined as falling within the interpretation of one of the use classes, the Council may:

a) Determine that the use is not consistent with the objective and purpose of the particular zone and is therefore not permitted; or
b) Determine by absolute majority that the proposed use is consistent with the objectives and purposes of the zone and thereafter follow the advertising procedures of Clause 6.2 in considering an application for Planning Consent.

Further, Clause 6.2.3 states: Where the Council is required, or decides, to give notice of an application for Planning Approval, the Council shall cause one or more of the following to be carried out:

a) Notice of the proposed development to be served on the owners and occupiers of land within an area determined by the Council as likely to be affected by the granting of Planning Approval, stating that submissions may be made to the Council within 21 days of the service of such notice: or
b) Notice of the proposed development to be published in a newspaper circulating in the Scheme area, stating that submissions may be made to the Council within 21 days from the publication thereof: or
c) A sign or signs displaying notice of the proposed development to be erected in a conspicuous position on the land for a period of 21 days from the date of publication of the notice referred to in paragraph (b) of this Clause.

Finally, Clause 6.2.5 states: After expiration of 21 days from the serving of the notice of the proposed development, the publication of notice, or the erection of a sign or signs, whichever is the later, the Council shall consider and determine the application.

Based on this information, it is likely that Council will need to advertise the proposal, including providing advice to the surrounding landowners who may be affected by the proposal, giving them the opportunity to provide feedback on the proposal. Once the required advertising has been completed, Council will then need to consider the Development Application and determine whether to approve or not the request.

Zone Objectives - Rural 3 Zone – General Farming

The objective for the zone is to maintain the rural economy of the Shire and protect the rural landscape and environment generally.

Council needs to consider proposed developments in this Zone taking into account:

a) Ensuring that the zone contains predominantly rural uses and reserves for various purposes. *This project proposal will not impact on, nor adversely affect any current or future rural uses within the Rural 3 – General Farming zone.*
b) The need to protect land from urban uses which may jeopardise the future use of that land for other planned purposes which are compatible with the rural zoning. *This project proposal is not considered an 'urban use' and will not jeopardise the future use of the land for any other purpose that may fall under the rural zoning. The towers are placed in locations that will not detract from, or impact, the useability of the land generally in this Zone.*
c) The need to protect the land from closer development which would detract from the rural character and amenity of the area. *This project proposal does not pose any risks or potential impacts that will detract from the rural character and amenity of the area.*
d) The need to prevent any development which may affect the viability of a rural holding. *This project proposal is not considered a development that may affect the viability of the rural holding. Quite the opposite, it will improve the viability of the area, as it offers internet connectivity options that may not be currently available in the area.*
e) The requirement that planning approval be obtained for all buildings including a residence and assess such applications to ensure minimal intrusion onto the rural landscape and the amenity of adjoining properties. *This project proposal is for the construction of a telecommunication tower and associated infrastructure. There is no habitation that is part of this proposal. The site selected is within an area of the property that is not arable and therefore will not impact on the financial viability of the property; will not intrude into the farming area or the rural landscape and will not impact adversely on the amenity of adjoining properties.*

The proposed construction of the telecommunications infrastructure ensures that agricultural pursuits can be preserved, will not adversely impact the viability of agricultural land, will not adversely impact the rural character and amenity of the area, and does not propose the clearing of any vegetation. In direct correlation, the proposed telecommunications infrastructure, as a non-rural land use, has

evidenced significant benefits for the district with improvements in connectivity and access to a reliable, fast internet service.

It is noted that the Gabby Quoi Quoi lookout is approximately 820m to the north of the proposed tower site; and the lookout sits approximately 310m above sea level, and the site where the tower is to be built is approximately 320m above sea level and will be 40m tall. As the tower is a monopole and is black in colour it generally blends into the landscape, and whilst it may be visible from the lookout, it should not detract from the amenity of the area and the views of the surrounding farmland that the lookout is renowned for.

Figure 6: Distance between proposed tower location & Gabby Quoi Quoi lookout

(Source: Landgate)

Section 64 of Schedule 2 Deemed provisions for local planning schemes of the Planning and Development (Local Planning Schemes) Regulation 2015 requires the advertising of complex applications for development approval.

State Planning Policy 5.2 – Telecommunications Infrastructure

The intent of State Planning Policy 5.2 – Telecommunications Infrastructure is 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".*

As stated in the Policy, 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 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.

The proposed development provides a wireless broadband network through line-of-site towers and complies with the intent of the Policy. Sites for telecommunications facilities are chosen for elevation, distance to other towers and ease of access. In this case, the facility is set well away from roads and sensitive receptors and is unlikely to affect visual amenities.

The Policy further states the following about the Visual Impacts of any proposed Telecommunications infrastructure:

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 benefits of improved telecommunications services should be balanced with the visual impact on the surrounding area:

1. *Assessment of the visual impact should be made on a case-by-case basis - assessment to be undertaken as part of the DA. The proposed CRISP tower is a wireless point-to-point tower providing internet connectivity. The design of the towers and associated infrastructure is based on minimising visual disturbance in the landscape.*

2. *Telecommunications infrastructure should be sited and designed to minimise visual impact and*
    a. *Be located where it will not be prominently visible from significant viewing locations (eg: scenic lookouts) – the proposed tower is approximately 820m from the Gabby Quoi Quoi lookout but should blend in relatively well and not be an eyesore on the landscape or detract from the view and amenity of the area. The container will be within the bush and not be visible from the lookout.*
    b. *Be located to detract from areas of significant importance (eg: heritage sites) - met*
    c. *Not located on sites where environmental, cultural heritage, social and visual landscape values may be compromised - met*
    d. *Include design features that are sympathetic to the surrounding landscape - towers are black (blends in) with white radios; containers are generally beige or white in colour with solar panels on top. Commitment is to be sympathetic to surrounding land uses (farming) and ensure that it does not impact the day-to-day farming enterprises.*

3. *Not applicable to this project*

4. *Telecommunications infrastructure should be located where it will facilitate continuous network coverage and/or improved telecommunications services to the community - sites are chosen to provide significant coverage improvements in the region. All of our towers are 'line of site' technology up to 30km from an existing tower within our network. The area that is the subject of this Development Application is an area in need of significant internet connectivity upgrades, and the coverage that will be provided, should the tower be approved, will have a marked improvement for all in the area, as the network expands towards the northwest of the Wheatbelt Region towards Jurien Bay.*

5. *Telecommunications infrastructure should be co-located and wherever possible*
    a. *Cables and lines should be located in existing underground conduits/ducts - not applicable*
    b. *Overhead lines and towers should be co-located with existing infrastructure corridors and/or mounted on existing or proposed buildings- noted & not applicable.*

It is important to note that whilst co-location is generally a recommendation under the State Planning Policy, it is not always feasible for this to be achieved in reality. The tower that is the subject of this

planning application is part of a broader project that will see the construction of 11 towers across the Wheatbelt region from Dowerin to Jurien Bay. The network connectivity improvements that will be offered will have significant and far-reaching benefits to the businesses and communities in these areas with accessibility to a fast, reliable and locally managed internet service designed by a regionally based business for regional businesses.

The selected location for individual towers is based on evidence of need, location, line-of-sight to existing towers in the network, known 'black-spot' areas and ability to provide a service that will meet the needs of the community.

Co-location, whilst an option, is not always a viable alternative for consideration.

Financial implications are a considerable factor in determining the location of a tower. The construction of a purpose-built tower that is owned, operated and managed by CRISP Wireless is a financially responsible outcome for the business. Additionally, when we build our own towers, we have full access as and when needed, which is especially important in times of an out-of-hours network or tower outage that requires our technicians to access the tower.

If we were to consider a co-location option, the time taken to negotiate an agreement with a third party may be considerable, and this would impact the timeline of delivery of the project. The timeline that we have has been set by the funding partners and the deliverables that need to be met in that time.

We have negotiated with the landowner of the proposed site and have approval for the infrastructure to be built on their land. They do not have any concerns with the visual impact of the infrastructure. This delivery method has been successfully implemented for the last 7 years that we have been building this comprehensive network across the Wheatbelt region.

Therefore, it is our opinion that the proposal is generally consistent with the principles set out in the Policy and can be balanced with the need for effective telecommunications services. Connectivity is considered a basic need, as without it, we can be left behind in an increasingly digital economy. Reliable internet connectivity promotes economic growth and connections to markets; drives productivity through access to information; fosters innovation and knowledge sharing; and is crucial for emergency communications, with reliable, robust telecommunications infrastructure allowing timely response to natural disasters.

<u>State Planning Policy 3.7 – Planning in Bushfire Prone Areas</u>

Part of the subject land and the location of the proposed telecommunications facility have been identified in the SLIP mapping as within a Bushfire Prone Area, as shown in Figure 2 above.

The intent of the SPP is "to implement effective, risk-based land use planning and development to preserve life and reduce the impact of bushfire on property and infrastructure".

Sites for telecommunications facilities are chosen for elevation, distance to other towers and ease of access.

While the proposed facility is within the identified bushfire-prone area, the development does not result in an increase of residents or employees, nor does it increase the bushfire threat. CRISP employees have a duty of care to ensure that any access to landowners' properties is undertaken in a manner so as to not cause a bushfire risk. As a business, we ensure that we remain up to date at all times of bushfire risks, harvest and vehicle movement bans in the areas where we are working, and any other restrictions imposed at a local or state level, and will always adhere strictly to these as imposed, especially during the peak fire season.

Accordingly, a bushfire assessment has not been carried out given the above.

Conclusion

The proposed development of a telecommunications facility will provide a much-needed service to the local community. The location of the proposed tower is set well back from the road and will not impact the privacy or visual amenities of the local residents.

The subject land is suitable for a telecommunications tower for the following reasons:

- ✓ The site has a direct line of site to other proposed towers in the region and across the network.
- ✓ The site has safe access, and the development will not create a nuisance to current traffic volumes and usage.
- ✓ The subject land is not flood prone.
- ✓ The development will not increase the threat of bushfires or put lives in danger.
- ✓ The proposed location has not been identified as containing native vegetation or Aboriginal artefacts.
- ✓ The proposed facility will not interfere with agricultural land; and
- ✓ Potential impacts are low.

Therefore, the Council can be confident in approving the telecommunications facility as it will satisfy an essential community need.

Attachments

Attachment 1	Application for Local Government Development Approval
Attachment 2	Landowner's Consent
Attachment 3	Certificate of Title & ASIC Company Search
Attachment 4	Site Plan
Attachment 5	Example Tower Technical Drawings
Attachment 6	Antenna Infrastructure

SHIRE OF GOOMALLING
Office address: 32 Quinlan Street, Goomalling WA 6460
Postal address: PO Box 118, Goomalling WA 6460
Phone: 9629 1101 Email: goshire@goomalling.wa.gov.au

APPLICATION FOR DEVELOPMENT APPROVAL

Owner Details		
Name: Badjyn Pty Ltd (Directors: William James Bynon & Jamie Darren Bynon		ABN (if applicable):
Address: 19 Wandoo Crescent Wongan Hills		Postcode: 6603
Phone: (work): (home): (mobile): 0429 201 229	Fax:	E-mail: jamiebynon@yahoo.com.au
Contact person for correspondence: Jamie Bynon		
Signature: Please refer to attached landowner consent		Date: 07/04/2026
Signature: Please refer to attached landowner consent		Date: 07/04/2026
The signature of the owner(s) is required on all applications. This application will not proceed without that signature. For the purposes of signing this application an owner includes the persons referred to in the Planning and Development (Local Planning Schemes) Regulations 2015 Schedule 2 clause 62(2)		

Applicant Details (if different from owner)		
Name: CRISP Wireless Pty Ltd		
Address: Suite 4/2 Williams Road, NARROGIN		Postcode: 6312
Phone: (work): 6809 2100 (home): (mobile):	Fax:	E-mail: lballard@crispwireless.com.au
Contact person for correspondence: Leigh Ballard		
The information and plans provided with this application may be made available by the local government f viewing in connection with the application. ⊗ Yes ☐ No		
Signature:		Date: 08/04/2026

Property Details		
Lot No: 13104	House/Street No:	Location No:
Diagram or Plan No: 133733	Certificate of Title Vol. No: 1975	Folio: 197
Title encumbrances (e.g. easements, restrictive covenants): Please refer to Certificate of Title attached		
Street name: accessed via Dowerin-Konnongorring Road		Suburb: Konnongorring
Nearest street intersection: Northam-Pithara Road		

Proposed Development

Nature of development:

Telecommunications infrastructure - communication repeater point - wireless broadband and communications hut

Is an exemption from development claimed for part of the development? ☐ Yes ⦸No

If yes, what is the exemption for: N/a

Description of proposed works and/or land use:

Telecommunications infrastructure - communication repeater point - wireless broadband and communications hut

Description of exemption claimed (if relevant):

Nil

Nature of any existing buildings and/or land use:

General farming based infrastructure

Approximate cost of proposed development: $50,000

Estimated time of completion: 4-6 weeks from all approvals

OFFICE USE ONLY

Acceptance Officer's initials: Date received:

Local Government reference no:

ATTACHMENT 3: CERTIFICATE OF TITLE & ASIC COMPANY SEARCH

WESTERN AUSTRALIA

TITLE NUMBER	
Volume	Folio
1975	**197**

RECORD OF CERTIFICATE OF TITLE

UNDER THE TRANSFER OF LAND ACT 1893

The person described in the first schedule is the registered proprietor of an estate in fee simple in the land described below subject to the reservations, conditions and depth limit contained in the original grant (if a grant issued) and to the limitations, interests, encumbrances and notifications shown in the second schedule.

BGRoberts

REGISTRAR OF TITLES

REGISTRAR OF TITLES WESTERN AUSTRALIA

THIS IS A MULTI-LOT TITLE

LAND DESCRIPTION:

LOTS 13104 & 13105 ON DEPOSITED PLAN 133733
LOT 13106 ON DEPOSITED PLAN 133739

REGISTERED PROPRIETOR:
(FIRST SCHEDULE)

BADJYN PTY LTD OF 19 WANDOO CRESCENT WONGAN HILLS WA 6603

(T N990370) REGISTERED 20/9/2018

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS:
(SECOND SCHEDULE)

1. THE LAND THE SUBJECT OF THIS CERTIFICATE OF TITLE EXCLUDES ALL PORTIONS OF THE LOT DESCRIBED ABOVE EXCEPT THAT PORTION SHOWN IN THE SKETCH OF THE SUPERSEDED PAPER VERSION OF THIS TITLE. SEE VOLUME 1975 FOLIO 197. AS TO LOT 13104 ON DP 133733, LOT 13106 ON DP 133739 ONLY
2. N990371 MORTGAGE TO WESTPAC BANKING CORPORATION REGISTERED 20/9/2018.
3. P875786 CAVEAT BY THE REGISTRAR OF TITLES LODGED 2/2/2024.

Warning: A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required. Lot as described in the land description may be a lot or location.

----------END OF CERTIFICATE OF TITLE----------

STATEMENTS:

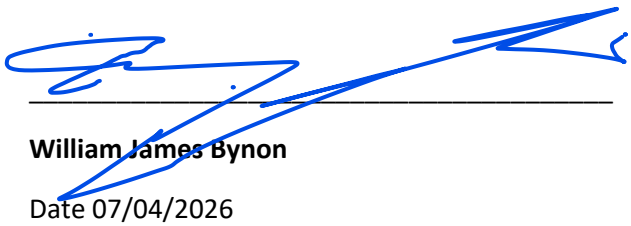
The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND:	1975-197 (13104/DP133733), 1975-197 (13105/DP133733), 1975-197 (13106/DP133739)
PREVIOUS TITLE:	1349-988
PROPERTY STREET ADDRESS:	NO STREET ADDRESS INFORMATION AVAILABLE.
LOCAL GOVERNMENT AUTHORITY:	SHIRE OF GOOMALLING

ATTACHMENT 2: LANDOWNER CONSENT

We, William James Bynon and Jamie Darren Bynon as Directors of Badjyn Pty Ltd being the registered landowners of the premises identified as Lot 13104 on P133733, consent to the submission of an application for Development Approval by CRISP Wireless Pty Ltd on the premises described above for the purpose of a Telecommunications Tower and associated infrastructure.

SIGNED



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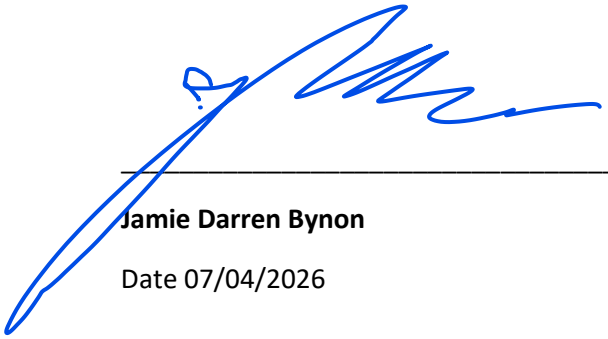
William James Bynon

Date 07/04/2026

SIGNED



_____

Jamie Darren Bynon

Date 07/04/2026

ASIC
Australian Securities & Investments Commission

Current Company Extract

Name: BADJYN PTY LTD
ACN: 617 139 072

Date/Time: 28 January 2026 AEST 08:28:52 PM

This extract contains information derived from the Australian Securities and Investments Commission's (ASIC) database under section 1274A of the Corporations Act 2001.

Please advise ASIC of any error or omission which you may identify.

EXTRACT

Organisation Details		Document Number
Current Organisation Details		
Name:	BADJYN PTY LTD	2E7836254
ACN:	617 139 072	
Registered in:	Western Australia	
Registration date:	01/02/2017	
Next review date:	01/02/2026	
Name start date:	01/02/2017	
Status:	Registered	
Company type:	Australian Proprietary Company	
Class:	Limited By Shares	
Subclass:	Proprietary Company	

Address Details		Document Number
Current		
Registered address:	19 Wandoo Crescent, WONGAN HILLS WA 6603	2E7836254
Start date:	01/02/2017	
Principal Place Of Business address:	19 Wandoo Crescent, WONGAN HILLS WA 6603	2E7836254
Start date:	01/02/2017	

Contact Address	
Section 146A of the Corporations Act 2001 states 'A contact address is the address to which communications and notices are sent from ASIC to the company'.	
Current	
Address:	PO BOX 556, BUSSELTON WA 6280
Start date:	25/02/2022

Officeholders and Other Roles		Document Number
Director		
Name:	WILLIAM JAMES BYNON	2E7836254
Address:	19 Wandoo Crescent, WONGAN HILLS WA 6603	
Born:	14/12/1934, COLLIE, WA	
Appointment date:	01/02/2017	
Name:	JAMIE DARREN BYNON	7EBA23295
Address:	333 Glatz Road, GOOMALLING WA 6460	
Born:	07/08/1969, WONGAN HILLS, WA	
Appointment date:	01/02/2017	
Secretary		
Name:	WILLIAM JAMES BYNON	2E7836254
Address:	19 Wandoo Crescent, WONGAN HILLS WA 6603	
Born:	14/12/1934, COLLIE, WA	
Appointment date:	01/02/2017	

Share Information

Share Structure

Class	Description	Number issued	Total amount paid	Total amount unpaid	Document number
ORD	ORDINARY	10	10.00	0.00	2E7836254

Members

Note: For each class of shares issued by a proprietary company, ASIC records the details of the top twenty members of the class (based on shareholdings). The details of any other members holding the same number of shares as the twentieth ranked member will also be recorded by ASIC on the database. Where available, historical records show that a member has ceased to be ranked amongst the top twenty members. This may, but does not necessarily mean, that they have ceased to be a member of the company.

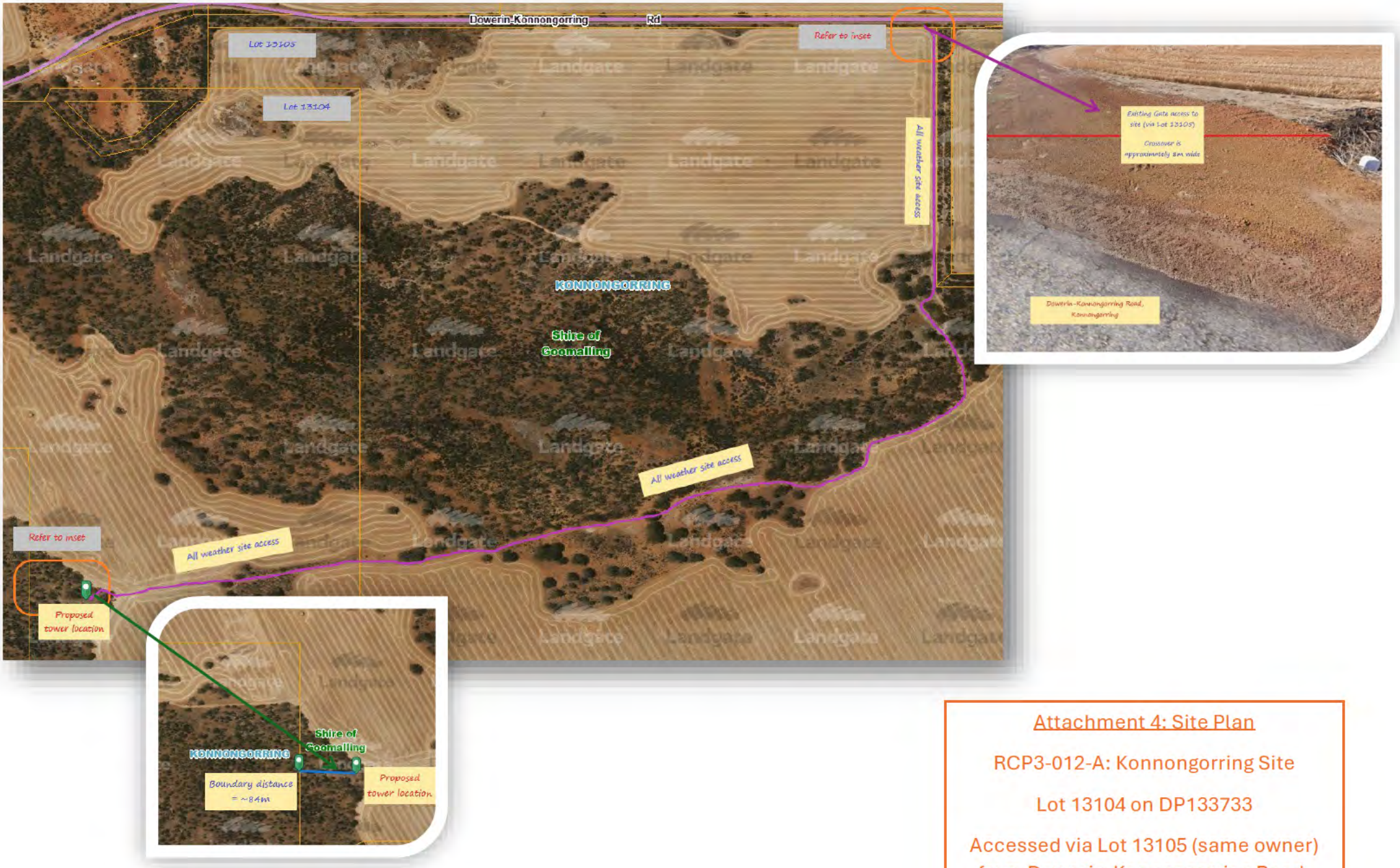
Name: WILLIAM JAMES BYNON
Address: 19 Wandoo Crescent, WONGAN HILLS WA 6603

Class	Number held	Beneficially held	Paid	Document number
ORD	5	yes	FULLY	2E7836254

Name: JAMIE DARREN BYNON
Address: 333 Glatz Road, GOOMALLING WA 6460

Class	Number held	Beneficially held	Paid	Document number
ORD	5	yes	FULLY	7EBA23295

*****End of Extract of 2 Pages*****



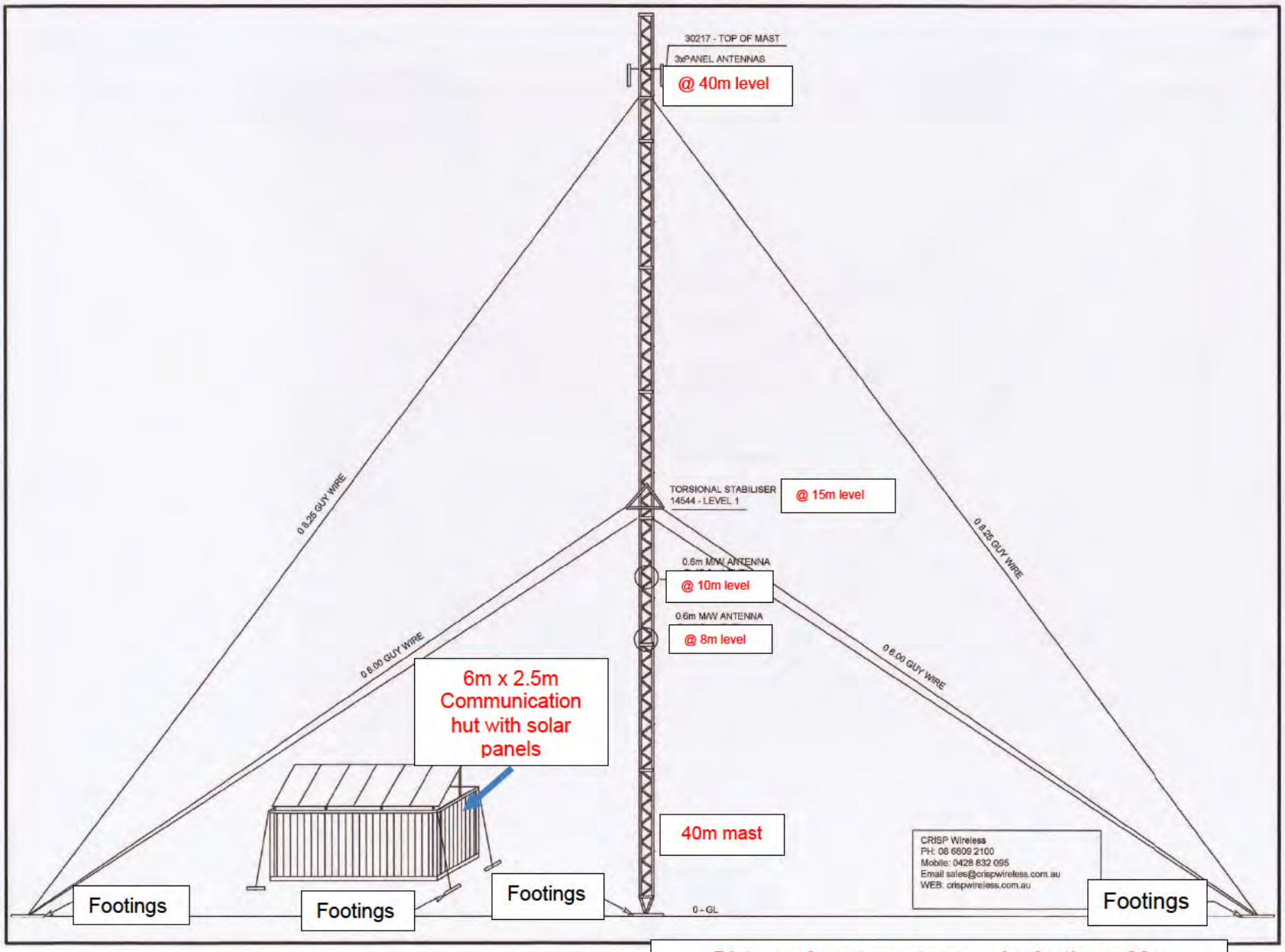
Attachment 4: Site Plan

RCP3-012-A: Konnongorring Site

Lot 13104 on DP133733

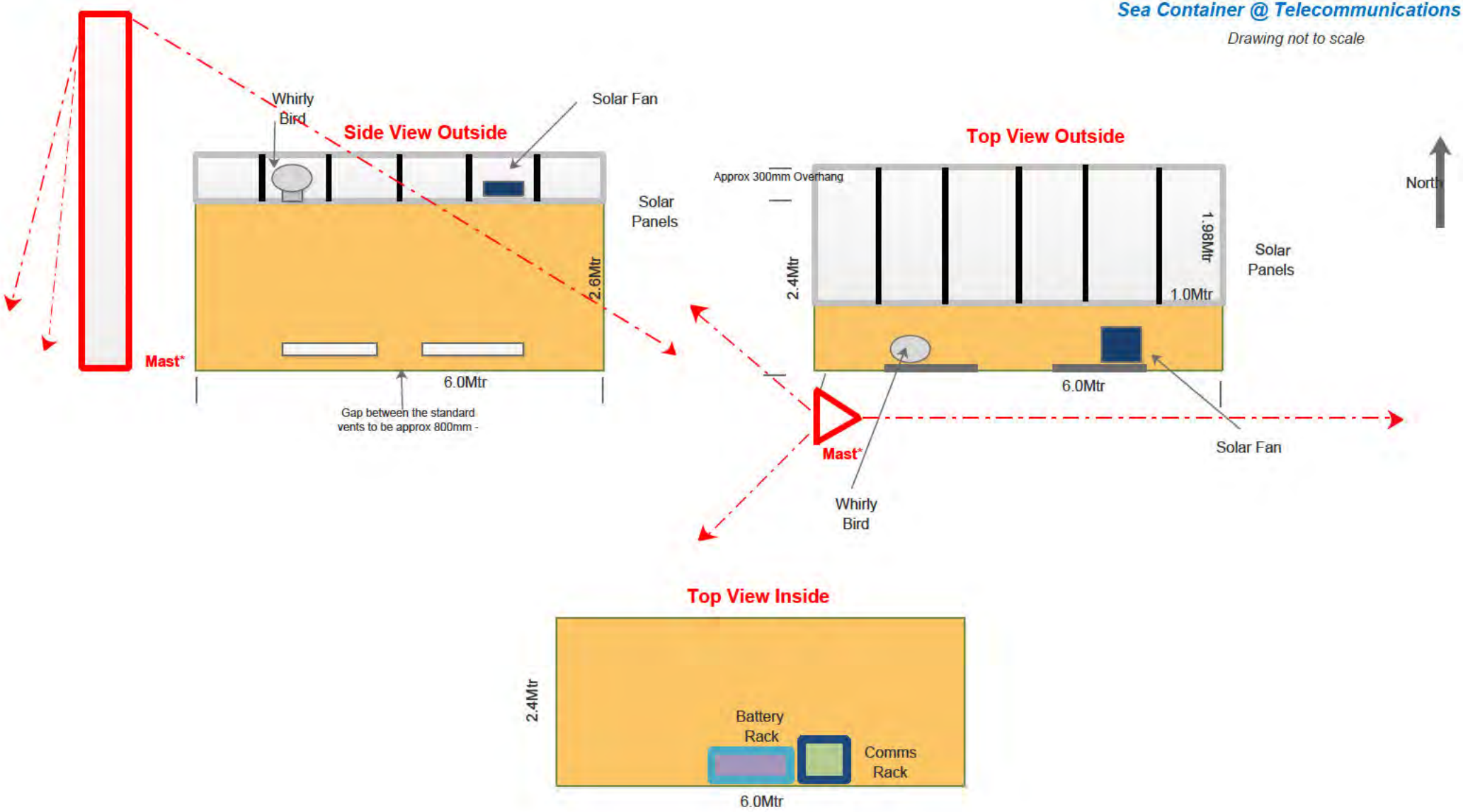
Accessed via Lot 13105 (same owner) from Dowerin-Konnongorring Road, Konnongorring

ATTACHMENT 5: EXAMPLE TECHNICAL DRAWINGS

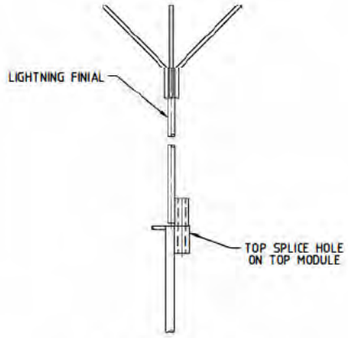


CRISP Wireless Pty Ltd
Sea Container @ Telecommunications Site

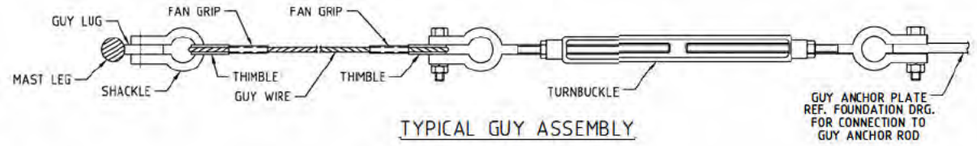
Drawing not to scale



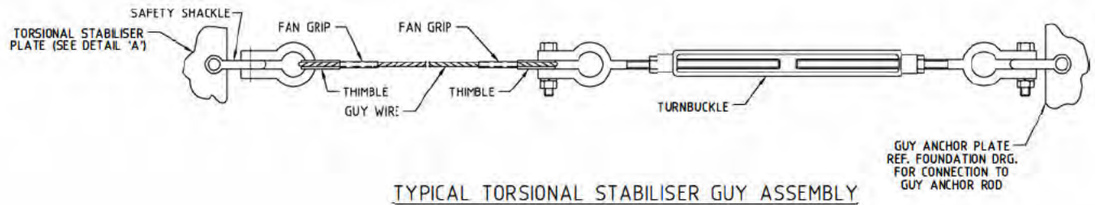
*Distance between mast and sea container not to scale.



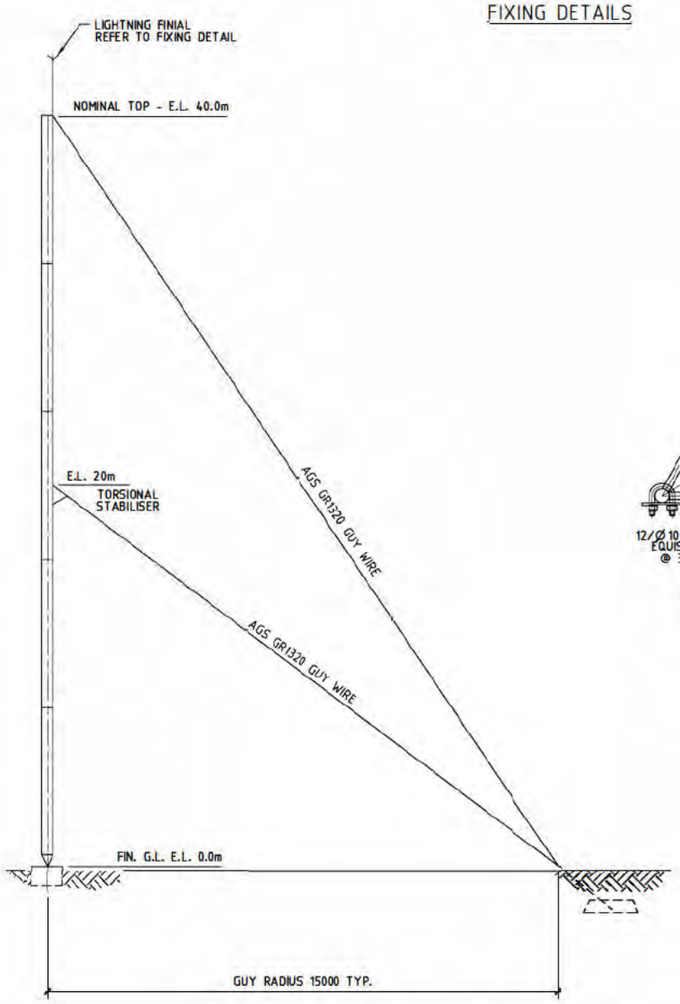
LIGHTNING FINIAL
FIXING DETAILS



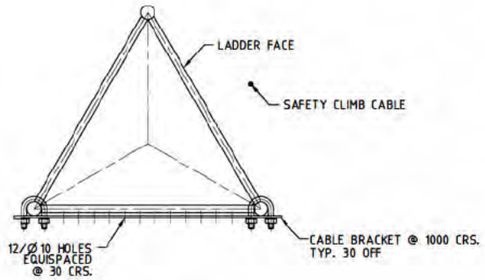
TYPICAL GUY ASSEMBLY



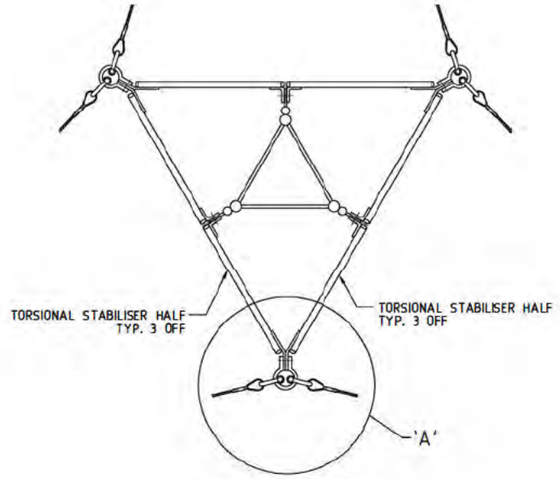
TYPICAL TORSIONAL STABILISER GUY ASSEMBLY



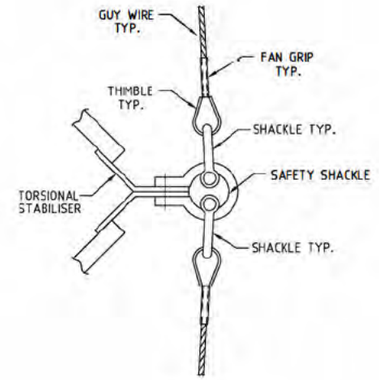
MAST ELEVATION



TYPICAL PLAN



PLAN AT TORSIONAL



DETAIL 'A'

GENERAL NOTES

1. REFER TO FEC STANDARD NOTES F1/1/SN.

DRG. No.	MK. No.	ITEM No.	No. OFF	DESCRIPTION	CUT LG.	MATERIAL/DRG. No.

MATERIAL LIST

REFERENCE DRAWINGS	REF	REVISION	DATE	APP'v.
F1/1/SN	FEC STANDARD NOTES			

INFORMATION ONLY
NOT TO BE USED
FOR CONSTRUCTION

FUTURE ENGINEERING & COMMUNICATION PTY LTD
29 Spencer Street, Cockburn Central WA 6164
Ph: +61 8 9417 4999 - Fax: +61 8 9417 5666
Email: admin@futureau.com.au

DRAWN:	ENG.:	
MP		40m F450 GUYED MAST
CHECKED:	APP'v.:	GENERAL ARRANGEMENT
DATE: 17-10-18	REV.	SCALE: NTS / DWG No.: Q7436-F450 / A1

FUTURE
ENGINEERING & COMMUNICATION

Future Engineering and Communication Pty Ltd ACN 050 840 321 as trustee
for the Future Engineering & Communication Unit Trust ABN 73 037 646 279
7 Tamara Drive Cockburn Central Western Australia 6164
Phone: +61 8 9417 4999 Facsimile: +61 8 9417 5666
Email: admin@futureau.com.au Web: www.futureau.com.au

STRUCTURE DESIGN CERTIFICATION

Structure Data

Structure Type: FEC Guyed Mast
Height: 40m
Job Number: TBC
Date: 2026
Client: CRISP Wireless

Site Details

Site Name						
Site ID						
Latitude						
Longitude						

Site Parameters

Wind loading standard: AS1170.2-2021
Wind region: A1*
Wind return period: 500 years*
Terrain Category: 2.00*
Topographical Multiplier, M_t: 1.17*
Wind Direction Multiplier, M_d: 1.00*

Structural design standards:

AS4100-2020, AS3995-1994 & AS3600-2018/Amdt1

Serviceability Criteria:

Maximum microwave rotation < 1° @ 27m/s

Antenna Loading Data (Height is measured from base of structure to centre line of antenna)

ID	Height AGL (m)	Antenna Type	Azimuth (°)	Effective area (m^2)	Feeder cable	Status (P/E)	Carrier
1	41.00	Lightning Finial	-	0.100*	-	P	-
2	40.00	4 x 800mm x 150mm Panels	-	0.720*	-	P	-
3	38.00	1 x Omni	-	0.100*	-	P	-
4	37.00	Future Allowance	-	0.500*	-	P	-
5	28.00	1 x Ø600mm M/W	-	0.503*	-	P	-
6	27.00	1 x Ø600mm M/W	-	0.503*	-	P	-
7	26.00	1 x Ø600mm M/W	-	0.503*	-	P	-

Ancillary Loading Data

Tower Access: Climbing on mast face c/w safety climb.
Feeder Arrangement: External feeder brackets on mast face.

FUTURE
ENGINEERING & COMMUNICATION

Future Engineering and Communication Pty Ltd ACN 050 840 321 as trustee
for the Future Engineering & Communication Unit Trust ABN 73 037 646 279
7 Tamara Drive Cockburn Central Western Australia 6164
Phone: +61 8 9417 4999 Facsimile: +61 8 9417 5666
Email: admin@futureau.com.au Web: www.futureau.com.au

Work covered by this certificate:

Design & certification of 40m guyed masts and associated guy attachments.
Design & certification of 1 x new antenna mount.
Foundation design by others and excluded from this certification.

Work Specified on the following document's:

FEC Drawings: J3903/1/3
J3903/2/AM

Foundation Reactions:

Mast Base: Compression = 85.35 kN
Shear = 4.04 kN
Guy Anchors: Horizontal = 38.63 kN
Uplift = 30.00 kN

Prepared by: Tom Wang

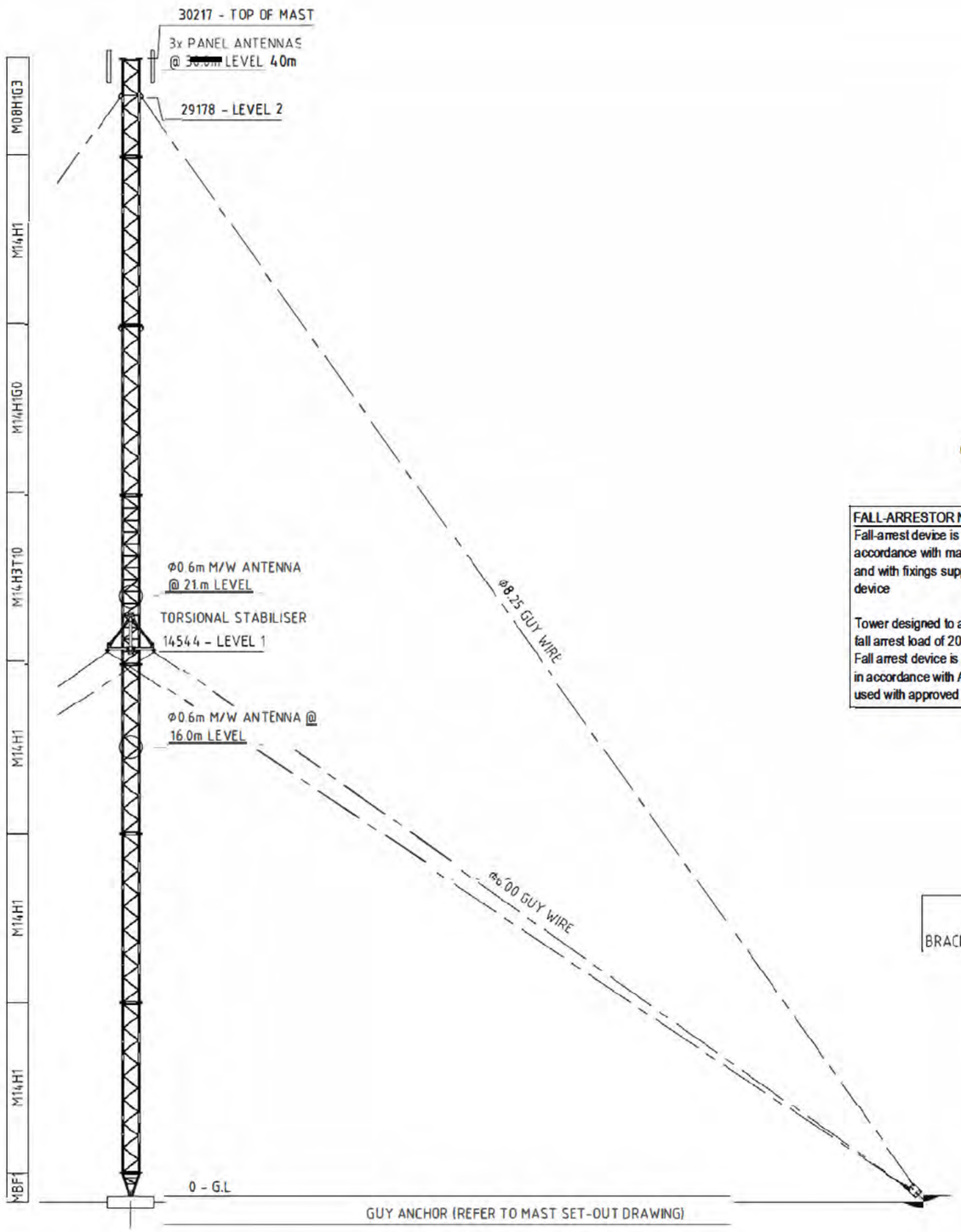
Approved by:

Chartered Professional Engineer 4397535
Mladen Kovacevic
MIEAust CPEng NER
Civil and Structural
ENGINEERS AUSTRALIA
Signature ..... Date: 31/08/22

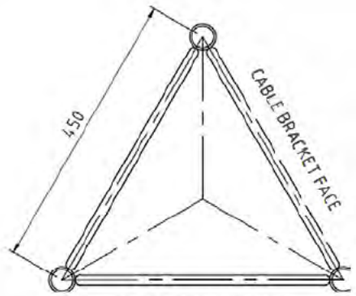
On behalf of: Future Engineering & Communication Pty Ltd.

Note

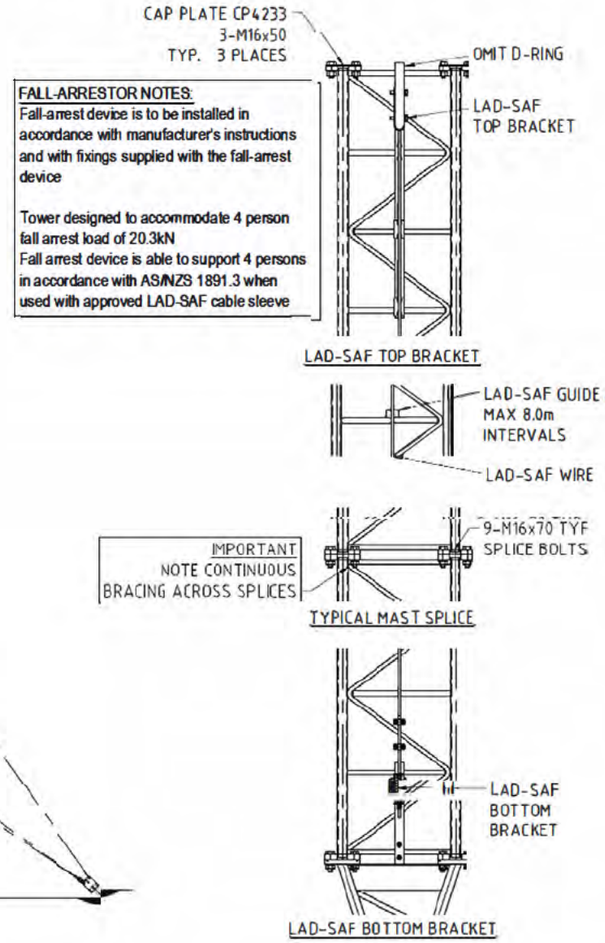
- Analysis is based on information provided in client supplied data unless shown by "*". See FEC Basis of Structural Review Document FE275 attached.
- This certificate does not Cover anything other than the structure and foundation described above. Eg. Existing headframe, mounting frames, antenna mounts, cable trays, etc. are not covered



DIAGRAMMATIC MAST ELEVATION



TYPICAL MAST PLAN VIEW



FALL-ARRESTOR NOTES:
Fall-arrest device is to be installed in accordance with manufacturer's instructions and with fixings supplied with the fall-arrest device

Tower designed to accommodate 4 person fall arrest load of 20.3kN
Fall arrest device is able to support 4 persons in accordance with AS/NZS 1891.3 when used with approved LAD-SAF cable sleeve

HARDWARE SCHEDULE				
SIZE	QTY	DESCRIPTION	GRADE/FINISH	SUPPLIED BY
M16x70	66	HEX HEAD BOLT + NUT & FLAT WASHER	GRADE 8.8 GALV	ROAM
M16x50	9	HEX HEAD BOLT + NUT & FLAT WASHER	GRADE 8.8 GALV	ROAM
6116633	1	TOP & BOTTOM BRACKET - RUNG SYSTEM	LAD-SAF	ROAM
6100400	3	GUIDE BLOCK	LAD-SAF	ROAM
LS030-GALV	1	30m PRE-SWAGED CABLE	LAD-SAF	ROAM
SIGN	1	1.2mm Aluminium 83 x 142mm	ROAM SIGN	ROAM

BOLTED CONNECTION NOTES:

1. All bolts to be fitted with nut and flat washer unless spring washer is specified and supplied.
2. All U-bolts to be fitted with 2 nuts on each arm
3. All bolts are to be fitted with a minimum of 2-threads protruding past the nut.
4. All slotted holes to be fitted with flat was ers on both sides of bolted ply.
5. All bolts to be snug tightened to AS4100 bolting category 4.6/S or 8.8/S.
6. Bolts designated with the notation "XS" shall have bolt thread excluded from intersecting any internal ply shear plane. XS bolt length is critical.
7. A second nut, or lock-nut, shall be fitted whenever two or more ply cannot be bolted together without eliminating a gap between them.

IMPORTANT CONSTRUCTION SAFETY NOTE:

Roam supplies steelwork for others to erect based upon a clear understanding that steelwork will be erected by suitably competent and qualified personnel working in accordance with a safety plan that has been prepared in conjunction with a competent erection supervisor. The safety plan is expected to include a comprehensive job hazard analysis covering an assessment of lifts by cranes, winches ginpoles and juries, safe lifting of partly assembled modules, temporary lifting points and temporary removal of components during strengthening works as applicable to the job. Where a Safety in Design drawing has been provided, the Safety Plan for construction works should incorporate design hazards, design control measures and notes to the Constructor.

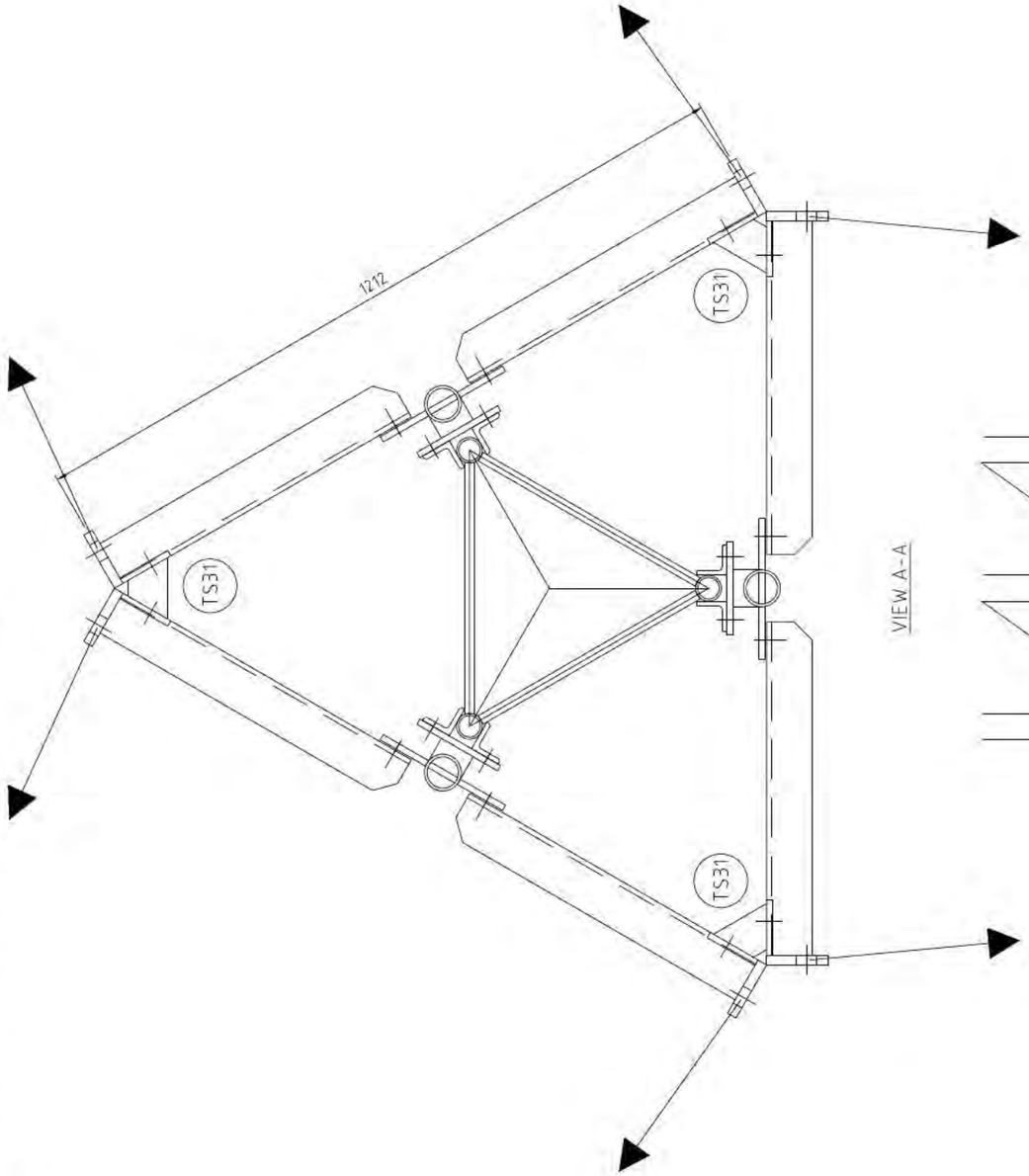
STD	CP4233	3	CAP PLATE	Φ138		
RJ12745	M08H1G3	1	MAST MODULE W/ GUYS	2586		
RJ12745	M14H3T10	1	MAST MODULE WITH T/S	4476		
RJ12745	M14H1G0	1	MAST MODULE W/ GUYS	4476		
RJ12745	M14H1	4	STD MAST MODULE	4476		
RM450	MBF1	1	MAST BASE	600		
DRG	COMPONENT	QTY	DESCRIPTION	LENGTH	MATERIAL	GRADE

TOTAL QTY = 10 COMPONENT SCHEDULE

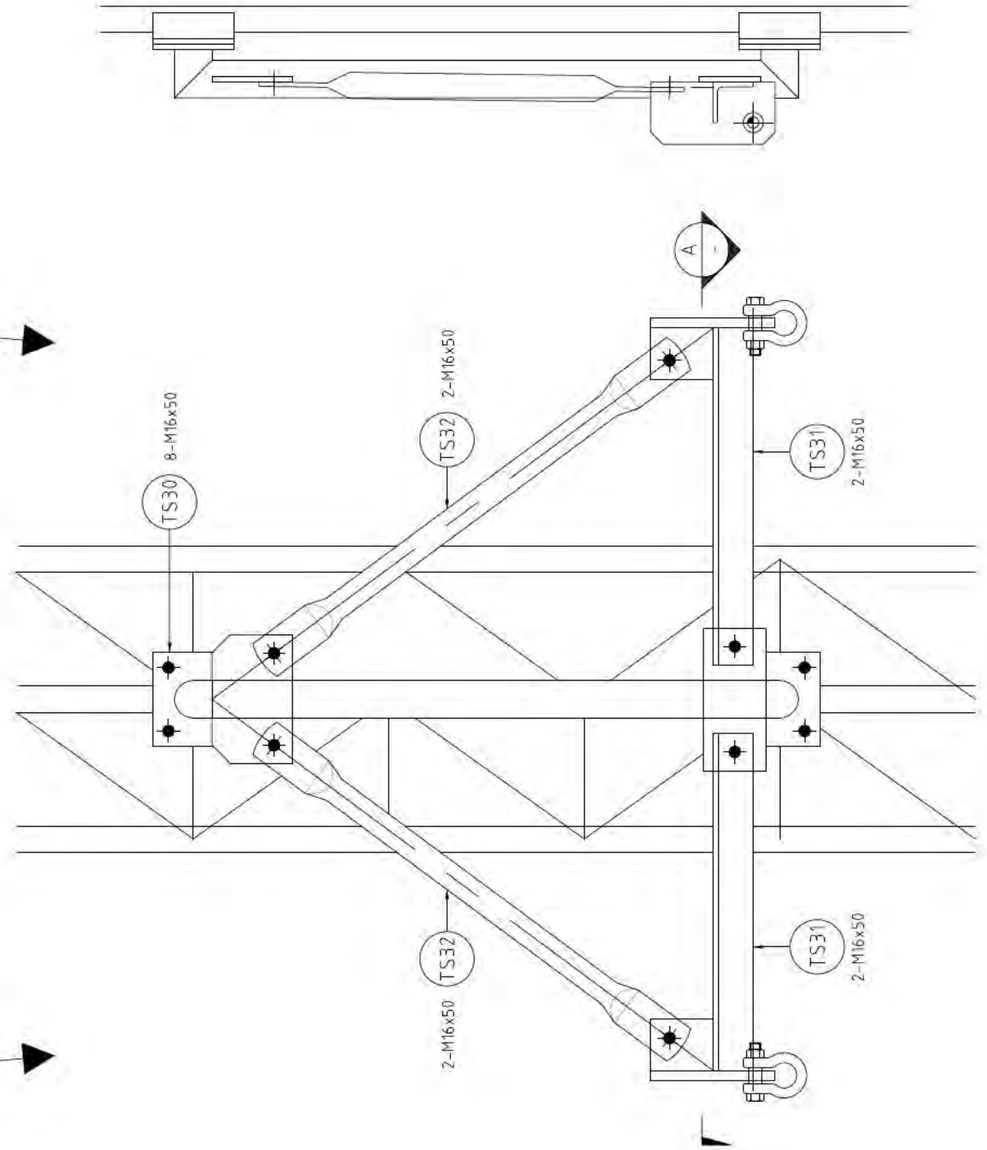
REFERENCE DRAWINGS		REF	REVISION	BY	DATE
RJ12748-4-SD1	SAFETY IN DESIGN ANALYSIS				
RJ12748-2-TS1	TORSIONAL STABILISER				
RJ12748-2-GM1	GUYED MAST ERECTION NOTES	C	JOB SPECIFIC MODULES	D.T	04-01-21
RJ12748-2-GW1	GUY WIRE ASSEMBLY	B	ISSUED FOR CONSTRUCTION	C.J.C	16-12-20
RJ12748-3-1	MAST SET-OUT	A	ISSUED FOR REVIEW	D.T	15-12-20

ROAM PTY LTD
8 MEKA STREET
MALAGA W.A. 6090 AUSTRALIA
TEL (618) 9248 4950 FAX (618) 9248 4951

DESIGN: C.J.C	DATE: 15-12-20	CRISP WIRELESS	
APPR: C.J.C	DATE: 16-12-20	40m RM450 GUYED MAST - TOWER D	
DRAWN: D.T	DATE: 15-12-20	NN GENERAL ARRANGEMENT	
SCALE: (A3) N.T.S	DWG. No. RJ12748-1-1	VER. -	REV. C



VIEW A-A



ELEVATION

HARDWARE SCHEDULE

SIZE	QTY	DESCRIPTION	GRADE/FINISH	SUPPLIED BY
M16x50	42	HEX HEAD BOLT + NUT & FLAT WASHER	GRADE 8.8 GALV	ROAM

DRG	COMPONENT	QTY	DESCRIPTION	LENGTH	MATERIAL	GRADE
RM450	TS32	6	STABILISER STRUT	839		
RM450	TS31	3	STABILISER HORIZONTAL	559		
RM450	TS30	3	STABILISER MOUNT	1075		

TOTAL QTY = 12

COMPONENT SCHEDULE

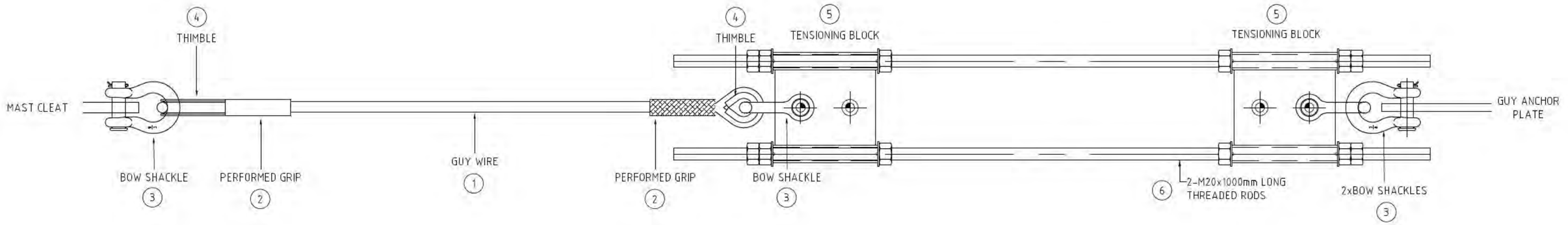
REFERENCE DRAWINGS	REF	REVISION	BY	DATE
	B	ISSUED FOR CONSTRUCTION	C.J.C	16-12-20
	A	ISSUED FOR REVIEW	D.T	16-12-20

ROAM PTY LTD
8 Meka Street
Malaga W.A. 6090 Australia
Tel (618) 9248 4950 Fax (618) 9248 4951

ERECTION DRAWING

DESCRIPTION: TORSIONAL STABILISER

REF:	APPR: C.J.C	DATE: 16-12-20	TOWER TYPE: RM450	MODULE:
SCALE: (A3) NTS	DRAWN: D.T	DATE: 16-12-20	DRG.No. RJ12748-2-TS1	REV B



	QUANTITIES PER ASSEMBLY REQUIRED																	
	①				②		③		④		⑤		⑥					
GUY-WIRE LEVEL	GUY WIRE				PREFORMED GRIP		BOW SHACKLE (bow size)		THIMBLE		TENSIONING BLOCK		THREADED RODS		INITIAL	TOTAL No. OF
	GRADE	CONSTRUCTION	GUY LENGTH	SUPPLIED LENGTH	⌀ (GRADE)	QTY	GRADE 'S' (WLL)	QTY	SIZE	QTY	TYPE	QTY	SIZE	QTY	TENSION (kN)	ASSEMBLIES
2	1320	7/2.75 (⌀8.25)	35m	40m	8.25 (1320)	2	13mm (2.0t WLL)	4	10mm	2	TB8	2	M20x1000mm	2	5.2	3
1	1320	7/2.00 (⌀6.00)	25m	30m	6.00 (1320)	2	13mm (2.0t WLL)	4	10mm	2	TB8	2	M20x1000mm	2	2.7	6

NOTES:

1. Guy lengths in table are based upon a flat level site. Adjust cut guy lengths to compensate for any on-site anchor radius adjustments.
2. All shackles pins to be wired to body on assembly.
3. Check and adjust all guy wires to match initial tensions in table. Tension values based on still wind conditions

SIZE	QTY	DESCRIPTION	GRADE/FINISH	SUPPLIED BY
HARDWARE SCHEDULE				
M20x1000mm	18	M20 THREADED ROD	GRADE 8.8 GALV.	ROAM
M20 NUT	108	M20 NUT	CLASS 8 GALV.	ROAM
M20 WASHER	72	M20 FLAT WASHER	GRADE 8.8 GALV	ROAM
10mm THIMBLE	18	10mm THIMBLE	GALV.	ROAM
13mm SHACKLE	36	13mm (2.0t WLL) BOW SHACKLE	GRADE S - GALV.	ROAM
6.00 GRIP	12	PREFORMED GRIP SUIT ⌀6.00 WIRE	GALV.	ROAM
8.25 GRIP	6	PREFORMED GRIP SUIT ⌀8.25 WIRE	GALV.	ROAM
7/2.00 (⌀6.00)	180m	GUY WIRE	GRADE 1320 - GALV.	ROAM
7/2.75 (⌀8.25)	120m	GUY WIRE	GRADE 1320 - GALV.	ROAM

DRG	COMPONENT	QTY	DESCRIPTION	LENGTH	MATERIAL	GRADE
RA07	TB8 revB	18	GUY-TENSIONING BLOCK	158		
TOTAL QTY = 18			COMPONENT SCHEDULE			

REFERENCE DRAWINGS	REF	REVISION	BY	DATE
	C	TURNBUCKLES REPLACED WITH TENSIONING BLOCKS	C.J.C	22-01-21
	B	ISSUED FOR CONSTRUCTION	C.J.C	16-12-20
	A	ISSUED FOR REVIEW	D.T	15-12-20

ROAM PTY LTD
8 Meka Street
Malaga W.A. 6090 Australia
Tel (618) 9248 4950 Fax (618) 9248 4951

ERECTION DRAWING

DESCRIPTION: GUY WIRE ASSEMBLY

REF:	APPR:	DATE:	TOWER TYPE:	MODULE:	
-	C.J.C	16-12-20	-	-	
SCALE: (A3) NTS	DRAWN: D.T	DATE: 15-12-20	DRG.No. RJ12748-2-GW1	VER -	REV C

MAST ERECTION METHOD OF PROCEDURE

IMPORTANT:

Roam structures are only to be erected by experienced qualified rigging personnel working in accordance with a safety plan that has been prepared in conjunction with a competent erection supervisor. The safety plan is expected to include a comprehensive job hazard analysis covering an assessment of lifts by cranes, winches ginpoles and juries, safe lifting of partly assembled modules and temporary lifting points. The Safety Plan for construction works should incorporate design hazards, design control measures and notes to the Constructor identified in the Safety in Design drawing.

MAST ERECTION PROCESS

1. Check shipping lists to ensure all materials have been delivered. Check materials for any damage. Any small areas of damaged galvanising should be repaired with zinc rich paint. Touch-up any paint damage.
2. When erecting the mast, the intention should be to have each mast span (guy level to guy level) fully assembled with all ancillaries (ladders, cable brackets, antenna mounts, torsional stabiliser, fall-arrest) installed, and guys attached, before mobilising a crane to site for lifting. Guy tensioning equipment and theodolites should also be set-up in advance.
3. Assemble mast sections, on the ground, into the spans that comprise the mast. The mast shall not be lifted in a single 30m span. Ensure that bolts are fully tightened before lifting the mast.
4. Mast sections typically have a top and bottom. Ensure sections are orientated to achieve a continuous bracing pattern and equal cable bracket spacing.
5. Refer to the guy-wire assembly drawing. The drawing specifies the expected final guy lengths based upon the surveyed positions on the mast foundations. The "supplied length" specified on the drawing typically allows for extra 3m for each individual guy. The guys for each mast should be cut to the "supplied length" dimension and attached to the guy lugs at the top of each corresponding mast span.
6. Set-up 2 x theodolites at approximate 90° apart and at a distance that enables the theodo ites to view the bottom of the mast and the top of the mast when fully erected.
7. Lift the bottom mast section into position, ensuring that the cable ladder and climbing ladder faces are orientated to best suit the site layout. Whilst the mast span is supported by the crane, pull the guys to the anchors, using turfers as required, and connect to the lowest anchor plate hole. Note that there is typically a spare hole at the top of the anchor plates for temporally attaching turfers and tensioning equipment.
8. Tension the lower set of guys until they are taut and support the mast without the aid of the crane. At this point the mast can be safely climbed with appropriate climbing gear to detach the crane hook.
9. Align the vertical crosshairs of the theodolites with one of the mast legs at the lowest point possible. Adjust guy tensions to align the bottom mast section until it is vertical within the precision of the theodolite. Achieve verticallity of 1:200 or better.
10. Repeat the process for the remaining mast spans.
11. Once the entire mast has been erected, attach and tension the fall-arrest cable, to the bottom tensioning bracket. The crane hook can be detached once all guys have been nominally tensioned maintaining mast verticality.

GUY TENSIONING PROCEDURE

1. Refer to the guy-wire assembly drawing. The values of initial tension have been calculated to achieve a vertical mast for the surveyed anchor positions. Initial tensions shall be achieved to within 10% of the specified value whilst maintaining mast verticality. Guy tension values are based upon still wind conditions.
2. Tensioning guys can be done with a guy-tension measuring instrument (such as a Piab RMT 20D) or with a load-cells. In either case, calibration records shall be maintained.

   Guys can be tensioned one-at-a-time but they would need to be checked and adjusted twice to correct for the impact of tensioning upon previously tensioned guys.

TENSIONING GUYS USING IN-LINE GAUGE

1. Connect load-cell to either side of the guy-tension-device (turnbuckle)
2. Tension the load-cell until the specified initial tension value is reached (+/- 10%)
3. Tension the guy-tension-device until the load-cell reading just reduces back to zero.
4. Release and remove the load-cell without adjusting the guy-tension-device.

BEFORE DEMOBILISING FROM SITE

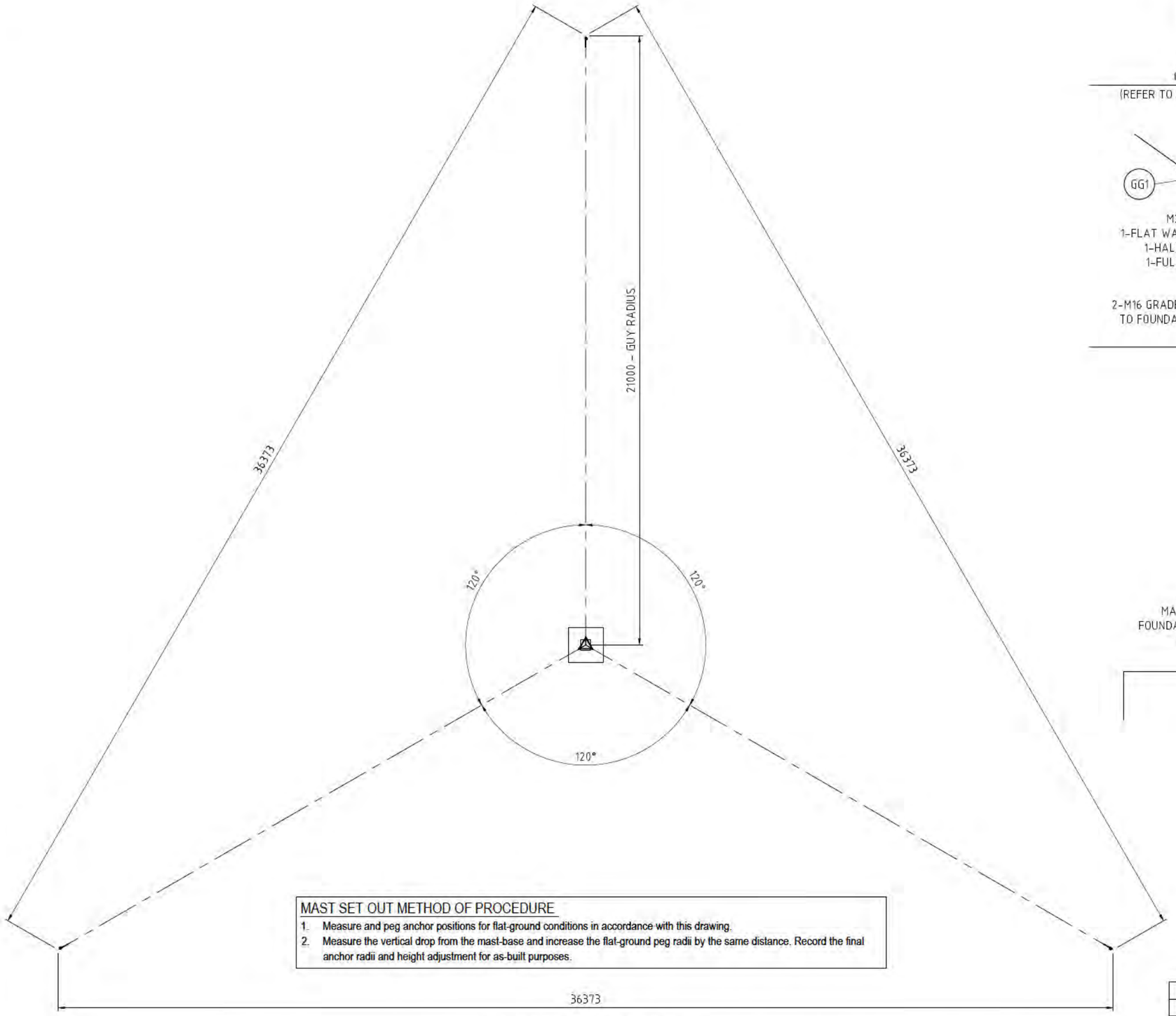
1. Once guys have been tensioned, re-tension the fall arrest cable and check that all mast splice bolts are properly tightened and have not loosened during the erection process.
2. Complete the mast inspection form supplied with the mast drawings.
3. On completion of all works, mark up the erection drawings and material lists;
   - i. Sign off drawings as as-built and records on the drawings any changes
   - ii. Fabrication mistakes
   - iii. Drawing mistakes
   - iv. Problems encountered during erection
   - v. Suggested design improvements
   - vi. Under-supply or over-supply of materials
   - vii. Appearance of structure.
4. Take photographs including one shot showing the entire structure.
5. Scan all drawings, lists and checklists and email these documents along with photographs and any other documentation to roam@roameng.com.au

REFERENCE DRAWINGS		REF	REVISION	BY	DATE
-	-	B	ISSUED FOR CONSTRUCTION	C.J.C	16-12-20
		A	ISSUED FOR REVIEW	D.T	15-12-20

ROAM PTY LTD
437 VICTORIA ROAD
MALAGA W.A. 6090 AUSTRALIA
TEL (618) 9248 4950 FAX (618) 9248 4951

DESIGN: C.J.C	DATE: 15-12-20	ROAM PTY LTD	
APPR: C.J.C	DATE: 16-12-20	STANDARD GUYED-MAST ERECTION NOTES (SHEET 1 OF 1)	
DRAWN: D.T	DATE: 15-12-20	SCALE: (A3) N.T.S	DWG. No. RJ12748-2-GM1 VER. 07 REV. B

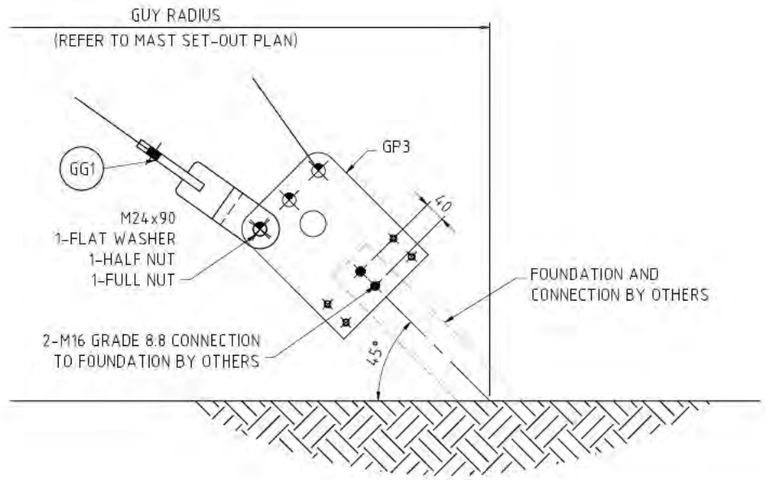
HARDWARE SCHEDULE				
SIZE	QTY	DESCRIPTION	GRADE/FINISH	SUPPLIED BY
M24x90	3	HEX. HD. BOLT c/w NUT & FLAT WASHER	GRADE 8.8 GALV	ROAM
M24	3	HALF NUT (LOCK NUT)	GRADE 8.8 GALV	ROAM



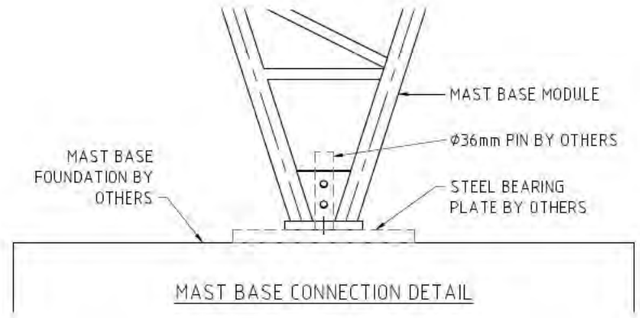
MAST SET OUT METHOD OF PROCEDURE

1. Measure and peg anchor positions for flat-ground conditions in accordance with this drawing.
2. Measure the vertical drop from the mast-base and increase the flat-ground peg radii by the same distance. Record the final anchor radii and height adjustment for as-built purposes.

FLAT GROUND MAST SET-UP PLAN



GUY ANCHOR PLATE DETAIL



MAST BASE CONNECTION DETAIL

RM01	GG1	3	SPLITTER PLATE	325		
RM01	GP3	3	ANCHOR PLATE	300		
DRG	COMPONENT	QTY	DESCRIPTION	LENGTH	MATERIAL	GRADE

TOTAL QTY = 6 COMPONENT SCHEDULE

REFERENCE DRAWINGS	REF	REVISION	BY	DATE
	B	ISSUED FOR CONSTRUCTION	C.J.C	16-12-20
	A	ISSUED FOR REVIEW	D.T	15-12-20

ROAM PTY LTD
8 MEKA STREET
MALAGA W.A. 6090 AUSTRALIA
TEL (618) 9248 4950 FAX (618) 9248 4951

DESIGN:	DATE:	CRISP WIRELESS				
C.J.C	15-12-20	30m RM450 GUYED MAST - TOWER D NN				
APPR: C.J.C	DATE: 16-12-20	MAST SET-OUT				
DRAWN: D.T	DATE: 15-12-20	SCALE: (A3) N.T.S	DWG. No. RJ12748-3-1	VER. -	REV. B	

Hazard assessment table				
	1	2	3	4
A	E	H	S	M
B	E	H	S	M
C	H	S	M	L
D	S	M	L	L

Risk Rank	Probability	Consequence
E - EXTREME	A –Likely "common or repeating occurrence"	1 – fatality or permanent disability
H - HIGH	B – Occasionally "happens every now and then"	2 – lost time injury or serious illness
S - SUBSTANTIAL	C – Unlikely "has been known to happen"	3 – medical treatment
M - MODERATE	D – Very Unlikely "possible but probably never will"	4 – possible first-aid treatment
L - LOW		

		Design Hazard	Probability	Consequence	Risk Rank	Design Control Measures	Controlled Probability	Controlled Consequence	Controlled Risk Rank	Note to the Constructor The purpose of this document is to summarise the hazards and control measures identified for the design phase of the project. This document does not specifically consider construction risks and hazards and is not a substitute for a construction work safety risk assessment.	Site Supervisor Sign
SAFE CONSTRUCTION	1	Hazards associated with inadequate documentation	D	2	M	Drawings checked and approved as for-construction status in accordance with Roam QMS procedures. Construction and erection guidance notes issued with the drawing pack. Construction notes presented on the drawing.	D	4	L	Ensure all construction notes are read and understood prior to commencing any works	
	2	Injury due to manual handling of excessive weight	D	3	L	Material listings provided to enable assessment of component weights	D	4	L	Implement control measures to limit manual handling. Consider installing feeder cables and antennas at ground level before lifting structure sections.	
	3	Dropping steelwork onto personnel during crane lift	D	1	S	Erection guidance notes are provided in the site document pack.	D	4	L	Roam site documentation will include list of component weights that can be used to calculate the weight of planned lifts. Refer to erection guidance notes. Dwg RJ12748-2-GM1	
	4	Fall or injury when erecting structure with a crane	D	1	S	Ladders are designed to be integral with structure lifts.	D	4	L	Method of procedure should be reviewed by suitably competent person. Refer to structure erection guidance notes. Dwg RJ12748-2-GM1	
	5	Fall or injury when erecting structure using manual erection	C	1	H	Suitably sized cranes are readily available to use rather than manual erection methods.	D	4	L	Method of procedure should be reviewed by suitably competent person. Refer to structure erection guidance notes. Dwg RJ12748-2-GM1	
	6	Structure collapse due to design fault	C	1	H	Proper compliance with QMS design and document control procedures	D	4	L	Only use current for-construction drawings	
SAFE USE & MAINTENANCE	7	Hazards associated with inadequate documentation	D	1	S	Fall-arrest supplier documentation supplied with structure.	D	4	L	Fall-arrest documentation to be handed over to tower owner.	
	8	Fall or injury when accessing antenna mounting positions	D	1	S	Structure is 450mm wide so all antennas are easily accessible.	D	4	L	Antenna mount design is by others. Residual risk to be controlled by appropriate JHA's.	
	9	Fall or injury when accessing feeder cables	D	1	S	Feeder cables located on cable brackets on face of the tower and can be accessed from climbing face.	D	4	L		
	10	Fall or injury when climbing structure	D	1	S	Compliant ladder with fall-arrest device provided.	D	4	L	Note that climbing harness and cable sleeve not supplied with fall-arrest device. Climbing past the torsional stabiliser will require a double lanyard & temporary detachment from the fall-arrest system.	
	11	Fall or injury when repairing surface coatings	D	1	S	Structure to be galvanized in accordance with Ausrtalian Standards to prevent premature degradation and the need to undertake premature repair works and maintenance.	D	4	L		

REFERENCE DRAWINGS	REF	REVISION	BY	DATE
- -	B	ISSUED FOR CONSTRUCTION	C.J.C	16-12-20
	A	ISSUED FOR REVIEW	D.T	15-12-20

ROAM PTY LTD
437 VICTORIA ROAD
MALAGA W.A. 6090 AUSTRALIA
TEL (618) 9248 4950 FAX (618) 9248 4951

DESIGN: C.J.C	DATE: 15-12-20	CRISP WIRELESS - TOWER D NN SAFETY IN DESIGN RISK ANALYSIS ANTENNA SUPPORT STRUCTURE	
APPR: C.J.C	DATE: 16-12-20		
DRAWN: D.T	DATE: 15-12-20	SCALE: (A3) N.T.S	DWG. No. RJ12748-4-SD1 VER. 3 REV. B

Attachment 6: General Antenna Information

ePMP™ 3000 Sector Antenna

Cambium Networks has deployed more than five million radios around the world achieving unparalleled degrees of scalability. Continuing the tradition of designing and manufacturing industry leading antenna solutions, the ePMP 3000 4X4 sector antenna encompasses all the key differentiations of the Cambium Antenna line and adds 4X4 Multi User MIMO Capability. Designed to work in 5 GHz spectrum and 90 degree coverage, the antenna is an integral part of the ePMP 3000 Access Point and allows for Multi User MIMO Operation.

KEY DEPLOYMENT ADVANTAGES

- **Frequency Re-use:** Designed for ABAB channel re-use (two channels covering four sectors), the sector antenna has a minimum 30 dB front to back ratio over a wide rear facing aperture.
- **Channel Flexibility:** Consistent gain from 4.9 to 6.0 GHz allows the operator to select a channel anywhere in the band and achieve the expected performance.
- **Consistent Coverage:** Excellent null fill capabilities of the antenna allow for broad geographical coverage within a sector even near the base of the tower and the edges of the sector.
- **Designed for the Installer:** Small, compact design, integrated ePMP radio mount and GPS antenna integration.
- **Predictable Performance:** The sector antenna is integrated into Cambium Networks LINKPlanner. The 3D model shows coverage at all elevations and across the azimuth.

KEY SPECIFICATIONS:

- 17 dBi gain
- 4.9 to 5.97 GHz spectrum
- 30 dBi front to back ratio
- IP 65 ruggedization

SPECIFICATIONS

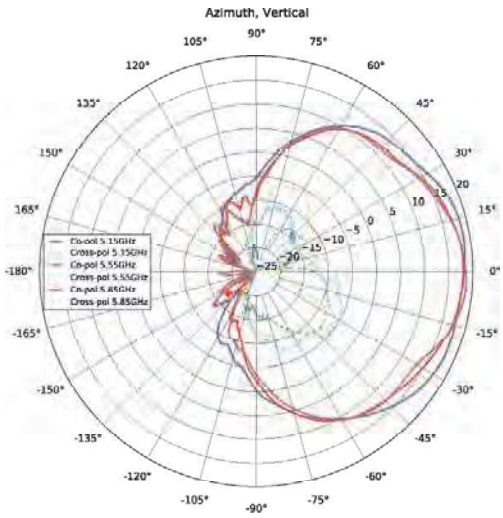
ePMP 3000 SECTOR ANTENNA	
Model Number	C050910D301A
Frequency Range	4.9 GHz to 5.97 GHz
Gain	17 dBi
3 dB Beamwidth - Azimuth	70 degrees
3 dB Beamwidth - Elevation	6 degrees
Electrical Downtilt	-2 degrees
Polarization	2X Horizontal, 2X Vertical

SPECIFICATIONS

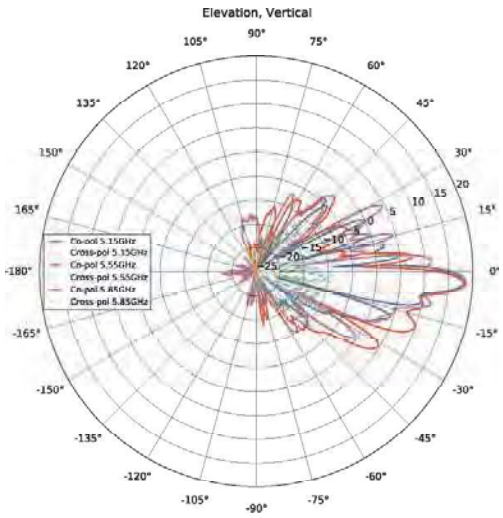
ePMP 3000 SECTOR ANTENNA	
Model Number	C050910D301A
Port-to-Port Isolation	> 20 dB
Front-to-Back Ratio	30 dB
Maximum Input Power	5 W
Input Impedance	50 ohms
Mounting Connectors	4 x RP SMA
Mounting Hardware	Included for mounting to mast diameters 2" to 4" (5 cm to 10 cm) -10 to +5 degree tilt Hardware included to connect ePMP access point to back of antenna body
Physical Dimensions	Antenna Body: 23.4" (H) x 9.6" (W) x 3.25" (D) (594 mm x 157 mm x 110 mm)
Weight	Antenna Body: 8.0 lbs, 3.7 kg w/ ePMP 3000 Access Point and Mounting Brackets: 13.8 lbs. 6.3 kg
Environmental	IP65
Radome Material	UV Protected ABS
Operating Temp	-40°C to 60°C (-40°F to 140°F)

ANTENNA PATTERNS

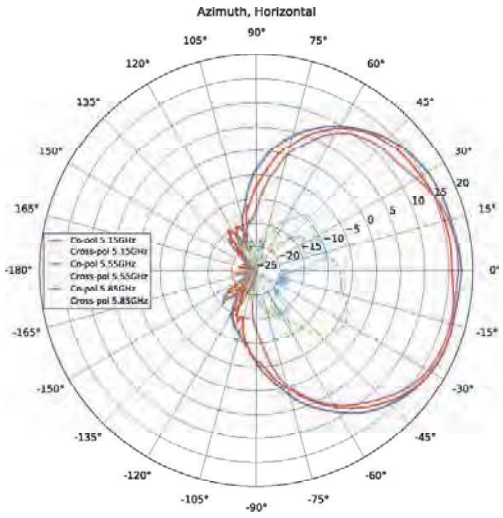
Channel 0 Vertical Polarization Azimuth



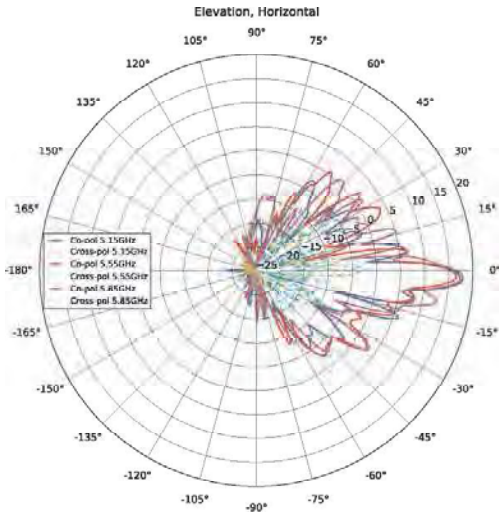
Channel 0 Vertical Polarization Elevation



Channel 1 Vertical Polarization Azimuth

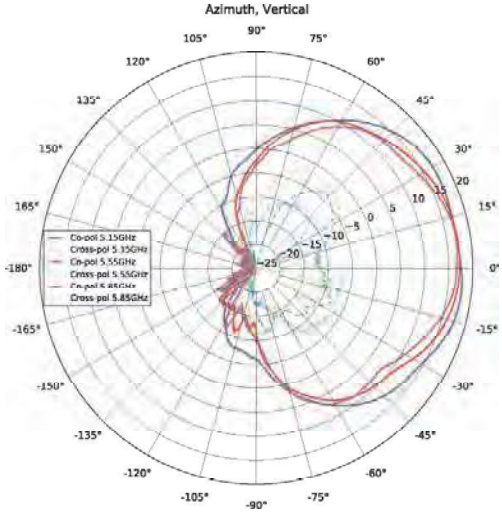


Channel 1 Vertical Polarization Elevation

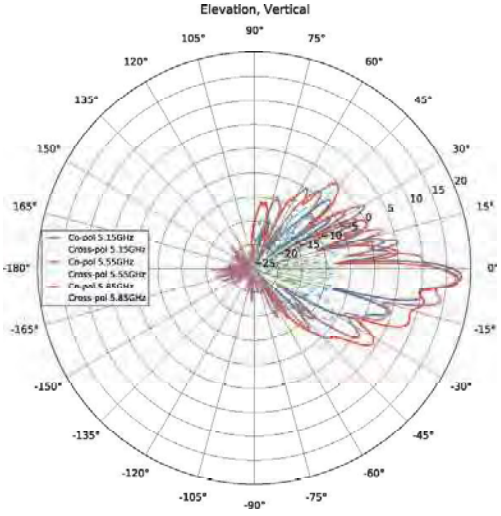


ANTENNA PATTERNS

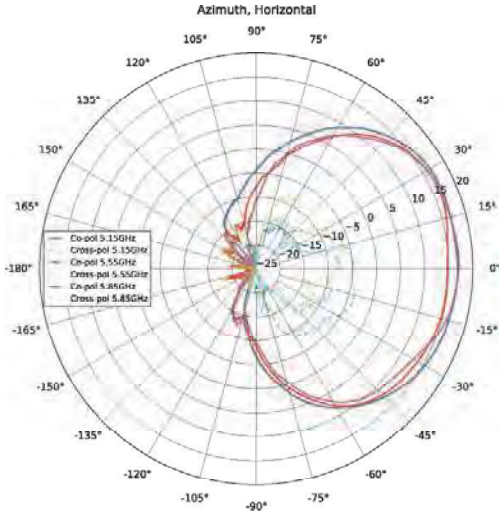
Channel 2 Vertical Polarization Azimuth



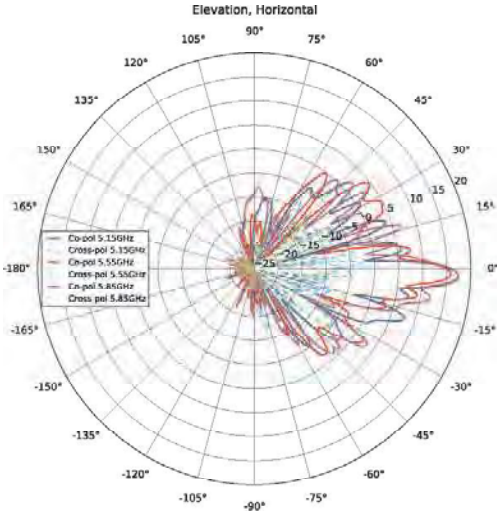
Channel 2 Vertical Polarization Elevation



Channel 3 Vertical Polarization Azimuth



Channel 3 Vertical Polarization Elevation



Cambium Networks™

5.25 - 5.85 GHz High Performance Dual Pole Parabolic Reflector Antenna

High Performance Dual Pole Parabolic Reflector Antennas from Cambium Networks are well-suited for deployment with any of the sub-6 GHz PTP products. They are engineered to provide ETSI class 2/3 radiation pattern performance as well as excellent gain. Field-proven preassembled antennas and robust pole mounts ensure "set and forget" installation with minimal post installation maintenance. The included radome ensures robust and reliable performance under the most challenging conditions.

FEATURES AND BENEFITS:

- High Performance ETSI Class 2/3* Parabolic Antennas – Excellent performance for a wide range of applications
- Fully Preassembled at the Factory – Simplifies installation on site and guarantees "factory tested" quality
- Industry leading 7year warranty
- Suitable for deployment with PTP 650, PTP 670, PTP 700 and PTP 450i connectorized radios.
- Fully supported in LINKPlanner™ providing accurate predictions of PTP link performance and availability. LINKPlanner™ is available at no charge from the support website at cambiumnetworks.com.

**ETSI Class depends on frequency band*

SPECIFICATIONS

GENERAL

Antenna Type	High Performance Parabolic Reflector Antenna
Size, nominal	2 ft (0.6 m); 3 ft (0.9 m); 4 ft (1.2 m)
Polarization	Dual
Standard RF Connector Type	N-Female

SPECIFICATIONS

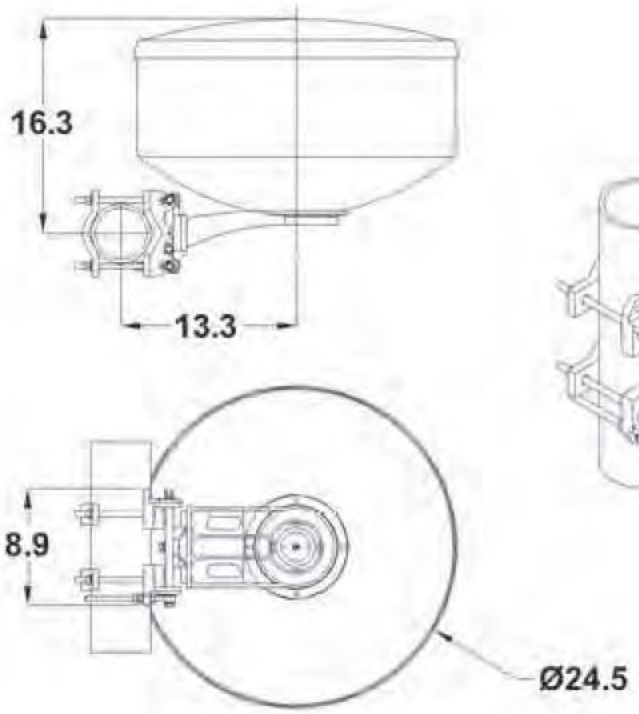
ELECTRICAL	2 FT (0.6 M)	3 FT (0.9 M)	4 FT (1.2 M)
Model Number	RDH4508B	RDH4509B	RDH4510B
Description	5.25-5.85 GHZ, 2-FT (0.6M), HIGH PERFORMANCE DUAL-POL	5.25-5.85 GHZ, 3-FT (0.9M), HIGH PERFORMANCE DUAL-POL	5.25-5.85 GHZ, 4-FT (1.2M), HIGH PERFORMANCE DUAL-POL
Operating Frequency Band	5.25 - 5.85 GHz	5.25 - 5.85 GHz	5.25 - 5.85 GHz
Half Power Beamwidth, Horizontal	6.1 degrees	4.2 degrees	3 degrees
Half Power Beamwidth, Vertical	6.1 degrees	4.2 degrees	3 degrees
Cross-Polarization Discrimination	28 dB	30 dB	30 dB
Front to Back Ratio (F/B)	44 dB	46 dB	49 dB
Gain, Low Frequency	28.3 dB	31.8 dB	34.2 dBi
Gain, Mid Frequency	28.8 dB	32.3 dBi	34.7 dBi
Gain, High Frequency	29.3 dB	32.8 dBi	34.7 dBi
VSWR	1.5:1	1.5:1	1.5:1
Return Loss	-14 dB	-14 dB	-14 dB

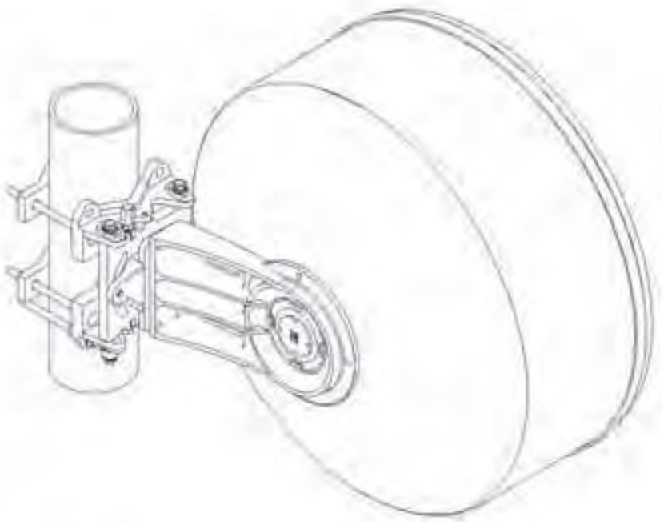
MECHANICAL	2 FT (0.6 M)	3 FT (0.9 M)	4 FT (1.2 M)
Model Number	RDH4508B	RDH4509B	RDH4510B
Description	5.25-5.85 GHZ, 2-FT (0.6M), HIGH PERFORMANCE DUAL-POL	5.25-5.85 GHZ, 3-FT (0.9M), HIGH PERFORMANCE DUAL-POL	5 .25-5.85 GHZ, 4-FT (1.2M), HIGH PERFORMANCE DUAL-POL
Fine Azimuth Adjustment	+/- 10 degrees	+/- 10 degrees	+/- 10 degrees
Fine Elevation Adjustment	+/- 30 degrees	+/- 25 degrees	+/- 25 degrees
Mounting Pipe Diameter, Min	2 inch | 5.08 cm	4.5 inch | 11.4 cm	4.5 inch | 11.4 cm
Mounting Pipe Diameter, Max	4.5 inch | 11.4 cm	4.5 inch | 11.4 cm	4.5 inch | 11.4 cm
Net Weight	27 lbs | 12.3 kg	50 lbs | 12.3 kg	85 lbs | 38.3 kg
Wind Velocity Operational	90 mph | 145 km/h	90 mph | 145 km/h	90 mph | 145 km/h
Wind Velocity Survival Rating	125 mph | 201 km/h	125 mph | 201 km/h	125 mph | 201 km/h
Axial Force (FA)	202 lbs | 899 N	403 lbs | 1972 N	737 lbs | 3278 N
Side Force (FS)	100 lbs | 445 N	200 lbs | 890 N	365 lbs | 1623 N
Twisting Moment (MT)	194 ft-lbs | 263 Nm	344 ft-lbs | 466 Nm	784 ft-lbs | 1063 Nm
Operating Temperature Range	-40 to +60 C	-40 to +60 C	-40 to +60 C
Max Pressure, PSIG, (if waveguide interface)	5	5	5

REGULATORY COMPLIANCE			
RoHS-compliant	Yes	Yes	Yes

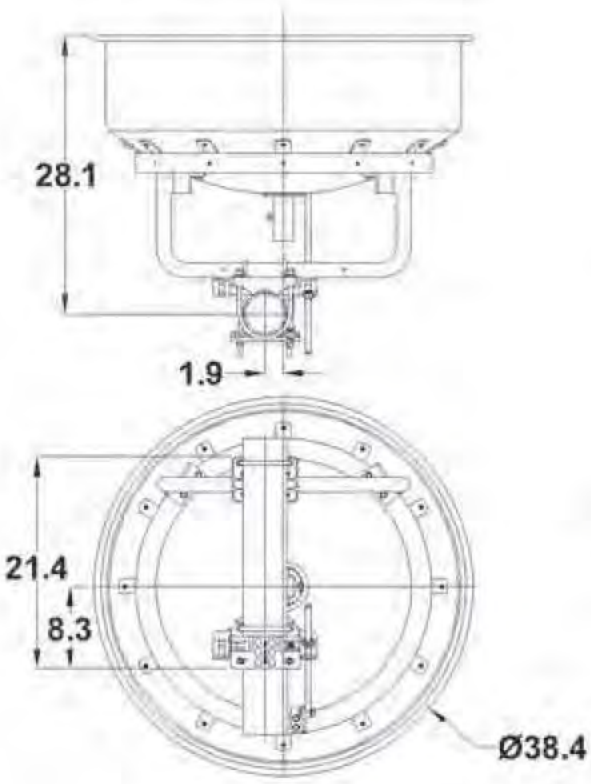
SHIPPING INFORMATION	2 FT (0.6 M)	3 FT (0.9 M)	4 FT (1.2 M)
Model Number	RDH4508B	RDH4509B	RDH4510B
Description	5.25-5.85 GHZ, 2-FT (0.6M), HIGH PERFORMANCE DUAL-POL	5.25-5.85 GHZ, 3-FT (0.9M), HIGH PERFORMANCE DUAL-POL	5.25-5.85 GHZ, 4-FT (1.2M), HIGH PERFORMANCE DUAL-POL
Package Type	Cardboard	Wood Crate	Wood Crate
Gross Weight	48 lbs | 28.7 kg	143 lbs | 69.8 kg	196 lbs | 88.9 kg
Dimensions, L x W x H	31 x 31 x 25in | 79 x 79 x 64 cm	47 x 28 x 48in | 119 x 71 x 122 cm	59 x 35 x 60in | 180 x 89 x 152 cm
Shipping Volume	13.9 cu ft | 0.39 cu m	36.56 cu ft | 1.04 cu m	71.7 cu ft | 2.03 cu m

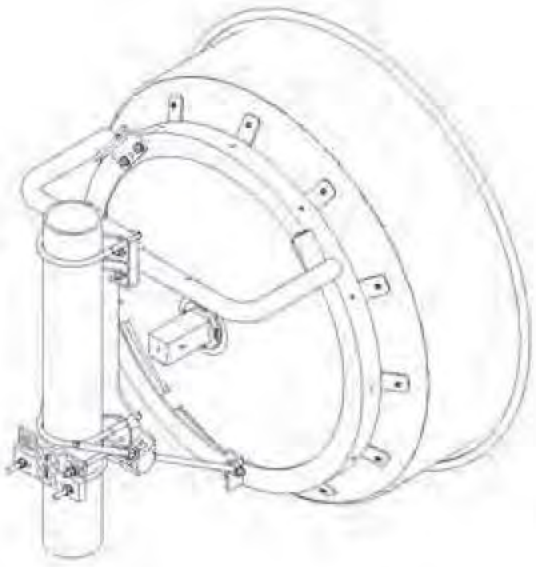
TECHNICAL DRAWINGS





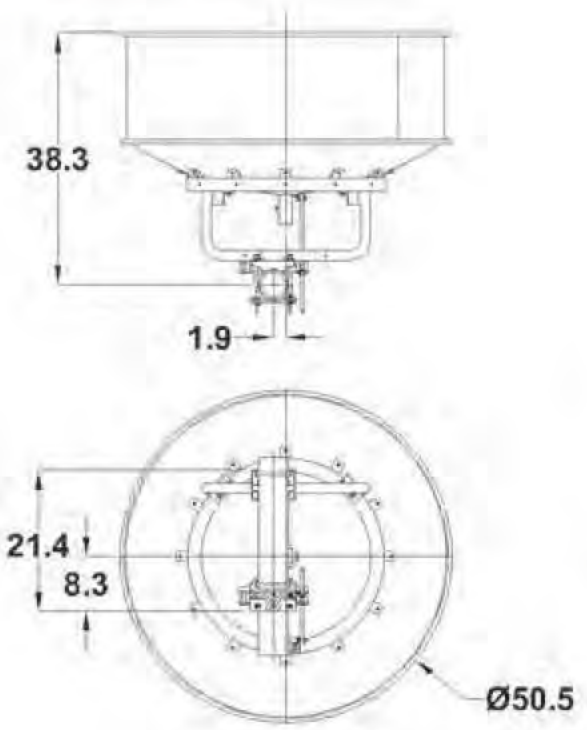
RDH4508B 5.25-5.85 GHZ, 2-FT (0.6M), HIGH PERFORMANCE DUAL-POL

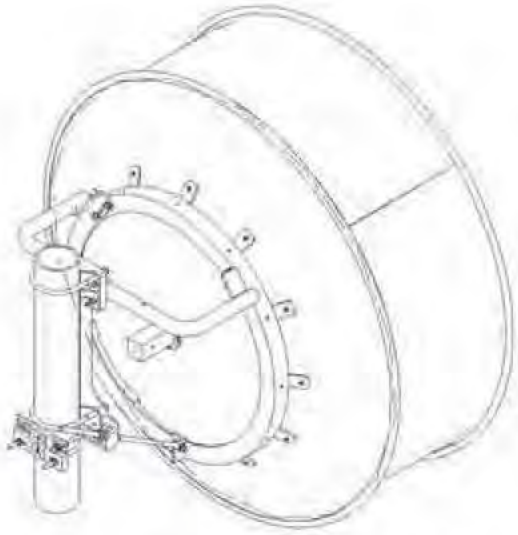




RDH4509B 5.25-5.85 GHZ, 3-FT (0.9M), HIGH PERFORMANCE DUAL-POL

TECHNICAL DRAWINGS





RDH4510B 5.25-5.85 GHZ, 4-FT (1.2M), HIGH PERFORMANCE DUAL-POL

TECHNICAL SPECIFICATIONS

	PTP 820S	PTP 820C + PTP 820C HP	PTP 820G	PTP 820F	PTP 820E	PTP 850E
Supported Frequency	6–38 GHz	6 – 38 GHz	6 – 38 GHz	6–38, 71–76, 81–86 GHz	71–76, 81–86 GHz	71–76, 81–86 GHz
Role in the Network	Compact all outdoor	Compact all outdoor w/ multi-core	Split Mount or all indoor, multi-carrier options	Split mount or all-indoor, multi-carrier options	Multiband with PTP 820C/S	Multiband with PTP 820C/S
Transport Technology	All packet	All packet	Hybrid and/or all packet	Hybrid and/or all packet	All packet	All packet
TDM Interface	None	None	16 x E1/T1	16 x E1/T1	None	None
Modulation	QPSK to 2048 QAM w/ACM	QPSK to 2048 QAM w/ACM	QPSK to 2048 QAM w/ACM	QPSK to 4096 QAM w/ACM	BPSK to 1024 QAM w/ACM	BPSK to 512 QAM w/ACM
Channel Size	3.5 to 80 MHz	3.5 to 80 MHz	3.5 to 60 MHz	6–38 GHz 14 to 112 MHz; 71–86 GHz : 62.5 to 500 MHz	62.5 – 500 MHz	250 MHz to 2 GHz
Capacity (Layer 2)	679 Mbps	1.36 Gbps	527 Mbps, 1.05 Gbps	542 Mbps, 1.08 Gbps	2.4 Gbps	10 Gbps
Capacity with Multi-Layer Compression	833 Mbps	1.67 Gbps	833 Mbps (1+0) 1.67 Gbps (2+0)	1.69 Gbps (1+0) 3.2 Gbps (2+0)	2.4 Gbps (1+0) 4.8 Gbps (2+0)	10 Gbps (1+0) 20 Gbps (2+0)
Configuration	1+0, 1+1 HSB, 2+0	1+0 to 4+0, 1+1/2+2 HSB, E/W, 1+0 SD, 2+2 SD	1+0, 1+1 HSB, 2+0 (E/W), 2+0 XPIC, 2+0 MC-ABC	1+0, 3 x 1+0, 2 x 2+0, 2 x 2+0 + 1+0, 1+1 HSB*, 2+2 HSB*	1+0, 2+0	1+0, 2+0 (XPIC)
LOS MIMO	No	Yes, 4x4 or 2x2	No	No	No	No
XPIC	No	Yes	Yes	Yes	No	Yes
Ethernet Interface	1 x 10/100/1000Base-T and 2x1000base-X or 10/100/1000Base-T	1 x 10/100/1000Base-T and 1x1000base-X or 10/100/1000Base-T	4 x 10/100/1000Base-T and 2x1000base-X	4x1 Gbe (RJ-45/SFP) 1x 2.5/1 Gbps SFP	1x 10/100/1000Base-T, PoE 1x 1Gbps SFP cage Optional: 1 x10/100/100 Base-T or 10 Gbps SFP cage	1x 2.5/1 Gbps SFP 1x 10 Gbps SFP 10 GE (SFP+) Optional: QSFP(4x)/10 GE or 1x(40) or SFP+ (1x10 GE)
Management Interface	1 x 10/100 Base-T	1 x 10/100 Base-T	1 x 10/100 Base-T	1 x 10/100 Base-T	1 x10/100/100 Base-T for management	1 x 1 GE RJ-45 for management
External Alarm	None	None	1 x DB9	1 x DB9	None	None
Dimensions (HxWxD – mm)	230 x 233 x 98	PTP 820C: 230x233x98 PTP 820C HP: 315x284x107	IDU: 44x426x180 RFU-C: 200x200x85 RFU-A: 44x443x421	IDU: 44x482x165 RFU-D: 230x233x98 RFU-D-HP: 319x286x107 RFU-S: 277x210x85 RFU-E: 220x198x75	220x198x75 43 dBi integrated antenna: 280x280x110	322x227x86 43 dBi ingegrated antenna: 341x270x103
Environmental	-33°C to +55°C (-45°C to +60°C extended)	-33°C to +55°C (-45°C to +60°C extended)	IDU: -5°C to +55°C (-25°C to +65°C extended) RFU-C: -33°C to +55°C (-45°C to +60°C extended) RFU-A: -5°C to +55°C (-25°C to +65°C extended)	IDU: -5°C to -55°C (-45°C to +60°C extended); RFU: -33°C to +55°C (-45°C to +60°C extended)	-33°C to +55°C (-45°C to +60°C extended)	-33°C to +55°C (-45°C to +60°C extended)
Power Input	-48 VDC	-48 VDC	-48 VDC	-48 VDC	-48 VDC	-48 VDC
PoE Injector Power Input	-48 VDC or +24 VDC	PTP 820C ONLY: -48VDC or +24VDC	N/A	N/A	-48 VDC or +24 VDC	-48 VDC or +24 VDC
Maximum Power Consumption	6–11 GHz: 40W; 13–38 GHz: 35W	Multi-Core Operation: PTP 820C: 6 GHz: 65W; 7 GHz: 75W; 11 GHz: 65W; 13–15 GHz: 55W; 18–24 GHz:48W; 26–38 GHz: 55W PTP 820C HP: 135W	IDU Eth-only with single modem: 23.5W, addition for second modem, 2.9W, additional for 16 E1/DS1: 11W • RFU-C: 6–26 GHz: 1+0 22W; 1+1 39W; 28–38 GHz, 1+0 26W; 1+1 43W RFU-Ae / RFU-Aep • 1+0 High Level: 77W / 90W Medium Level: 53W / 73W Low Level: 43W / 47W Mute: 24W / 24W • 1+1 HSB/SD BBS: High Level: 101W / 114W Medium Level: 77W / 97W Low Level: 67W / 71W Mute: 48W / 48W	IDU: 48W maximum RFU-D: 75W RFU-D-HP: 130W/180W RFU-S: 43W RFU-E: 43W	43W Active 35W Standby	58W Active 47W Standby

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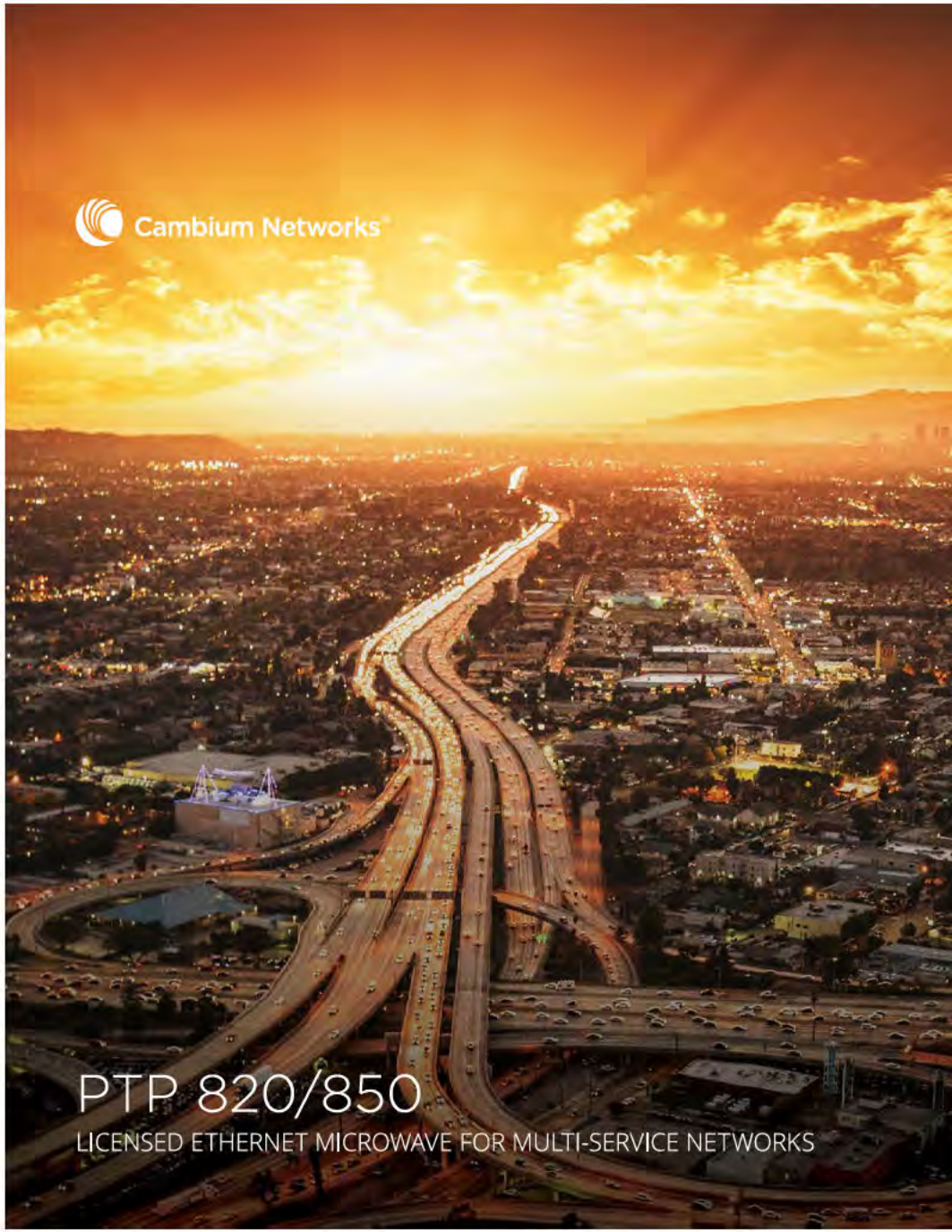
UK Office

Unit B2, Linhay Business Park,
Eastern Road, Ashburton, United Kingdom, TQ13 7UP
+44 1364 655500



Cambium **PTP** 820/850


PTP 820S


PTP 820C


PTP 820E


PTP 850E


PTP 820G
Split-Mount / All-Indoor, Multi-Carrier


PTP 820F
Split-Mount / All-Indoor, Multi-Carrier

A single platform serving all radio transport requirements.


PUBLIC SAFETY


ENTERPRISE


WIRELESS CARRIER


WIRELESS INTERNET SERVICE PROVIDER

PTP 820/850 is a point-to-point licensed microwave backhaul platform that integrates leading networking functionality with the industry's most advanced microwave technologies, creating a superior microwave transport solution.

Supporting licensed frequency bands ranging from 6 to 86 GHz, the PTP 820/850 series delivers a wide range of configurations to offer a tailored solution for any deployment scenario.

Composed of high-density multi-technology nodes and integrated radio units, the PTP 820/850 series offers flexibility in choosing all-indoor, split-mount, and all-outdoor configuration options. Exploiting unique Line of Sight (LOS) Multiple Input Multiple Output (MIMO) technology, modulation up to 4096 QAM and wider channel bandwidths ensures industry-leading throughput and spectral efficiency.

The PTP 820E/850E operate in E-Band radio providing throughput up to 20Gbps, this eliminates the need for future forklift upgrades, or major system overhaul by the network operator to deliver multi gigabit-plus capacity.

PTP 820/850 also offers both Synchronous Ethernet (SyncE) and IEEEv2 synchronization protocols required for large ISP and MPLS networks.

Operations, Administration and Maintenance (OA&M) tools coupled with a full suite of network and element management systems (NMS and EMS) simplify network provisioning and monitoring, reducing operators' total cost of ownership and enabling them to meet the most stringent service level agreements.

Combining technologies, equipment and services, PTP 820/850 enables network operators to meet accelerating demand for capacity cost-effectively under rapidly evolving conditions.

PTP 820/850 Product Series Highlights

- Licensed frequency bands 6-86 GHz
- Up to 4096 QAM, with 12-step hitless and errorless Adaptive Coding & Modulation (ACM) for high reliability
- Up to 20 Gbps bandwidth supported
- Multi-gigabit radio capacity with high spectral efficiency
- TDM and/or packet supporting legacy services and evolution to all-packet
- Integrated Ethernet Switch, MEF Carrier Ethernet 2.0 compliant, MPLS-TP-ready
- Header de-duplication for additional capacity boost
- Intelligent service-centric management utilizing QoS and advanced OA&M capabilities
- Carrier-grade service resiliency (G.8032, MSTP)
- ITU-T Y.1731 Performance Management – MEF 35
- Integrated synchronization solution: Native/SyncE/IEEE 1588v2
- Lowest power consumption with adaptive green mode
- Low latency with unique frame cut through for latency sensitive services
- Industry-leading system gain

NOTES: The highlight feature may not apply to all PTP 820/850 platform.

LINKPlanner

LINKPlanner is a free, easy-to-use link design tool that allows network operators to easily and quickly design networks. Microsoft® Windows® and Intel®-based Mac® versions of LINKPlanner can be downloaded from Cambium Networks' support pages.

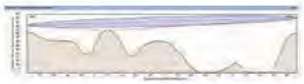
Key LINKPlanner features:

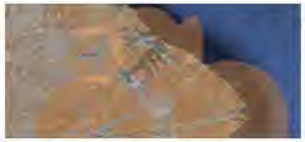
- Design a five-nines-reliable wireless link
- Plan and optimize a single link or multiple links simultaneously
- Perform calculations for both licensed and unlicensed products
- Automatically load path terrain profiles and environmental factors such as rain fade
- Display a comprehensive overview of your entire point-to-point wireless network via Google™ Earth
- Generate reports that validate projected performance and serve as time-saving deployment guidelines
- Create bills of material for point-to-multipoint and point-to-point networks including accessories

About Cambium Networks

Cambium Networks is a leading global provider of wireless connectivity solutions that strengthen connections between people, places and things. Specializing in providing an end-to-end wireless fabric of reliable, scalable, secure, cloud-managed platforms that perform under demanding conditions, Cambium Networks empowers service providers and enterprise, industrial and government network operators to build intelligent edge connectivity. Cambium Networks' commitment to continuous innovation in wireless access is demonstrated in the millions of radios deployed in thousands of networks that benefit communities around the world. Team members also contribute to social responsibility activities to serve the communities in which they live. Headquartered outside Chicago and with R&D centers in the U.S., U.K. and India, Cambium Networks sells through a range of trusted global distributors.

www.cambiumnetworks.com


PATH PROFILE WITH OBSTRUCTIONS


GOOGLE EARTH NETWORK VIEW


MAP OF THE SITES AND LINKS IN THE PROJECT

Cambium Networks™

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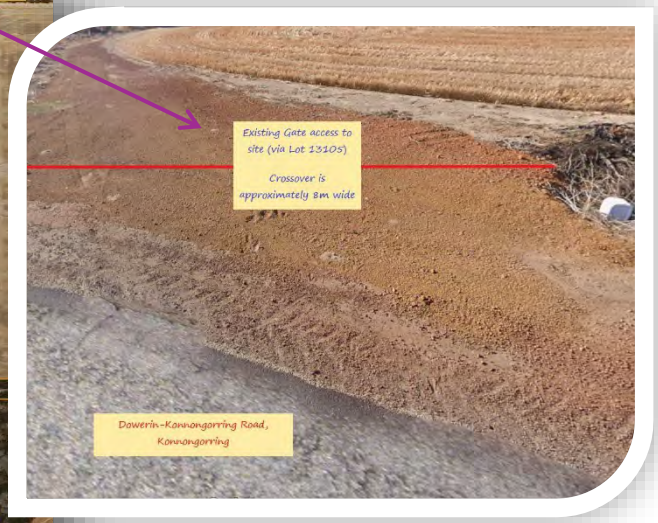

Attachment 4: Site Plan

RCP3-012-A: Konnongorring Site

Lot 13104 on DP133733

Accessed via Lot 13105 (same owner) from Dowerin-Konnongorring Road, Konnongorring