SHIRE OF WEST ARTHUR
APPROVED DEVELOPMENT APPLICATION

This is a final complete copy of a development application approved by the West Arthur Shire Council on 14 November 2024.

Vin Fordham Lamont
Chief Executive Officer
15 November 2024

METEOROLOGICAL MAST DEVELOPMENT APPLICATION

Ambrosia Wind Farm

Prepared for
SHIRE OF WEST ARTHUR
14 August 2024

URBIS

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Urbis acknowledges the important contribution that Aboriginal and Torres Strait Islander people make in creating a strong and vibrant Australian society.

We acknowledge, in each of our offices, the Traditional Owners on whose land we stand.

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CONTENTS

FIGURES

TABLES

1. INTRODUCTION

This report has been prepared by Urbis on behalf of Ambrosia Wind Farm Pty Ltd to support a development application for the installation of a meteorological mast ('**met mast'**) for the future Ambrosia Wind Farm located within the Shire of West Arthur, south-east of Collie.

The Ambrosia Wind Farm is being developed in partnership between Green Wind Renewables (**GWR**) and Aula Energy, a portfolio company of Macquarie Asset Management. This partnership is seeking to develop, finance and construct a portfolio of large-scale onshore wind farms in Western Australia that includes Ambrosia Wind Farm, which encompasses rural land located within the Shire of West Arthur.

This application proposes two potential locations for the met mast. Ambrosia Wind Farm Pty Ltd is seeking development approval for both locations to provide flexibility in choosing the most suitable site, however the intent is that only one met mast will be constructed and installed.

The proposed met mast will measure approximately 150 metres tall and is designed to measure wind speeds at various heights. This is crucial to understand the wind conditions on the site and will assist in determining the final layout of the turbines. The met mast will be a temporary structure that will be in place for approximately 5 years, after which it will be deconstructed and removed from the site.

It is noted that the future development of Ambrosia Wind Farm will be subject to a separate development application supported by extensive technical assessments.

2. SITE CONTEXT

2.1. LOCATION AND BACKGROUND

The proposed met masts are located within the Shire of West Arthur (**Shire**), approximately 200km south-east of the Perth CBD, 124km east of Busselton and 53km south-east of Collie.

Locally, the proposed met masts are located on rural land. The area is characterised by its rural setting, surrounded by farmland and natural bushland. The sites form part of land within the Wheatbelt region with agriculture and farming being significant industries in the area.

The regional context of the site is shown at **Figure 1** below and the subject site is shown at **Figure 2**.

Figure 1 - Regional Context Plan

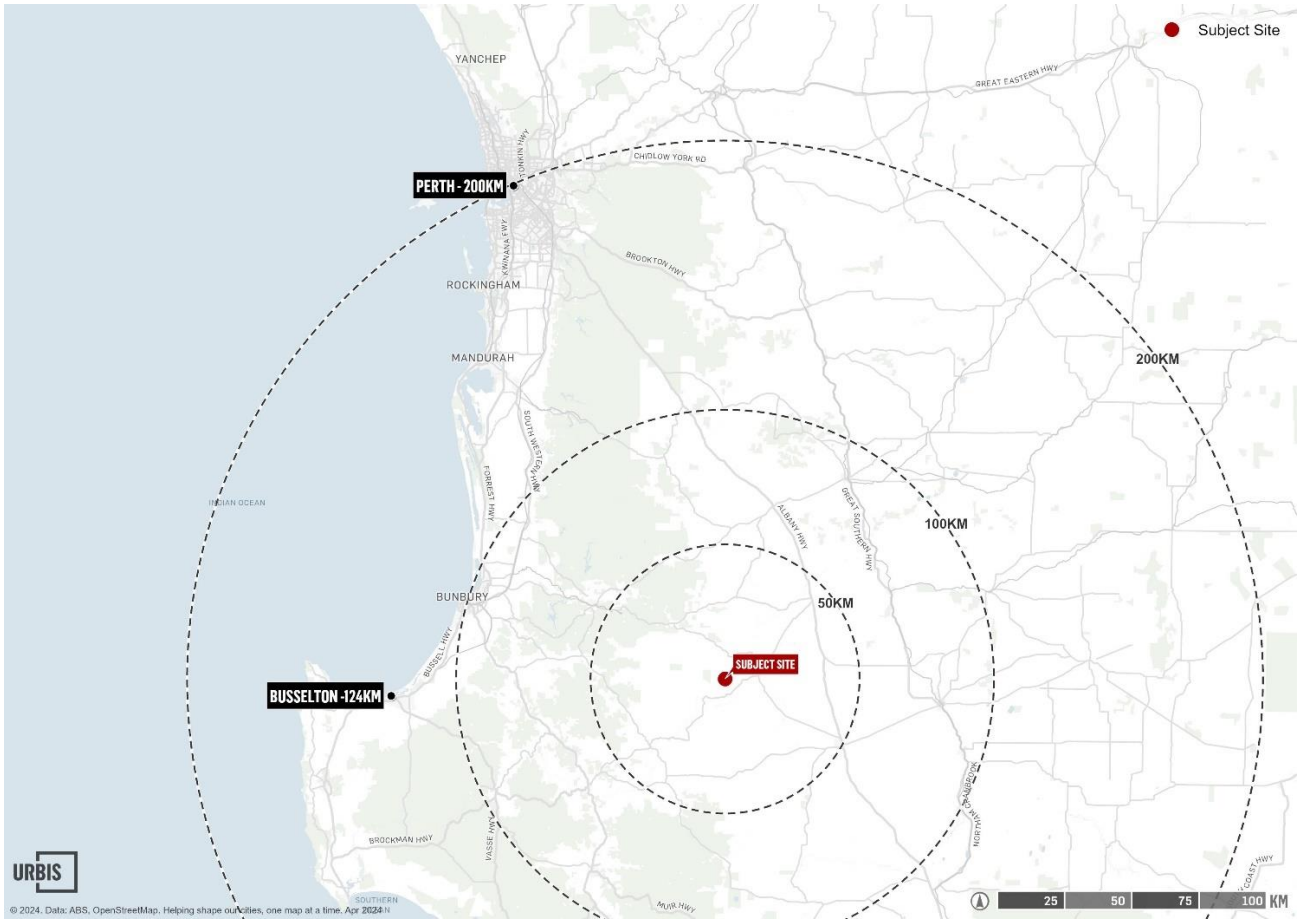
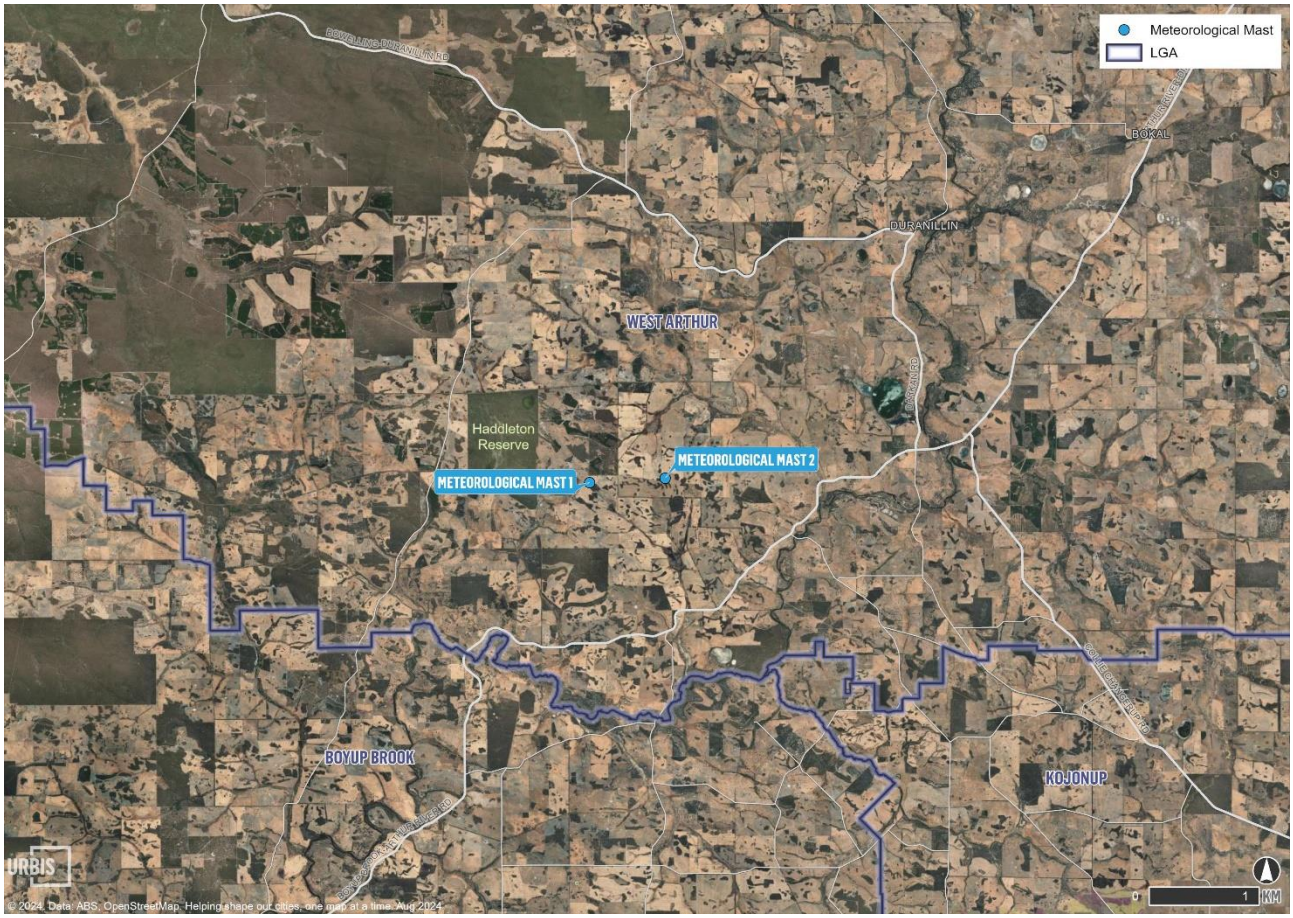


Figure 2 - Aerial Plan



2.2. LOT PARTICULARS

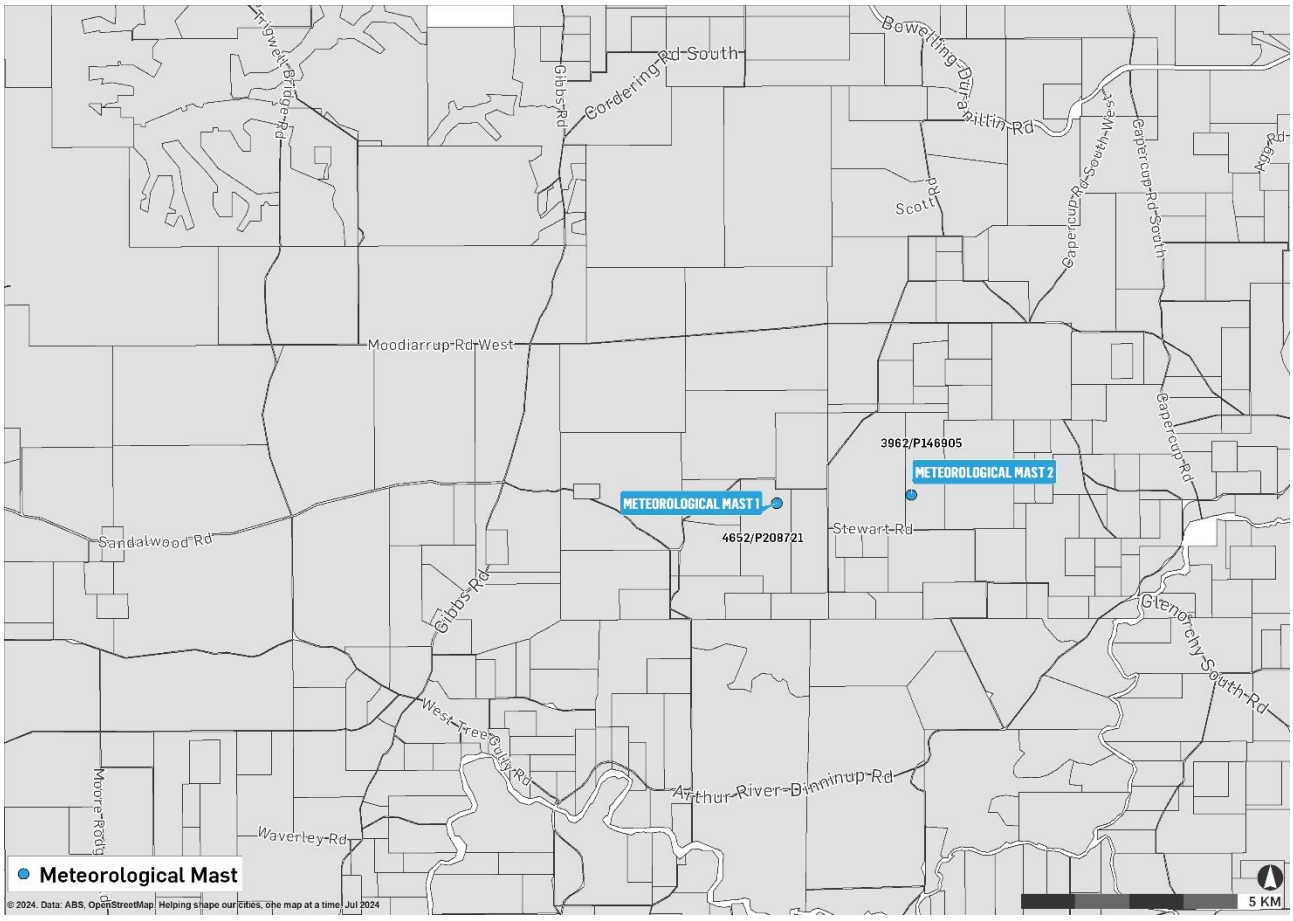
Two met mast locations are proposed, located on two separate, private landholdings. **Table 1** presents the relevant lots applicable to this development application and **Figure 3** provides a cadastral plan of the subject site.

Certificates of Title for the two affected lots are provided at **Appendix A.**

Table 1 – Lot Particulars

Report Ref.	Lot No.	Plan / Diagram	Volume	Folio	Street Address	Area (ha)	Proprietor(s)	Encumbrances / Other
Met Mast 1	4652	P208721	383	100A	N/A	244.0042	Derbar Pty Ltd	See Certificate of Title
Met Mast 2	3962	P146905	2121	704	N/A	277.2881	Warren Roemarie Pty Ltd	See Certificate of Title

Figure 3 - Cadastral Plan



3. PRE-LODGEMENT CONSULTATION

GWR on behalf of Ambrosia Wind Farm Pty Ltd has undertaken consultation with nearby landholders (**Figure 4**) and relevant government stakeholders over the past six months, informing this application and the broader wind farm development.

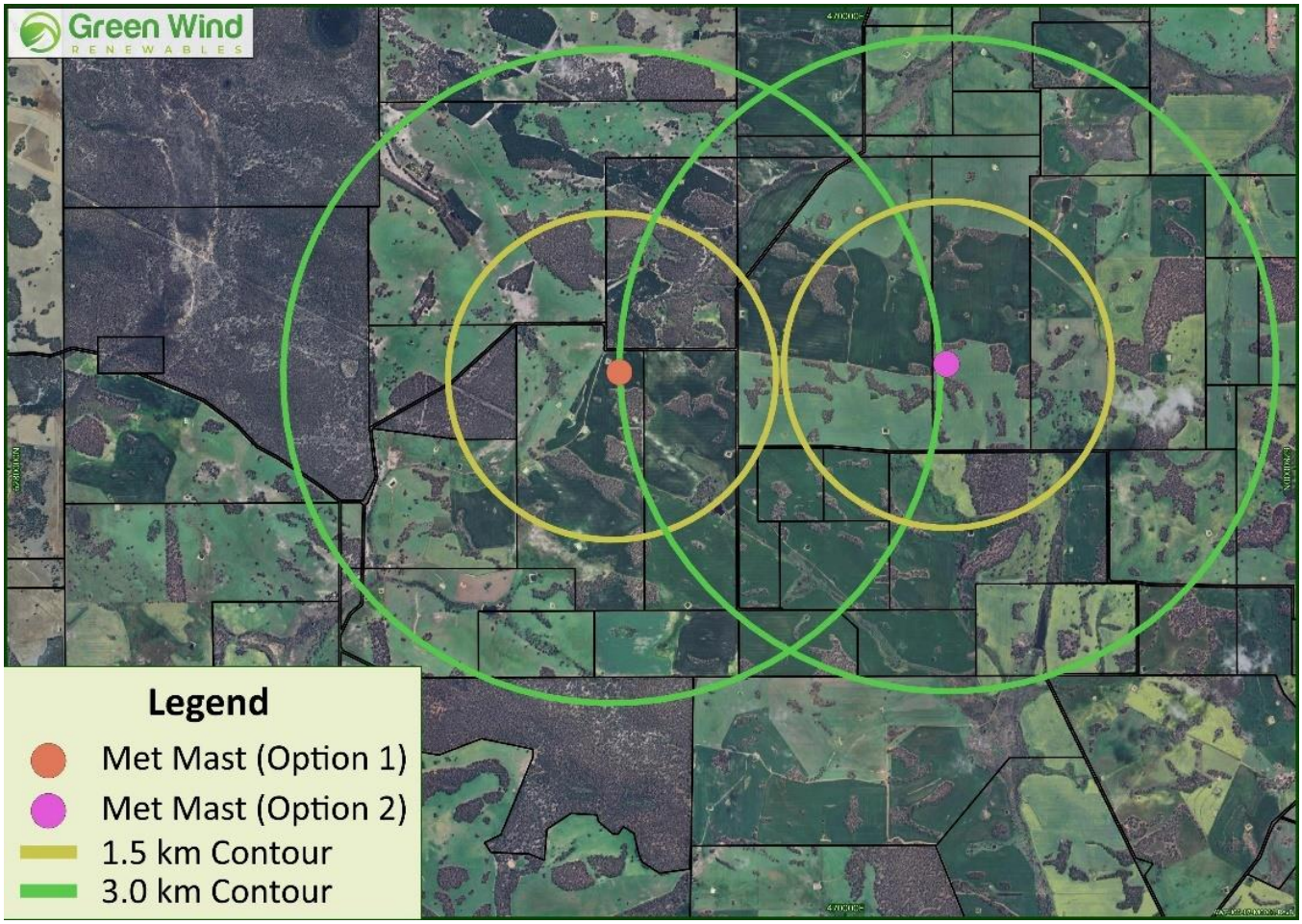
Importantly, GWR has maintained close engagement with the two private landowners impacted by the met mast locations to ensure a detailed understanding of the proposal and programme, and level of support (evidenced by being a signatory to this application).

Refer to **Table 2** below for a summary of the consultation undertaken to date.

Table 2 - Consultation Summary

Stakeholder	**Consultation Outcomes**
Shire of West Arthur	The Shire has been consulted on the details of this met mast proposal as well as the broader wind farm project.
Landowners: Derbar Pty Ltd and Warren Roemarie Pty Ltd.	The landowners are signatories to and support this Development Application with the understanding that the meteorological masts are temporary, with the subject site to be remediated post-decommissioning
Adjacent landowners	Consultation with key landowners surrounding the met masts (within 3km) has been undertaken (refer **Figure 4**) in addition to a broader engagement process for the wind farm. No significant issues have been raised in relation to the met masts, with broad support being received.
Gnaala Karla Boodja - Aboriginal Corporation	Consultation has commenced with GKB regarding the execution of a Noongar Standard Heritage Agreement (**NSHA**), with the Activity Notice for the Met Mast to be submitted once the NSHA is signed.
Lakeside Camping	Consultation was undertaken in relation to aviation safety
Civil Aviation Safety Authority (CASA)	Notification of the proposal to CASA will be provided before construction commences.
Wider Community within Shire of West Arthur	Information on the met mast was included in the local community newsletter “The Bleat” published on 30 July. Information on the met mast has been uploaded to the Ambrosia Wind Farm website https://ambrosiawindfarm.com.au/

Figure 4 - Consultation boundary with landowners living within contour areas.



4. PROPOSED DEVELOPMENT

4.1. OVERVIEW

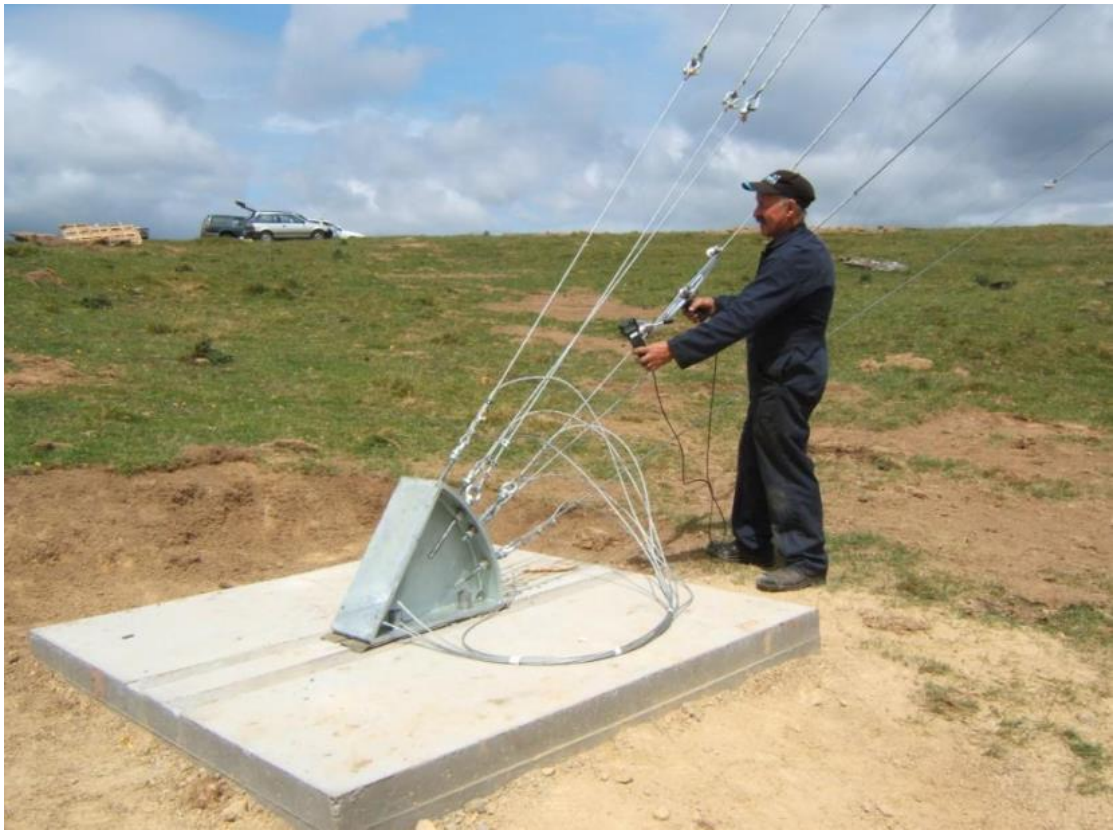
This application seeks development approval for two met mast locations. Ambrosia Wind Farm Pty Ltd is seeking approval for both locations while further wind analysis is being undertaken, however it is the intent that GWR will construct and install one met mast which will be confirmed prior to construction. The key elements of the met mast can be summarised as follows:

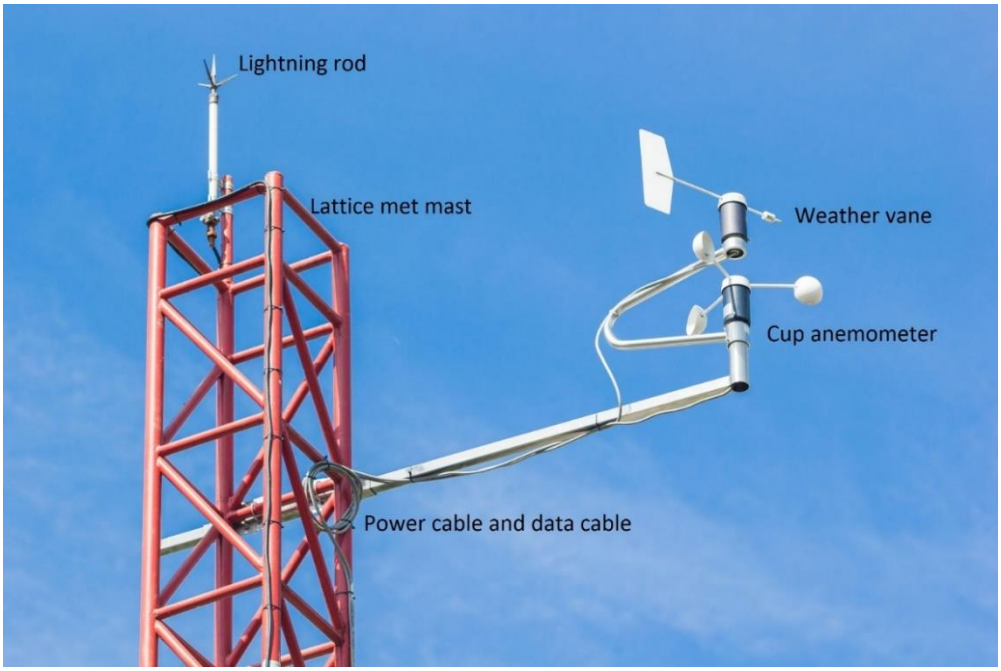
- The met mast will be approximately 150 metres tall. It will be designed to measure wind speeds at various heights, which will be crucial to understand the wind conditions of the site and assist in determining the final layout of the turbines.
- The met mast will be delivered to site in sections on a flatbed truck. Installation of the met mast will take approximately 7 weeks which includes a period of 3 to 4 weeks for concrete to cure. A construction workforce of 5 to 7 people will be present for the installation, as well as an excavator and small crane.
- Parking for construction workers will occur on private property most likely adjacent to the met mast construction in the cropped area. Given the short-term nature of the construction period, formalised carparking is not required. Access to the proposed location is to be from Stewart Road.
- The erection of the mast only takes a few days depending on weather conditions. The crane is used only to erect the first few sections of the mast. After that, a gin pole is used to continue building up to the desired height.
- The met mast is locked in place through a square tower foundation which comprises a concrete structure and measures approximately 60.0cm wide and 1.0 metre deep with provision of key anchor points which stabilise the met mast at the height proposed.
- At various height intervals on the mast, there are devices that measure wind speed and direction, as well as temperature and other climate variables.
- There is potential for micro siting of the met mast and guy wire anchor points following geotechnical and heritage investigations.
- The met mast will be a temporary structure that will be in place for approximately 5 years, after which it will be decommissioned and completely removed from site. This will involve removing all foundations and remediating the site to its previous land use.

The proposed locations have been selected to maximise wind speeds, while avoiding any sensitive areas from an environmental or heritage perspective. Each met mast location is readily accessible to nearby internal roads, minimising the need for significant infrastructure and/road upgrades.

Plans and specifications of the proposed met mast are provided at **Appendix B,** with example imagery of the met mast provided at **Figure 5.**

Figures 5 - Met Mast Example Imagery





4.2. TECHNICAL CONSIDERATIONS

A number of technical considerations will inform the proposed layout of Ambrosia Wind Farm – including ecology, heritage, bushfire, shadow flicker, aviation, landscape and visual assessment and other technical elements. These investigations have commenced and have been utilised to inform this met mast development application.

A summary of the key relevant considerations is provided below, from an environmental, heritage, aviation, bushfire and landscape/visual impact perspective.

4.2.1. Environmental

Existing environmental studies for the Ambrosia Wind Farm identify that there are no limiting environmental issues applicable to this development, with the sites not located near any major waterbodies. It was then not seen necessary to conduct further environmental studies.

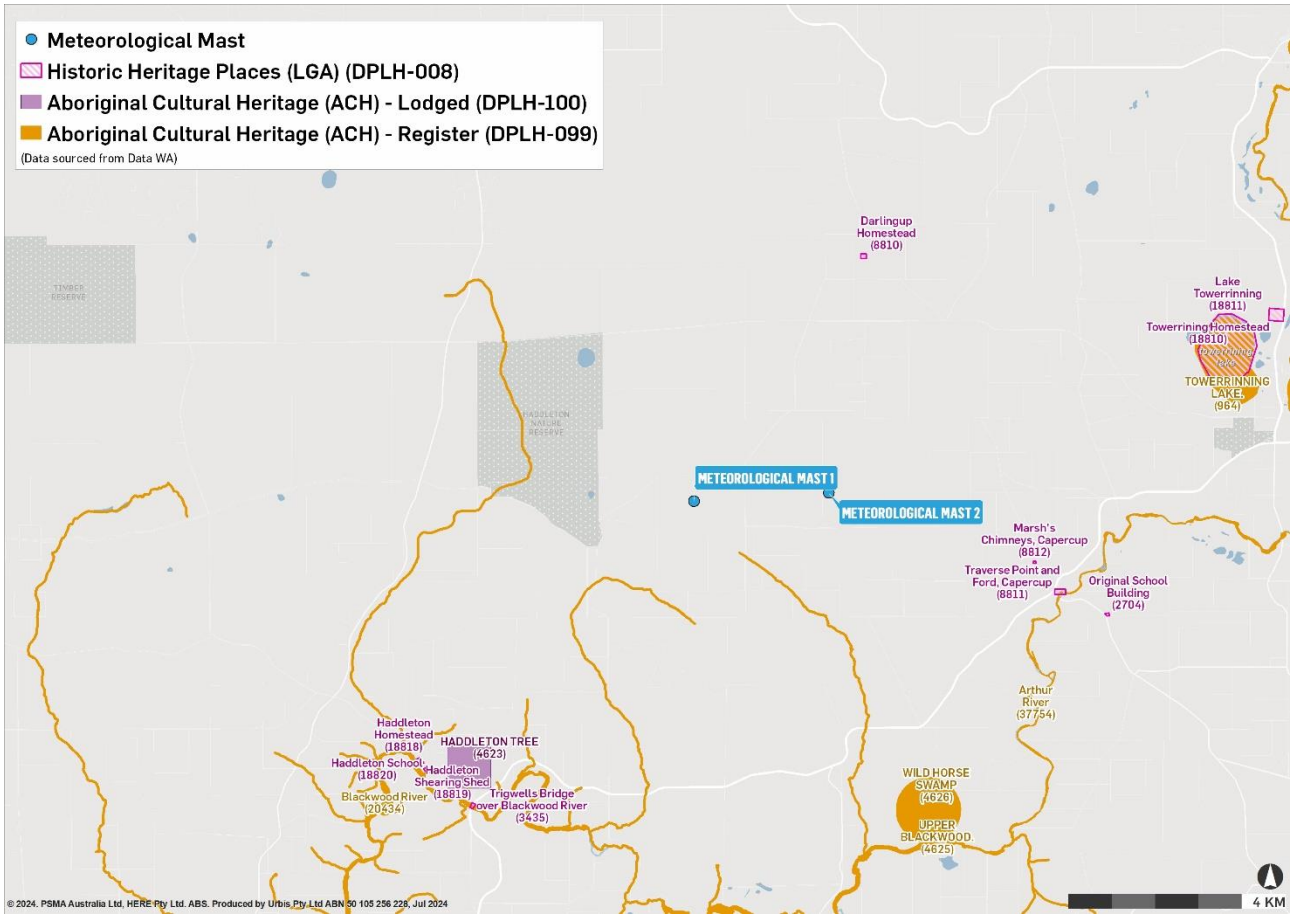
In addition, the subject sites are located on land utilised for agrarian cropping and pasturing purposes and exist in a state that is cleared from remnant vegetation. Therefore, the clearing of native vegetation, and subsequent approvals under the *Environmental Protection Act 1986* is not required.

4.2.2. Heritage

An Aboriginal and Historical Due Diligence Assessment has been being prepared by Urbis to inform the wind farm proposal including the proposed met masts. This assessment considers the potential impact of the subject area, including Aboriginal Cultural Heritage (**ACH**), registered sites and lodged places, historic (non-Aboriginal heritage) places located within the site, and potential archaeological constraints in view of relevant heritage controls.

A summary of the key findings of this assessment in the context of the two met mast locations is provided below. The heritage context of the site and surrounds is shown at **Figure 6.**

Figure 6 - Heritage Context Plan



4.2.2.1. Aboriginal Cultural Heritage

The met mast locations are located on the traditional lands of the Gnaala Karla Boodja People (**GKB**).

The Aboriginal Cultural Heritage Inquiry System (**ACHIS**) identifies one registered ACH site within the curtilage of the subject site. The Blackwood River (ID 20434) extends south of the met mast locations etc.

The registered boundary of this Site ID 20434 is approximately 2km from the nearest proposed met mast location. According to available satellite imagery, the nearest tributary to the met masts may extend and be closer than this estimated distance. As water has been documented to hold strong cultural value for Aboriginal people, including for GKB, this means there is a potential for impact if there are natural water bodies within proximity to the met mast locations. More importantly, this site also has intangible cultural values as it is a Creation / Dreaming Narrative site, therefore, it is important to understand the impact on those values as well.

An archaeological and ethnographic site inspection will be undertaken prior to construction to confirm the potential impact on the values of the Blackwood River by the proposed works. In April 2024, Green Wind Renewables provided GKB Aboriginal Corporation with a draft Noongar Standard Heritage Agreement (NSHA) for execution. Once the NSHA is signed by both parties, An Activity Notice for the proposed works associated to the installation of the met mast will be submitted and the site inspections will be conducted with the participation of GKB representatives.

Registered ACH sites in the broader landscape include Wild Horse Swamp (ID 4626), Upper Blackwood River (ID 4625), and Towerrinning Lake (ID 964). As these ACH sites are located more than 5km away from the proposed met mast locations, the works will not impact the heritage values of these ACH sites. At this point, we are anticipating no impacts on the cultural values of any of the mentioned sites, therefore, a Section 18 consent under the *Aboriginal Heritage Act 1972* will not be required.

It should be noted that the ACH boundaries available through ACHIS are not exhaustive of all possible ACH in Western Australia do not include sites that have not previously been identified, recorded, and registered. A detailed survey will be undertaken to inform the broader wind farm application.

4.2.2.2. Historic Heritage

A number of historic heritage places listed under the Shire of West Arthur Local Heritage Survey also exist within and in proximity to the met mast option locations. As these are not Heritage Listed (registered) places, there are no statutory requirements that apply. All places are assigned a Level 3 (some/moderate) or Level 4 (little) level of significance. The places which are included within the subject site include:

- Darlingup Homestead (8810)
- Marsh's Chimneys, Capercup (8812)

Traverse Point and For, Capercup (8811) is also within very close proximity to the met mast locations. A summary of the key heritage places and a broad assessment of impact of the proposed met masts is provided in **Table 3** below.

Table 3 - Historic Heritage

Heritage Place	Statement of Significance	Potential for Impact
8810 Darlingup Homestead	*One of the original buildings in the district, its construction type being unique, and its age make it a notable contribution to the buildings in the district.*	This place is located a minimum of 7.5km from the proposed met mast locations. This is sufficient distance from the proposed location of works that the met mast will not impact the construction typology or ability to interpret the age of this heritage place.
8812 Marsh's Chimneys, Capercup	*Notable as the site of one of the first dwellings in the West Arthur Shire and for its association with the pioneering Marsh family.*	This place is located a minimum of 5km from the proposed met mast locations. This is sufficient distance from the proposed location of works that the met mast will not impact the integrity of this heritage place and its association with the Marsh family.

Heritage Place	Statement of Significance	Potential for Impact
8811 Traverse Point and Ford, Capercup	*Notable as the original starting point for the surveying of the first location in the area and the ford was a river crossing in the times before bridges allowing travellers, teams, shepherds, and traders to safely cross the river.*	This place is located a minimum of 5.5 km from the proposed met mast locations. This is sufficient distance from the proposed location of works that the met mast will not impact the integrity of this heritage place and its significance as the original starting point for the surveying of the first location in the area, or an important ford river crossing.

4.2.3. Aviation Impact

An Aviation Impact Assessment has been prepared by Aviation Projects for the location of both met masts. The assessment concludes that both proposed locations will not impact aviation operations in the area, specifically noting that both locations will not impede on the low safe altitude, is not within controlled airspace, and will not affect communication, navigation, or surveillance facilities.

However, the assessment notes that there may be some low-level aircraft operations in the area related to the associated activities in the area (e.g. relating to surrounding rural uses). On this note, the assessment recommended several actions to be undertaken:

- While not mandatory, the Assessment recommends marking the meteorological towers with flags or balls, contrasting colours, and alternating mast markings. This is consistent with CASA's initial recommendation;
- The requirements for obstacle lighting do not strictly apply to the proposed WMT locations as they will not infringe on any certified aerodrome's Obstacle Limitation Surfaces (OLS) or other surfaces as specified. At 151.2 m (496 ft) AGL the WMT is just below what is considered as normally navigable airspace (500 ft AGL), with it normally considered that obstacle lighting would not be required.
  - In this instance, CASA has recommended that the met mast utilise low intensity red obstacle/hazard lights during poor light and hours of darkness, with the need to consider community impact from the lighting. This is purely a recommendation and is not enforceable. However, CASA has also noted that they are not aware of any regulated or unregulated aerodromes in the vicinity (approximately 2.5km). If there are any unregulated aerodromes in the vicinity (e.g. landing areas), this is to be highlighted by the relevant local government.
- Report the construction details of the metrological mast as soon as reasonably possible to the CASA after development approval is achieved and the location of the mast is confirmed. This is required under the *Civil Aviation Safety Regulations 1998*; and
- Details and location of the mast should be provided to Air Services Australia. This will be done concurrently with the reporting to CASA.

Refer to **Appendix C** for a copy of the Aviation Impact Assessment.

4.2.4. Landscape and Visual Impact

To illustrate the potential impact of the met mast locations, an indicative viewshed has been prepared and is shown below at **Figure 7 and 8** (full copies and location plan included at **Appendix D).** These views are taken as follows:

- Met Mast 1 – view looking north-east from Boyup Brook Arthur Road (viewing distance approximately 5.0km)
- Met Mast 2 – view looking north-west from Boyup Brook Arthur Road (viewing distance approximately 4.0km)

Both images demonstrate that the proposed met masts will not be a dominant feature in the rural landscape. A more detailed landscape and visual impact assessment will be undertaken in the future to support the broader wind farm application.

Figure 7 - Viewshed Image (Met Mast Location 1)

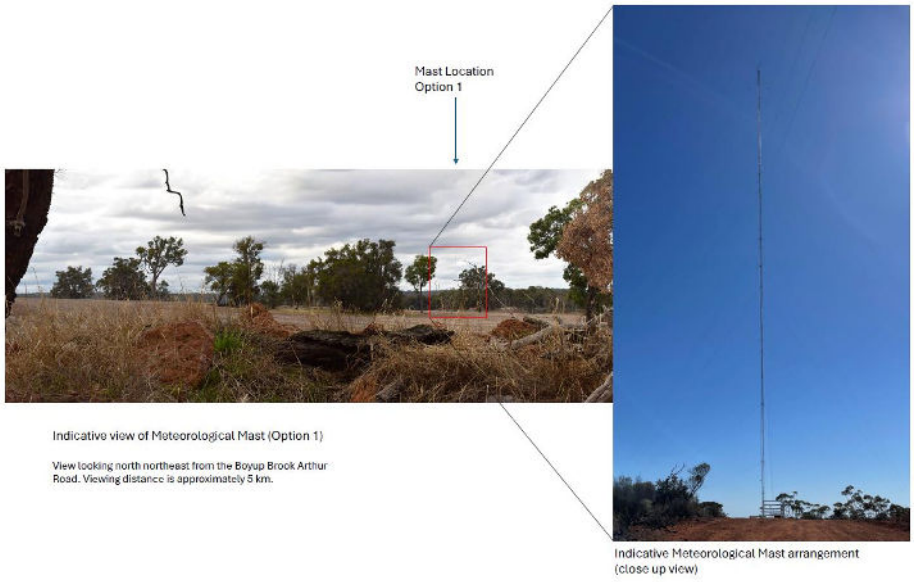
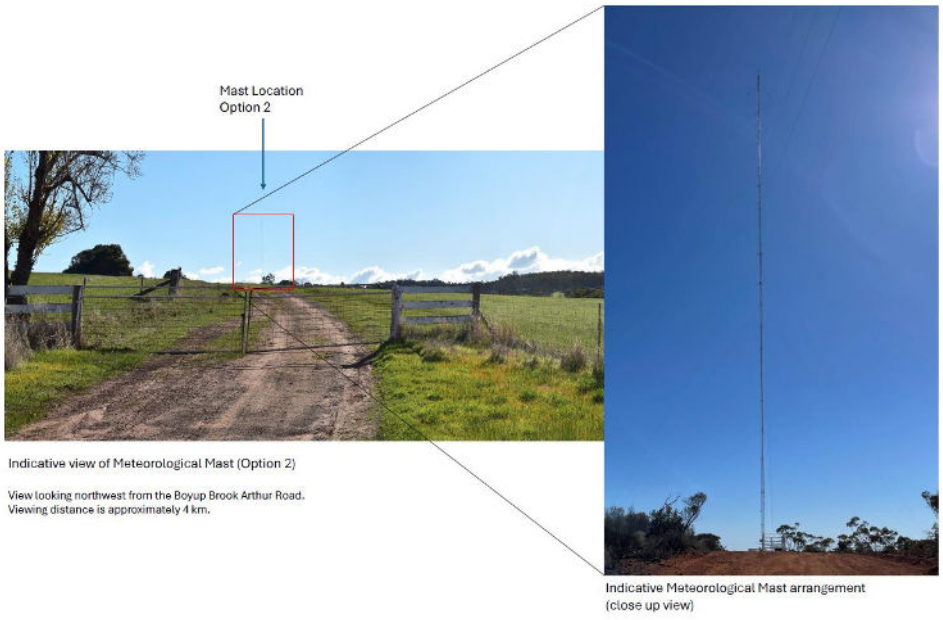


Figure 8 - Viewshed Image (Met Mast Location 2)

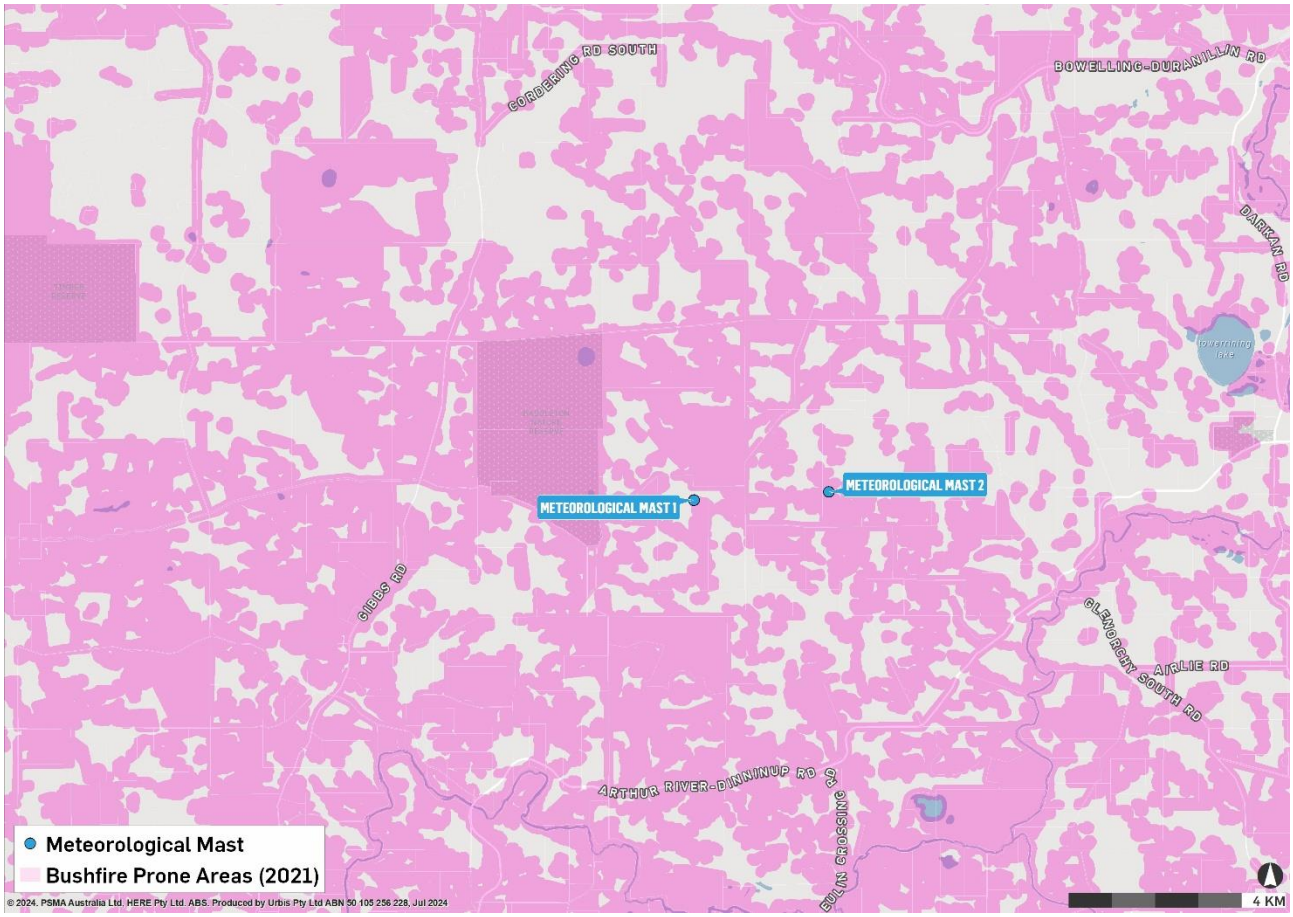


4.2.5. Bushfire

A large portion of the broader area is designated bushfire prone under the Department of Fire Emergency Service mapping, as shown at **Figure 9**. State Planning Policy 3.7 – Planning in Bushfire Prone Areas (**SPP 3.7**) directs how land use should address bushfire risk management in Western Australia. It applies to all land which has been designated as bushfire prone by the Fire and Emergency Services (**FES**) Commissioner.

While both locations of the met masts are located within land identified as bushfire prone, given the structures are non-habitable, an assessment was not considered warranted to support this application.

Figure 9 - Bushfire Prone Mapping



5. STATE PLANNING FRAMEWORK

5.1. STATE PLANNING ASSESSMENT

Table 4 below highlights the relevant state planning documents that may apply to the proposed met masts.

Table 4 – State Planning Assessment

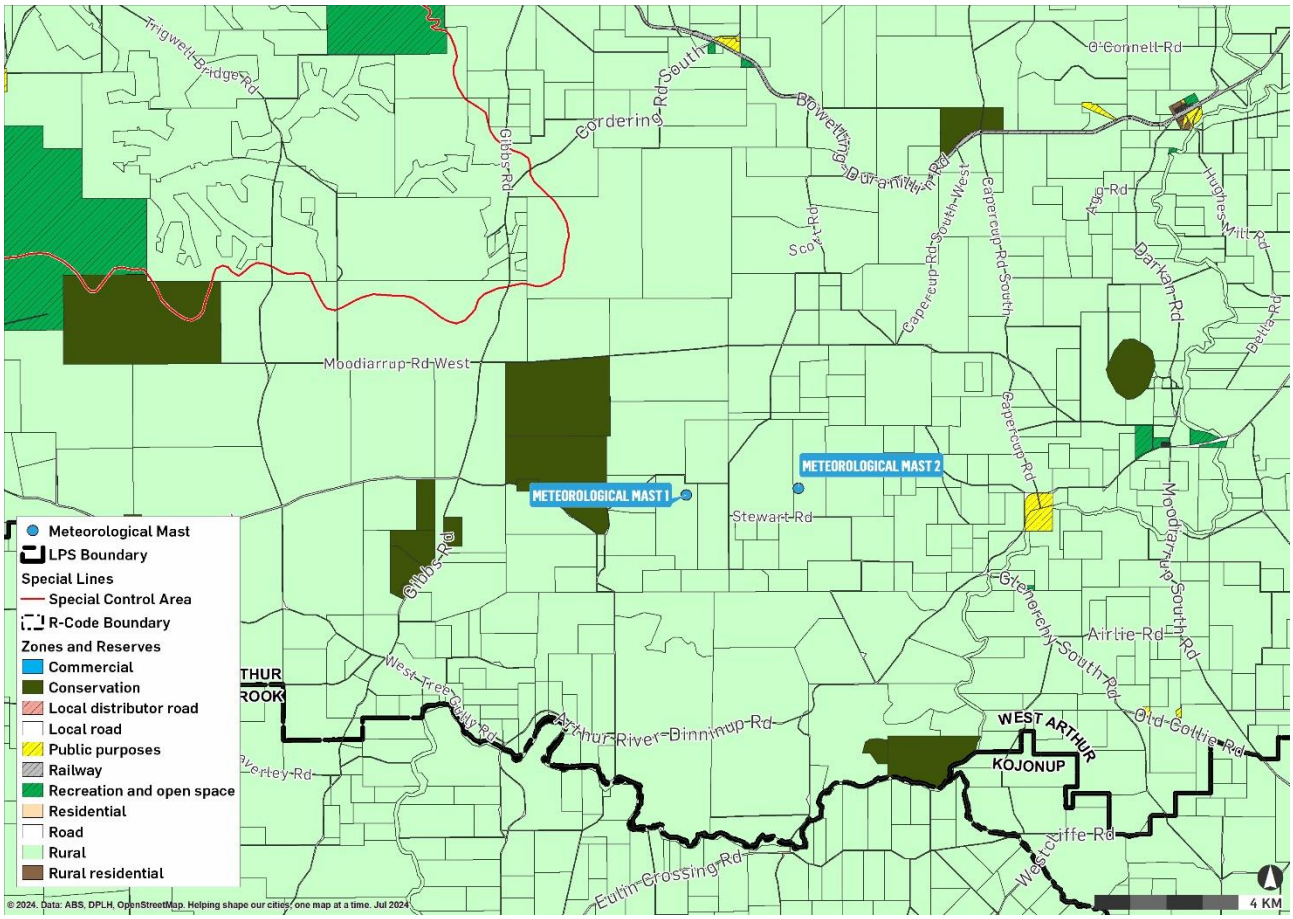
State Planning Policy	Comment
State Planning Policy 2.5 – Rural Planning *The key objectives set out by SPP 2.5 is to protect and preserve Western Australia's rural land assets for their economic, ecological, and landscape values. Thus, requiring broad compatibility between land uses in the delivery of this policy.*	The subject sites are currently located on lands zoned 'Rural' under the Shire of West Arthur Planning Scheme and therefore SPP 2.5 is applicable for consideration. The construction of the proposed met mast will not result in a land use conflict with the rural uses of the sites, impact on environmental or water assets, or result in a notable reduction of usable rural land, and therefore the proposal meets the requirements of this policy.
State Planning Policy 3.5 – Historic Heritage Conservation *The key objectives set out SPP 3.5 is to ensure the preservation and conservation of historic places and areas of significance in Western Australia, as well as provide greater levels of certainty for landowners and communities.*	An Aboriginal and Historical Due Diligence Assessment has been prepared by Urbis to inform the wind farm proposal including the proposed met masts. The assessment concludes that the proposed location and design of the met masts will have limited impact of sites of heritage significance, as detailed in **Section 3.2.1** of this report.
State Planning Policy 3.7 – Planning in Bushfire Prone Areas *The key objective of SPP 3.7 is to implement effective, risk-based land use planning and development to preserve life and reduce the impact of bushfire on property and infrastructure.*	Given the proposal for the met mast is minor in scale, this level of assessment under SPP 3.7 was not considered warranted. A detailed Bushfire Attack Level Assessment/Bushfire Management Plan will be prepared to accompany the broader wind farm application.
Position Statement – Renewable Energy Facilities This position statement outlines the WA Planning Commissions requirements to support the consistent consideration and provision of renewable energy facilities within WA.	Consistent with this Position Statement, the proposed met masts have been informed by considerable technical inputs, from an ecological, heritage, bushfire, landscape and aviation perspective.

6. LOCAL PLANNING FRAMEWORK

6.1. SHIRE OF WEST ARTHUR LOCAL PLANNING SCHEME NO. 2

The two met mast locations are both zoned Rural under the Shire of West Arthur Local Planning Scheme No.2 (**LPS 2**) as shown in **Figure 10** below.

Figure 10 - Scheme Map Extract



As set out in Clause 4.2 of the LPS 2, the objectives of the Rural Zone are as follows:

- *To ensure the continuation of broad-hectare agriculture as the principal land use in the district, encouraging where appropriate the retention and expansion of agricultural activities.*
- *To provide for intensive agricultural uses and diversified farming which retain the rural character and amenity of the locality, and which are consistent with land suitability.*
- *To help protect rural land from land degradation and further loss of biodiversity by:*
  - *minimising clearing of remnant vegetation*
  - *encouraging retention and protection of remnant vegetation*
  - *encouraging development and protection of vegetation corridors*
  - *encouraging development of sustainable surface and sub-surface drainage works*
  - *encouraging rehabilitation of salt-affected land*
  - *encouraging soil conservation through land management measures*
  - *encouraging identification and protection of wetlands*

- *To consider non-rural uses where they can be shown to be of benefit to the district and not detrimental to the natural resources or the environment.*
- *To allow for facilities for tourists and travellers, and for recreation uses.*
- *To have regard to use of adjoining land at the interface of the rural zone with other zones to avoid adverse effects on local amenities.*

Consistent with the above objectives, the proposed met mast is being installed for the primary purpose of measuring wind speed to assist in determining the wind conditions and future layout of the turbines. It will not impede on surrounding rural and agricultural pursuits and will avoid impacts on areas of sensitivity such as ecological areas (including areas of remnant vegetation) and heritage sites of significance.

Overall, the proposed met mast is considered to be 'of benefit to the district' in informing a future wind farm that will contribute significantly to the Shire's economic development and sustainability aspirations and will 'not be detrimental to the natural resources or the environment'. In whole, with the broader Ambrosia Wind Farm development, the meteorological mast is a catalyst in securing clean, reliable, and sustainable clean energy for the Shire and reforming the broader energy network of WA

6.1.1. Land Use Permissibility

Under Table 1 of the LPS 2, a 'meteorological mast' is not specified. While the closest use would be 'telecommunications infrastructure', by virtue of the proposed design, given the purpose of the met mast is for wind monitoring purposes (and not telecommunication), this use class is not considered suitable.

On this basis, the proposed met mast is considered a use not listed. In accordance with Clause 4.4.2 of LPS 2, where a use is caried out that is not specifically mentioned in the Zoning Table and cannot reasonably be determined as falling within the type or class of activity of any other land use the local government may:

(a) determine that the use is consistent with the objectives of the particular zone and is therefore permitted; or
(b) determine that the proposed use may be consistent with the objectives of the particular zone and thereafter follow the advertising procedures of clause 9.4 in considering an application for planning approval; or
(c) determine that the use is not consistent with the objectives of the particular zone and is therefore not permitted.

For the reasons articulated in **Section 5.1** above, given the alignment with the Rural zone objectives and its purpose in informing a future wind farm application (which will be subject to a separate planning process), it is considered that the proposed use shall be permitted, consistent with (a) above.

6.1.2. Development Requirements

Part 5 of LPS 2 outlines general development requirements. Clause 5.18 refers to the development requirements for land zoned as 'Rural'. **Table 5** provides assessment against the relevant general development requirements for land zoned Rural.

Table 5 – General Development Requirements

Provision	Requirement	Proposed
5.18.2 Setbacks	The minimum building setbacks are to be: – Front: 20.0m – Rear: 20.0m – Side: 10.0m	**Complies**. No building or development located within the proposed setbacks.

Provision	Requirement	Proposed
5.18.3 General Development Requirements		
Sensitive uses	a) any sensitive or incompatible uses which may require buffer separation from the proposed use;	**Complies**. Visual landscape impact has been considered in the siting of the met masts as well as impacts to aviation.
Sustainable water supply	b) evidence of a sustainable water supply that does not rely on catchment outside the lot, or damming of a stream that will impact on the water availability for another lot or lots;	Not applicable.
Site characteristics	c) soil conditions, slope, soil type, rock, potential for water logging, foundation stability, and how the application has addressed these site characteristics; and	**Achieved**. A series of anchor points into fixed concrete foundation has been situated around the development, providing stability.
Effluent disposal	d) whether effluent disposal systems can be set back 100 metres (conventional septic system) or 50 metres (alternative system) from any stream. (The buffer distances may be reduced depending on the size and nature of the stream and the soil types).	Not applicable.

6.2. SHIRE OF WEST ARTHUR LOCAL PLANNING STRATEGY

The Local Planning Strategy (**the Strategy**) sets out the Shires general aims and intentions for future long-term growth and change.

The subject site is identified as Rural Land within the Strategy which is consistent with the zoning in LPS 2. Part 5.0 of the Strategy sets out the expectations for Rural Land, and whilst there are no specific provisions mentioned around renewable/energy projects (or associated infrastructure such as met masts), it is identified that the Shire supports the diversification of agricultural production that has the potential to expand both the economic base and the population of the district. It also states that it supports other rural uses that complement and do not have the potential to constrain established farming within land zoned Rural.

6.3. DRAFT LOCAL PLANNING POLICY NO.5 – WIND FARMS POLICY

Draft Local Planning Policy No.5 – Wind Farms (**LPP 5**) was prepared by the Shire in 2023. It outlines the measures to assess proposals for wind farms including advertising criteria, referral requirements, and clarifies the level of information to be provided to the Shire to accompany the application.

LPP 5 outlines the expectations of the Shire in terms of technical information informing applications for wind farms. It is understood Draft LPP 5 generally aligns with the State Guidance Statement regarding the requirement for applications to consider acoustics, visual and landscape impact assessments, and transportation details.

LPPS 5, albeit draft, has been considered as part of initial investigations, including this met mast application. Generally, this application considers all aspects of the policy from a technical perspective, which will be supplemented as part of the future development application for the wind farm.

7. CONCLUSION

The proposed met mast will be installed to monitor wind speeds to inform the turbine layout of the future Ambrosia Wind Farm. This application seeks approval for two potential met mast locations, with the intent that only one mast is constructed and installed.

This report demonstrates the proposal is not inconsistent with the Rural zone objectives and is generally aligned with the broader planning framework as well as relevant technical requirements. On the basis, it is respectfully requested this application be approved, subject to any suitable conditions. In this regard, it is anticipated that conditions should be limited to the preparation of a management plan (addressing construction and traffic) to ensure suitable management practices are implemented during the construction phase.

8. DISCLAIMER

This report is dated 14 August 2024 and incorporates information and events up to that date only and excludes any information arising, or event occurring, after that date which may affect the validity of Urbis Ltd **(Urbis)** opinion in this report. Urbis prepared this report on the instructions, and for the benefit only, of Green Wind Renewables **(Instructing Party)** for the purpose of Development Application **(Purpose)** and not for any other purpose or use. To the extent permitted by applicable law, Urbis expressly disclaims all liability, whether direct or indirect, to the Instructing Party which relies or purports to rely on this report for any purpose other than the Purpose, and to any other person which relies or purports to rely on this report for any purpose whatsoever (including the Purpose).

In preparing this report, Urbis was required to make judgements which may be affected by unforeseen future events, the likelihood and effects of which are not capable of precise assessment.

All surveys, forecasts, projections and recommendations contained in or associated with this report are made in good faith and on the basis of information supplied to Urbis at the date of this report, and upon which Urbis relied. Achievement of the projections and budgets set out in this report will depend, among other things, on the actions of others over which Urbis has no control.

In preparing this report, Urbis may rely on or refer to documents in a language other than English, which Urbis may arrange to be translated. Urbis is not responsible for the accuracy or completeness of such translations and disclaims any liability for any statement or opinion made in this report being inaccurate or incomplete arising from such translations.

Whilst Urbis has made all reasonable inquiries it believes necessary in preparing this report, it is not responsible for determining the completeness or accuracy of information provided to it. Urbis (including its officers and personnel) is not liable for any errors or omissions, including in information provided by the Instructing Party or another person or upon which Urbis relies, provided that such errors or omissions are not made by Urbis recklessly or in bad faith.

This report has been prepared with due care and diligence by Urbis and the statements and opinions given by Urbis in this report are given in good faith and in the reasonable belief that they are correct and not misleading, subject to the limitations above.

APPENDIX A CERTIFICATES OF TITLE

WESTERN AUSTRALIA

TITLE NUMBER	
Volume	Folio
383	**100A**

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

LAND DESCRIPTION:

LOT 4652 ON DEPOSITED PLAN 208721

REGISTERED PROPRIETOR:
(FIRST SCHEDULE)

DERBAR PTY LTD OF 55 ST. GEORGE'S TERRACE, PERTH

(T A776568) REGISTERED 24/1/1974

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

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:	383-100A (4652/DP208721)
PREVIOUS TITLE:	383-100A
PROPERTY STREET ADDRESS:	NO STREET ADDRESS INFORMATION AVAILABLE.
LOCAL GOVERNMENT AUTHORITY:	SHIRE OF WEST ARTHUR

ORIGINAL

INDEXED

LANDS	L.T.O.
	Land 61
Entered in Journal	Permit 13
	Lease 1119/69
	Name 66

14/12/70

OFFICE OF TITLES FEE PAID 5 0 0
19/12/70 17673

WESTERN AUSTRALIA

REGISTER BOOK

VOL. 383 FOL. 100A

CT 0383 0100A F

Crown Grant

Elizabeth the Second, by the Grace of God, of the United Kingdom, Australia and Her other Realms and Territories, Queen, Head of the Commonwealth, Defender of the Faith. To all to whom these Presents shall come, GREETING: Know ye that We, of Our special Grace, certain knowledge, and mere motion, have given and granted and We do by these Presents, for Us, Our heirs and successors, in consideration of the payment of the sum of $452.17 and the fulfilment of the prescribed conditions to the satisfaction of Our Governor of Our State of Western Australia, Give and Grant unto

Dorsett Motors Holdings Pty. Limited having its registered office situate at 93 Spencer Street Bunbury formerly of 24 Stephen Street Bunbury

(hereinafter called the Grantee), the natural surface and so much of the land as is below the natural surface to a depth of ——200—— feet of ALL THAT Tract or Parcel of Land situate and being in the District of Wellington in Our said State, containing ——————602 acres 3 roods 22 perches——————— more or less, and marked and distinguished in the Maps and Books of the Department of Lands and Surveys of Our said State as Wellington Location 4652——————————————— and as the same is delineated and coloured green in the plan drawn hereon TOGETHER WITH all Appurtenances whatsoever thereunto belonging, or in anywise appertaining: TO HAVE AND TO HOLD the said Tract or Parcel of Land to the depth aforesaid, and all and singular the Premises hereby granted, with their appurtenances, unto the said Grantee, in fee simple: YIELDING AND PAYING for the same to Us, Our heirs and successors, one peppercorn of yearly rent on the twenty-fifth day of March in each year, or as soon thereafter as the same shall be lawfully demanded: PROVIDED, NEVERTHELESS, that, subject to section 141 of the Land Act, 1933, it shall be lawful for Us, Our heirs and successors, or for any person or persons acting in that behalf by Our or their authority, to resume and enter upon possession of any part of the said land which it may at any time be Us, Our heirs and successors, be deemed necessary to resume for roads, townsites, railways, railway stations, bridges, canals, towing paths, harbour or river improvement works, drainage, or irrigation works, or quarries, and generally for any other works or purposes of public use, utility, or convenience, and for the purpose of exercising the power to search for minerals hereinafter reserved, and such lands as resumed to hold to Us, Our heirs and successors, as of Our or their former estate without making to the said Grantee, or any person lawfully claiming under him, any compensation in respect thereof, so nevertheless, that the land so to be resumed shall not exceed one-twentieth part of the whole of the lands aforesaid, and that no such resumption be made of the part of any lands upon which any buildings may have been erected, or which may be in use as gardens, or otherwise, for the more convenient occupation of any such buildings, or on which any other improvements as defined by the Land Act, 1933, have been made, without compensation: AND PROVIDED, ALSO, that it shall be lawful for all roads for Us, Our heirs and successors, or for any person or persons acting in that behalf by Our or their authority, to cut and take away any such indigenous timber, and to search and dig for and carry away any stones or other materials which may be required for making or keeping in repair any roads, tramways, railways, railway stations, bridges, canals, towing paths, harbour works, breakwaters, river improvements, drainage, or irrigation works, and generally for any other works or purposes of public use, utility, or convenience, without making to the said Grantee, or any person claiming under him, any compensation in respect thereof: and we do hereby save and reserve to Us, Our heirs and successors, all Mines, of Gold, Silver, Copper, Tin, or other Metals, Ore, and Minerals, or other substances containing Metals, and all Gems or Precious Stones and Coal or Mineral Oil and all Petroleum Substances in and under the said land, with full liberty as all times to search and dig for and carry away the same and for that purpose to enter upon the said land or any part thereof; and we do hereby save and reserve to Us, Our heirs and successors all petroleum (as defined in the Petroleum Act, 1936), and all amendments thereof for the time being in force, and all marketable indigenous timber including all Sandalwood and Mallet trees in the said land if reserved to the Crown save that the Grantee may suppress, fell or otherwise destroy any marketable indigenous timber other than Sandalwood and Mallet trees in the ordinary course of bona fide clearing and the use of the timber so felled for his own reasonable requirements in connection with farming operations on the said lands with full liberty to Us, Our heirs and successors and persons authorised by Us or by any person or corporation in whom the control of forests is for the time being vested, to enter, obtain and remove any of the marketable indigenous timber and for that purpose or for the purpose of extracting any marketable indigenous timber from any other land in the locality, full liberty for Us and any of the persons aforesaid to pass and repass over the said lands with or without vehicles, machinery, horses and cattle and to take water from any spring, stream, well or water hole and to lay down and construct pipe lines for conveying the water and to make roads and ways and construct and maintain timber tramways on the said lands subject however (where the land, any, tramway or pipeline is for the purpose of extracting any marketable indigenous timber or conveying water from any other land in the locality) to no other direct and satisfactory route being available through Crown lands, reserves or State forests without making to the grantee or transferees or assigns of the grantee any compensation in respect of any of the matters aforesaid: providing that We, Our heirs and successors will make good the actual amount of any structural damage done to any buildings, erections or fences in the exercise of those rights and where a lawful fencing part of a cattle or sheep-proof enclosure is opened, provide and maintain cattle-pits and other efficient means to prevent the escape therefrom of cattle and sheep. The timber restrictions hereinbefore mentioned shall apply to the land for a period of twenty years and no longer from the date of issue of this Grant.

IN WITNESS whereof We have caused Our trusty and well-beloved HIS EXCELLENCY MAJOR GENERAL SIR DOUGLAS ANTHONY KENDREW, Knight Commander of the Most Distinguished Order of Saint Michael and Saint George, Companion of the Most Honourable Order of the Bath, Commander of the Most Excellent Order of the British Empire, Companion of the Distinguished Service Order, Governor in and over the State of Western Australia and its Dependencies in the Commonwealth of Australia, to affix to these Presents the Public Seal of the said State.

Sealed this 1st day of April, One thousand nine hundred and seventy

Governor.

Grant under the Land Act, 1933 as amended.

Minister for Lands.

CERTIFICATE OF TITLE
UNDER THE "TRANSFER OF LAND ACT, 1893" AS AMENDED

The abovenamed Grantee is now the registered proprietor of an estate in fee simple subject to the easements and encumbrances notified hereunder in all the land described in this Grant.

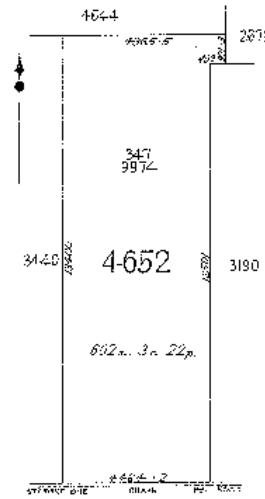
DATED THIS 1st DAY OF July 19 70

ASSISTANT REGISTRAR OF TITLES

Transfer A776368 to Derbar Pty Ltd. of 53 St. Georges Terrace, Perth. Registered 29th January 1976 at 9.22 a.m.

PLAN HEREIN REFERRED TO

Area and measurements on this Plan before are more or less, and a peg has been placed at each corner of the section



Scale : 30 Chains to an inch
Surveyed by B.J. Ross
Corr: 2334/63. Survey: D.E 872
Drawn: A.J.M. Ext.

SURVEYOR GENERAL.

61260/5/69—1100—11 Compl.

For encumbrances and other matters affecting the land see back

S. 287M.

EASEMENTS AND ENCUMBRANCES REFERRED TO

Mortgage B554193 to Commonwealth Trading Bank of Australia. Registered 11th July 1978 at 11.05a'c. DISCHARGED

Mortgage B554195 to Commonwealth Trading Bank of Australia. Registered 11th July 1978 at 11.05a'c. DISCHARGED

Mortgage B565592 to Commonwealth Development Bank of Australia. Registered 1st August, 1978 at 9.34a'c. DISCHARGED

Discharge D264606 of Mortgage B565592. Registered 9th November, 1986 at 9.56 a'c.

Cup. C/T not prod. (since produced)
Discharge E360346 of Mortgages B554193 and B554195. Registered 15th May, 1990 at 10.04 hrs.

CROWN GRANT

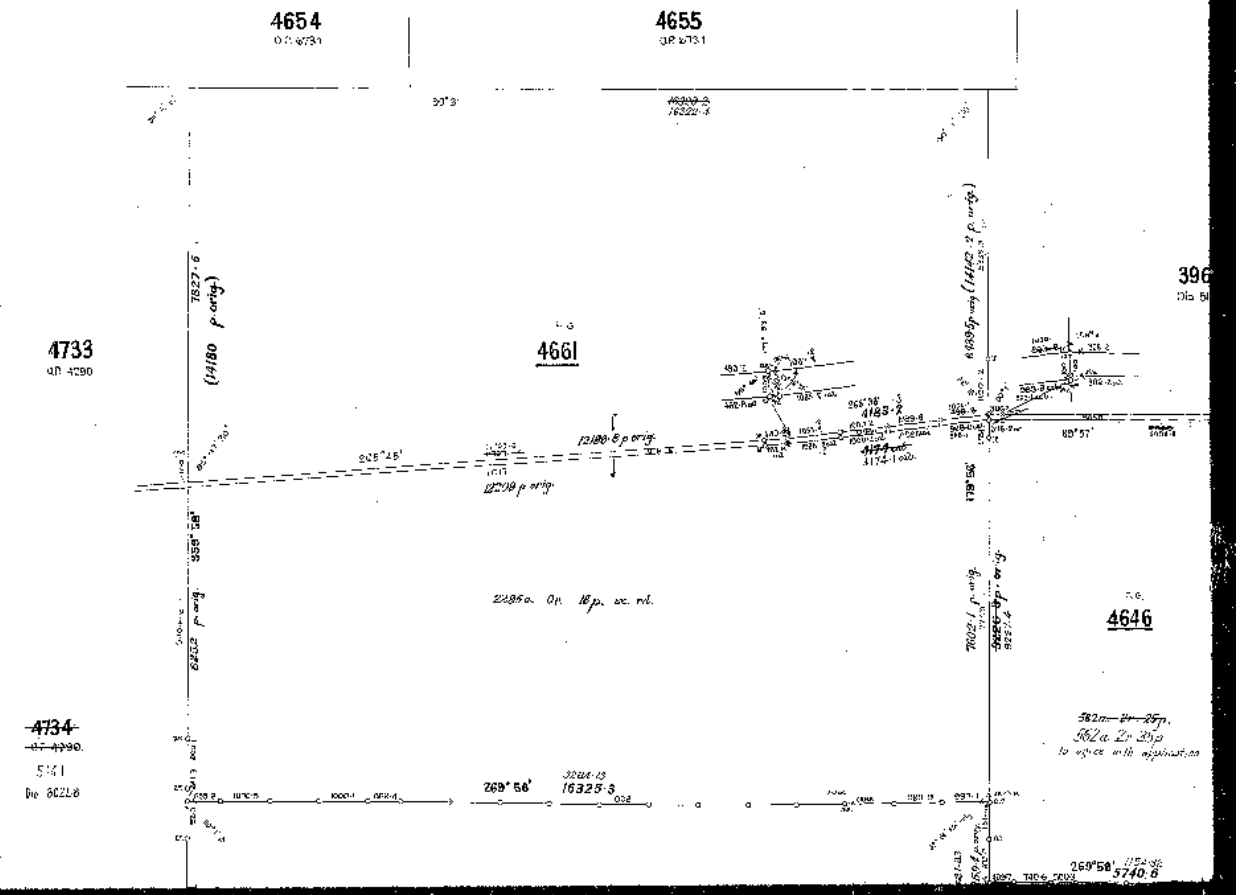
VOL. 383 FOL. 100A

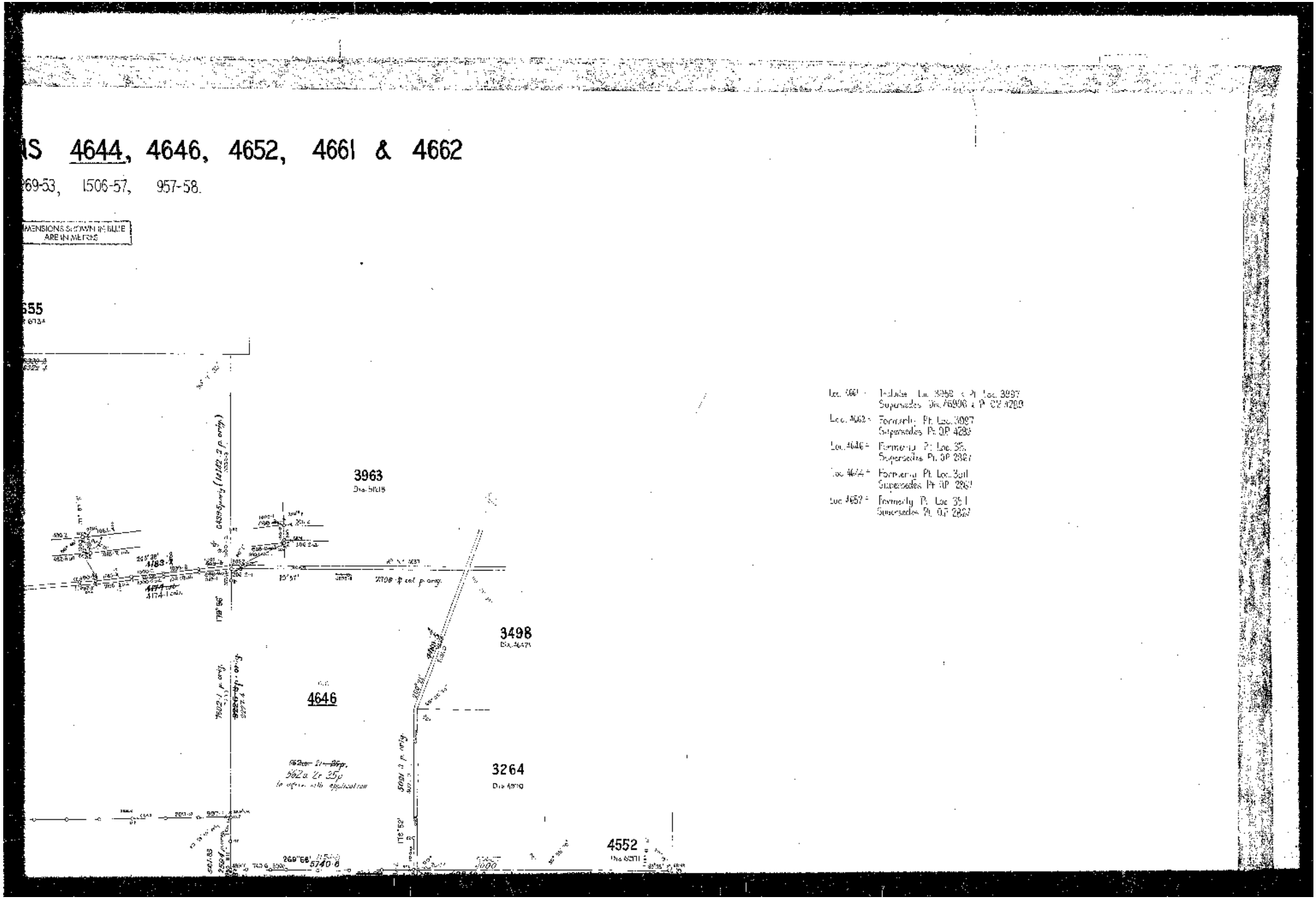
CT 0383 010JA B

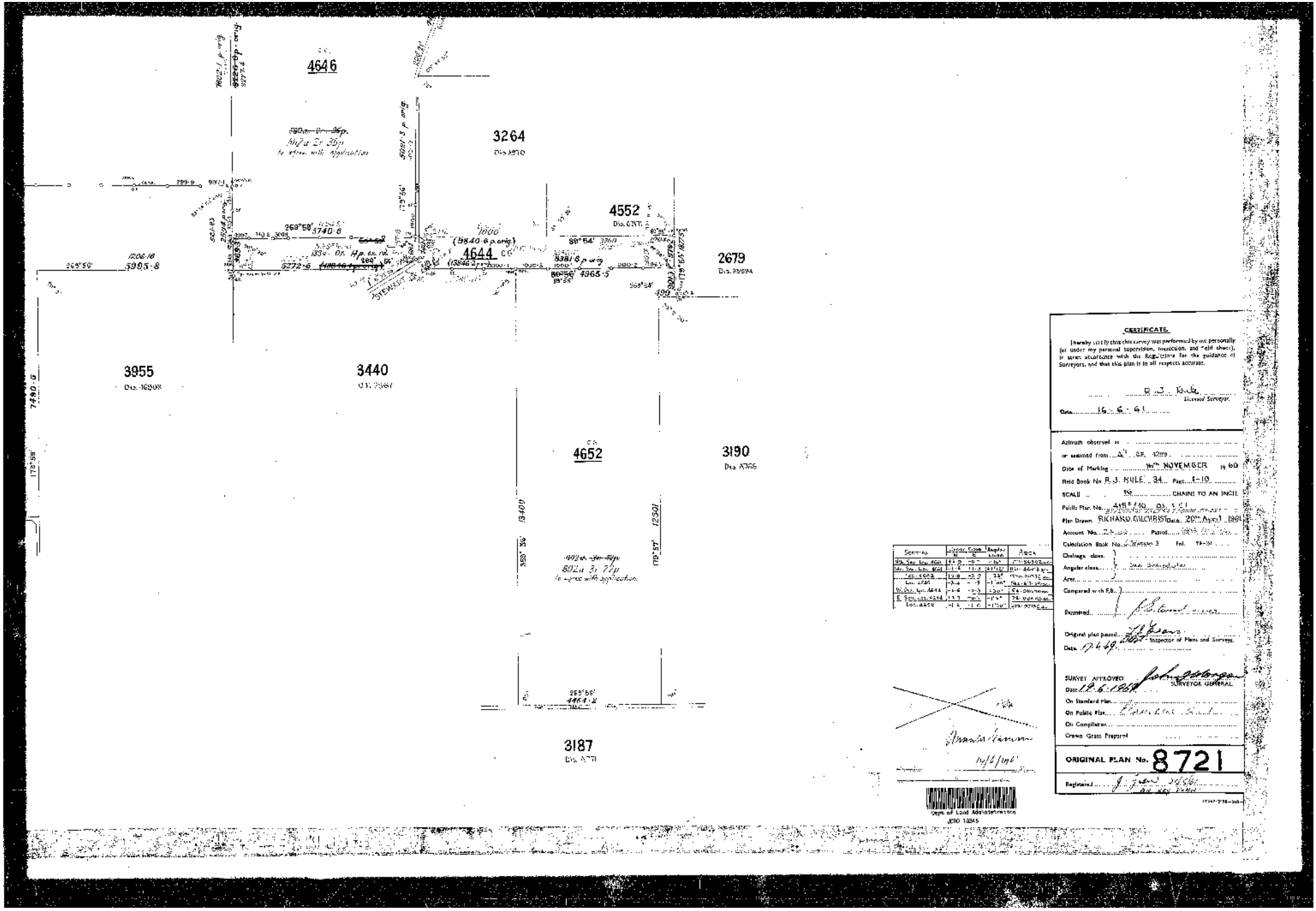
WELLINGTON LOCATIONS 4644, 4646, 4652, 4661

CORR. 1269-53, 1506-57, 957-58.

DIMENSIONS SHOWN IN BLUE ARE IN METRES







Deposited Plan 208721

Lot	Certificate of Title	Lot Status	Part Lot
4644	1962/31	Registered	
4646	383/90A	Registered	
4652	383/100A	Registered	
4661	271/175A	Registered	
4662	1360/108	Registered	

WESTERN AUSTRALIA

TITLE NUMBER	
Volume	Folio
2121	**704**

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:

LOT 1953 ON DEPOSITED PLAN 123478
LOT 3962 ON DEPOSITED PLAN 146905

REGISTERED PROPRIETOR:
(FIRST SCHEDULE)

WARREN ROEMARIE PTY LTD OF 57 FORTUNE STREET NARROGIN WA 6312
(T Q046016) REGISTERED 28/6/2024

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

1. Q046017 MORTGAGE TO NATIONAL AUSTRALIA BANK LTD REGISTERED 28/6/2024.

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:	2121-704 (1953/DP123478), 2121-704 (3962/DP146905)
PREVIOUS TITLE:	1293-705
PROPERTY STREET ADDRESS:	NO STREET ADDRESS INFORMATION AVAILABLE.
LOCAL GOVERNMENT AUTHORITY:	SHIRE OF WEST ARTHUR

LT. 37

ORIGINAL—NOT TO BE REMOVED FROM DEPARTMENT OF LAND ADMINISTRATION

Transfer G658694

Volume 1293 Folio 705

WESTERN AUSTRALIA

REGISTER BOOK
VOL. FOL.
CT 2121 704

CERTIFICATE OF TITLE

UNDER THE "TRANSFER OF LAND ACT, 1893" AS AMENDED

VOL. 2121 FOL. 704

I certify that the person described in the First Schedule hereto is the registered proprietor of the undermentioned estate in the undermentioned land subject to the easements and encumbrances shown in the Second Schedule hereto.

Dated 9th December, 1997

REGISTRAR OF TITLES

ESTATE AND LAND REFERRED TO

Estate in fee simple in Wellington Locations 1953 and 3962, delineated on the map in the Third Schedule hereto, limited however to the natural surface and therefrom to a depth of 60.96 metres.

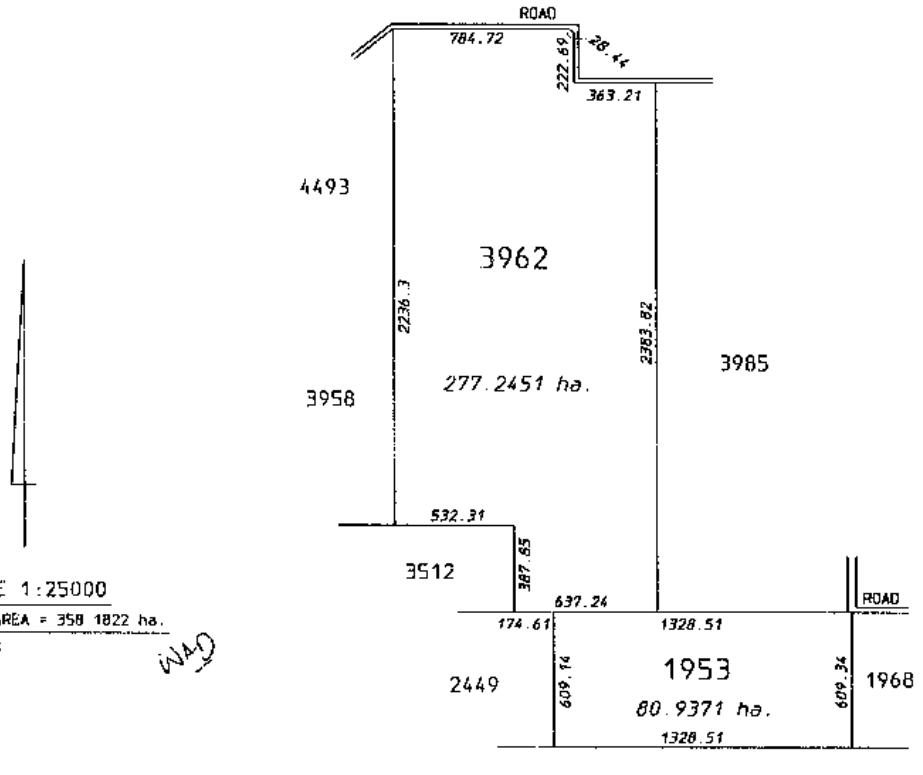
FIRST SCHEDULE (continued overleaf)

~~Wilfred John Lee Steere and Vivienne Lee Lee Steere~~ both of "Greenfields", Boyup ~~Brook,~~ as joint tenants of one undivided twelfth share, Steven Roe Lee Steere and ~~Desrae Marie~~ Lee Steere both of "Roemarie", West Arthur, as joint tenants of one undivided twelfth share, James Hubert Lee Steere and Deanna May Lee Steere both of "Tweeddale", Boyup Brook, as joint tenants of one undivided twelfth share, the said Wilfred John Lee Steere of three undivided twelfth shares, the said Steven Roe Lee Steere of three undivided twelfth shares and the said James Hubert Lee Steere of three undivided twelfth shares, all as tenants in common.

SECOND SCHEDULE (continued overleaf)

NIL

THIRD SCHEDULE



SCALE 1:25000

TOTAL AREA = 358 1822 ha.

K. F:

NOTE: ENTRIES MAY BE AFFECTED BY SUBSEQUENT ENDORSEMENTS.

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

LT. 37

FIRST SCHEDULE (continued) NOTE: ENTRIES MAY BE AFFECTED BY SUBSEQUENT ENDORSEMENTS

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	REGISTERED	TIME	SEAL	CERT OFFICER
Markk Peter Stretch and Leith Elaine Stretch both of Post Office Box 2086, Marmion, as joint tenants.	Transfer	H433705	2.5.00	15.31		
Scott Maxwell Ewen of Post Office Box, Darkan of one undivided fourth share, Lachlan John Ewen of PO Box 53, Darkan of one undivided fourth share, Mark James Wunnenberg and Karen Michelle Wunnenberg both of PO Box 80, Darkan, as joint tenants of one undivided fourth share, Ivan William Wunnenberg and Judith Anne Wunnenberg both of PO Box 30, Darkan, as joint tenants of one undivided fourth share, as tenants in common.	Transfer	I807330	3.3.04	13.26		

SECOND SCHEDULE (continued) NOTE: ENTRIES MAY BE AFFECTED BY SUBSEQUENT ENDORSEMENTS

INSTRUMENT NATURE	INSTRUMENT NUMBER	PARTICULARS	REGISTERED	TIME	SEAL	CERT OFFICER	CANCELLATION	NUMBER	REGISTERED OR LODGED	SEAL	CERT. OFFICER
Mortgage	H433706	to Bank of Western Australia Ltd.	2.5.00	15.31			Discharged	I807327	3.3.04		

CERTIFICATE OF TITLE VOL. 2121 FOL. 704

Loc? No	District	C.P. No.	Name of Applicant	Acreage	Compilation Plan No.
3962	Wellington	C. G.	~~K G Shepherson~~	~~685.0.14 22~~ ~~685 0 21~~	2118 136 301

H.O Corr. No 910/38
D.O Corr. No 95/24

(Inspection Survey by C.M.May F.B. 119)

10 OCT 1924 SURVEY OFFICE

3955
Dia 46903

3985
Diag. 47936
(Plotting to Chns Sheet 145.) amended as in red

3958
Dia 46904

4493
O.P. 4709

LOC 3512
Dia 47223

LOC 2449
Dia 32278

LOC 1953
Dia 23478

Swamp

Calculations for Area

No & Page of Field Book	Bearing	Distance	N	S	E	W	Multipliers	Double Areas
119	0° 0	111.16.6	111.16.6				400.2.0	
P.S.	90° 0	4.00.0			4.00.0		800.4.0	96 406.24
	180° 0	120.7		120.7.0			800.4.0	
	90° 0	1905.5			1905.5		914.9.7	
	150° 1	1182.8		1182.8		3.4	116.12.0	1375 746.54
	230° 0	3167.7				3167.7	84.22.1	
	0° 18	1928.0	1928.0		7.2		57.82.6	101 556.31
1	220° 13	4646.1	10.0			2646.1	22.45.1	0 146.51
			1305.46	1305.4.5	5812.5	5817.2		142 374.82
								102 115.82
								1370 258.00
								655 12.800
								0 5.12.00
								21 180.00

Azimuth observed at
or assumed from LOC 3955
Date of Marking 15th Sept 1924
Field Book No 119 Page 56 7
Scale 20 Chains to an Inch
Working Plan No 415/80 Division 05 1/2

REFERENCE TO TREES

Corner	Bearing	Dist in Links	Nº & Mark on Tree	Description of Tree
A				
B				
C				
D				
E				
F				

305

OFFICE REFERENCE

Account No 13/24 Passed 14.10.24
Calculation Book No 10 Folio 62
Chainage Close N 0.1 E 4.4
Angular Close + 2'.45"
Area 685 13605 ac
Compared with F.B. 14.10.24
Examined K.M.Garden 14.10.24
Diagram passed W.A.C. Hall
Draftsman in Charge
~~District Surveyor~~
Date 4.11.1924

On D.O. Working Plan 14.10.24
On Standard Plan
On Working Plan 17.1.25
Survey approved as Adjusted
Marshall Fox
DISTRICT SURVEYOR
~~Surveyor General~~
Date 5.11.1924

Diagram Nº 16905

District Office	Head Office
Regd 13 May 25	Regd 19 Nov 25

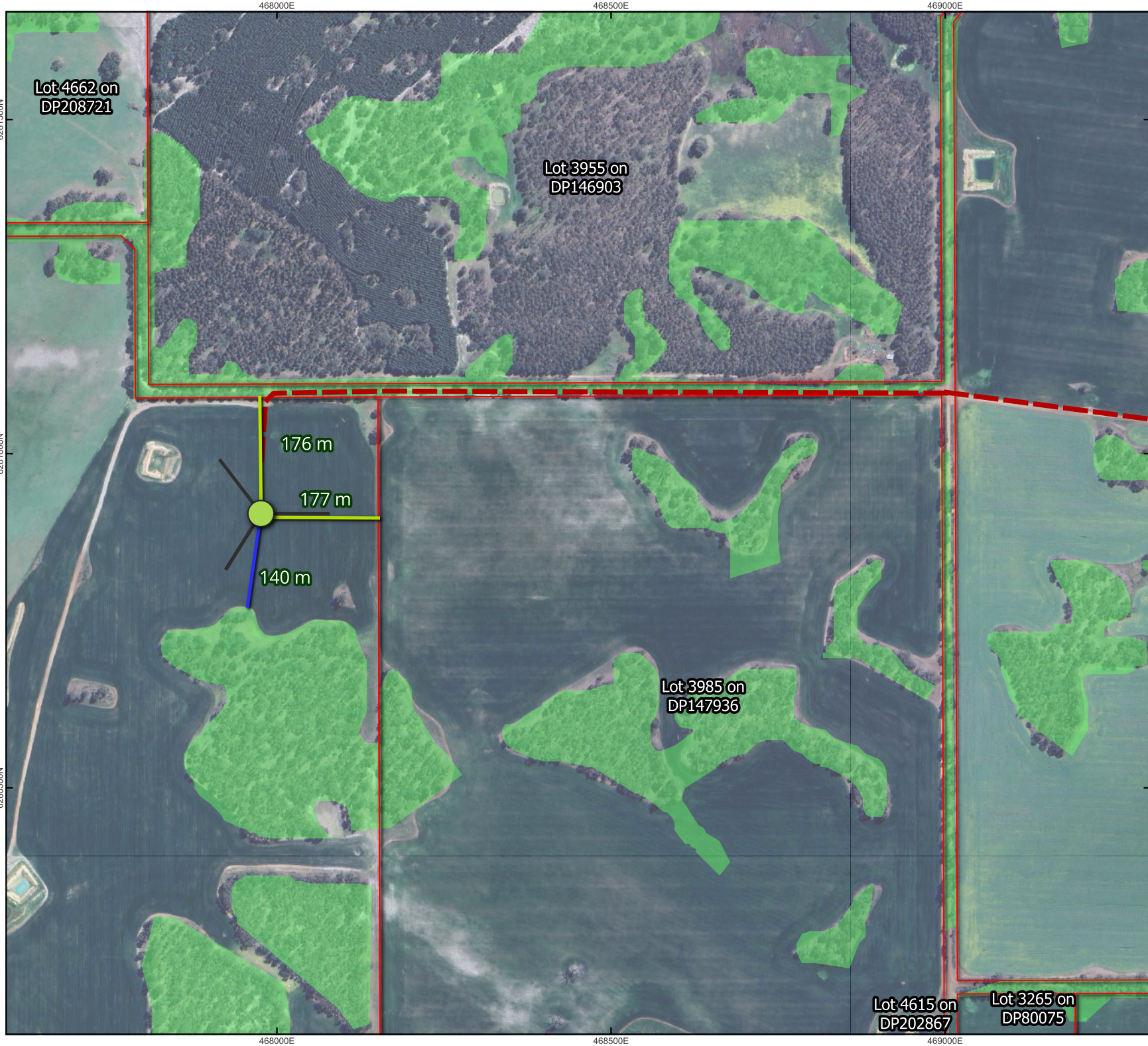
I hereby certify that this Survey was performed by me personally (or under my own personal supervision, inspection and field check) in strict accordance with the Regulations for the Guidance of Surveyors and that this plan is in all respects accurate.

W. A. Jarvis Licensed Surveyor
Date 8/10 1924

Deposited Plan 146905

Lot	Certificate of Title	Lot Status	Part Lot
3962	2121/704	Registered	

APPENDIX B METEOROLOGICAL MAST PLANS/SPECIFICATIONS



LEGEND

- Land Boundary
- Native Vegetation
- Indicative Met Mast Location (1)
- Indicative Guy Wires (100 m)
- Accessways - Via Stewart Road
- Distance to Vegetation
- Distance to Boundary

Ambrosia Wind Farm

Met Mast Location
Scenario 1

0 200 400 m

Scale: 1:7500
Coordinate System: GDA2020 / MGA zone 50
Universal Transverse Mercator (UTM)
Date: 14/08/2024

AWF-J06-13-M0015-RevA

Green Wind RENEWABLES

LEGEND

- Land Boundary
- Native Vegetation
- Indicative Met Mast Location (2)
- Indicative Guy Wires (100 m)
- Accessways - Via Stewart Road
- Distance to Vegetation
- Distance to Boundary

Ambrosia Wind Farm

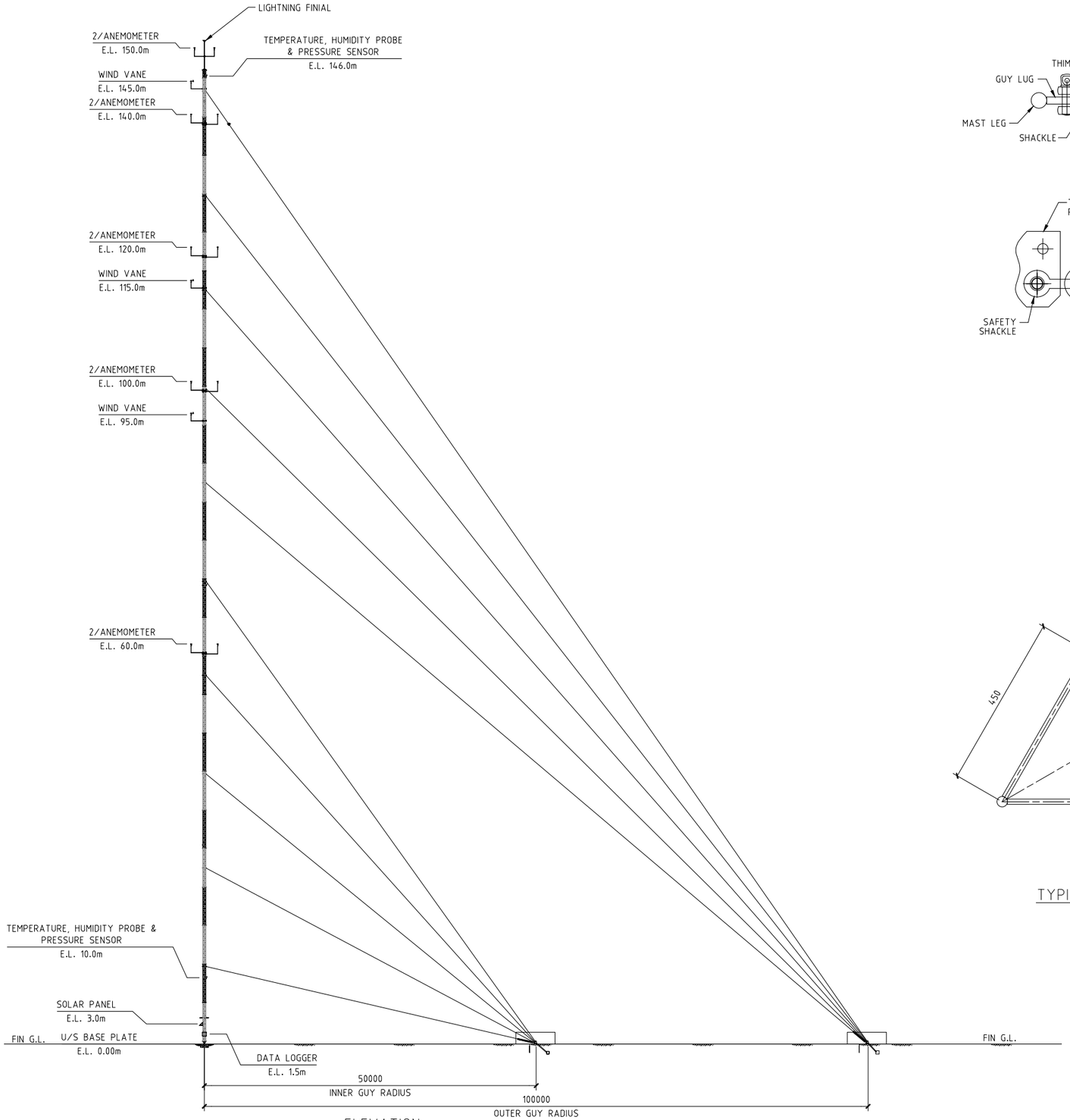
Met Mast Location
Scenario 2

0 250 500 m

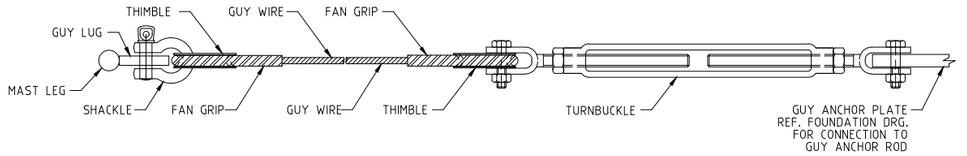
Scale: 1:10000
Coordinate System: GDA2020 / MGA zone 50
Universal Transverse Mercator (UTM)
Date: 14/08/2024

AWF-J06-13-M0015-RevA

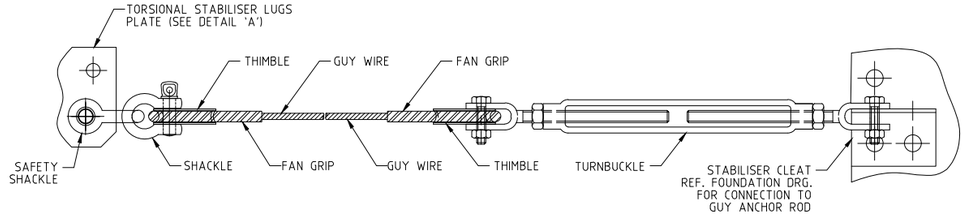
Green Wind RENEWABLES



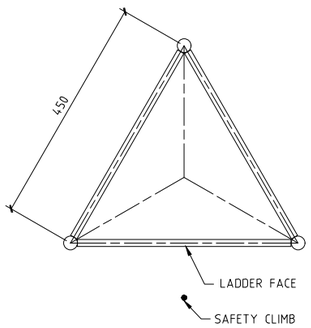
ELEVATION



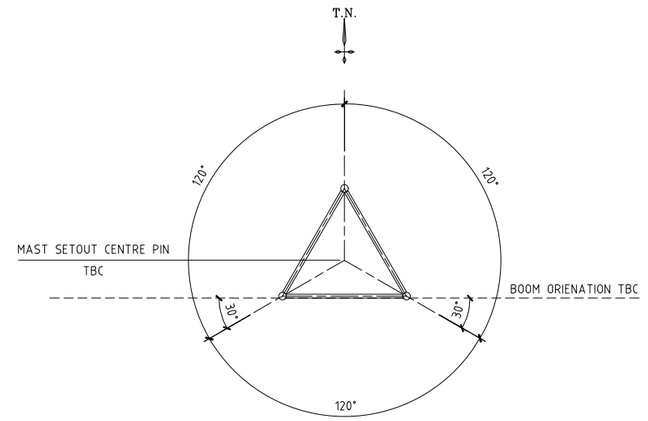
TYPICAL GUY ASSEMBLY



TYPICAL TORSIONAL STABILISER GUY ASSEMBLY



TYPICAL PLAN



MAST LAYOUT

GENERAL NOTES

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

INFORMATION ONLY
NOT TO BE USED
FOR CONSTRUCTION

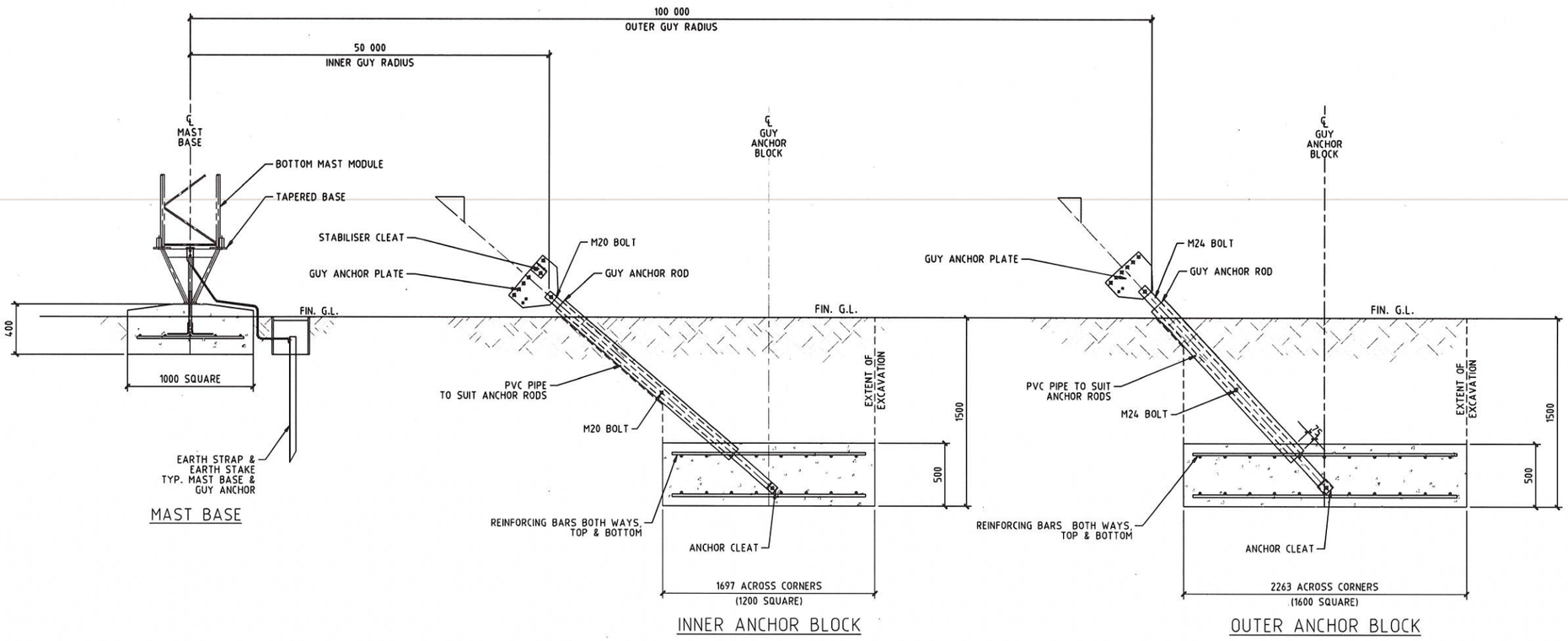
F1/1/SN	FEC STANDARD NOTES								
DRAWING No.	DESCRIPTION	DRAWING No.	DESCRIPTION	DRAWING No.	DESCRIPTION	REF	DESCRIPTION	DATE	APPv.
REFERENCE DRAWINGS						REVISIONS			

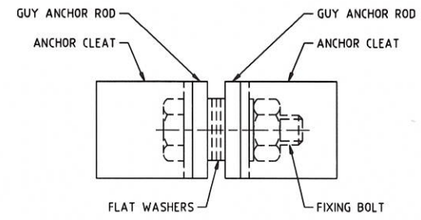
FUTURE
ENGINEERING & COMMUNICATION
E: ENGINEERING@FUTUREAU.COM.AU T: +61 8 9417 4999

DRAWN:	ENG.:
JG	
CHECKED:	APPv.:

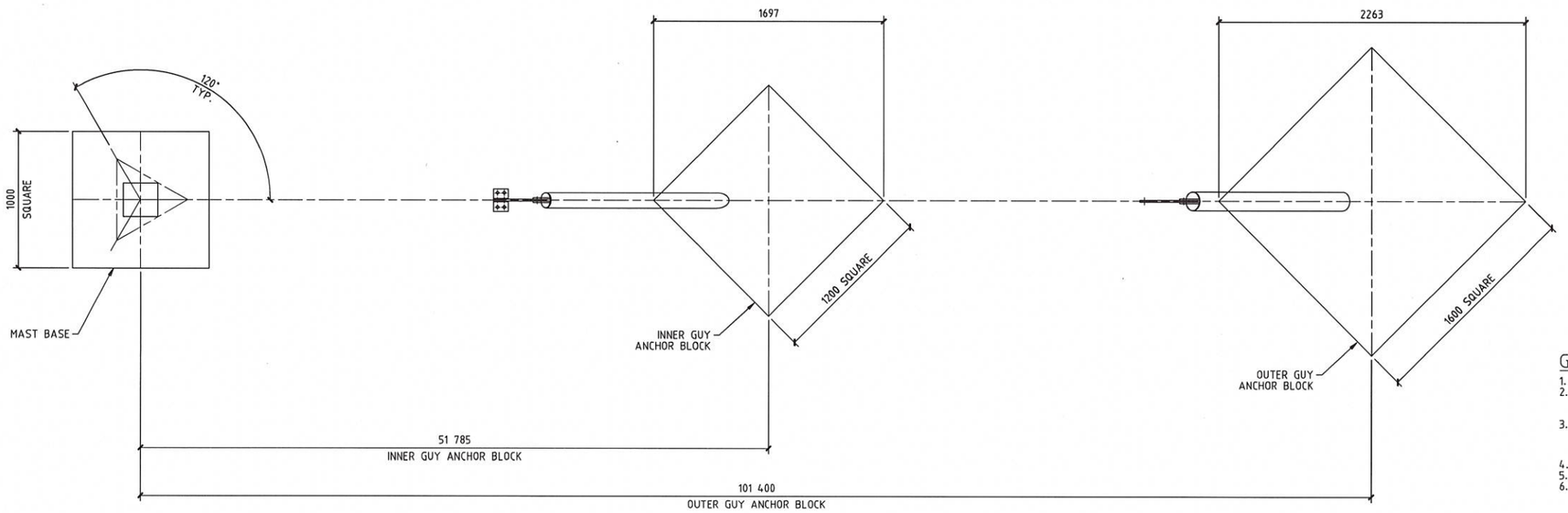
150m HUB F450 METEOROLOGY MAST GUYED MAST INDICATIVE DRAWING

DATE:	SHEET:	SCALE:	DWG No. :	REV:
13-06-24	A1	NTS	Q8085/1/1	





ANCHOR CLEAT DETAIL



FOUNDATION LAYOUT

GENERAL NOTES

1. REFER FEC STANDARD NOTES, DWG F1/1/SN.
2. CONCRETE DESIGNED TO AS3600:
   MINIMUM COMPRESSIVE STRENGTH = 32 MPa
   COVER = 75mm U.O.N.
3. ASSUMED SOIL PARAMETERS:
   Ø = 30°, SOIL DENSITY = 18 kN/m^3 , COHESION = 0 kPa.
   MINIMUM REQUIRED ALLOWABLE BEARING CAPACITY = 150 kPa.
4. FOUNDATION BASES TO BE LEVELLED AND COMPACTED.
5. GROUT TO BE 3:1 SAND CEMENT DRY PACK MORTAR OR NON-SHRINK GROUT.
6. GUY RADII GIVEN ARE BASED ON LEVEL GROUND. FOR EACH 100mm RISE/FALL IN GROUND LEVEL ADJUST RADII BY: INNER GUY RADIUS ±117mm.
   OUTER GUY RADIUS ±93mm.
7. EXTENT OF EXCAVATION TO BE MINIMIZED. BACKFILL TO BE FULLY COMPACTED GRANULAR FILL IN MAX LAYERS OF 300mm.

REFERENCE DRAWINGS						REVISIONS			
DRAWING No.	DESCRIPTION	DRAWING No.	DESCRIPTION	DRAWING No.	DESCRIPTION	REF	DESCRIPTION	DATE	APPv.
F1/1/SN	FEC STANDARD NOTES								

FUTURE
ENGINEERING & COMMUNICATION
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DRAWN:	ENG.:	STEVENSONS / YOORLING BADGINGARRA WIND FARM 150m HUB F450 METEOROLOGY MAST FOUNDATION DETAILS				
MP						
CHECKED:	APPv.:					
DATE:	SHEET:	SCALE:	DWG No.:	REV:		
27-04-24	A1	NTS	J4276/3/1			

APPENDIX C AVIATION IMPACT ASSESSMENT

AVIATION PROJECTS

Alix Chinnery
Associate Director - Project Management, Environment WA
AECOM

By email: alix.chinnery@aecom.com

July 2024

Our reference: 101606-01

Dear Alix

Re: Ambrosia Wind Farm Wind Monitoring Tower – Aviation Impact Assessment

Please find in this correspondence a summary overview of the aviation impact assessment (AIA) of possible constraints to developing a wind monitoring tower (WMT) in Moodiarrup for the purposes of obtaining meteorological data to support the proposed Ambrosia wind farm.

1.1. Project Background

Macquarie Asset Management Green Investments (MAM Green Investments) and Green Wind Renewables (GWR) have agreed to partner to deliver a portfolio of large-scale wind farm projects in Western Australia. AECOM has been engaged by the proponent to prepare project development plans for each project, including a separate development plan for the installation of a wind monitoring tower (WMT) to be installed in each wind farm project area.

The Ambrosia wind farm project area is located approximately 23 km (12.5 nm) south of the town of Darkan, 50 km (27 nm) southeast of the town of Collie, and 193 km (104 nm) southeast of the City of Perth, in the Shire of West Arthur local government area (LGA). The Project will include the installation of 1 WMT up to 151.2 m AGL, in one of the two options shown in Figure 1.

AECOM wishes to understand the potential aviation impacts and the need for aviation hazard marking and lighting of the WMT and has engaged Aviation Projects to undertake an aviation impact assessment to support the development application for the installation of a WMT.

1.2. References

References used or consulted in the preparation of this report included:

- Airservices Australia, Aeronautical Information Package; including AIP Book, Departure and Approach Procedures and En Route Supplement Australia, dated 13 June 2024
- Airservices Australia, *Designated Airspace Handbook*, effective 13 June 2024
- Civil Aviation Safety Authority, *Civil Aviation Safety Regulations 1998* (CASR)
- Civil Aviation Safety Authority, Part 139 (Aerodromes) Manual of Standards 2019, F2024C00161 registered 16/02/2024
- Civil Aviation Safety Authority, Advisory Circular (AC) 139.E-05 v1.1 Obstacles (including wind farms) outside the vicinity of a CASA certified aerodrome (October 2022)

- Civil Aviation Safety Authority, Advisory Circular (AC) 139.E-01v1.0 Reporting of tall structures, December 2021
- Department of Infrastructure and Regional Development, Australian Government, National Airport Safeguarding Framework, Guideline D Managing the Risk of Wind Turbine Farms as Physical Obstacles to Air Navigation, dated June 2013
- International Civil Aviation Organization (ICAO), Doc 8168 Procedures for Air Navigation Services—Aircraft Operations (PANS-OPS)
- ICAO Standards and Recommended Practices, Annex 14—Aerodromes

1.3. Client material

AECOM provided the following material for the purposes of this analysis in the SharePoint project material library:

- WMT specification, *Met Mast Spec*.docx
- WMT location, *20240607 - Met Mast Update – JC.kmz*

1.4. Project description

This assessment considers 2 locations of the WMT:

- WMT – option 1
- WMT – option 2

The WMT will have a maximum height of 151.2 m above ground level (AGL).

Figure 1 shows the proposed location of the WMT sites relative to the town of Darkan, and Coalfields and Boyup Brook-Arthur roads (source: Google Earth, AECOM).

Figure 1 WMT site overview

1.5. Wind monitoring tower description

The proposed wind monitoring tower will be of steel lattice construction and a maximum of 151.2 m in height above ground level (AGL) and will be guyed in 3 directions.

For the purpose of this assessment, the maximum WMT height applied for the aviation analysis is based on the maximum elevation observed in Google Earth for the WMT site plus a 5 m error margin.

Table 1 provides the details of the WMT height applied for this assessment.

Table 1 WMT details

Parameter	*Option 1*	*Option 2*
Error budget (m)	5 m	5 m
Location	TBC within WMT development area	33°36'38.77"S 116°41'12.28"E

Parameter	*Option 1*	*Option 2*
Maximum ground elevation within development area	295 m AHD	305 m AHD
Height of tower AGL	151.2 m (496.1 ft)	151.2 m (496.1 ft)
WMT tip height (with 5 m buffer)	451.2 m AHD (1481 ft AMSL)	461.2 m AHD (1514 ft AMSL)

1.6. Aviation Impact Assessment

This analysis considers the aeronautical impact of the WMT on the following:

- The operation of nearby certified aerodromes
- The operation of nearby aircraft landing areas (uncertified aerodromes)
- Grid and air route Lowest Safe Altitudes (LSALTs)
- Airspace protection
- Aviation facilities
- Radar installations
- Local aircraft operations.

1.7. Shire of West Arthur

Development of the WMT will be subject to Shire of West Arthur's planning scheme, amended 03/02/2012. Section 1.5 of the scheme provides the purpose of the scheme, including to:

a) *set out the local government's planning aims and intentions for the Scheme area;*

b) *set aside land for public purposes;*

c) *zone land within the Scheme area for the purposes defined in the Scheme;*

d) *control and guide land use and development;*

e) *set out procedures for the assessment and determination of planning applications;*

f) *make provisions for the administration and enforcement of the Scheme; and*

g) *address other matters set out in the Schedule 7 to the Planning and Development Act 2005;*

There is no specific aerodrome safeguarding policy or framework established in the Shire of West Arthur planning scheme or strategy. This assessment considers that the development of the WMT is not specifically affected by the Shire of West Arthur planning framework in relation to aviation impacts.

1.8. Nearby certified aerodromes

There are no certified aerodromes located within 30 nm of the proposed WMT locations. Bunbury aerodrome (YBUN) is located approximately 50.5 nm northwest of the nearest WMT site, Katanning aerodrome (YKNG) approximately 50.5 nm east-southeast of the WMT and Busselton Airport (YBLN) approximately 63 nm west of the WMT location.

Figure 2 shows a 30 nm radius from the WMT locations in relation to the nearest certified aerodromes (source, AECOM, Google Earth, Airservices). A certified aerodrome means an aerodrome regulated by the Civil Aviation Safety Authority (CASA) under Part 139 of the Civil Aviation Safety Regulations (CASR), with defined standards established in Part 139 (Aerodromes) Manual of Standards (MOS) 2019.

The 30 nm radius represents the 25 nm minimum sector altitude (MSA) for aerodromes with terminal instrument flight procedures. The 25 nm MSA minimum altitude is determined by assessing obstacles within 30 nm (25 nm plus 5 nm buffer) of the aerodrome reference point or navigational aid on which the MSA is based.

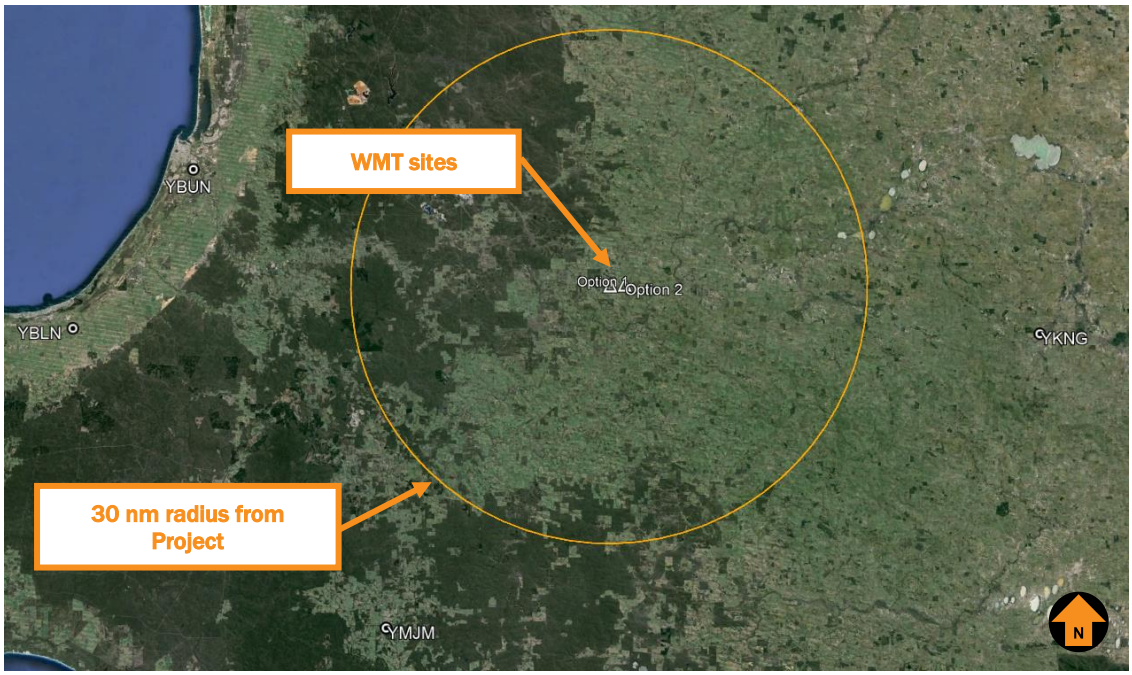

Figure 2 WMT relative to the closest certified aerodromes

The WMT will not affect any certified aerodrome if installed in either of the proposed locations.

1.9. Nearby aeroplane landing areas

As a guide, an area of interest within a 3 nm radius of an aeroplane landing area (ALA) is used to assess the potential impacts of proposed developments on aircraft operations at or near the ALA. There are no formal airspace safeguarding specifications established for ALAs.

A search on OzRunways, which sources its data from Airservices Australia (AIP), did not identify any unregulated aerodromes within 3 nm of the WMT site. The aeronautical data provided by OzRunways is approved under CASA CASR Part 175.

A review of NationalMap (an online map-based tool allowing access to spatial data from Australian government agencies) was also undertaken. No ALAs were identified within 3 nm of the proposed WMT sites.

An ALA was identified on Google Earth immediately south of Lake Towerrinning, approximately 5 nm (9.25 km) northeast of the nearest proposed WMT site - option 2. This ALA will not be affected by the WMT in either of the proposed locations.

1.10. Air routes and grid LSALT

MOS 173 requires that the published lowest safe altitude (LSALT) for a particular airspace grid or air route provides a minimum of 1000 ft clearance above the controlling (highest) obstacle within the relevant airspace grid or air route tolerances.

The proposed WMT will be in a grid identified in the EnRoute Chart – Low. (ERCL 8) The grid LSALT applicable to the proposed WMT location is 2900 ft AMSL, with a minimum obstacle clearance surface of 1900 ft AMSL.

The WMT will be located in the vicinity of 1 low-level air route – V408, between waypoints JOSBU and ARUMI. V408 has a LSALT of 4200 ft AMSL, with a protection surface of 3200 ft AMSL.

Figure 3 shows the air routes and grid LSALT in proximity to the proposed WMT location (source: ERC Low 8, AECOM).

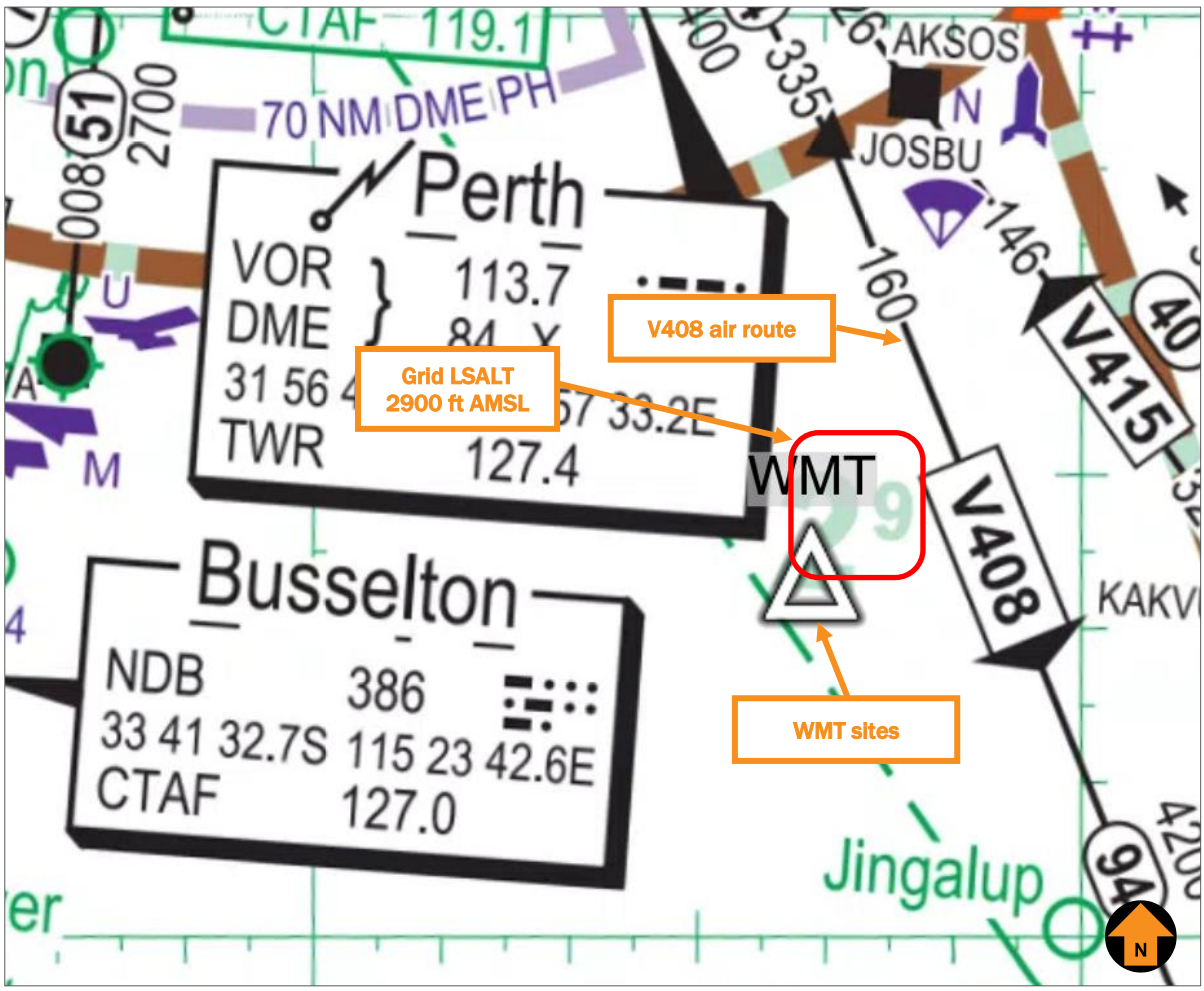

Figure 3 WMT in relation to LSALT

An impact analysis of the LSALT for the grid and surrounding air routes is provided in Table 2 based on the maximum WMT height of 461.2 m AHD (1514 ft AMSL).

Table 2 Air route and grid LSALT impact analysis

Air route	*Waypoint pair*	*LSALT ft AMSL*	*Minimum Obstacle Clearance height ft AMSL*	*Impact on airspace design WMT*	*Potential solution*	*Impact on aircraft ops*
V408	JOSBU - ARUMI	4200	3200	No impact – below protection surface by 1686 ft	N/A	N/A
Grid	N/A	2900	1900	No impact – below protection surface by 386 ft	N/A	N/A

The WMT will not impact the grid LSALT or LSALT of the nearest air routes.

1.11. Airspace

The WMT locations are located outside of controlled airspace (wholly within Class G airspace).

The WMT will not affect any Prohibited, Restricted or Danger Areas in either of the 2 locations.

1.12. Aviation facilities

Part 139 MOS 2019 specifies the protection of Communication, Navigation and Surveillance Systems (CNS) from development which may affect the function of these systems.

The WMT sites are not within the prescribed clearance zones or areas of interest for any CNS facilities as specified in Part 139 MOS 2019 Chapter 19.

1.13. ATC Surveillance Radar Systems

Airservices Australia currently requires assessment of the potential for wind farms to affect radar lines of sight.

The open lattice construction of slim wind monitoring towers does not have any impact upon ATC Surveillance Radar Systems.

1.14. Aircraft Operations in the vicinity of the WMT

It is anticipated that aircraft operations in the vicinity of the WMT will be mostly limited to aerial application operations that may be conducted in the region associated with cropping activity. It is understood aerial application operations may occur from the Lake Towerrinning aircraft landing area, located approximately 5 nm northeast of the closest WMT. Private and recreational aircraft operations also occur at the Lake Towerrinning aircraft landing area.

There is unlikely to be air transport operations conducted in the vicinity of the WMT sites.

Air transport operations are generally conducted under the instrument flying rules (IFR), while aerial work and private aircraft operations in the area are likely to be conducted under visual flying rules (VFR) and during the day only.

Operations conducted under VFR are required to remain in visual meteorological conditions (VMC) and clear of the highest point of the terrain by 500 ft vertical distance and 300 m horizontal distance.

1.15. Civil Aviation Safety Authority - regulatory context

The Civil Aviation Safety Authority (CASA) regulates aviation activities in Australia. Applicable requirements include the Civil Aviation Regulations 1988 (CAR), Civil Aviation Safety Regulations 1998 (CASR) and associated Manual of Standards (MOS) and other guidance material. Standards for Certified Aerodromes are established in Part 139 MOS 2019.

A certified aerodrome means an aerodrome certified under Part 139 (Aerodromes) Civil Aviation Safety Regulations 1998. An aerodrome must be certified if there is a terminal instrument flight procedure implemented at the aerodrome, except for specialised helicopter operations. The standards for the operation

and maintenance of a certified aerodrome are provided in Part 139 Manual of Standards 2019 (Part 139 MOS 2019).

Standards relevant to developing WMT's in proximity to a certified aerodrome include the control of tall and hazardous objects (as defined) located in the vicinity of an aerodrome and terminal instrument flight procedures and specifications for lighting and marking obstacles.

Civil Aviation Safety Regulations 1998, Part 139—Aerodromes

CASR 139.165 requires the owner of a structure (or proponents of a structure) that will be 100 m or more above ground level to inform CASA, even if the object is not in the vicinity of a certified aerodrome. This must be given in written notice and contain information on the proposal, the height and location(s) of the object(s) and the proposed timeframe for construction. This is to allow CASA to assess the effect of the structure on aircraft operations and determine whether or not the structure will be hazardous to aircraft operations.

The proponent of the WMT is required to report the WMT to CASA in accordance with CASR 139.165, *as soon as practicable after forming the intention to construct or erect the proposed object or structure.* This would generally be regarded as when the final location of the WMT sites have been confirmed, prior to construction, noting that CASA may recommend lighting or marking of the WMTs which should be considered during the fabrication of the WMTs.

The notification should be provided to CASA via email to Aerodromes@casa.gov.au and Airspace.Protection@casa.gov.au.

This notification to CASA is a requirement irrespective of whether the object is infringing an aerodrome's obstacle limitation surface or not.

Manual of Standards Part 139—Aerodromes

Part 139 MOS 2019 Chapter 8.109 specifies when obstacles must be marked:

> *(1) The following objects or structures at an aerodrome are obstacles and must be marked in accordance with this Division unless CASA determines otherwise under subsections (3) and (5):*
>
> *a) any fixed object or structure, whether temporary or permanent in nature, extending above the obstacle limitation surfaces;*
>
> - *Note An ILS building is an example of a fixed object.*
>
> *a) (b) any object or structure on or above the movement area that is removable and is not immediately removed.*

Chapter 8.110 sets the requirement for marking hazardous obstacles:

> *As illustrated in Figure 8.110 (5), long, narrow structures like masts, poles and towers which are hazardous obstacles must be marked in contrasting colour bands so that:*
>
> *a) the darker colour is at the top; and (b) the bands:*
>
> *i. are, as far as physically possible, marked at right angles along the length of the long, narrow structure; and*
>
> *ii. have a length ("z" in Figure 8.110 (5)) that is, approximately, the lesser of:*
>
> *(A) 1/7 of the height of the structure; or*
>
> *(B) 30 m.*

Figure 4 provides a diagram of the marking specification for masts, poles and towers as specified by CASA in Part 139 MOS 2019 figure 8.110 (5).

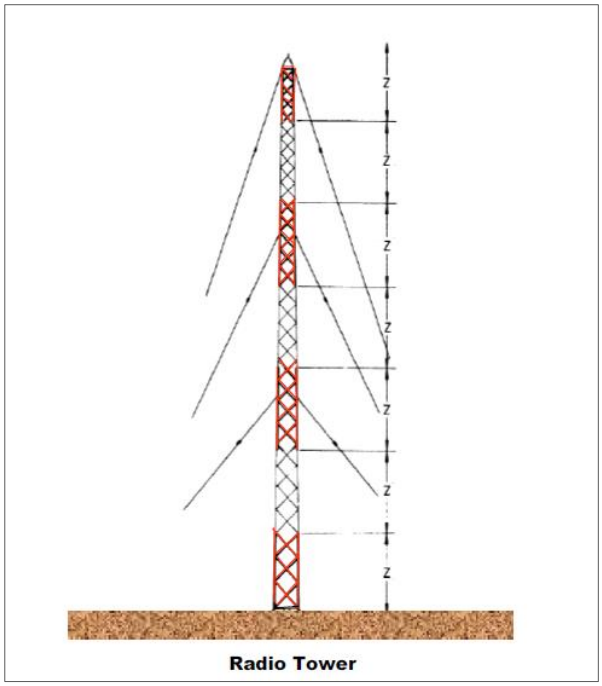

Figure 4 Part 139 MOS 2019 8.110 marking specification

The Part 139 MOS 2019 requirements relating to obstacle marking do not strictly apply to the proposed WMTs because they are not located within the OLS of any certified aerodrome or above an aircraft movement area.

Part 139 MOS 2019 Chapter 8.110 (7) specifies markers for hazardous obstacles in the form of wires or cables:

> *(7)* *Hazardous obstacles in the form of wires or cables must be marked using 3-dimensional coloured objects attached to the wire or cables.*
>
> *Note Spheres and pyramids are examples of 3-dimensional objects.*
>
> *(8)* *The objects mentioned in subsection (7) must:*
>
> *(a) be approximately equivalent in size to a cube with 600 mm sides; and*
>
> *(b) be spaced 30 m apart along the length of the wire or cable.*

The proponent should consider marking the WMT in accordance with the specifications provided, noting there is no regulatory requirement to do so. Marking the WMT in accordance with these specifications will increase the visibility of the WMT during the day and may reduce the risk of a collision by an aircraft, particularly any low-level aerial application operations which may occur in the vicinity. (Note – refer to guidance contained within the National Airports Safeguarding Framework (NASF) Guideline D, provided later in this report.)

Obstacle Lighting

Part 139 MOS 2019 specifies when obstacle lights are required in Chapter 9.27(1):

(1) Subject to subsection (2), for a runway intended to be used at night, the following artificial objects or structures are hazardous obstacles and must be provided with obstacle lighting:

a) an object or structure that extends above the take-off climb surface within 3 000 m of the inner edge of the take-off climb surface;

b) an object or structure that extends above the approach or transitional surface within 3 000 m of the inner edge of the approach surface;

c) an object or structure that extends above the applicable inner, conical or outer horizontal surfaces;

d) an object or structure that extends above the obstacle assessment surface of a T-VASIS or PAPI;

e) an object or structure in the vicinity of a taxiway, an apron taxiway or a taxilane, that is a hazard to aircraft using the taxiway, apron taxiway or taxilane, except that obstacle lights must not be installed on elevated ground lights or MAGS.

Part 139 MOS 2019 Chapter 9.27(4) specifies that:

(4) Despite subsection (1), CASA may determine in writing, following an assessment:

a) that an object or structure on, or within the immediate vicinity of, the aerodrome is a hazardous obstacle; and

b) what, if any, lighting is required for that hazardous obstacle.

The requirements for obstacle lighting do not strictly apply to the proposed WMT locations as they will not infringe on any certified aerodrome's OLS or other surfaces as specified. CASA will review the WMT for potential hazards to aircraft operations and may recommend lighting the WMT.

At 151.2 m (496.1 ft) AGL the WMT is just below what is considered as normally navigable airspace (500 ft AGL), and it would normally be considered that obstacle lighting should not be required. CASA may provide a recommendation for the WMT to be lit, noting they can't mandate this.

1.16. National Airports Safeguarding Framework

The National Airports Safeguarding Advisory Group (NASAG) was established by Commonwealth Department of Infrastructure and Transport to develop a national land use planning framework called the National Airports Safeguarding Framework (NASF).

NASF Guideline D: *Managing the Risk to Aviation Safety of Wind Turbine Installations (Wind Farms)/Wind Monitoring Towers*, provides guidance to State/Territory and local government decision makers, airport operators and developers of wind farms to jointly address the risk to civil aviation arising from the development, presence and use of wind farms and WMTs.

Section 39 of NASF Guideline D provides guidance for the marking and lighting of WMTs, with consideration of the risks associated with WMTs for aircraft in the vicinity due to their slender construction and guy wires, primarily for aerial agriculture and aerial firefighting operations.

NASF Guideline D recommends the following markings for WMTs:

a) the top 1/3 of wind monitoring towers to painted in alternating contrasting bands of colour. Examples of effective measures can be found in the Manual of Standards for Part 139 of the Civil

Aviation Safety Regulations 1998. In areas where aerial agriculture operations take place, marker balls or high visibility flags can be used to increase the visibility of the towers;

b) marker balls or high visibility flags or high visibility sleeves placed on the outside guy wires;

c) ensuring the guy wire ground attachment points have contrasting colours to the surrounding ground/vegetation; or

d) a flashing strobe light during daylight hours.

The NASF guidelines differ slightly from the specifications of Part 139 MOS 2019 (which are only strictly applicable to objects infringing the OLS of a certified aerodrome, or otherwise directed by CASA).

1.17. Summary

The following list of findings summarises the outcomes of this assessment, based on the installation of a WMT at 151.2 m AGL in the proposed Ambrosia wind farm project area (in either of the 2 proposed locations), with a maximum height of 461.2 m AHD (1514 ft AMSL):

- There are no certified aerodromes located within 30 nm of the proposed WMT sites, and the WMT(s) will not affect any certified aerodrome's obstacle limitation surface or terminal instrument flight procedures.
- There are no verified uncertified aerodromes (aircraft landing areas) located within 3 nm of the WMT sites and there will be no impact to any verified ALA caused by the WMT(s).
- The WMT will not impact the grid LSALT of 2900 ft AMSL.
- The WMT will not impact the LSALT of nearby low-level air routes.
- The WMT will be located outside of controlled airspace (wholly within Class G airspace) and are not located in any Prohibited, Restricted and Danger areas.
- The WMT will not impact any communication, navigation or surveillance facilities.
- Some low-level aircraft operations related to aerial application activities are likely within the vicinity of the WMT site.
- It is not mandatory to mark the WMTs, however, the following markings are recommended to be implemented in consideration of potential low-level day VFR aerial work operations in the vicinity:
    - Marker balls or high visibility flags or sleeves should be placed on the outside guy wires (noting NASF guidelines don't specify the size or number of markers)
    - Guy wire ground attachment points should be in contrasting colours to the surrounding ground/vegetation and
    - Paint markings should be applied in alternating contrasting bands of colour to at least the top 1/3 of the mast, with the darker colour at the top and the widths of the bands of approximately 1/7 of the longest dimension.
- Obstacle lighting is not strictly required on the WMT however may be considered as additional mitigation. CASA will review the WMT proposal and provided a recommendation for obstacle lighting if they determine the WMT will be hazardous to aircraft operations, noting they can't mandate obstacle lighting.

- Due to exceeding 100 m AGL, details of the WMT must be reported to CASA as *soon as practicable after forming the intention to construct or erect the proposed object or structure*, in accordance with CASR Part 139.165(1)(2).
- 'As constructed' details of the WMT coordinates and elevation should be provided to Airservices Australia, by submitting the form at this webpage: https://www.airservicesaustralia.com/wp-content/uploads/ATS-FORM-0085_Vertical_Obstruction_Data_Form.pdf to the following email address: airport.developments@airservicesaustralia.com

The development of the WMT in either of the two proposed locations is feasible in respect to aviation impacts.

If you wish to clarify or discuss the contents of this correspondence, please contact me on 0419 666 733.

Kind regards,

Brad O'Connor

Specialist Consultant

31 July 2024

AVIATION PROJECTS

Alix Chinnery
Associate Director - Project Management, Environment WA
AECOM

By email: alix.chinnery@aecom.com

October 2024

Our reference: 101606-01

Dear Alix,

Re: Ambrosia Wind Farm Wind Monitoring Tower – Aviation Impact Assessment

Please find in this correspondence a summary overview of the lighting requirements applicable to the Wind Monitoring Tower (WMT) proposed for the Ambrosia Wind Farm (the Project).

1.1. Civil Aviation Safety Authority - regulatory context

The Civil Aviation Safety Authority (CASA) regulates aviation activities in Australia. Applicable requirements include the Civil Aviation Regulations 1988 (CAR), Civil Aviation Safety Regulations 1998 (CASR), associated Manual of Standards (MOS) and other guidance material. Standards for Certified Aerodromes are established in CASR Part 139 MOS 2019.

A certified aerodrome means an aerodrome certified under CASR Part 139 (Aerodromes). The standards for the operation and maintenance of a certified aerodrome are provided in CASR Part 139 MOS.

As identified in our letter to you titled '*101606_01_AECOM_Ambrosia_ WF_WMT_AIA_v0.1_240701*' on the 1st of July 2024 (WMT AIA), there are no certified aerodromes in the vicinity of the Project. The rules and standards relating to the lighting and marking of tall obstacles as prescribed in the CASR Part 139 MOS do not apply to the Project's WMTs, as such CASA may only recommend lighting in this case and cannot mandate its installation. CASA is likely to recommend lighting to WMTs regardless of location.

Reference should instead be made to the National Airport Safeguarding Framework (NASF) Guideline D: *Managing The Risk To Aviation Safety Of Wind Turbine Installations (Wind Farms)/Wind Monitoring Towers*. These guidelines provide recommendations and best practise for tall obstacles outside of the vicinity of certified aerodromes (as is the case of the Project).

Civil Aviation Safety Regulations 1998, Part 139—Aerodromes

CASR 139.165 requires the owner of a structure (or proponents of a structure) that will be 100 m or more above ground level to inform CASA and Airservices Australia, even if the object is not in the vicinity of a certified aerodrome. As a result of this notification the WMT will be entered into the tall obstacle database and be published on aeronautical charts. The presence of the WMT on the charts will provide awareness of the WMT to pilots operating in the area using the published aeronautical charts during a pre-flight planning activity. These charts must be studied and used prior to and throughout a flight.

1.2. National Airports Safeguarding Framework

The National Airports Safeguarding Advisory Group (NASAG) was established by Commonwealth Department of Infrastructure, Transport, Regional Development, Communications and the Arts to develop a national land use planning framework

NASF Guideline D: *Managing the Risk to Aviation Safety of Wind Turbine Installations (Wind Farms)/Wind Monitoring Towers*, provides guidance to State/Territory and local government decision makers, airport operators and developers of wind farms to jointly address the risk to civil aviation arising from the development, presence and use of wind farms and WMTs.

Section 39 of NASF Guideline D provides guidance for the marking and lighting of WMTs, with consideration of the risks associated with WMTs for aircraft in the vicinity due to their slender construction and guy wires, primarily for aerial agriculture and aerial firefighting operations.

NASF Guideline D recommends the following markings for WMTs:

> *a) the top 1/3 of wind monitoring towers to painted in alternating contrasting bands of colour. Examples of effective measures can be found in the Manual of Standards for Part 139 of the Civil Aviation Safety Regulations 1998. In areas where aerial agriculture operations take place, marker balls or high visibility flags can be used to increase the visibility of the towers;*
>
> *b) marker balls or high visibility flags or high visibility sleeves placed on the outside guy wires;*
>
> *c) ensuring the guy wire ground attachment points have contrasting colours to the surrounding ground/vegetation; or*
>
> *d) a flashing strobe light during **daylight** hours.*

The NASF guidelines do not recommend nighttime lighting to be installed to WMTs.

1.3. Rules of flight

1.3.1. Flight under Day Visual Flight Rules (Day VFR)

According to Australia's Aeronautical Information Package (AIP) the meteorological conditions required for visual flight in the applicable (class G) airspace at or below 3,000 ft AMSL or 1,000 ft AGL (whichever is the higher) are: 5,000 m visibility, clear of clouds and in sight of ground or water.

CASR 91.267 (Minimum height rules—other areas) prescribes the minimum height for flight. Generally speaking, and unless otherwise approved, aircraft are restricted to a minimum height of 500 ft AGL above the highest point of the terrain and any object on it within a radius of 300 m in visual flight during the day when not in the vicinity of built-up areas, and 1000 ft AGL over built up areas (within a horizontal radius of 600 m of the point on the ground or water immediately below the aeroplane).

As the WMT is less than 500 ft AGL aircraft complying with CASR 91.267 should be above the height of the WMT at all times and when within 600 m of the WMT be at least 500 ft higher than the published altitude of the WMT - as will be shown on aeronautical charts in line with the recommendations of the WMT AIA.

However, these height restrictions do not apply if through stress of weather or any other unavoidable cause it is essential that a lower flying height be maintained. Flight below these height restrictions is also permitted in certain other circumstances (such as aerial spraying operations).

1.3.2. Flight under Night Visual Flight Rules (Night VFR)

With respect to flight under the VFR at night, CASR 91.277 requires that the pilot in command of an aircraft flying VFR at night must not fly below the appropriate lowest safe altitude (LSALT) unless during take-off and landing operations, within 3 nm of an aerodrome. These lowest safe altitudes are calculated using the highest obstacle or terrain in the area and applying a 1000 ft above them. As referenced in the WMT AIA the nearby Route and Grid LSALTS provide sufficient protection to aircraft from the WMT as there are taller obstacles or terrain within their protection areas. Lighting of the WMT at night is not likely to reduce the risk to aircraft complying with the existing LSALTS in the area and may be bothersome to nearby residents.

There are also no identified uncertified aerodromes within 3nm of the WMT.

1.3.3. Flight under Instrument Flight Rules (Day or Night) (IFR)

According to CASR Part 91, flight under the instrument flight rules (IFR) requires an aircraft to be operated at a height clear of obstacles that is calculated according to an approved method.

Obstacle lights on structures not within the vicinity of an aerodrome are effectively redundant to an aircraft being operated under the IFR.

1.4. Aircraft Operations in the vicinity of the WMT

It is anticipated that aircraft operations in the vicinity of the WMT will be mostly limited to aerial application operations that may be conducted in the region associated with cropping activity. It is understood aerial application operations may occur from the Lake Towerrinning aircraft landing area, located approximately 5 nm northeast of the closest WMT. Private and recreational aircraft operations also occur at the Lake Towerrinning aircraft landing area.

There is unlikely to be air transport operations conducted in the vicinity of the WMT sites.

Air transport operations are generally conducted under the instrument flying rules (IFR), while aerial work and private aircraft operations in the area are likely to be conducted under visual flying rules (VFR) and during the day only.

Operations conducted under VFR are required to remain in visual meteorological conditions (VMC) and clear of the highest point of the terrain by 500 ft vertical distance and 300 m horizontal distance.

1.5. Summary

The installation of lighting during hours of darkness recommended by CASA is not likely to improve the safety of aircraft operating within published regulations. The NASF provides clear guidelines for the recommendation of marking and lighting outside of the vicinity of certified aerodromes. This guidance is recommended to be followed for all structures outside of this vicinity.

Should you wish to discuss this letter or the previously published WMT AIA please contact me on 0419 666 733.

Kind regards,

Brad O'Connor

Specialist Consultant – Aviation Safeguarding

08 October 2024

APPENDIX D VIEW SHED IMAGES