Noise Assessment

Proposed Cabinet Manufacturing Facility
47 Myoora Road, 3-5 & 7 Pinnacle Place
Somersby, NSW

Prepared for: Space Urban Pty Ltd
C/- Perception Planning
July 2024
MAC242150-01RP1V1

Muller Acoustic Consulting

Document Information

Noise Assessment

Proposed Cabinet Manufacturing Facility

47 Myoora Road, 3-5 & 7 Pinnacle Place

Somersby, NSW

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1 Introduction

Muller Acoustic Consulting Pty Ltd (MAC) has been commissioned by Perception Planning (PP), on behalf of Space Urban Pty Ltd (SU) to prepare a Noise Assessment (NA) to quantify emissions from the proposed Industrial Facility to be located at 47 Myoora Road, 3-5 & 7 Pinnacle Place, Somersby, NSW.

The NA has quantified potential operational and sleep disturbance noise emissions from the project and recommends reasonable and feasible noise controls where required.

This assessment has been undertaken in accordance with the following documents:

- NSW Environment Protection Authority (EPA), Noise Policy for Industry (NPI) 2017;
- NSW Department of Environment and Climate Change (DECCW) – NSW Interim Construction Noise Guideline (ICNG), July 2009;
- NSW Department of Environment, Climate Change and Water (DECCW) – NSW Road Noise Policy (RNP), March 2011;
- NSW Environment Protection Authority (EPA), Approved Methods for the measurement and analysis of environmental noise in NSW, 2022; and
- Australian Standard AS 1055:2018 - Acoustics - Description and measurement of environmental noise - General Procedures.

A glossary of terms, definitions and abbreviations used in this report is provided in Appendix A.

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2 Project Description

2.1 Background

The project is to be constructed across 3 lots, 47 Myoora Road (131/-/DP1034432), 3-5 Pinnacle Place (51/-/DP1151970), and 7 Pinnacle Place (52/-/DP1151970) Somersby, NSW, which are all zoned E4, general industrial area. The area surrounding the project comprises of active recreational and commercial premises to the south, industrial premises to the north and east and a single residential receiver to the west across Myoora Road. The dwelling is located on land zoned for primary production with part of the property also used for workshop facility.

The ambient noise environment surrounding the project site comprises of commercial/industrial noise sources and road traffic noise from the nearby M1 motorway during the day period, and is dominated by traffic noise during the evening and night periods.

Taking into account the surrounding industrial and commercial land uses, traffic noise from the nearby motorway and the sewage treatment works to the west of the residential receiver, the area surrounding the project site is considered to be representative of an urban setting.

The project proposes the development of an industrial manufacturing facility for the production, storage and export of flatpack cabinets and furniture. Panels of manufactured compressed wood sheets will be delivered to the facility, which will be then cut to size, edged, drilled, routed and prepared to be included in flatpack cabinets and furniture. The finished products will be exported for storage and sales. The project is proposed to operate 24 hours a day, seven days a week. Site plans for the project are provided in Appendix B.

2.1.1 Receiver Review

A review of residential receivers in proximity to the project has been completed and are summarised in **Table 1. Figure 1** provides a locality plan showing the position of these receivers in relation to the project.

Table 1 Receiver Locations

Receiver	Receiver Type	Receiver Height	Coordinates (MGA56)	
			Easting	Northing
R01	Residential	1.5m	339868	6301403
AR01	Active Recreational	1.5m	339863	6301138
C01	Commercial	1.5m	339935	6301042
I01	Industrial	1.5m	340022	6301441
I02	Industrial	1.5m	340160	6301416
I03	Industrial	1.5m	340146	6301370
I04	Industrial	1.5m	340226	6301336
I05	Industrial	1.5m	340225	6301283
I06	Industrial	1.5m	340202	6301242
I07	Industrial	1.5m	340165	6301187

2.1.2 Proposed Activities & Operating Hours

There are several key activities associated with the project that have the potential to generate acoustic impacts on nearby receivers. **Table 2** provides a summary of project noise sources and the assessment period in which they propose to occur.

Table 2 Noise Generating Activities

Activity/Source	Period[1]	Operational
Staff Light Vehicles in Carpark	Day	✓
	Evening	✓
	Night	✓
Heavy Vehicles for Import and Export of Goods	Day	✓
	Evening	✓
	Night	✓
Internal Manufacturing Operations	Day	✓
	Evening	✓
	Night	✓
Mechanical Plant	Day	✓
	Evening	✓
	Night	✓

Note 1: Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.

FIGURE 1

Locality Plan

MAC242150-01RP1

47 Myoora Road &

3-5 & 7 Pinnacle Place

Somersby, NSW

KEY

- Site Boundary
- Attended Noise Monitoring Location
- Unattended Noise Monitoring Location
- Receiver

0 10 20 30 40 50 60 70 80 90 m

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3 Noise Policy and Guidelines

3.1 Noise Policy for Industry

The EPA released the Noise Policy for Industry (NPI) in October 2017 which provides a process for establishing noise criteria for consents and licenses enabling the EPA to regulate noise emissions from scheduled premises under the Protection of the Environment Operations Act 1997.The objectives of the NPI are to:

- provide noise criteria that is used to assess the change in both short term and long-term noise levels;
- provide a clear and consistent framework for assessing environmental noise impacts from industrial premises and industrial development proposals;
- promote the use of best-practice noise mitigation measures that are feasible and reasonable where potential impacts have been identified; and
- support a process to guide the determination of achievable noise limits for planning approvals and/or licences, considering the matters that must be considered under the relevant legislation (such as the economic and social benefits and impacts of industrial development).

The policy sets out a process for industrial noise management involving the following key steps:

1. Determine the Project Noise Trigger Levels (PNTLs) (ie criteria) for a development. These are the levels (criteria), above which noise management measures are required to be considered. They are derived by considering two factors: shorter-term intrusiveness due to changes in the noise environment; and maintaining the noise amenity of an area.
2. Predict or measure the noise levels produced by the development with regard to the presence of annoying noise characteristics and meteorological effects such as temperature inversions and wind.
3. Compare the predicted or measured noise level with the PNTL, assessing impacts and the need for noise mitigation and management measures.
4. Consider residual noise impacts - that is, where noise levels exceed the PNTLs after the application of feasible and reasonable noise mitigation measures. This may involve balancing economic, social and environmental costs and benefits from the proposed development against the noise impacts, including consultation with the affected community where impacts are expected to be significant.
5. Set statutory compliance levels that reflect the best achievable and agreed noise limits for the development.

6. Monitor and report environmental noise levels from the development.

3.1.1 Project Noise Trigger Levels (PNTL)

The policy sets out the procedure to determine the PNTLs relevant to an industrial development. The PNTL is the lower (ie, the more stringent) of the **Project Intrusiveness Noise Level** (PINL) and **Project Amenity Noise Level** (PANL) determined in accordance with Section 2.3 and Section 2.4 of the NPI.

3.1.2 Rating Background Level (RBL)

The Rating Background Level (RBL) is a parameter determined from noise monitoring and is used for assessment purposes. As per the NPI, the RBL is an overall single figure background level representing each assessment period (day, evening and night) over the noise monitoring period.

3.1.3 Project Intrusiveness Noise Level (PINL)

The PINL ($LA_{eq(15min)}$) is the RBL + 5dB and seeks to limit the degree of change a new noise source introduces to an existing environment. Hence, when assessing intrusiveness, background noise levels need to be measured.

Background noise levels need to be determined before intrusive noise can be assessed. The NPI states that background noise levels to be measured are those that are present at the time of the noise assessment and without the subject development operating. For the assessment of modifications to existing premises, the noise from the existing premises should be excluded from background noise measurements. It is note that the exception is where the premises has been operating for a significant period of time and is considered a normal part of the acoustic environment; it may be included in the background noise assessment under the following circumstances:

- the development must have been operating for a period in excess of 10 years in the assessment period/s being considered and is considered a normal part of the acoustic environment; and,
- the development must be operating in accordance with noise limits and requirements imposed in a consent or licence and/or be applying best practice.

Where a project intrusiveness noise level has been derived in this way, the derived level applies for a period of 10 years to avoid continuous incremental increases in intrusiveness noise levels. This approach is consistent with the purpose of the intrusiveness noise level to limit significant change in the acoustic environment. The purpose of the project amenity noise level is to moderate against background noise creep.

3.1.4 Project Amenity Noise Level (PANL)

The PANL is relevant to a specific land use or locality. To limit continuing increases in intrusiveness levels, the ambient noise level within an area from all combined industrial sources should remain below the recommended amenity noise levels specified in Table 2.2 (of the NPI). The NPI defines two categories of amenity noise levels:

- **Amenity Noise Levels (ANL)** – are determined considering all current and future industrial noise within a receiver area; and
- **Project Amenity Noise Level (PANL)** – is the recommended level for a receiver area, specifically focusing the project being assessed.

Additionally, Section 2.4 of the NPI states: "to ensure that industrial noise levels (existing plus new) remain within the recommended amenity noise levels for an area, a project amenity noise level applies for each new source of industrial noise as follows":

PANL for new industrial developments = recommended **ANL** minus 5dBA.

The following exceptions apply when deriving the PANL:

- areas with high traffic noise levels;
- proposed developments in major industrial clusters;
- existing industrial noise and cumulative industrial noise effects; and
- greenfield sites.

The NPI states with respect to high traffic noise areas:

The level of transport noise, road traffic noise in particular, may be high enough to make noise from an industrial source effectively inaudible, even though the LAeq noise level from that industrial noise source may exceed the project amenity noise level. In such cases the project amenity noise level may be derived from the LAeq, period(traffic) minus 15 dB(A).

Where relevant this assessment has considered influences of traffic with respect to amenity noise levels (ie areas where existing traffic noise levels are 10dB greater than the recommended amenity noise level).

Furthermore, Section 2.4 of the NPI states "*where the project amenity noise level applies and it can be met, no additional consideration of cumulative industrial noise is required.* "

The recommended amenity noise levels as per Table 2.2 of the NPI are reproduced in **Table 3**.

Table 3 Amenity Noise Levels

Receiver Type	Noise Amenity Area	Time of day	Recommended amenity noise level dB LAeq(period)
Residential	Rural	Day	50
		Evening	45
		Night	40
	Suburban	Day	55
		Evening	45
		Night	40
	Urban	Day	60
		Evening	50
		Night	45
Hotels, motels, caretakers' quarters, holiday accommodation, permanent resident caravan parks.	See column 4	See column 4	5dB above the recommended amenity noise level for a residence for the relevant noise amenity area and time of day
School Classroom	All	Noisiest 1-hour period when in use	35 (internal) 45 (external)
Hospital ward			
- internal	All	Noisiest 1-hour	35
- external	All	Noisiest 1-hour	50
Place of worship - internal	All	When in use	40
Passive Recreation	All	When in use	50
Active Recreation	All	When in use	55
Commercial premises	All	When in use	65
Industrial	All	When in use	70

Notes: The recommended amenity noise levels refer only to noise from industrial noise sources. However, they refer to noise from all such sources at the receiver location, and not only noise due to a specific project under consideration. The levels represent outdoor levels except where otherwise stated.

Types of receivers are defined as rural residential; suburban residential; urban residential; industrial interface; commercial; industrial – see Table 2.3 and Section 2.7 of the NPI.

Note 1: Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.

3.1.5 Maximum Noise Assessment Trigger Levels

The potential for sleep disturbance from maximum noise level events from a project during the night-time period needs to be considered. The NPI considers sleep disturbance to be both awakenings and disturbance to sleep stages.

Where night-time noise levels from a development/premises at a residential location exceed the following criteria, a detailed maximum noise level event assessment should be undertaken:

- $LA_{eq(15min)}$ 40dB or the prevailing RBL plus 5dBA, whichever is the greater, and/or
- LA_{max} 52dB or the prevailing RBL plus 15dBA, whichever is the greater.

A detailed assessment should cover the maximum noise level, the extent to which the maximum noise level exceeds the rating background noise level, and the number of times this happens during the night-time period.

Other factors that may be important in assessing the impacts on sleep disturbance include:

- how often the events would occur;
- the distribution of likely events across the night-time period and the existing ambient maximum events in the absence of the development;
- whether there are times of day when there is a clear change in the noise environment (such as during early morning shoulder periods); and
- current understanding of effects of maximum noise level events at night.

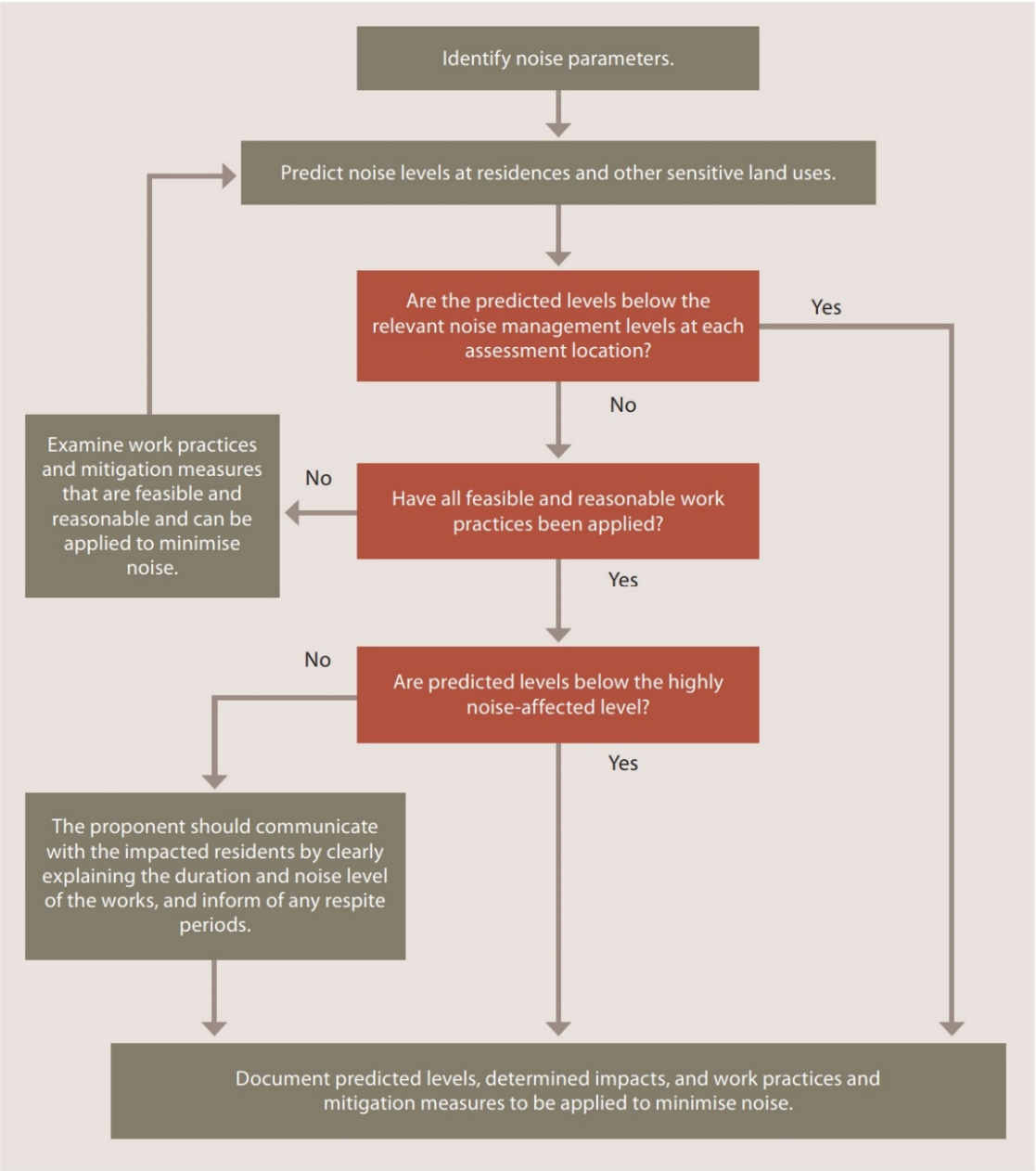
3.2 Interim Construction Noise Guideline

The ICNG sets out procedures to identify and address the impacts of construction noise on residences and other sensitive land uses. This section provides a summary of noise objectives that are applicable to the assessment. The ICNG provides two methodologies for the assessment of construction noise emissions:

- Quantitative, which is suited to major construction projects with typical durations of more than three weeks; and
- Qualitative, which is suited to short term infrastructure maintenance (< three weeks).

The qualitative assessment methodology is a more simplified approach that relies on noise management strategies. This NA has adopted a quantitative assessment approach which is summarised in Figure 2. The quantitative approach includes identification of potentially affected receivers, derivation of the construction noise management levels, quantification of potential noise impact at receivers via predictive modelling and, provides management and mitigation recommendations.

Figure 2 Quantitative Assessment Processes for Assessing and Managing Construction Noise



Source: Department of Environment and Climate Change, 2009.

3.2.1 Standard Hours for Construction

Table 4 presents the ICNG recommended standard hours for construction works.

Table 4 Recommended Standard Hours for Construction

Daytime	Construction Hours
Monday to Friday	7am to 6pm
Saturdays	8am to 1pm
Sundays or Public Holidays	No construction

These recommended hours do not apply in the event of direction from police, or other relevant authorities, for safety reasons or where required in an emergency to avoid the loss of lives, property and/or to prevent environmental harm. Construction activities are anticipated to be undertaken during standard construction hours.

3.2.2 Construction Noise Management Levels

Section 4 of the ICNG details the quantitative assessment method involving predicting noise levels and comparing them with the Noise Management Level (NML) and are important indicators of the potential level of construction noise impact. **Table 5** reproduces the ICNG Noise Management Level (NML) for residential receivers. The NML is determined by adding 10dB (standard hours) or 5dB for Out of Hours (OOH) to the Rating Background Level (RBL) for each specific assessment period.

Table 5 Noise Management Levels		
Time of Day	Management Level LAeq(15min)[1]	How to Apply
Recommended standard hours: Monday to Friday 7am to 6pm Saturday 8am to 1pm No work on Sundays or public holidays.	Noise affected RBL + 10dB	The noise affected level represents the point above which there may be some community reaction to noise. Where the predicted or measured LAeq(15min) is greater than the noise affected level, the proponent should apply all feasible and reasonable work practices to meet the noise affected level. The proponent should also inform all potentially impacted residents of the nature of work to be carried out, the expected noise levels and duration, as well as contact details.
	Highly Noise Affected 75dBA (HNA)	The highly noise affected level represents the point above which there may be strong community reaction to noise. Where noise is above this level, the relevant authority (consent, determining or regulatory) may require respite periods by restricting the hours that the very noisy activities can occur, taking into account times identified by the community when they are less sensitive to noise such as before and after school for work near schools, or mid-morning or mid-afternoon for work near residences; and if the community is prepared to accept a longer period of construction in exchange for restrictions on construction times.
Outside recommended standard hours.	Noise affected RBL + 5dB	A strong justification would typically be required for work outside the recommended standard hours. The proponent should apply all feasible and reasonable work practices to meet the noise affected level. Where all feasible and reasonable practices have been applied and noise is more than 5dBA above the noise affected level, the proponent should negotiate with the community. For guidance on negotiating agreements see Section 7.2.2 of the ICNG.

Note 1: The Rating Background Level (RBL) is an overall single figure background level representing each assessment period over the whole monitoring period. The RBL is used to determine the construction noise management levels for noise assessment purposes and is the median of the ABL's.

4 Existing Environment

4.1 Unattended Noise Monitoring

To quantify the existing background noise environment of the area, unattended noise monitoring was conducted at one location representative of the ambient environment surrounding the project site. The selected monitoring location is shown in **Figure 1** and is considered representative of surrounding residential receivers as per Fact Sheet B1.1 of the NPI.

The unattended noise survey was conducted in general accordance with the procedures described in Standards Australia AS 1055:2018, "Acoustics – Description and Measurement of Environmental Noise".

The measurements were carried out using one Svantek 977 noise analyser from Tuesday 14 May 2024 to Wednesday 22 May 2024. All acoustic instrumentation used carries appropriate and current NATA (or manufacturer) calibration certificates with records of all calibrations maintained by MAC as per Approved Methods for the measurement and analysis of environmental noise in NSW (EPA, 2022) and complies with AS/NZS IEC 61672.1-2019-Electroacoustics - Sound level meters - Specifications. Calibration of all instrumentation was checked prior to and following measurements. Drift in calibration did not exceed ±0.5dBA.

Observations on-site identified the surrounding locality was typical of an urban environment, with road traffic noise, commercial and industrial activities audible.

Data affected by adverse meteorological conditions have been excluded from the results in accordance with methodologies provided in Fact Sheet A4 of the NPI. Residential receivers situated in the surrounding area have been classified under the EPA's urban amenity category. This criteria is used in conjunction with the intrusiveness criteria to determine the limiting criteria. The summary results of long-term unattended noise monitoring are provided in **Table 6**. The measured daily ABLs for the background monitoring are provided in **Table C18** in **Appendix C** along with the daily noise monitoring charts.

Table 6 Background Noise Monitoring Summary

Location	Measured background noise level, RBL, dBA			Measured LA_{eq}, dBA		
	Day 7am to 6pm	Evening 6pm to 10pm	Night 10pm to 7am	Day 7am to 6pm	Evening 6pm to 10pm	Night 10pm to 7am
L1	38	41	37	53	49	49

Note: Excludes periods of wind or rain affected data. Meteorological data obtained from the Bureau of Meteorology weather station Mangrove Mountain AWS 33.3°S 151.2°E 305m AMSL.

4.2 Attended Noise Monitoring

To supplement the unattended noise assessment and to quantify the changes in ambient noise in the community surrounding the operation, one 15 minute attended measurement was completed.

The attended noise survey was conducted in general accordance with the procedures described in Standards Australia AS 1055:2018, "Acoustics – Description and Measurement of Environmental Noise".

All acoustic instrumentation used carries appropriate and current NATA (or manufacturer) calibration certificates with records of all calibrations maintained by MAC as per Approved Methods for the measurement and analysis of environmental noise in NSW (EPA, 2022) and complies with AS/NZS IEC 61672.1-2019-Electroacoustics - Sound level meters - Specifications. Calibration of all instrumentation was checked prior to and following measurements. Drift in calibration did not exceed ±0.5dBA.

The attended noise monitoring was conducted using one Svantek 971 noise analyser at the site (see **Figure 1**) on Wednesday 22 May 2024 ambient background noise levels.

The attended measurement was completed during calm and clear meteorological conditions and confirmed that ambient traffic and commercial/industrial noise dominated the surrounding environment. The results of the short-term noise measurement and observations are summarised in **Table 7**.

Table 7 Operator-Attended Noise Survey Results

Date/ Time (hrs)	Noise Descriptor (dBA re 20 μPa)			Meteorology	Description and SPL, dBA
	LA_{max}	LA_{eq}	LA_{90}		
22/05/2024 10:36	88	60	41	WD: E WS: 0.3m/s Rain: Nil	Traffic 59-88 Lawn Mower 39-45 Birds 40-45 Aircraft 35-41

Note 1: Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.

5 Assessment Criteria

5.1 Operational Noise Trigger Levels (Criteria)

This section outlines the determination of PNTLs and Maximum Noise Assessment Trigger Levels in accordance with NPI methodology.

5.1.1 Intrusiveness Noise Levels

The PINL for the project are presented in **Table 8** and have been determined based on the RBL +5dBA and only apply to residential receivers.

Table 8 Project Intrusiveness Noise Levels

Location	Receiver Type	Period[1]	Measured RBL dB LA_{90}	Adopted RBL dB LA_{90}	PINL dB $LA_{eq(15min)}$
L1	Residential	Day	38	38	43
		Evening	41	38[2]	43
		Night	37	37	42

Note 1: Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.

Note 2: In accordance with NPI guidance, the RBL for the evening period cannot be greater than the daytime RBL. Accordingly, the daytime RBL has been adopted for the evening period.

5.1.2 Determination of NPI Residential Receiver Amenity Category

Classification of residential receivers in the surrounding area have been determined by review of the measured RBLs and a tally of the features for each category described in Table 2.3 of the NPI. The overall tally of features and resulting classifications are provided in **Table 9**. The detailed assessment of receiver categories is provided in **Table D19** in **Appendix D.** This classification is used in conjunction with the intrusiveness criteria to determine the limiting criteria.

Table 9 Determination of NPI Residential Receiver Category

Location	Rural	Suburban	Urban
L1	1	0	5

Observations at locations in the surrounding locality support the assessment of the receiver as an urban residential category.

5.1.3 Amenity Noise Levels and Project Amenity Noise Levels

The PANL for residential receivers and other receiver types (ie non-residential) potentially affected by the project are presented in **Table 10.**

Table 10 Amenity Noise Levels and Project Amenity Noise Levels

Receiver Type	Noise Amenity Area	Assessment Period[1]	NPI Recommended ANL dB $LA_{eq(period)}$	ANL dB $LA_{eq(period)}$[2]	PANL dB $LA_{eq(15min)}$[3]
Residential	Urban	Day	60	55	58
		Evening	50	45	48
		Night	45	40	43
Active Recreation	All	When in use	55	50	53
Commercial	All	When in use	65	60	63
Industrial	All	When in use	70	65	68

Note 1: Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.

Note 2: Project Amenity Noise Level equals the Amenity Noise Level -5dB as there is other industry in the area.

Note 3: Includes a +3dB adjustment to the amenity period level to convert to a 15-minute assessment period as per Section 2.2 of the NPI.

5.1.4 Project Noise Trigger Levels

The PNTL are the lower of either the PINL or the PANL. **Table 11** presents the derivation of the PNTLs in accordance with the methodologies outlined in the NPI.

Table 11 Project Noise Trigger Levels

Receiver Type	Noise Amenity Area	Assessment Period[1]	PINL dB $LA_{eq(15min)}$	PANL dB $LA_{eq(15min)}$	PNTL dB $LA_{eq(15min)}$
Residential	Urban	Day	43	58	43
		Evening	43	48	43
		Night	42	43	42
Active Recreation	All	When in Use	N/A	48	48
Commercial	All	When in Use	N/A	63	63
Industrial	All	When in Use	N/A	68	68

Note 1: Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.

5.1.5 Maximum Noise Trigger Levels

The maximum noise trigger levels shown in **Table 12** are based on night time RBLs and trigger levels as per Section 2.5 of the NPI. The trigger levels will be applied to transient noise events that have the potential to cause sleep disturbance.

Table 12 Maximum Noise Trigger Levels (Night)

Residential Receivers			
$LA_{eq(15min)}$		LA_{max}	
40dB $LA_{eq(15min)}$ or RBL + 5dB		52dB LA_{max} or RBL + 15dB	
Trigger	40	Trigger	52
RBL +5dB	42	RBL +15dB	52
Highest	**42**	**Highest**	**52**

Note: Monday to Saturday; Night 10pm to 7am. On Sundays and Public Holidays Night 10pm to 8am.

Note: NPI identifies that maximum of the two values is to be adopted which is shown in bold font.

5.2 Construction Noise Management Levels

The relevant Noise Management Levels (NMLs) for standard construction hours are presented in **Table 13**.

Table 13 Construction Noise Management Levels

Receiver ID	Assessment Period[1]	Adopted RBL dB LA_{90}	NML dB $LA_{eq(15min)}$
Residential	Standard Hours	38	48 (RBL+10dBA)
Active Recreation Areas	When in use	N/A	65 (external)
Commercial Premises	When in use	N/A	70 (external)
Industrial Premises	When in use	N/A	75 (external)

Note 1: Refer to Table 4 for Standard Recommended Hours for Construction.

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6 Modelling Methodology

A computer model was developed to quantify project noise emissions to neighbouring receivers using DGMR (iNoise, Version 2024.1) noise modelling software. iNoise is an intuitive and quality assured software for industrial noise calculations in the environment. 3D noise modelling is considered industry best practice for assessing noise emissions from projects.

The model incorporated a three-dimensional digital terrain map giving all relevant topographic information used in the modelling process. Additionally, the model uses relevant noise source data, ground type, attenuation from barrier or buildings and atmospheric information to predict noise levels at the nearest potentially affected receivers. Where relevant, modifying factors in accordance with Fact Sheet C of the NPI have been applied to calculations.

The model calculation method used to predict noise levels was in accordance with ISO 9613:1 and ISO 9613:2 including corrections for meteorological conditions using CONCAWE[1]. The ISO 9613 standards are the most used noise prediction method worldwide. Many countries refer to ISO 9613 in their noise legislation. However, the ISO 9613 standard does not contain guidelines for quality assured software implementation, which leads to differences between applications in calculated results. In 2015 this changed with the release of ISO/TR 17534-3. This quality standard gives clear recommendations for interpreting the ISO 9613 method. iNoise fully supports these recommendations. The models and results for the 19 test cases are included in the software.

6.1 Mitigation Included in Design and Noise Control Recommendations

The noise model incorporated the following:

- The project is constructed as per the site design and plans, which includes the barrier attenuation provided by the project buildings orientation (as presented in **Appendix B**).

6.2 Construction Scenarios

Construction noise emissions were modelled for the following two scenarios, considered to be the main noise generating activities for the development of the project site:

- Scenario 1 – Concreting Foundation Slabs and Roadways; and
- Scenario 2 – Building General Construction.

[1] Report no. 4/18, "the propagation of noise from petroleum and petrochemical complexes to neighbouring communities", Prepared by C.J. Manning, M.Sc., M.I.O.A. Acoustic Technology Limited (Ref.AT 931), CONCAWE, Den Haag May 1981

6.3 Sound Power Levels

Table 14 presents the sound power level for each noise source modelled in this assessment. It is noted that sound power levels were sourced from manufacturer's specifications or from in-field measurements at similar project sites.

Table 14 Acoustically Significant Sources – Sound Power Levels dBA *(re 10^{-12} Watts)*

Item and quantity (per 15 minutes)	Sound Power Level dB LAeq	Total Sound Power Level dB LAeq(15min)	Source Height[1]
Operation			
Staff car idle, start up and drive off (x40)[2]	81	84	0.5m
Staff vehicles travelling through Car Park (40 cars per 15min)	81	87	0.5m
Import/export heavy vehicles travelling around site (2 vehicles per 15min)	93	105	1.0m
Panel Saw (x4)	97	103	1.0m
Edging Machine (x6)	105	113	1.0m
Drilling Machine (x7)	98	106	1.0m
Conveyors (x5)	102	109	1.0m
Dust Collectors (x5)	97	104	1.0m
Sorting & Packaging Machines (x8)	102	111	1.0m
Maximum Noise Level Assessment (LAmax), Morning Shoulder (5am – 7am)			
Door Slam	87		0.5m
Air Brake Release	108		0.5m
Delivery Impact	104		0.5m
Construction Fleet			
Item	Sound Power Levels dB LAeq(15min)	Scenario 1	Scenario 2
Handheld Grinder	105	x1	x2
Concrete Pump	106	x1	--
Concrete Agitator	109	x2	x1
Concrete Vibrator	113	x2	x1
Backhoe	111	--	x1
Franna Crane	98	--	x1
Elevated Work Platform	101	--	x2
Road Truck	103	--	x2
Fleet Total		**118**[4]	**117**[4]

Note 1: Height above the relative ground or building below source.

Note 2: Includes a duration adjustment assuming vehicles operate for three (3) minutes continuously within a period of 15-minutes.

Note 3: Modelled as a moving point source with adjustments for length of travelled path, velocity and number of movements in a 15-minute period.

Note 4: Modelled as an area source with adjustments for area and number of detailed point sources in a 15-minute period.

7 Noise Assessment Results

7.1 Operational Noise Assessment

Noise predictions from all sources have been quantified at surrounding receivers to the project site and are presented in **Table 15**.

Table 15 Noise Predictions – All Receivers

Residential Receivers							
Rec	Predicted Noise Level dB $LA_{eq(15min)}$			PNTL dB $LA_{eq(15min)}$			Compliant
	Day	Evening	Night	Day	Evening	Night	
R01	40	40	40	43	43	42	✓

Other Receivers				
Rec	Period	Predicted Noise Level dB $LA_{eq(15min)}$	PNTL dB $LA_{eq(15min)}$	Compliant
AR01	When in use	<35	53	✓
C01	When in use	<35	63	✓
I01	When in use	45	68	✓
I02	When in use	41	68	✓
I03	When in use	47	68	✓
I04	When in use	<35	68	✓
I05	When in use	38	68	✓
I06	When in use	41	68	✓
I07	When in use	41	68	✓

7.1.1 Maximum Noise Level Assessment

In assessing maximum noise events, typical LA_{max} noise levels from transient events were assessed at the nearest residential receivers. For the sleep disturbance assessment, a sound power level of 87dBA for a car door slam, 102dBA for truck impact and 108dBA for an air brake release were adopted for maximum noise level (LA_{max}) events. Predicted noise levels from LA_{max} events for assessed receivers are presented **Table 16.** The predicted levels show compliance with the maximum noise trigger levels.

Table 16 Maximum Noise Trigger Level Assessment (Night)[1]

Night Period					
Rec	Predicted Noise Level dB LAmax			NPI Trigger Level dB LAmax	Compliant
	Car Door Slam in Western Space	Heavy Vehicle Impact	Air Brake Release		
R01	45	48	36	52	✓

7.2 Construction Noise Assessment

Table 17 presents the results of modelled construction noise emissions. Predictions identify that emissions from construction have the potential to be above the noise management levels at the nearest residential receiver. Accordingly, recommendations to reduce the impact of construction noise emissions on surrounding receivers are provided in Section 8.

Table 17 Construction Noise Levels – All Receivers

Rec	Period[1]	Predicted Noise Level dB $LA_{eq(15min)}$		Management Level dB $LA_{eq(15min)}$	Compliant
		Scenario 1	Scenario 2		
R01	Day	64	63	48	X
AR01	Day	54	53	65	✓
C01	Day	53	52	70	✓
I01	Day	67	66	75	✓
I02	Day	63	62	75	✓
I03	Day	69	68	75	✓
I04	Day	49	48	75	✓
I05	Day	60	59	75	✓
I06	Day	61	60	75	✓
I07	Day	60	59	75	✓

Note 1: See Table 4 of this report for Recommended Standard Hours for Construction.

8 Construction Recommendations

The results of the Noise Assessment demonstrate that levels during standard construction hours are above the ICNG Noise Management Levels at the nearest residential receiver surrounding the project. Accordingly, it is recommended that noise management and mitigation measures be adopted during noise intensive construction activities to limit impacts on surrounding receivers.

Recommendations for consideration during construction activities for this project may include:

- implement boundary fences/retaining walls as early as possible to maximise their attenuation benefits to surrounding receivers;
- toolbox and induction of personnel prior to shift to discuss noise control measures that may be implemented to reduce noise emissions to the community;
- where possible use mobile screens or construction hording to act as barriers between construction works and receivers;
- all plant should be shut down when not in use. Plant to be parked/started at farthest point from relevant assessment locations;
- operating plant in a conservative manner (no over-revving);
- selection of the quietest suitable machinery available for each activity;
- avoidance of noisy plant/machinery working simultaneously where practicable;
- minimisation of metallic impact noise;
- all plant are to utilise a broadband reverse alarm in lieu of the traditional hi frequency type reverse alarm; and
- undertake letter box drops to notify receivers of potential works.

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9 Discussion and Conclusion

Muller Acoustic Consulting Pty Ltd (MAC) has completed a Noise Assessment (NA) to quantify emissions from the proposed Industrial Facility to be located at 47 Myoora Road, 3-5 & 7 Pinnacle Place ,Somersby NSW.

The assessment has quantified potential operation emissions pertaining to staff light vehicles, import/export heavy vehicle movements and internal processing operations.

The results of the Noise Assessment demonstrate that noise emissions from the operation would satisfy the relevant trigger levels at all assessed receivers once noise controls for the project are implemented (see Section 6.1):

- The project is constructed as per the site design and plans, which includes the barrier attenuation provided by the project buildings orientation (as presented in Appendix B).

Furthermore, sleep disturbance is not anticipated, as emissions from maximum noise events (ie impact noise from staff car door slams, delivery impacts and air brake releases are predicted to satisfy the NPIs maximum noise trigger levels.

Modelled noise emissions from construction activities identify that predicted noise emissions are above the applicable construction management levels at the nearest residential receiver. Therefore, noise management measures are provided in Section 8 of this report to reduce potential impacts on surrounding receivers.

In summary, the Noise Assessment supports the Development Application for the project incorporating the recommendations and controls outlined in this report.

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Appendix A – Glossary of Terms

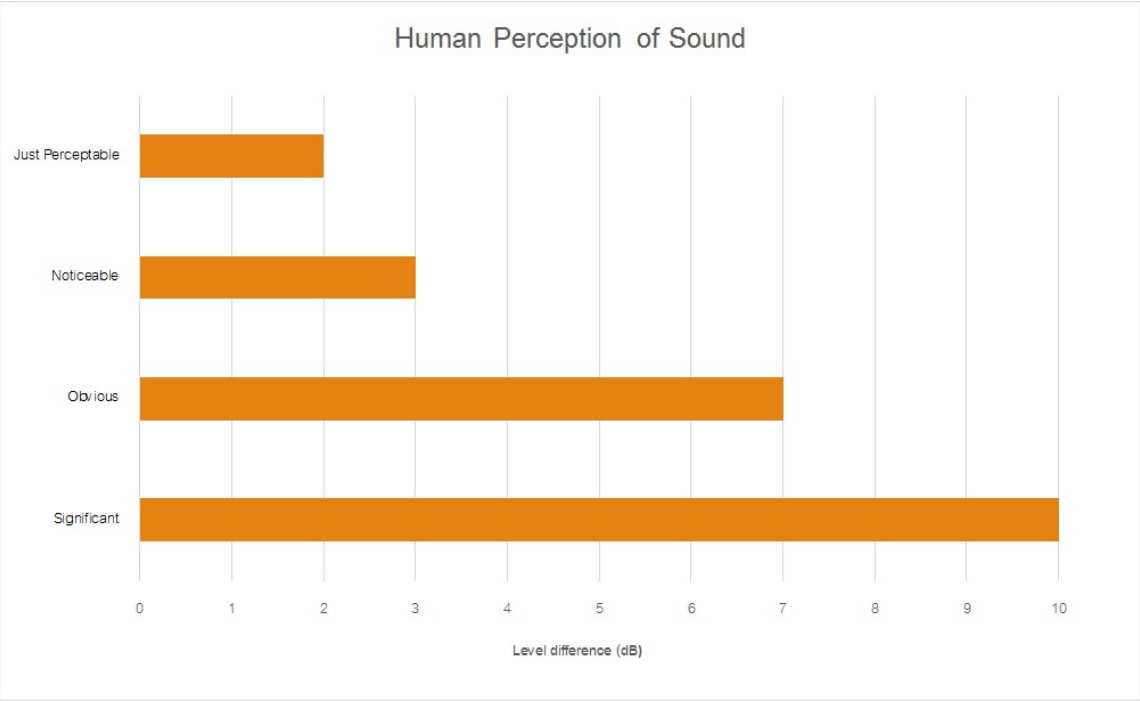
A number of technical terms have been used in this report and are explained in **Table A1**.

Table A1 Glossary of Acoustical Terms	
Term	Description
1/3 Octave	Single octave bands divided into three parts
Octave	A division of the frequency range into bands, the upper frequency limit of each band being twice the lower frequency limit.
ABL	Assessment Background Level (ABL) is defined in the NPI as a single figure background level for each assessment period (day, evening and night). It is the tenth percentile of the measured L90 statistical noise levels.
Ambient Noise	The total noise associated with a given environment. Typically, a composite of sounds from all sources located both near and far where no particular sound is dominant.
A Weighting	A standard weighting of the audible frequencies designed to reflect the response of the human ear to sound.
Background Noise	The underlying level of noise present in the ambient noise, excluding the noise source under investigation, when extraneous noise is removed. This is usually represented by the LA90 descriptor
dBA	Noise is measured in units called decibels (dB). There are several scales for describing noise, the most common being the 'A-weighted' scale. This attempts to closely approximate the frequency response of the human ear.
dB(Z), dB(L)	Decibels Z-weighted or decibels Linear (unweighted).
Extraneous Noise	Sound resulting from activities that are not typical of the area.
Hertz (Hz)	The measure of frequency of sound wave oscillations per second - 1 oscillation per second equals 1 hertz.
LA10	A sound level which is exceeded 10% of the time.
LA90	Commonly referred to as the background noise, this is the level exceeded 90% of the time.
LAeq	Represents the average noise energy or equivalent sound pressure level over a given period.
LAmax	The maximum sound pressure level received at the microphone during a measuring interval.
Masking	The phenomenon of one sound interfering with the perception of another sound. For example, the interference of traffic noise with use of a public telephone on a busy street.
RBL	The Rating Background Level (RBL) as defined in the NPI, is an overall single figure representing the background level for each assessment period over the whole monitoring period. The RBL, as defined is the median of ABL values over the whole monitoring period.
Sound power level (Lw or SWL)	This is a measure of the total power radiated by a source in the form of sound and is given by 10.log10 (W/Wo). Where W is the sound power in watts to the reference level of 10^{-12} watts.
Sound pressure level (Lp or SPL)	the level of sound pressure; as measured at a distance by a standard sound level meter. This differs from Lw in that it is the sound level at a receiver position as opposed to the sound 'intensity' of the source.

Table A2 provides a list of common noise sources and their typical sound level.

Table A2 Common Noise Sources and Their Typical Sound Pressure Levels (SPL), dBA	
Source	Typical Sound Pressure Level
Threshold of pain	140
Jet engine	130
Hydraulic hammer	120
Chainsaw	110
Industrial workshop	100
Lawnmower (operator position)	90
Heavy traffic (footpath)	80
Elevated speech	70
Typical conversation	60
Ambient suburban environment	40
Ambient rural environment	30
Bedroom (night with windows closed)	20
Threshold of hearing	0

Figure A1 – Human Perception of Sound



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Appendix B – Site Plans

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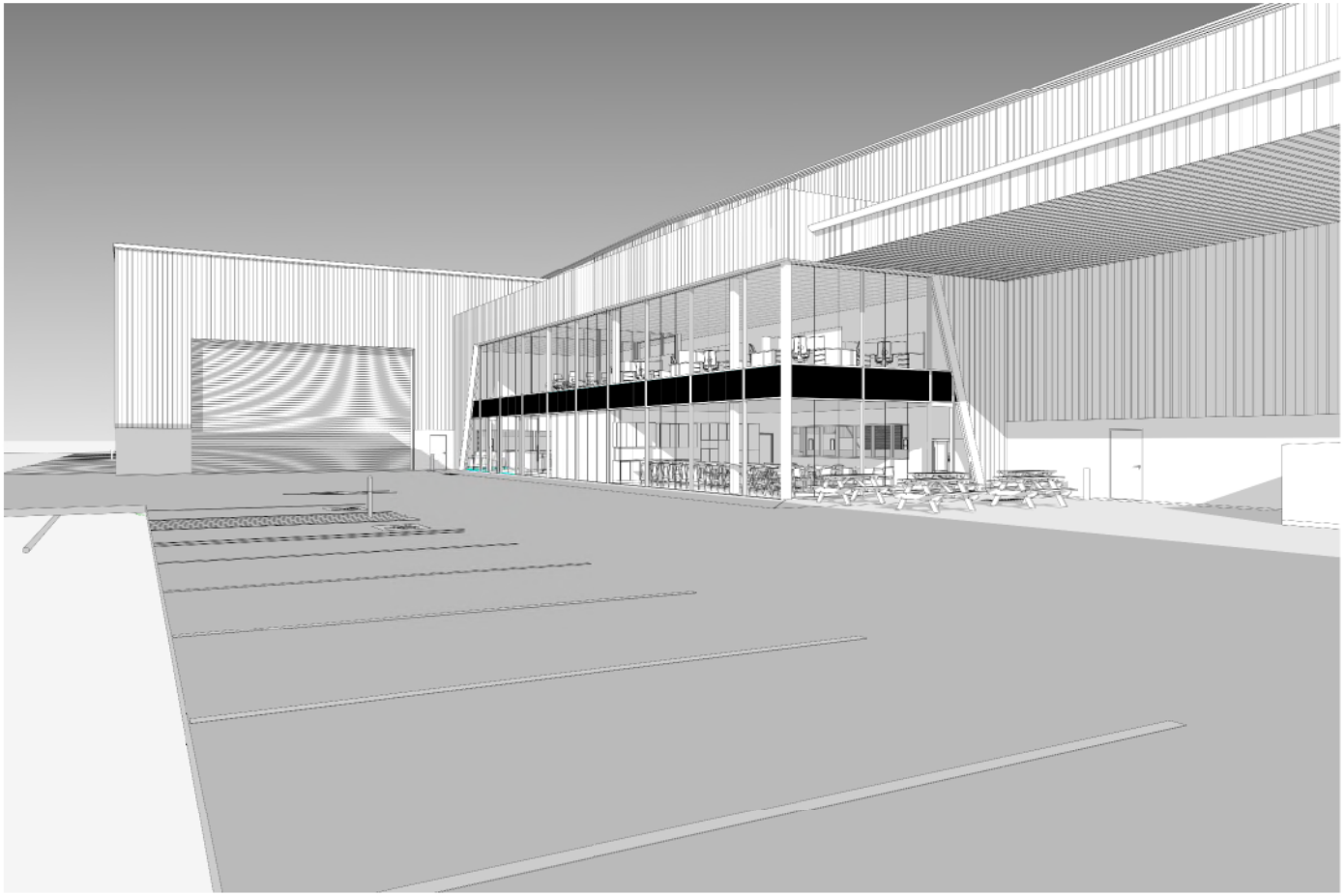
SHEET No.	DRAWING TITLE	ISSUE	Current Revision Description
DA000	PROJECT COVER PAGE	A	DA Application
DA001	LOCATION PLAN	A	DA Application
DA002	SURVEY PLAN	A	DA Application
DA003	SITE ANALYSIS PLAN	A	DA Application
DA004	SITE PLAN	A	DA Application
DA005	STAGING PLAN	A	DA Application
DA100	GROUND FLOOR PLAN	A	DA Application
DA101	FIRST FLOOR PLAN	A	DA Application
DA102	OFFICE LAYOUT GROUND AND FIRST FLOOR	A	DA Application
DA103	LUNCH ROOM 2' AND AMENITIES	A	DA Application
DA110	ROOF PLAN	A	DA Application
DA150	AREA CALCULATION PLANS	A	DA Application
DA160	SERVICES PLAN	A	DA Application
DA200	ELEVATIONS	A	DA Application
DA300	SECTION	A	DA Application
DA500	VEHICLE MOVEMENT PLAN	A	DA Application
DA800	PERSPECTIVE RENDERINGS	A	DA Application



GENERAL NOTES

DRAWINGS TO BE READ IN CONJUNCTION WITH BUT NOT LIMITED TO ALL STRUCTURAL ENGINEERS, STORMWATER ENGINEERS, LANDSCAPE ARCHITECTS, & OTHER ASSOCIATED PLANS & REPORTS. REFER TO SECTION J REPORT FOR ADDITIONAL REQUIREMENTS NOTED ON THE DRAWINGS.

NOTE: ALL DIMENSIONS & SETOUTS ARE THE BE VERIFIED ON SITE & ALL OMISSIONS OR ANY DISCREPANCIES TO BE NOTIFIED TO THE ARCHITECT OR OWNER. FIGURED DIMENSIONS TO BE USED AT ALL TIMES. DO NOT SCALE DIMENSION OF DRAWING.

NCC 2022 & AUSTRALIAN STANDARD COMPLIANCE NOTES:

- ALL CONSTRUCTION TO COMPLY WITH FIRE HAZARD PROPERTIES OF THE NCC2022 SPECIFICATION C2D11.
- FIRE SEPARATION OF ENCLOSURES UNDER STAIRWAYS TO BE IN ACCORDANCE WITH D3D9 / SPEC C2D9 & C4D5.
- BUILDING TO BE PROTECTED THROUGHOUT BY SPRINKLER SYSTEM COMPLYING WITH SPEC. E1D12.
- PERIMETER VEHICULAR ACCESS TO COMPLY WITH C3D5(b).
- DOOR THRESHOLDS TO BE IN ACCORDANCE WITH D3D15.
- SWINGING DOORS TO BE IN ACCORDANCE WITH D3D25.
- DOOR HARDWARE TO BE IN ACCORDANCE WITH D3D26.
- GENERAL ACCESS REQUIREMENTS TO BE IN ACCORDANCE WITH D4D3 & AS1428.1
- DISABLED PARKING TO BE IN ACCORDANCE WITH D4D9 & AS1428.1
- SIGNAGE FOR ACCESSIBLE FACILITIES TO BE IN ACCORDANCE WITH SPEC D4D7 & AS1428.1
- TACTILE INDICATORS TO BE IN ACCORDANCE WITH D4D9 & AS1428.1
- PORTABLE FIRE EXTINGUISHERS TO BE IN ACCORDANCE WITH AS2118.1:2017
- FIRE HYDRANT SYSTEM AS2419.1:2005 & AS2419.1:2017 CLAUSE 3.2.3.3
- WATER PROOFING AND WET AREAS TO BE IN ACCORDANCE WITH AS3740, AS2870 & NCC SPECIFICATION F2D2

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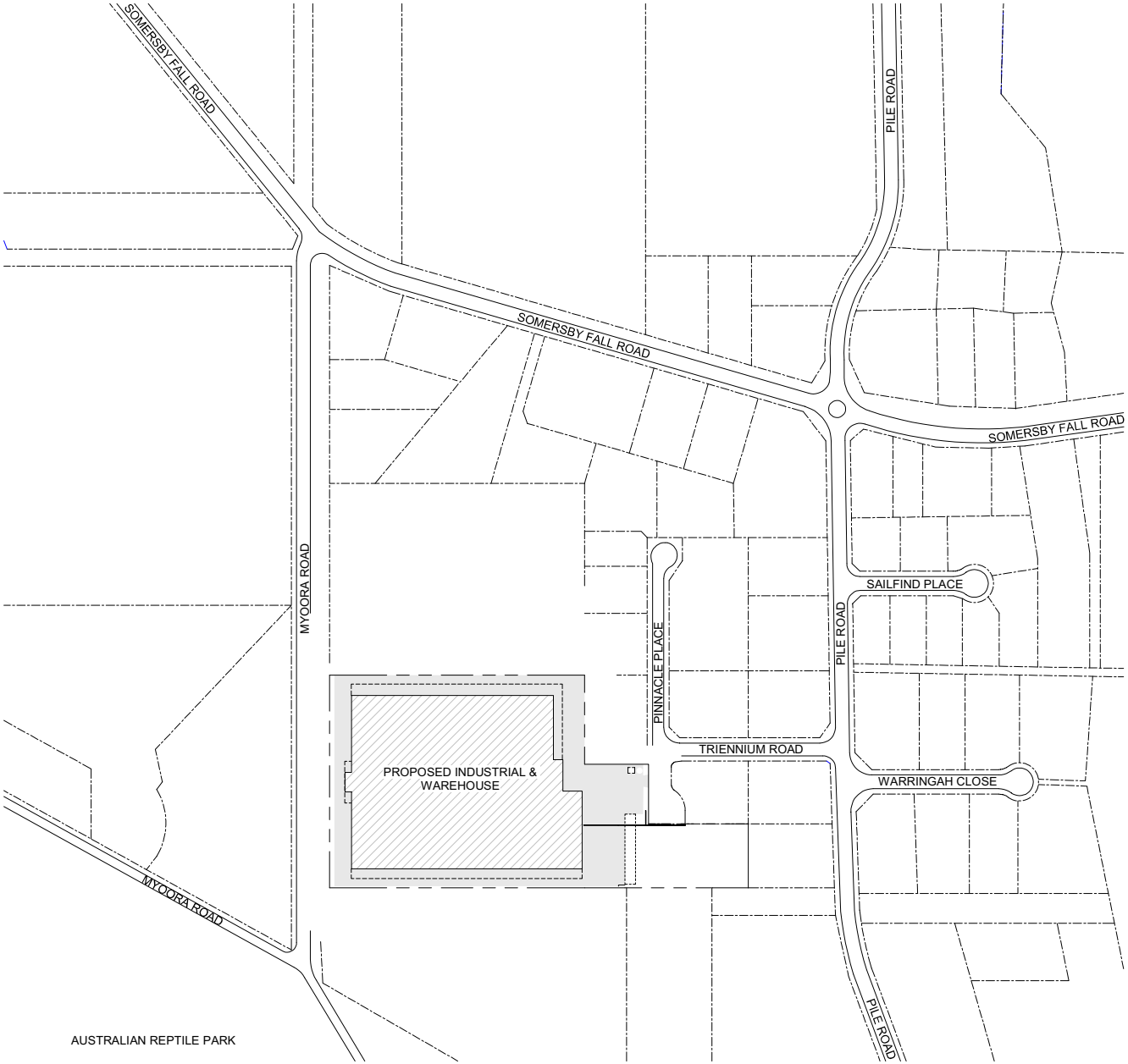

LOCATION PLAN
1 : 2000

LEGEND

A.F.F.L. - ABOVE FINISHED FLOOR LEVEL
A.P. - ACCESS PANEL (600x600 UNO)
B.O.A. - BOTTOM OF AWNING
C.O.S. - CONFIRM ON SITE
D.P. - DOWNPIPE
E.G.L. - EXISTING GROUND LINE
E.Q. - EQUAL
E.X. - EXISTING
F.C.L. - FINISHED CEILING LEVEL
F.F. - FIRST FLOOR
F.F.L. - FINISHED FLOOR LEVEL
F.W. - FLOOR WASTE
G.P. - GAS POINT
G.D.1 - GRATED DRAIN
G.F. - GROUND FLOOR LEVEL
H.W.U. - HOT WATER UNIT
O - OVER
O.E. - OR EQUIVALENT
O.F. - OVERFLOW
R.L. - RELATIVE LEVEL
R.W.T. - RAINWATER TANK
S.C. - STRUCTURAL COLUMN
T.O.M. - TOP OF MEZZANINE
T.O.R. - TOP OF ROOF
T.O.W. - TOP OF WALL
U - UNDER
U.N.O. - UNLESS NOTED OTHERWISE
X - CRITICAL DIMENSION

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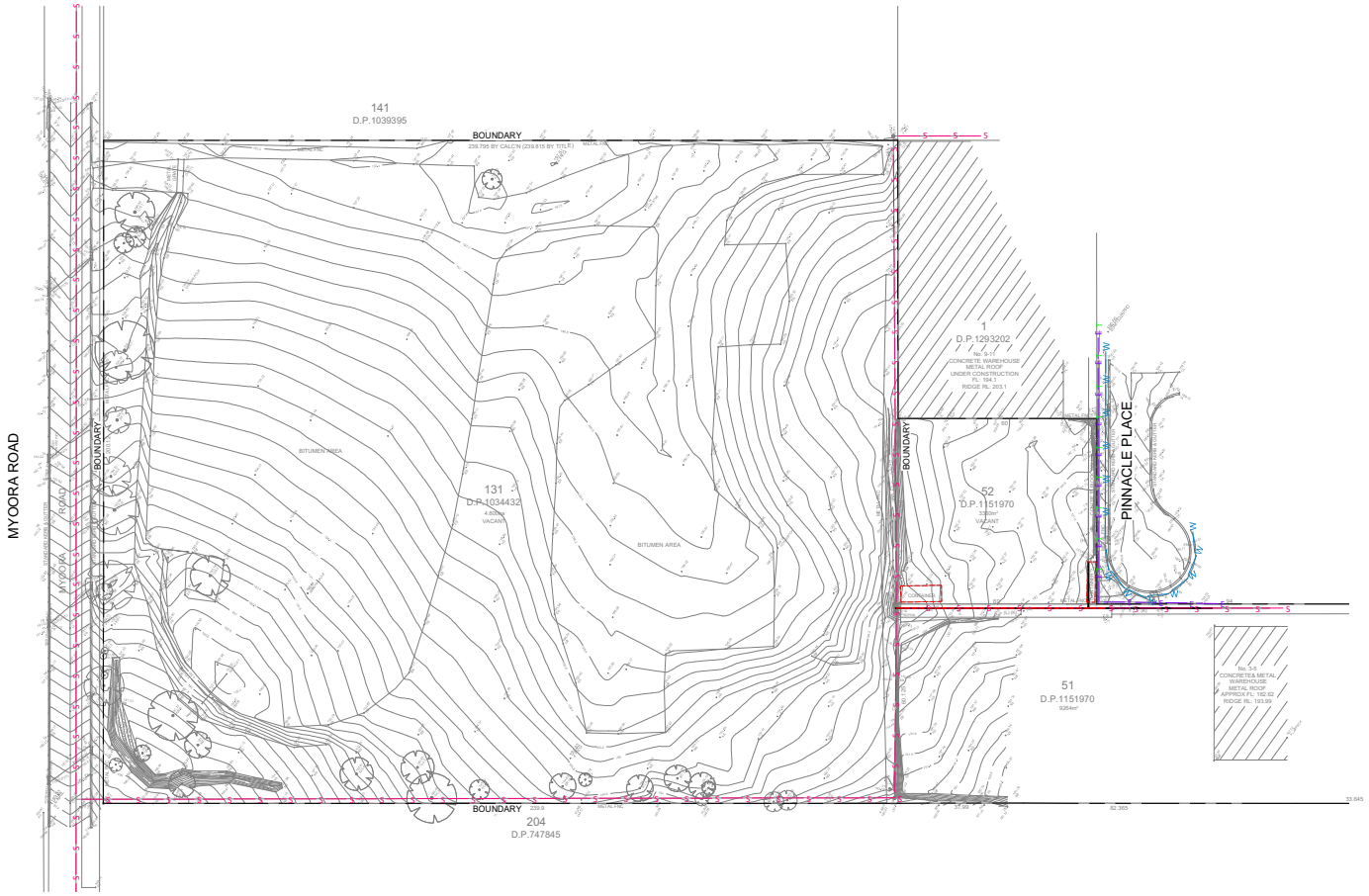

SITE SURVEY PLAN
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ELECTRICAL LINE	E
FENCE	/
GAS LINE	G
SEWER LINE	S
STORM WATER LINE	SW
TELECOM LINE	T
WATER LINE	W
DEMOLITION	
SITE BOUNDARY	

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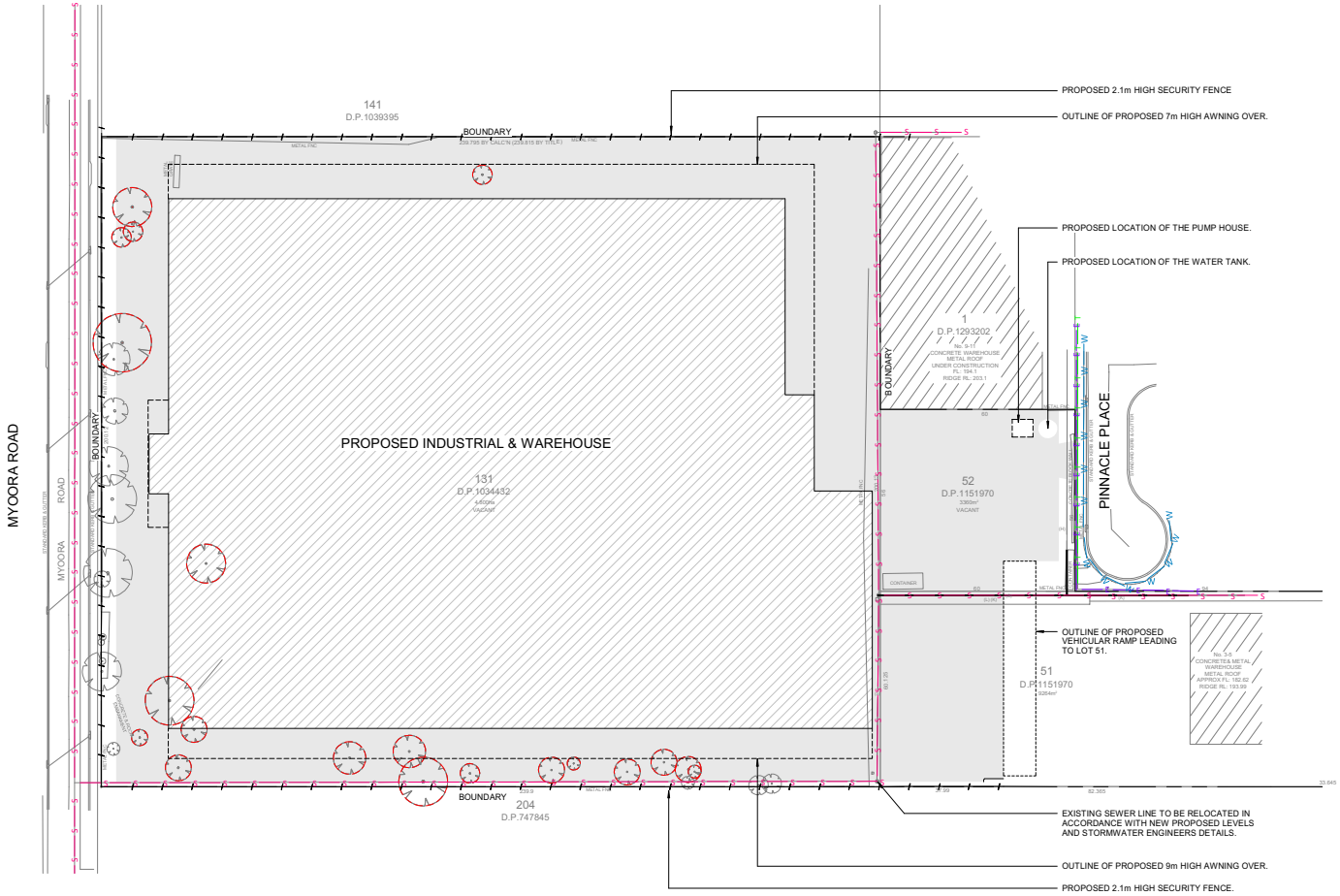

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SITE ANALYSIS PLAN
1 : 750

LEGEND

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X - CRITICAL DIMENSION

TREE - REMOVED	
TREE - RETAIN	
ELECTRICAL LINE	E
FENCE	/
GAS LINE	G
SEWER LINE	S
STORM WATER LINE	SW
TELECOM LINE	T
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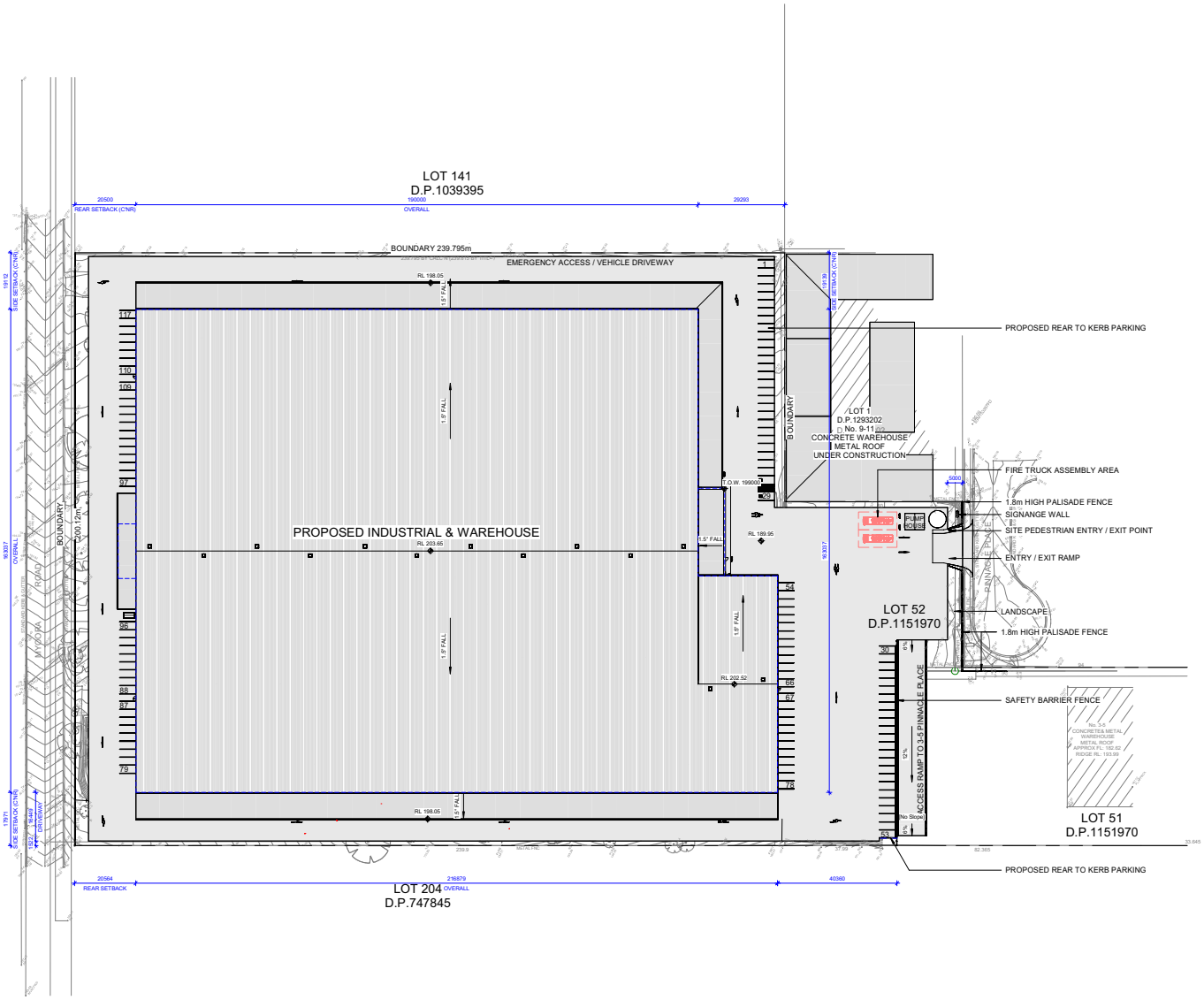

SITE PLAN
1 : 750

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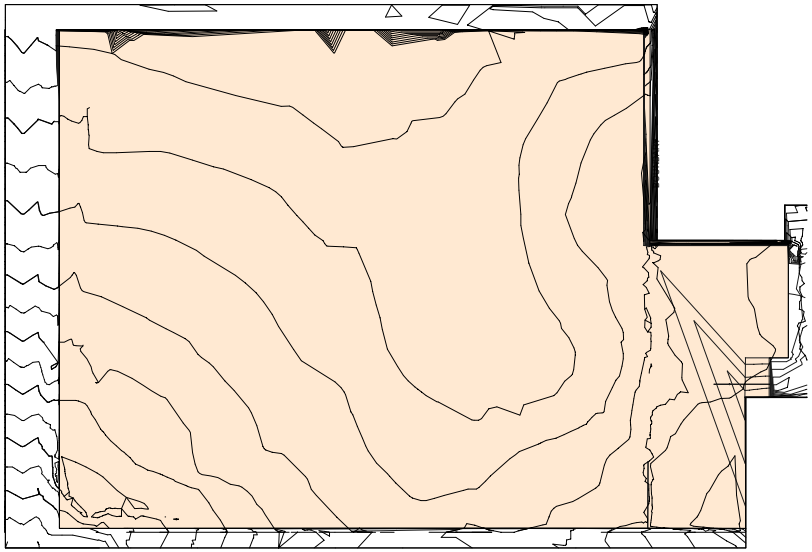
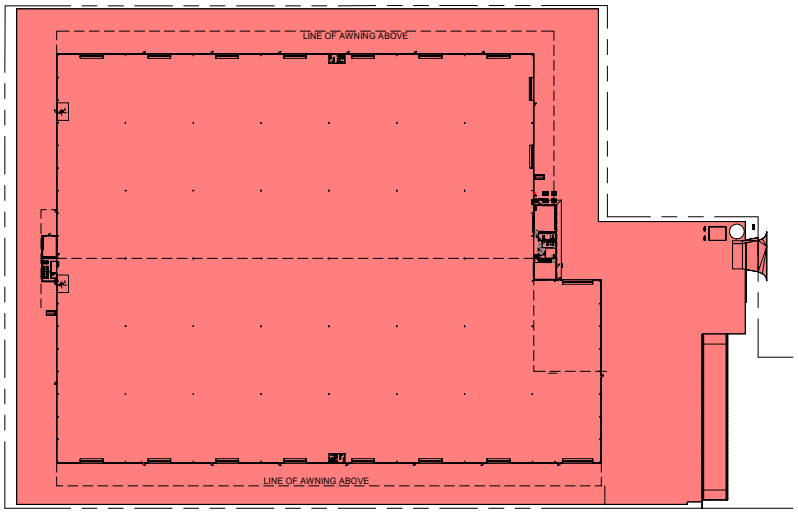
REVISION: A



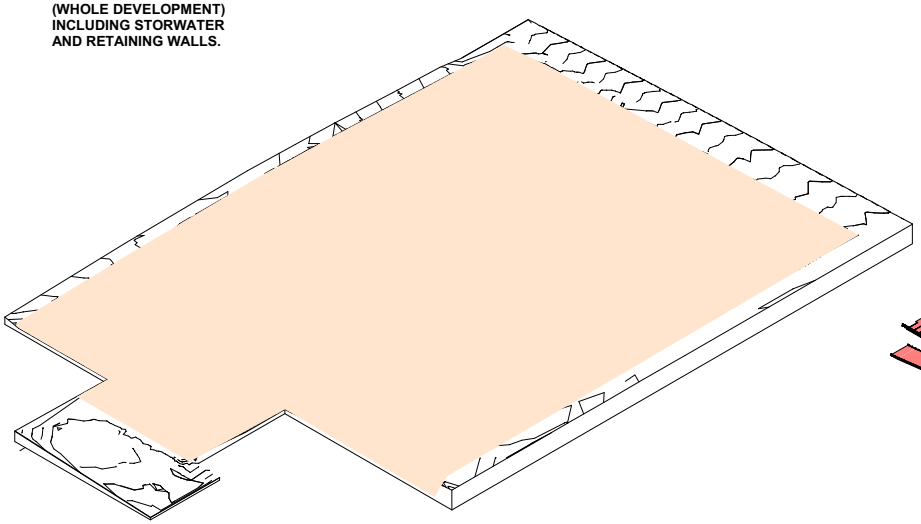
1 DA000 STAGE 1
1 : 1000



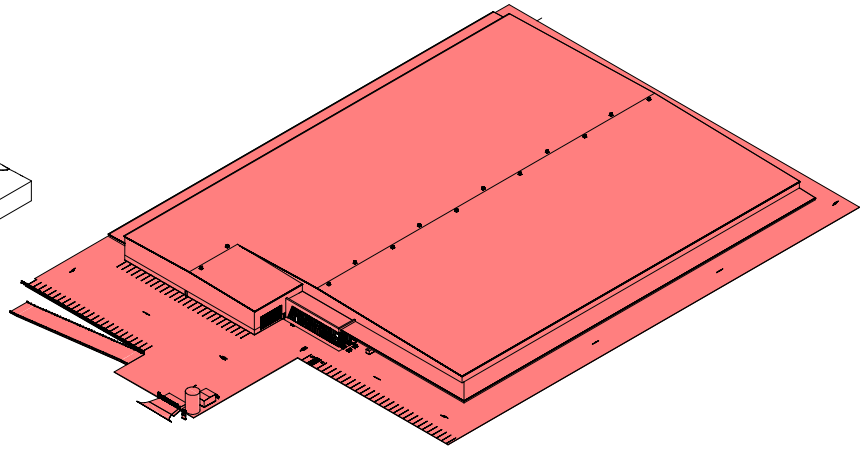
2 DA000 STAGE 2
1 : 1000

NOTE:
STAGE 1

BULK EARTHWORKS (WHOLE DEVELOPMENT) INCLUDING STORWATER AND RETAINING WALLS.



3 DA000 STAGE 1



4 DA000 STAGE 2

ISSUE	AMENDMENT	DATE
A	DA Application	12/06/24

A BORG COMPANY
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Website: www.spaceurban.com.au

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STATUS:
DA APPLICATION

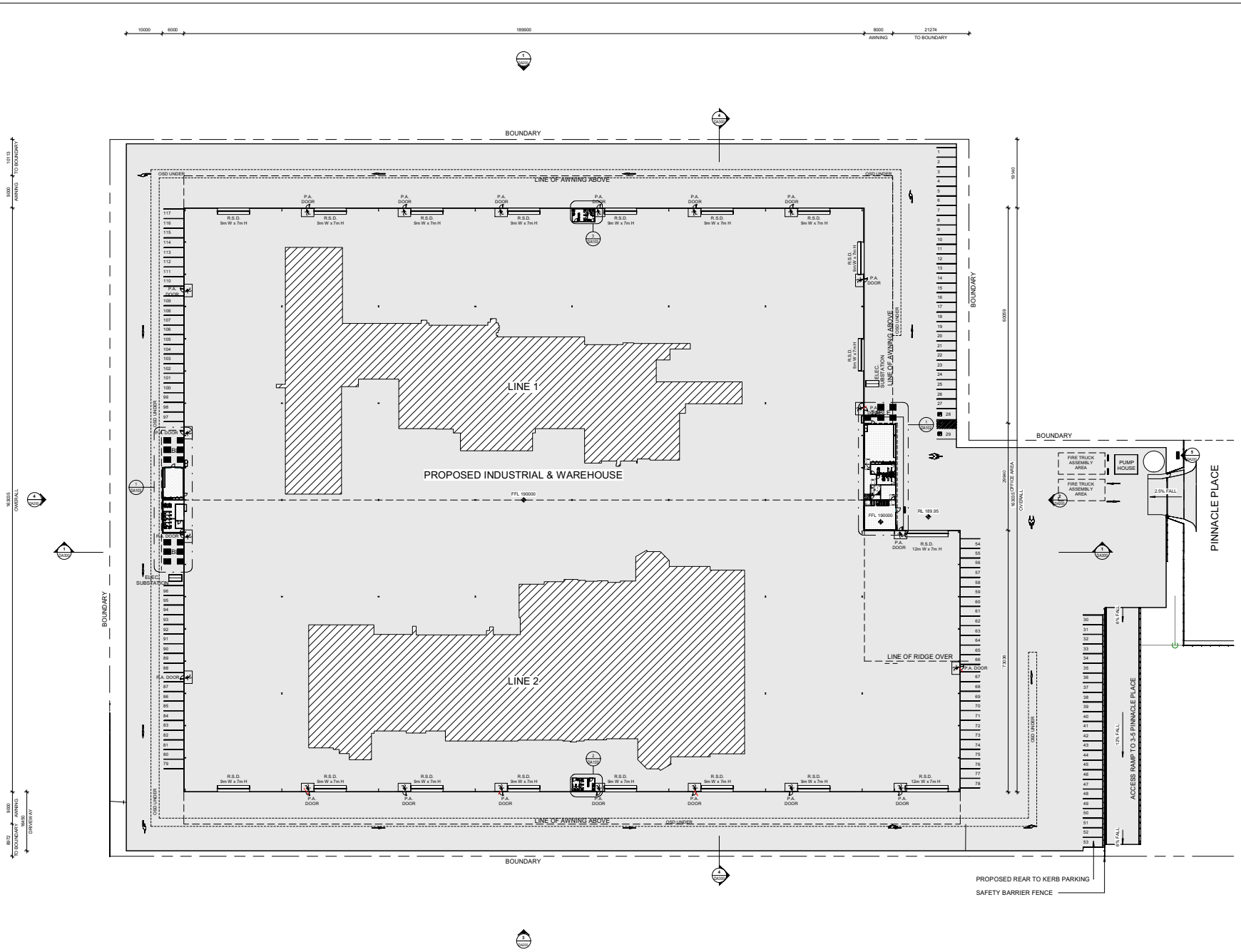
CLIENT:
SPACE URBAN

PROJECT:
PROPOSED INDUSTRIAL & WAREHOUSE

7 PINNACLE PLACE
SOMERSBY, NSW 2250

DRAWING TITLE:
STAGING PLAN

SCALE: As indicated@A1
JOB No.: JMPI-0062
DRAWN BY: U.J./J.B.
DRAWING No. DA005
REVISION: A



GROUND FLOOR PLAN
1 : 500

LEGEND

A.F.F.L. - ABOVE FINISHED FLOOR LEVEL
A.P. - ACCESS PANEL (600x600 UNO)
B.O.A. - BOTTOM OF AWNING
C.O.S. - CONFIRM ON SITE
D.P. - DOWNPIPE
E.G.L - EXISTING GROUND LINE
E.Q. - EQUAL
E.X. - EXISTING
F.C.L. - FINISHED CEILING LEVEL
F.F. - FIRST FLOOR
F.F.L. - FINISHED FLOOR LEVEL
F.W. - FLOOR WASTE
G.P. - GAS POINT
G.D.1 - GRATED DRAIN
G.F. - GROUND FLOOR LEVEL
H.W.U. - HOT WATER UNIT
O - OVER
O.E. - OR EQUIVALENT
O.F. - OVERFLOW
R.L - RELATIVE LEVEL
R.W.T. - RAINWATER TANK
S.C. - STRUCTURAL COLUMN
T.O.M. - TOP OF MEZZANINE
T.O.R - TOP OF ROOF
T.O.W. - TOP OF WALL
U - UNDER
U.N.O. - UNLESS NOTED OTHERWISE
X - CRITICAL DIMENSION

ISSUE	AMENDMENT	DATE
A	DA Application	12/06/24

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STATUS: **DA APPLICATION**

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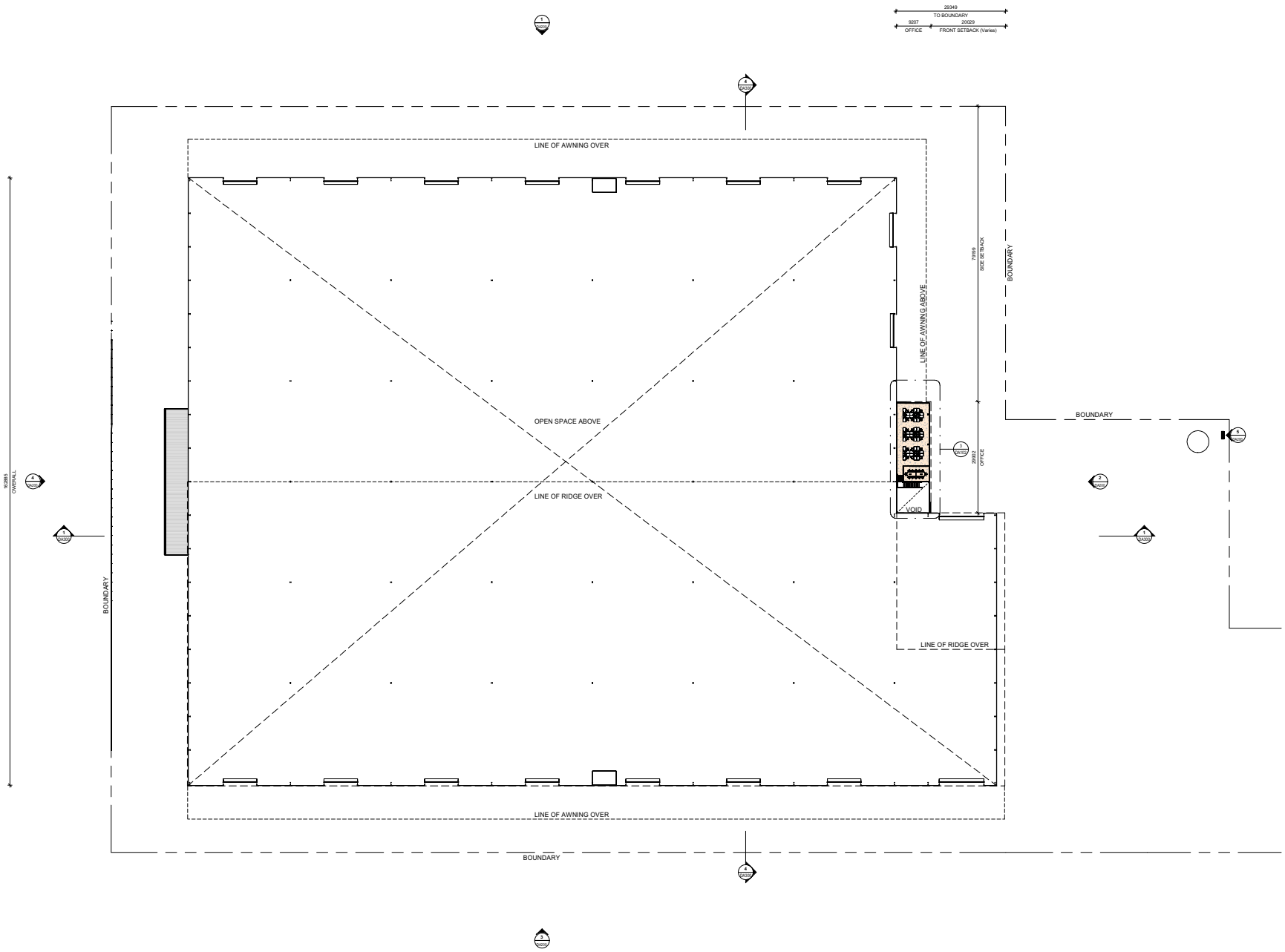
PROJECT: PROPOSED INDUSTRIAL & WAREHOUSE
7 PINNACLE PLACE
SOMERSBY, NSW 2250

DRAWING TITLE: **GROUND FLOOR PLAN**

SCALE: 1 : 500@A1
JOB No.: JMPI-0062
DRAWN BY: U.J./J.B.
DRAWING No. DA100
REVISION: A



FIRST FLOOR PLAN
1 : 500

LEGEND

A.F.F.L. - ABOVE FINISHED FLOOR LEVEL
A.P. - ACCESS PANEL (600x600 UNO)
B.O.A. - BOTTOM OF AWNING
C.O.S. - CONFIRM ON SITE
D.P. - DOWNPIPE
E.G.L. - EXISTING GROUND LINE
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T.O.R - TOP OF ROOF
T.O.W. - TOP OF WALL
U - UNDER
U.N.O. - UNLESS NOTED OTHERWISE
X - CRITICAL DIMENSION

ELECTRICAL LINE	E
FENCE	/
GAS LINE	G
SEWER LINE	S
STORM WATER LINE	SW
TELECOM LINE	T
WATER LINE	W
DEMOLITION	
SITE BOUNDARY	

ISSUE	AMENDMENT	DATE
A	DA Application	12/06/24

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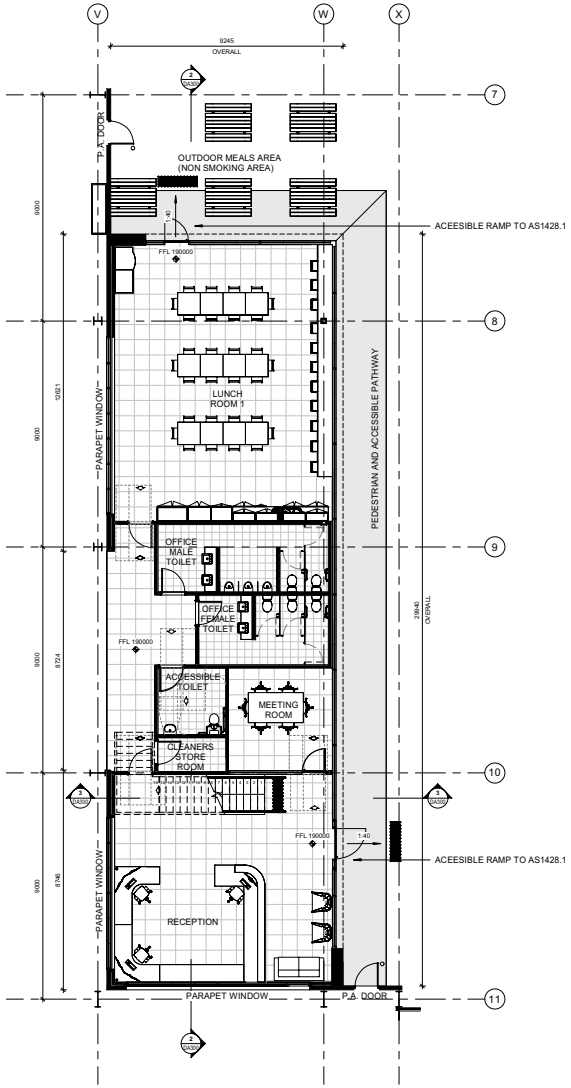
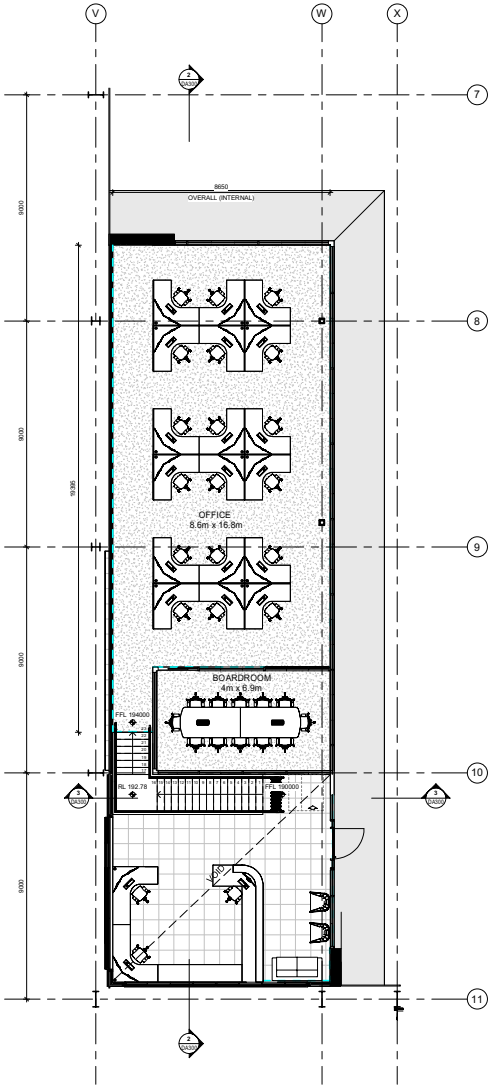
7 PINNACLE PLACE
SOMERSBY, NSW 2250

DRAWING TITLE:
FIRST FLOOR PLAN

SCALE: 1 : 500@A1
DRAWING No. DA101
JOB No.: JMPI-0062
DRAWN BY: U.J./J.B.
REVISION: A



1 GROUND FLOOR OFFICE LAYOUT
1 : 100



3 FIRST FLOOR OFFICE LAYOUT
1 : 100

LEGEND

A.F.F.L. - ABOVE FINISHED FLOOR LEVEL
A.P. - ACCESS PANEL (600x600 UNO)
B.O.A. - BOTTOM OF AWNING
C.O.S. - CONFIRM ON SITE
D.P. - DOWNPIPE
E.G.L. - EXISTING GROUND LINE
E.Q. - EQUAL
E.X. - EXISTING
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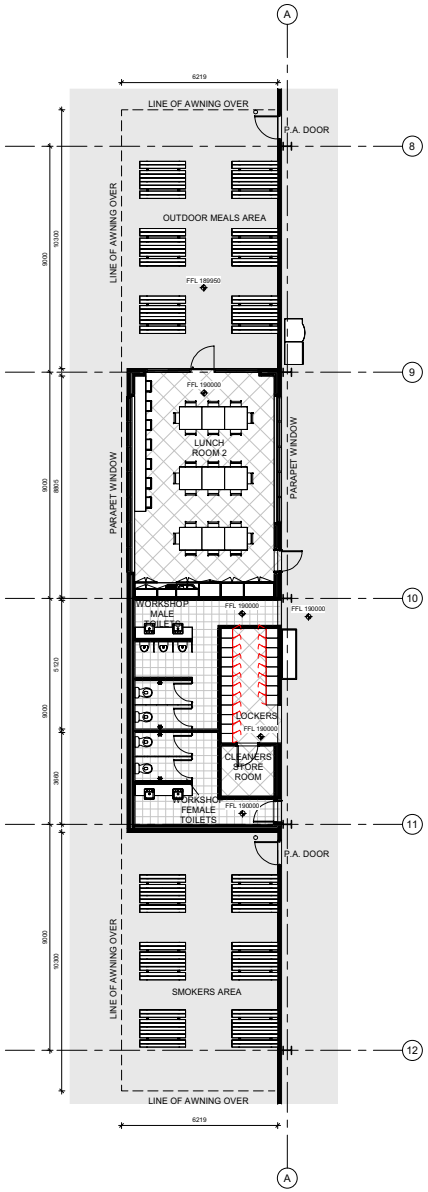
PROPOSED INDUSTRIAL & WAREHOUSE

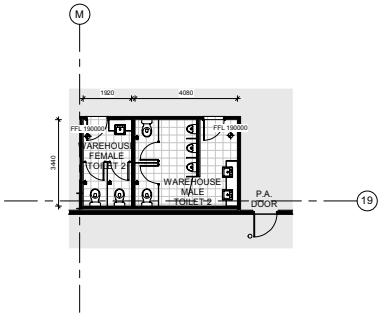
7 PINNACLE PLACE
SOMERSBY, NSW 2250

DRAWING TITLE:
OFFICE LAYOUT GROUND AND FIRST FLOOR

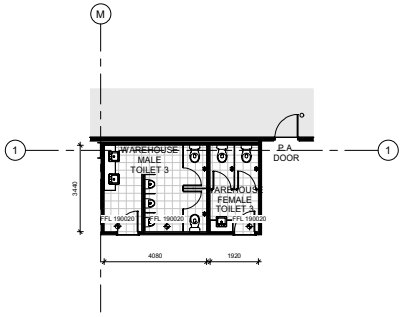
SCALE: 1 : 100@A1
DRAWING No. DA102
JOB No.: JMPI-0062
DRAWN BY: U.J./J.B.
REVISION: A



1 DA103 **REAR LUNCHROOM & AMENITIES**
1 : 100



2 DA103 **WAREHOUSE AMENITIES 1**
1 : 100



3 DA103 **WAREHOUSE AMENITIES 2**
1 : 100

LEGEND

A.F.F.L. - ABOVE FINISHED FLOOR LEVEL
A.P. - ACCESS PANEL (600x600 UNO)
B.O.A. - BOTTOM OF AWNING
C.O.S. - CONFIRM ON SITE
D.P. - DOWNPIPE
E.G.L. - EXISTING GROUND LINE
E.Q. - EQUAL
E.X. - EXISTING
F.C.L. - FINISHED CEILING LEVEL
F.F. - FIRST FLOOR
F.F.L. - FINISHED FLOOR LEVEL
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T.O.R. - TOP OF ROOF
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U - UNDER
U.N.O. - UNLESS NOTED OTHERWISE
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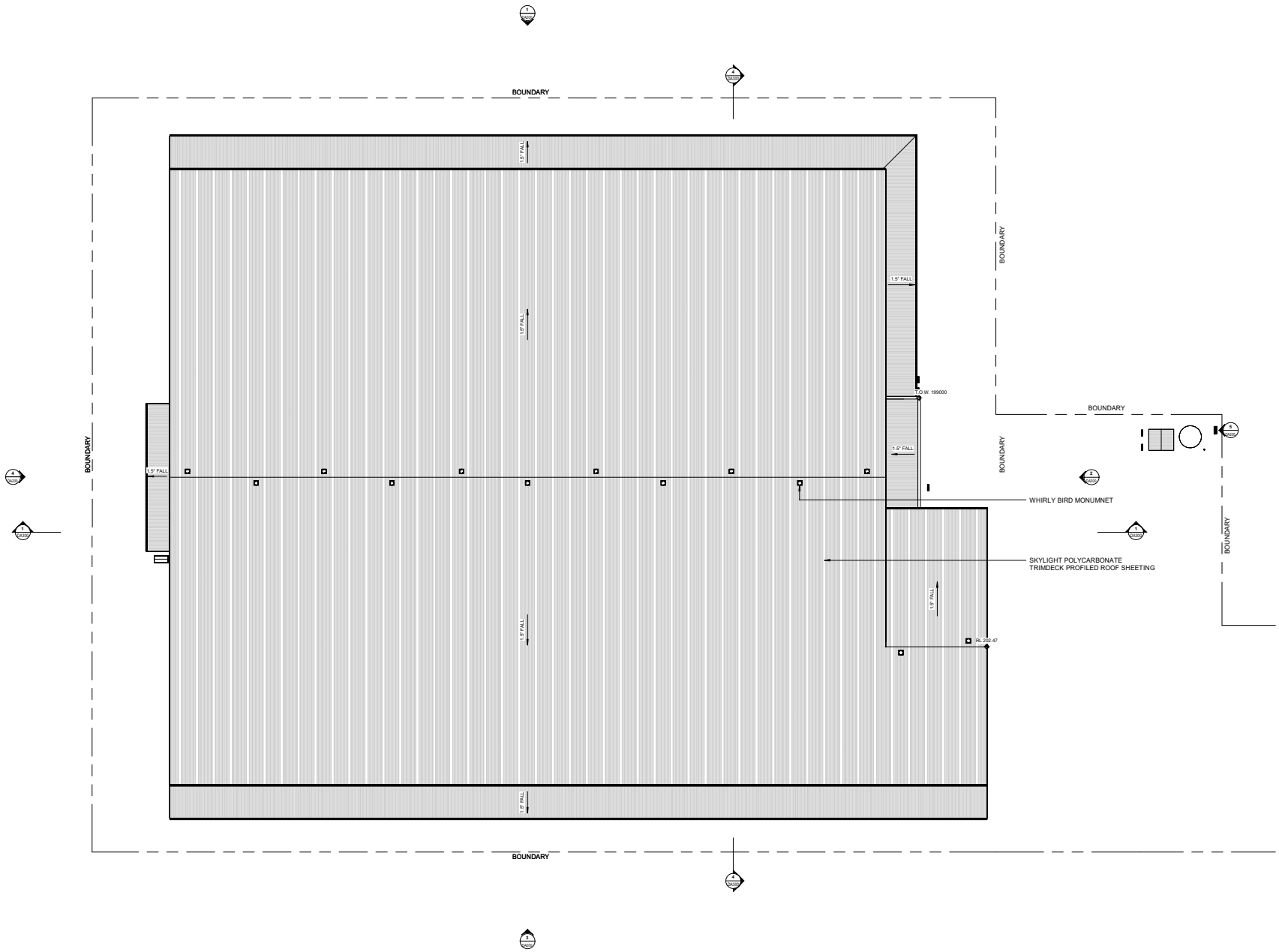
7 PINNACLE PLACE
SOMERSBY, NSW 2250

DRAWING TITLE:
LUNCH ROOM 2 AND AMENITIES

SCALE: 1 : 100@A1
DRAWING No. DA103
JOB No.: JMPI-0062
DRAWN BY: U.J./J.B.
REVISION: A



ROOF PLAN
1 : 500

LEGEND

A.F.F.L. - ABOVE FINISHED FLOOR LEVEL
A.P. - ACCESS PANEL (600x600 UNO)
B.O.A. - BOTTOM OF AWNING
C.O.S. - CONFIRM ON SITE
D.P. - DOWNPIPE
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X - CRITICAL DIMENSION

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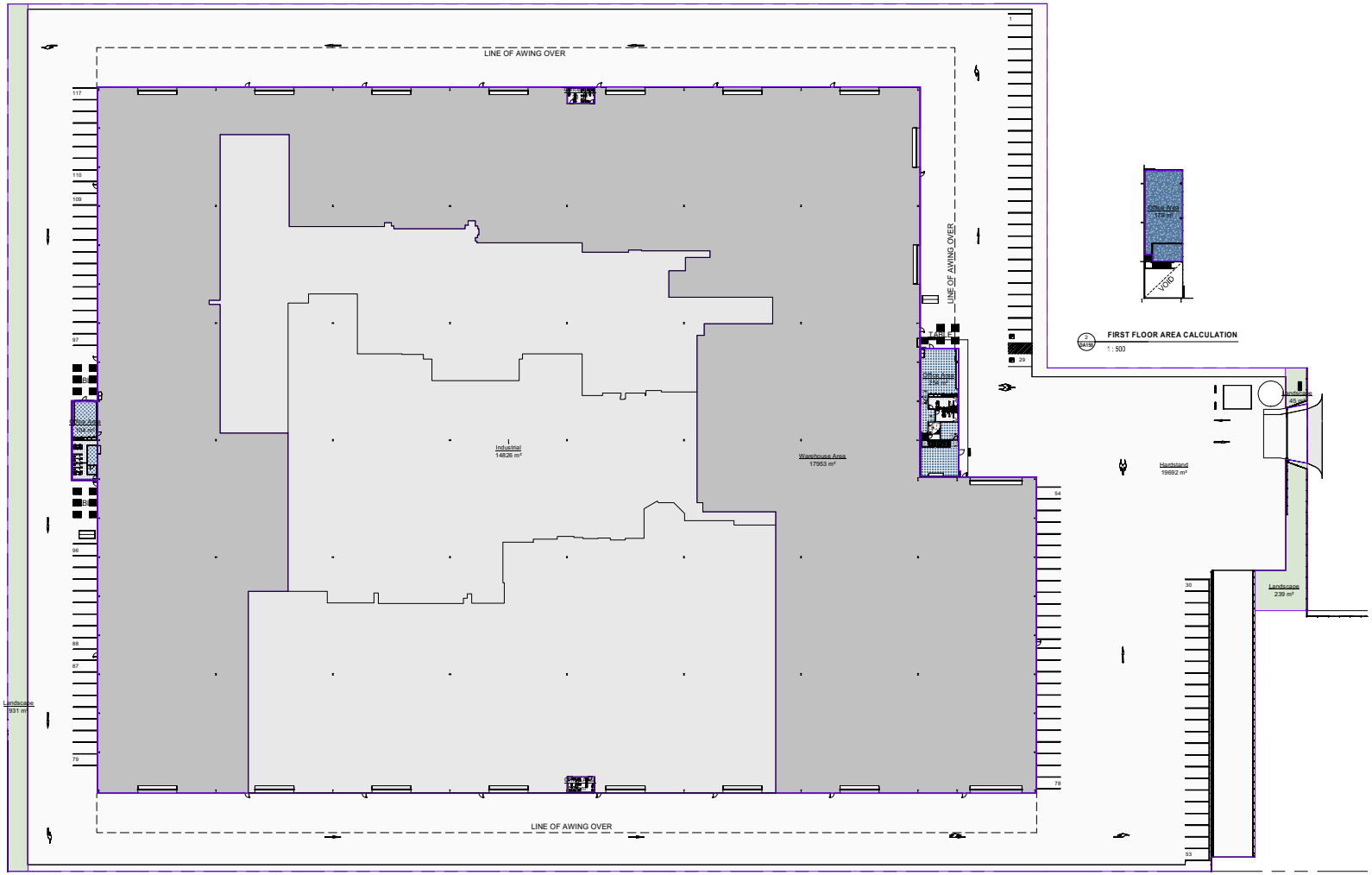
7 PINNACLE PLACE
SOMERSBY, NSW 2250

DRAWING TITLE:
ROOF PLAN

SCALE: 1 : 500@A1
DRAWING No. DA110
JOB No.: JMPI-0062
DRAWN BY: U.J./J.B.
REVISION: A



2 DA150 **FIRST FLOOR AREA CALCULATION**
1 : 500

1 DA150 **GROUND FLOOR AREA CALCULATION**
1 : 500

AREA LEGEND

- Hardstand
- Industrial
- Landscape
- Office Area
- Warehouse Area

AREA SCHEDULE - GROSS BUILDING

Level	Name	Area
Ground Floor	Hardstand	19692 m²
		19692 m²
Ground Floor	Industrial	14826 m²
		14826 m²
Ground Floor	Landscape	931 m²
Ground Floor	Landscape	239 m²
Ground Floor	Landscape	45 m²
		1215 m²
First Floor	Office Area	178 m²
Ground Floor	Office Area	104 m²
Ground Floor	Office Area	254 m²
Ground Floor	Office Area	21 m²
Ground Floor	Office Area	21 m²
		579 m²
Ground Floor	Warehouse Area	17953 m²
		17953 m²
Grand total		54264 m²

Total Site Area: **54086m²**

Floor Coverage Area: 579m² (Office)
14826m² (Industrial)
17953m² (Warehouse)
Total: 33358m²

FSR 33358m² / 54086m²
0.616 ~ **0.62:1**

Site Areas 19679m² (Hardstand Area)
14826m² (Industrial Area)
401m² (GF Office Area)
17953m² (Warehouse Area)
Total: 53037m²

Site Coverage (53037m² / 54086m²) * 100
98.1%

PARKING REQUIREMENTS

REQUIRED NUMBER OF PARKINGS 223

INDUSTRIAL	148
WAREHOUSE AREA	60
OFFICE AREA	14
TOTAL PROVIDED PARKINGS	**117**
DIFFERENCE	-106

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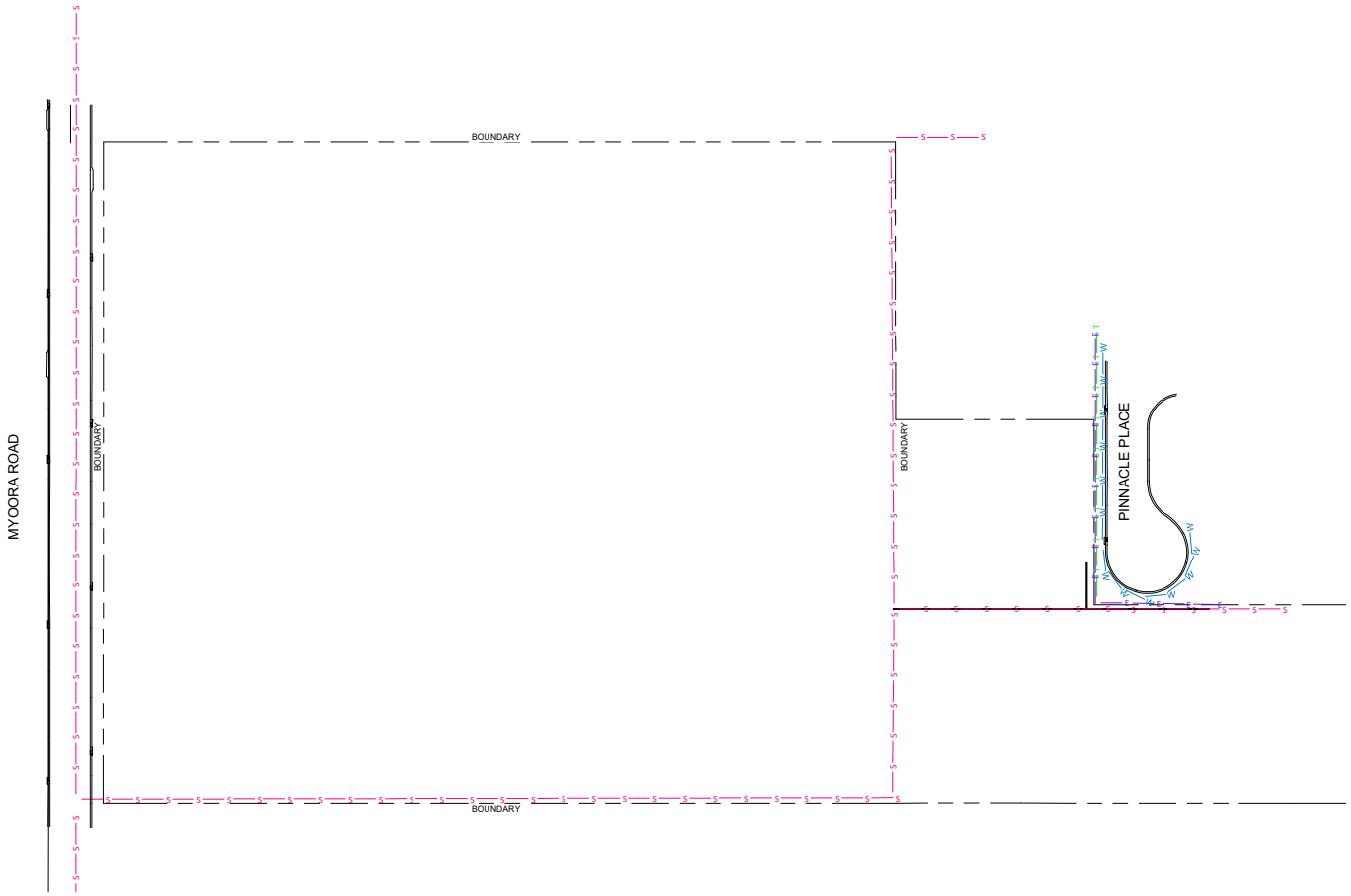
7 PINNACLE PLACE
SOMERSBY, NSW 2250

DRAWING TITLE:
AREA CALCULATION PLANS

SCALE: 1 : 500@A1
DRAWING No. DA150
JOB No.: JMPI-0062
DRAWN BY: U.J./J.B.
REVISION: A



DA160 **SERVICES PLAN**
1 : 750

LEGEND

A.F.F.L. - ABOVE FINISHED FLOOR LEVEL
A.P. - ACCESS PANEL (600x600 UNO)
B.O.A. - BOTTOM OF AWNING
C.O.S. - CONFIRM ON SITE
D.P. - DOWNPIPE
E.G.L. - EXISTING GROUND LINE
E.Q. - EQUAL
E.X. - EXISTING
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U - UNDER
U.N.O. - UNLESS NOTED OTHERWISE
X - CRITICAL DIMENSION

ELECTRICAL LINE	E
FENCE	/
GAS LINE	G
SEWER LINE	S
STORM WATER LINE	SW
TELECOM LINE	T
WATER LINE	W
DEMOLITION	
SITE BOUNDARY	

ISSUE	AMENDMENT	DATE
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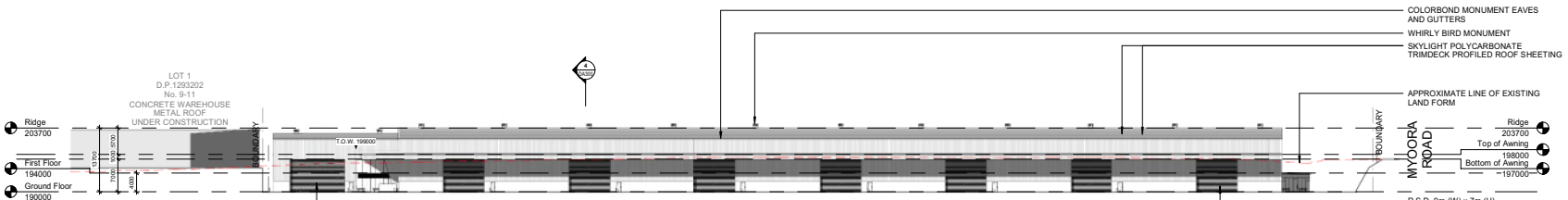
PROPOSED INDUSTRIAL & WAREHOUSE

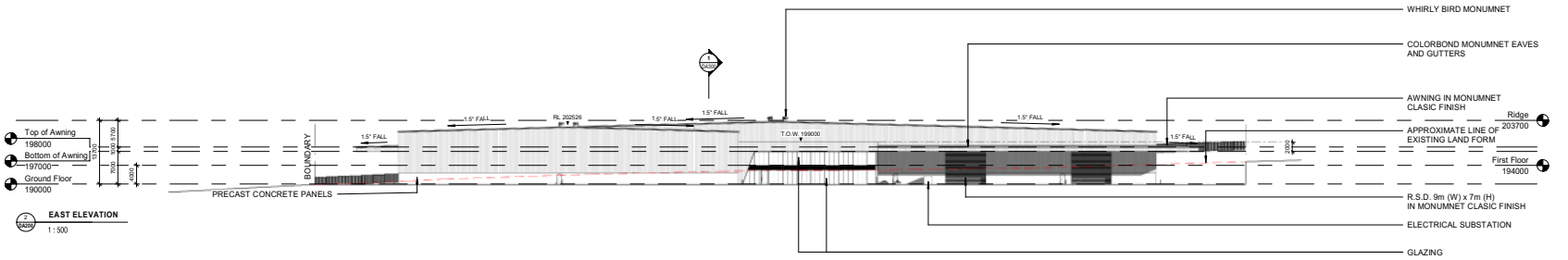
7 PINNACLE PLACE
SOMERSBY, NSW 2250

DRAWING TITLE:
SERVICES PLAN

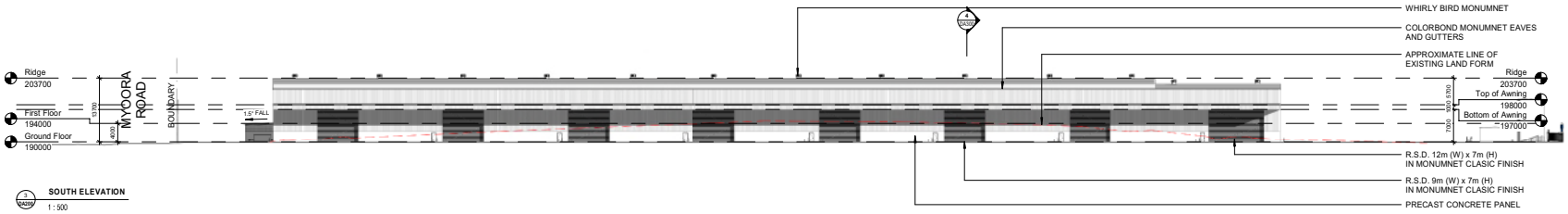
SCALE: 1 : 750@A1
DRAWING No. DA160
JOB No.: JMPI-0062
DRAWN BY: U.J./J.B.
REVISION: A



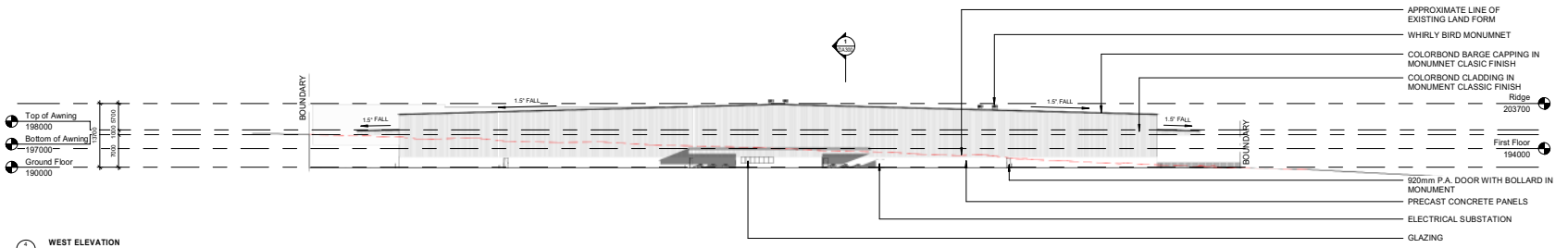
NORTH ELEVATION
1 : 500



EAST ELEVATION
1 : 500

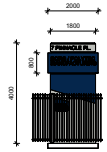


SOUTH ELEVATION
1 : 500



WEST ELEVATION
1 : 500

COLOR SCSHEDULE
1 : 1



WALL SIGNAGE
1 : 100

LEGEND

A.F.F.L. - ABOVE FINISHED FLOOR LEVEL
A.P. - ACCESS PANEL (600x600 UNO)
B.O.A. - BOTTOM OF AWNING
C.O.S. - CONFIRM ON SITE
D.P. - DOWNPIPE
E.G.L. - EXISTING GROUND LINE
E.Q. - EQUAL
E.X. - EXISTING
F.C.L. - FINISHED CEILING LEVEL
F.F. - FIRST FLOOR
F.F.L. - FINISHED FLOOR LEVEL
F.W. - FLOOR WASTE
G.P. - GAS POINT
G.D.1 - GRATED DRAIN
G.F. - GROUND FLOOR LEVEL
H.W.U. - HOT WATER UNIT
O - OVER
O.E. - OR EQUIVALENT
O.F. - OVERFLOW
R.L. - RELATIVE LEVEL
R.W.T. - RAINWATER TANK
S.C. - STRUCTURAL COLUMN
T.O.M. - TOP OF MEZZANINE
T.O.R - TOP OF ROOF
T.O.W. - TOP OF WALL
U - UNDER
U.N.O. - UNLESS NOTED OTHERWISE
X - CRITICAL DIMENSION

ISSUE	AMENDMENT	DATE
A	DA Application	12/06/24

space URBAN
A BORG COMPANY
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STATUS:
DA APPLICATION

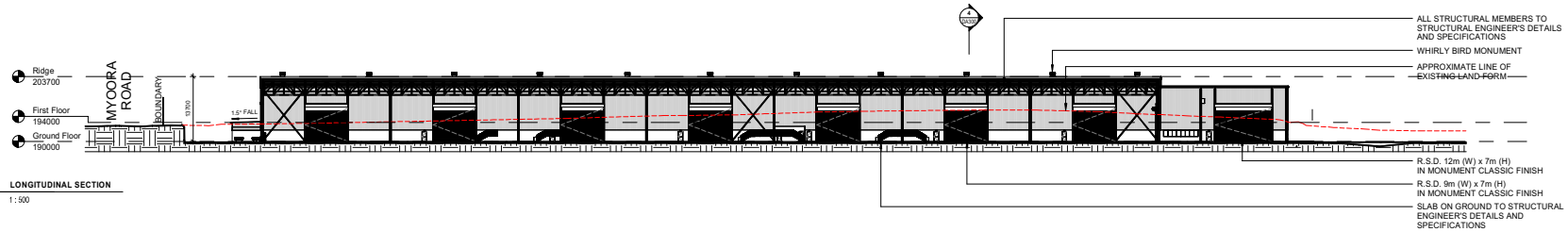
CLIENT:
SPACE URBAN

PROJECT:
PROPOSED INDUSTRIAL & WAREHOUSE

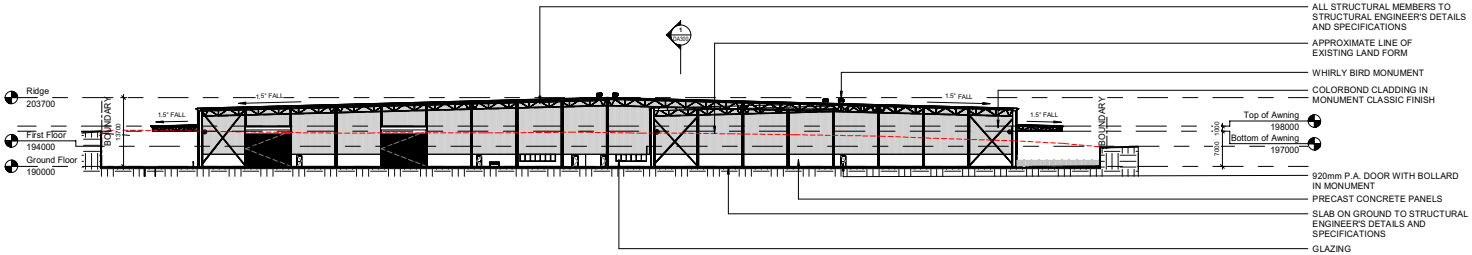
7 PINNACLE PLACE
SOMERSBY, NSW 2250

DRAWING TITLE:
ELEVATIONS

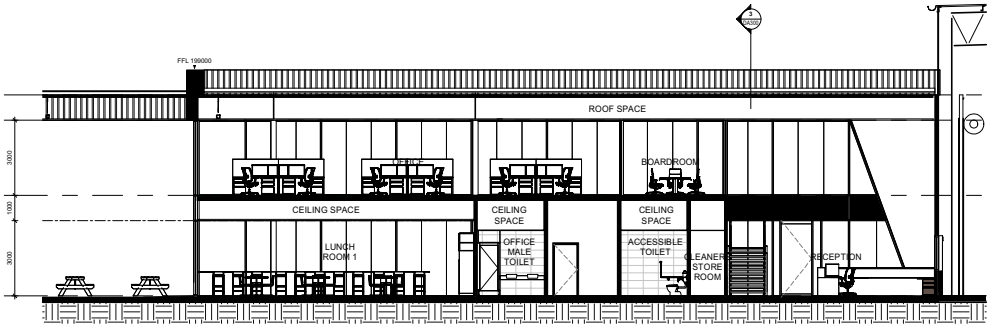
SCALE: As indicated@A1
JOB No.: JMPI-0062
DRAWN BY: U.J./J.B.
DRAWING No. DA200
REVISION: A



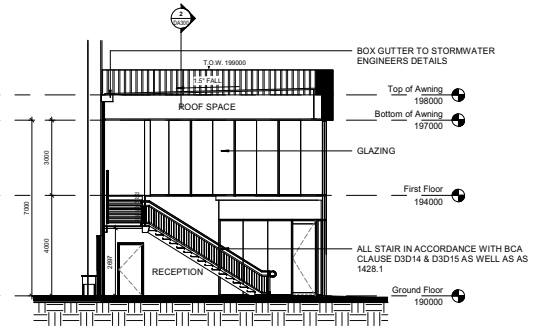
1 DA300 **LONGITUDINAL SECTION**
1 : 500



1 DA300 **TRANSVERSAL SECTION**
1 : 500



2 DA300 **LONGITUDINAL FRONT OFFICE SECTION**
1 : 100



3 DA300 **TRANSVERSAL SECTION - OFFICE AREA**
1 : 100

LEGEND

A.F.F.L. - ABOVE FINISHED FLOOR LEVEL
A.P. - ACCESS PANEL (600x600 UNO)
B.O.A. - BOTTOM OF AWNING
C.O.S. - CONFIRM ON SITE
D.P. - DOWNPIPE
E.G.L. - EXISTING GROUND LINE
E.Q. - EQUAL
E.X. - EXISTING
F.C.L. - FINISHED CEILING LEVEL
F.F. - FIRST FLOOR
F.F.L. - FINISHED FLOOR LEVEL
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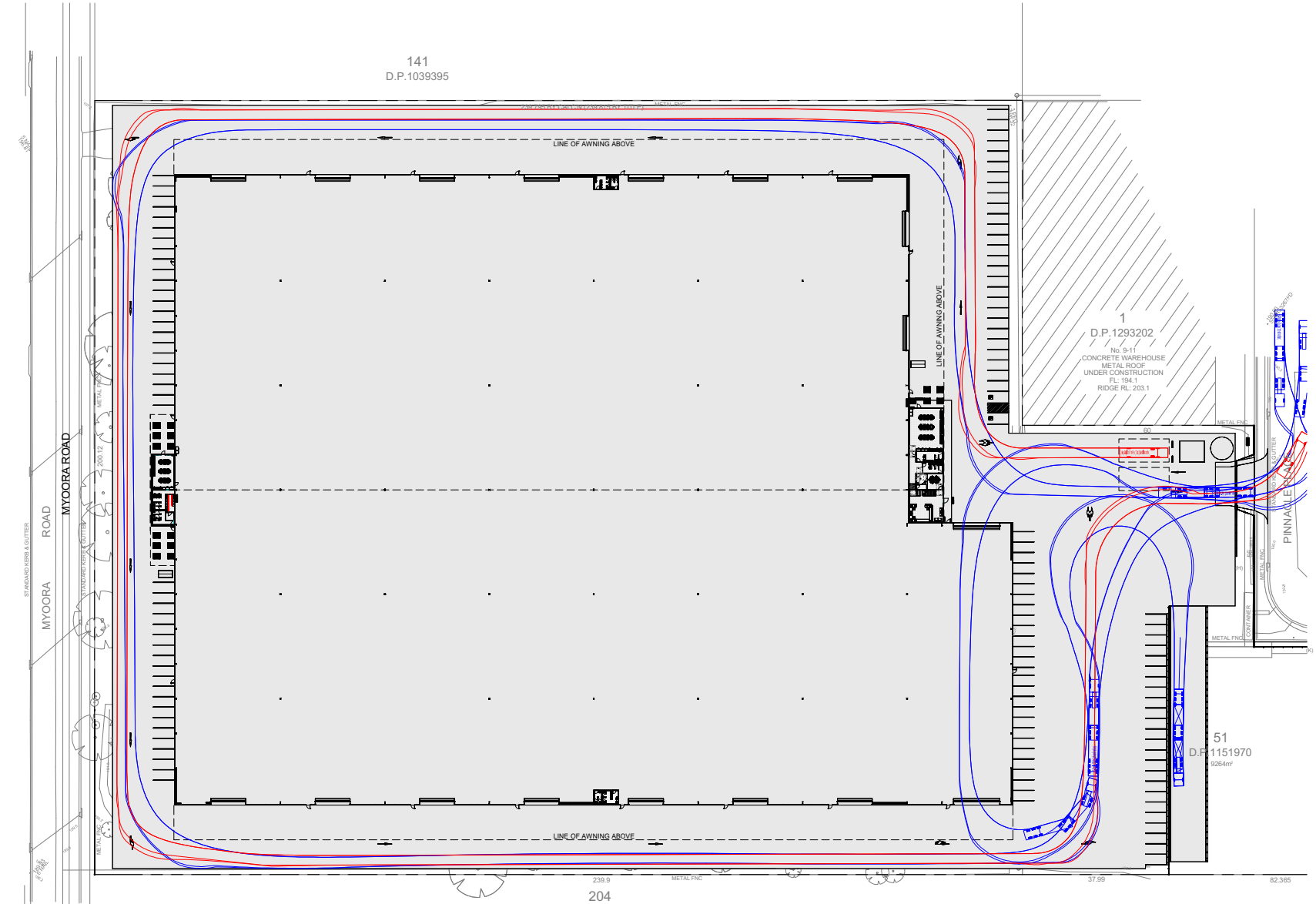
PROJECT:
PROPOSED INDUSTRIAL & WAREHOUSE
7 PINNACLE PLACE
SOMERSBY, NSW 2250

DRAWING TITLE:
SECTION

SCALE: As indicated@A1
JOB No.: JMPI-0062
DRAWN BY: U.J./J.B.
DRAWING No. DA300
REVISION: A



VEHICLE MOVEMENT PATH
1 : 500

Single Unit Truck / Bus (12.5m)

Overall Length	12.5m
Overall Width	2.5m
Overall Body Height	3.7m
Min Body Ground Clearance	410mm
Track Width	2.5m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.5m

B-Double (25.0m) (abs min radius)

Overall Length	25m
Overall Width	2.5m
Overall Body Height	3.7m
Min Body Ground Clearance	410mm
Track Width	2.5m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.5m

ISSUE	AMENDMENT	DATE
A	DA Application	12/06/24

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STATUS:
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PROJECT:
PROPOSED INDUSTRIAL & WAREHOUSE

7 PINNACLE PLACE
SOMERSBY, NSW 2250

DRAWING TITLE:
VEHICLE MOVEMENT PLAN

SCALE: 1 : 500@A1
DRAWING No. DA500
JOB No.: JMPI-0062
DRAWN BY: U.J./J.B.
REVISION: A

ISSUE	AMENDMENT	DATE
A	DA Application	12/06/24

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CLIENT:

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PROJECT:

PROPOSED INDUSTRIAL & WAREHOUSE

7 PINNACLE PLACE
SOMERSBY, NSW 2250

DRAWING TITLE:

PERSPECTIVE RENDERINGS

SCALE:	@A1	DRAWING No.	DA800
JOB No.:	JMPI-0062		
DRAWN BY:	F.J./J.B.	REVISION:	A

Appendix C – Noise Monitoring Charts and ABLs Summary

Table C18 Background Noise Monitoring Summary – Location L1						
Date	Measured Background Noise Level (LA_{90}) dB ABL[1]			Measured dB $LA_{eq(period)}$		
	Day	Evening	Night	Day	Evening	Night
Thursday 30 May 2024	--[2]	38	32	--[2]	50	46
Friday 31 May 2024	46	42	--[2]	55	54	--[2]
Saturday 1 June 2024			42	--[2]	--[2]	56
Sunday 2 June 2024	45	37	33	55	51	50
Monday 3 June 2024	--[2]	35	33	--[2]	49	46
Tuesday 4 June 2024	--[2]	35	28	--[2]	51	48
Wednesday 5 June 2024	42	--[2]	30	55	--[2]	53
Thursday 6 June 2024	--[2]	--[2]	31	--[2]	--[2]	50
Friday 7 June 2024	48	37	30	57	50	46
Saturday 8 June 2024	44	40	36	53	49	47
Sunday 9 June 2024	43	35	29	51	47	45
Monday 10 June 2024	42	33	27	52	50	46
Tuesday 11 June 2024	--[2]	--[2]	--[2]	--[2]	--[2]	--[2]
Location1 – RBL / Leq Overall	44	37	31	54	51	50

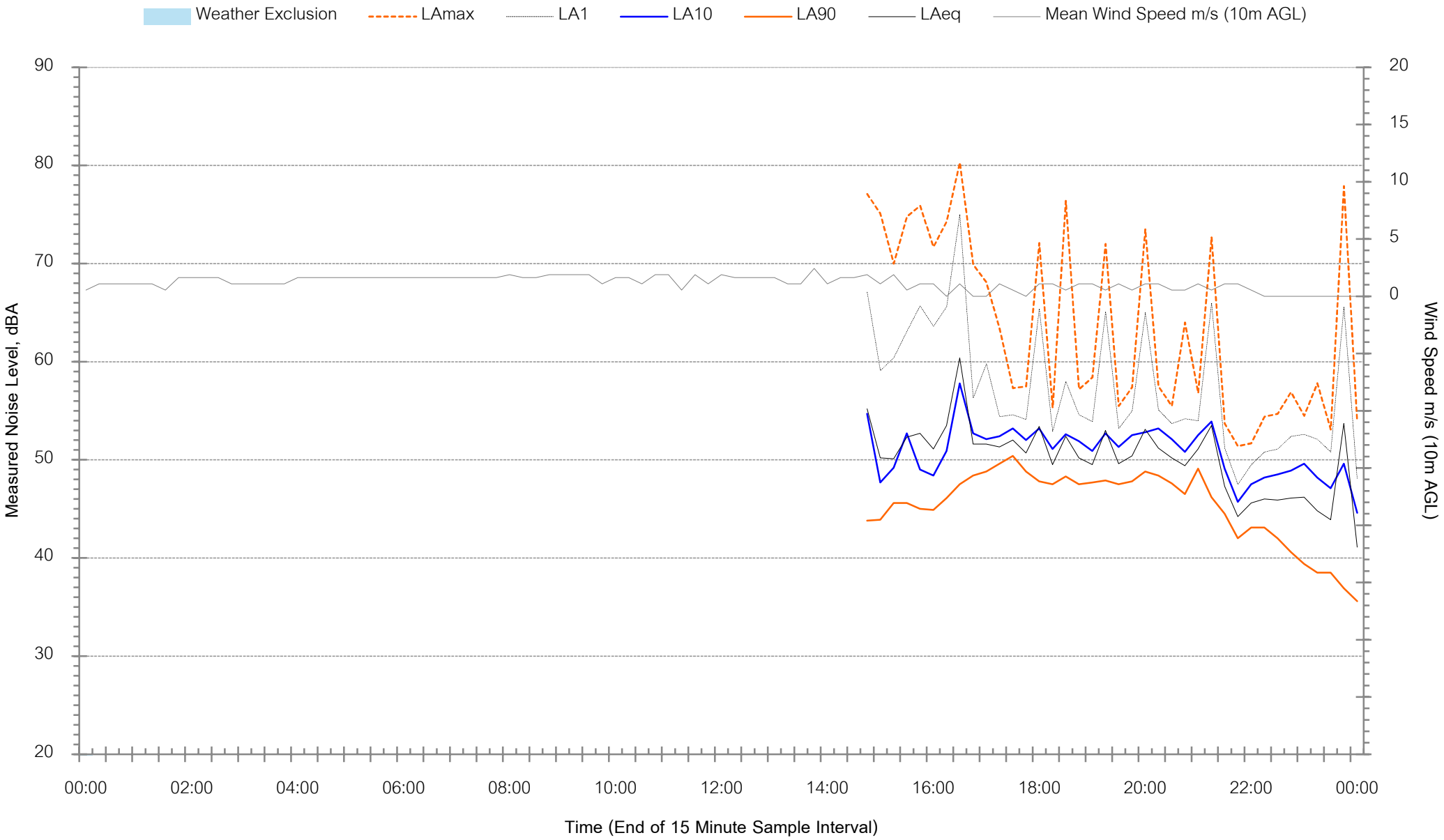
Note 1: Assessment background level (ABL) – the single-figure background level representing each assessment period day, evening and night as per NPI Fact Sheet A.

Note 2: Measurement removed due to adverse weather as per NPI Fact Sheet A.

Note: Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods

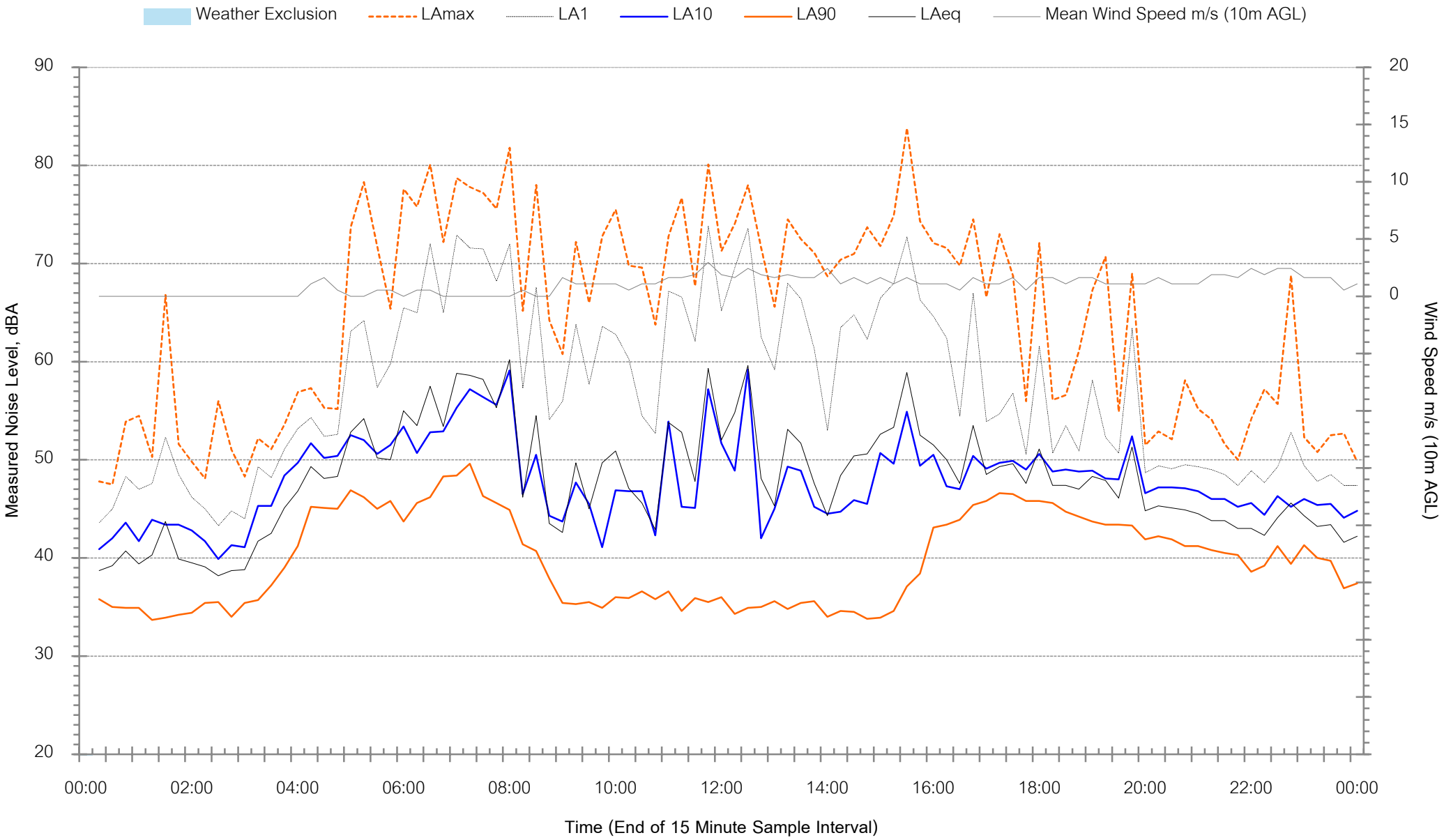
Background Noise Levels

25 Myoora Road, Somersby, NSW - Tuesday 14 May 2024



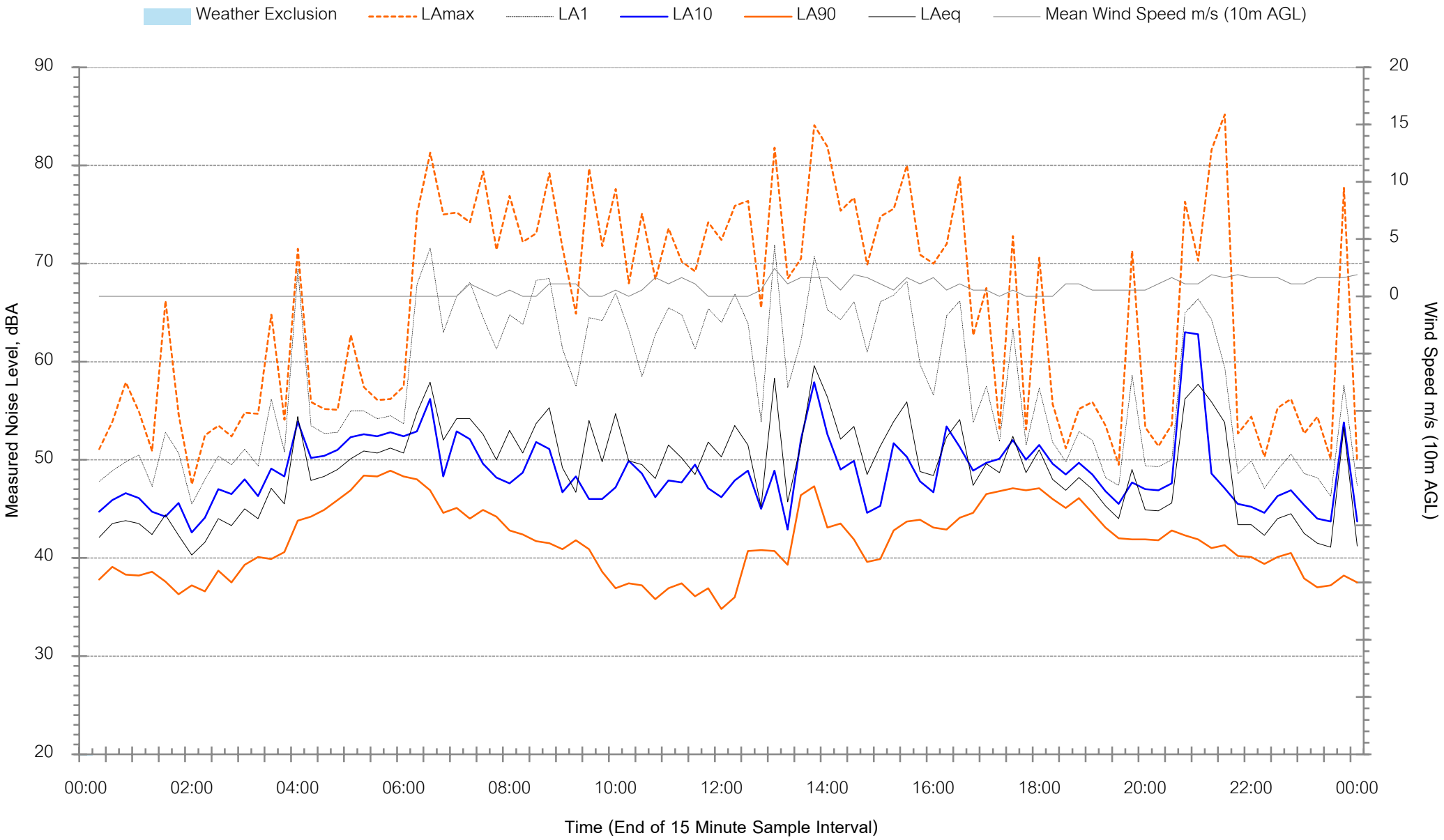
Background Noise Levels

25 Myoora Road, Somersby, NSW - Wednesday 15 May 2024



Background Noise Levels

25 Myoora Road, Somersby, NSW - Thursday 16 May 2024

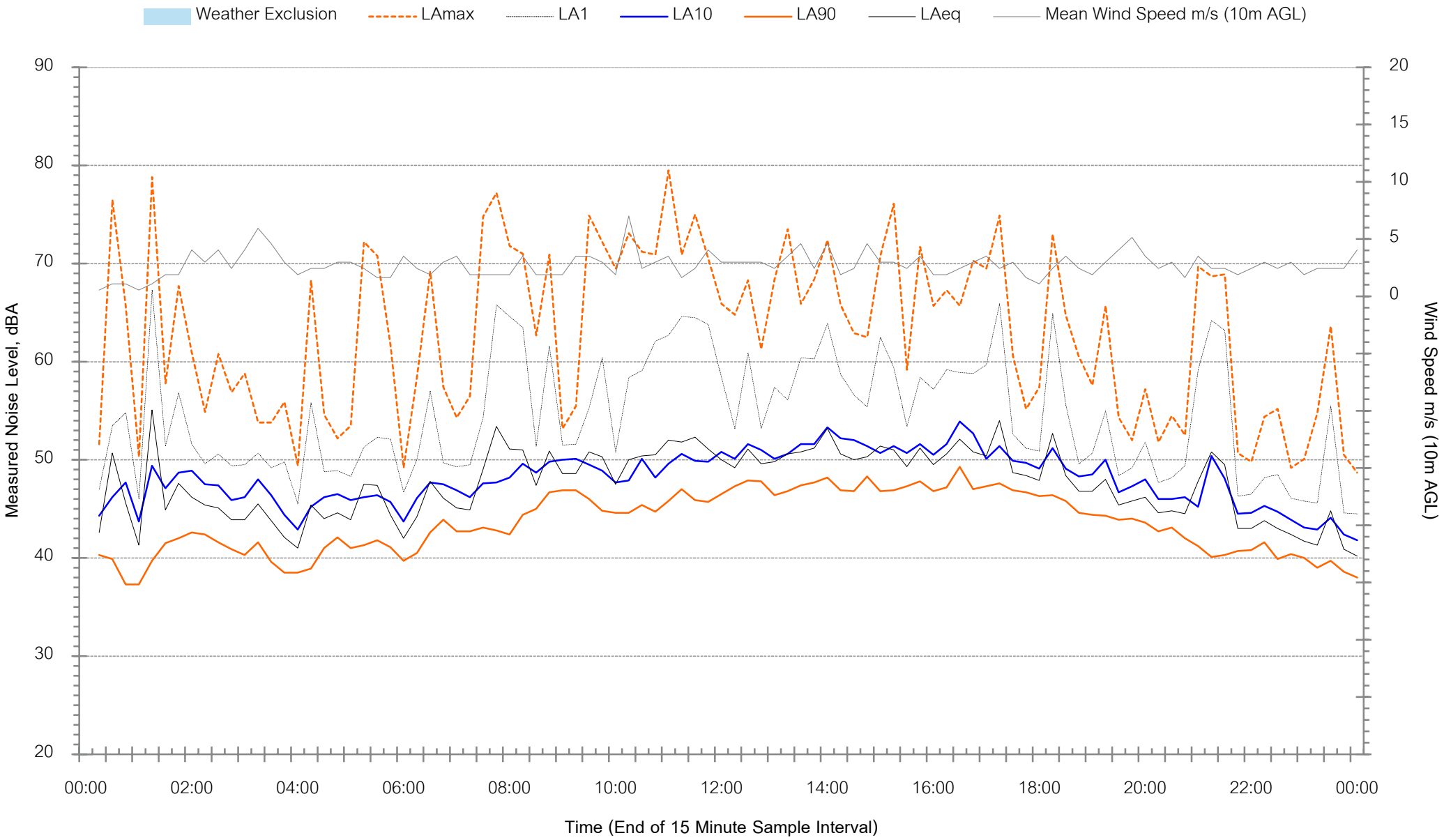


Background Noise Levels

25 Myoora Road, Somersby, NSW - Friday 17 May 2024

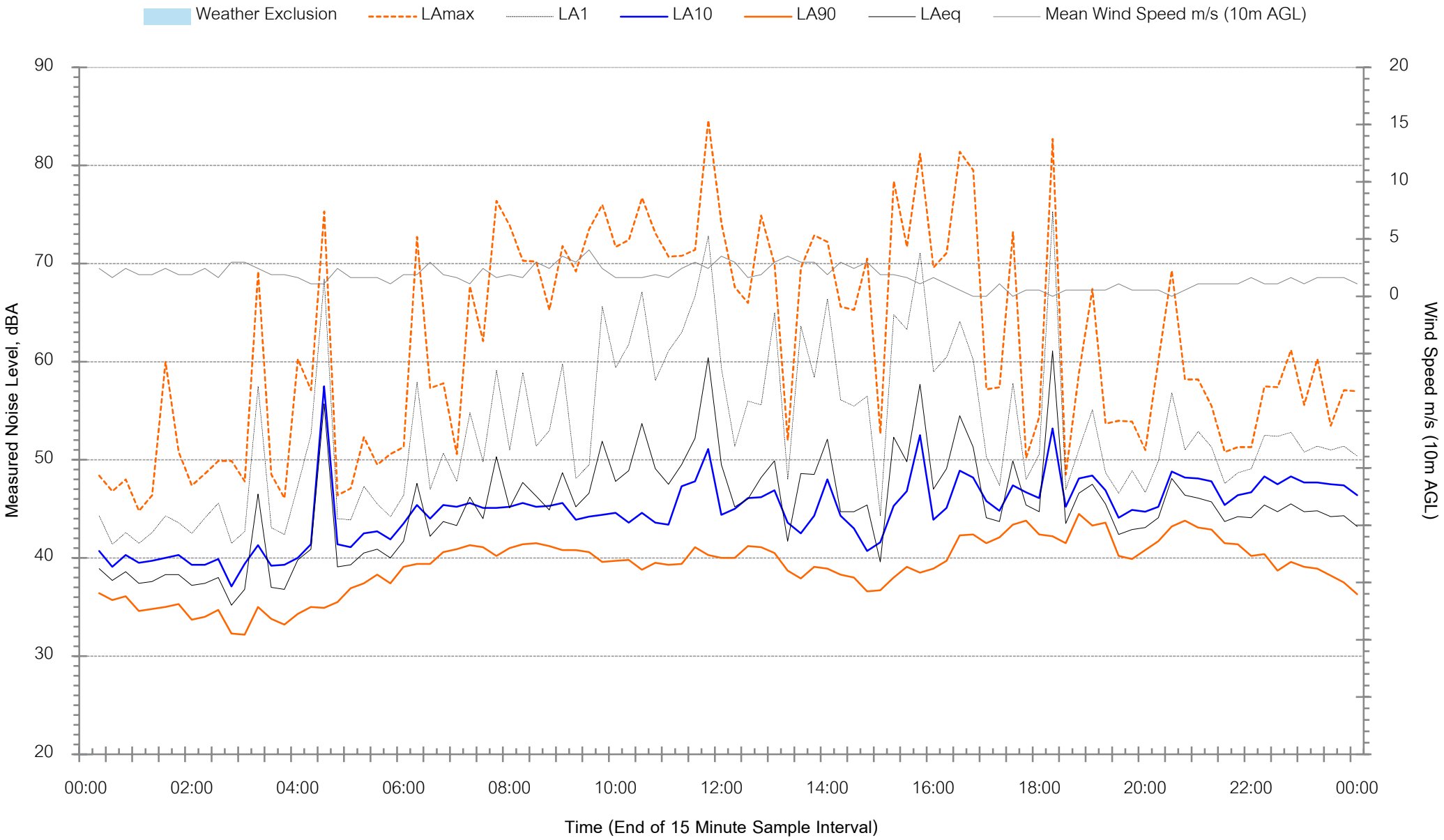
Background Noise Levels

25 Myoora Road, Somersby, NSW - Saturday 18 May 2024



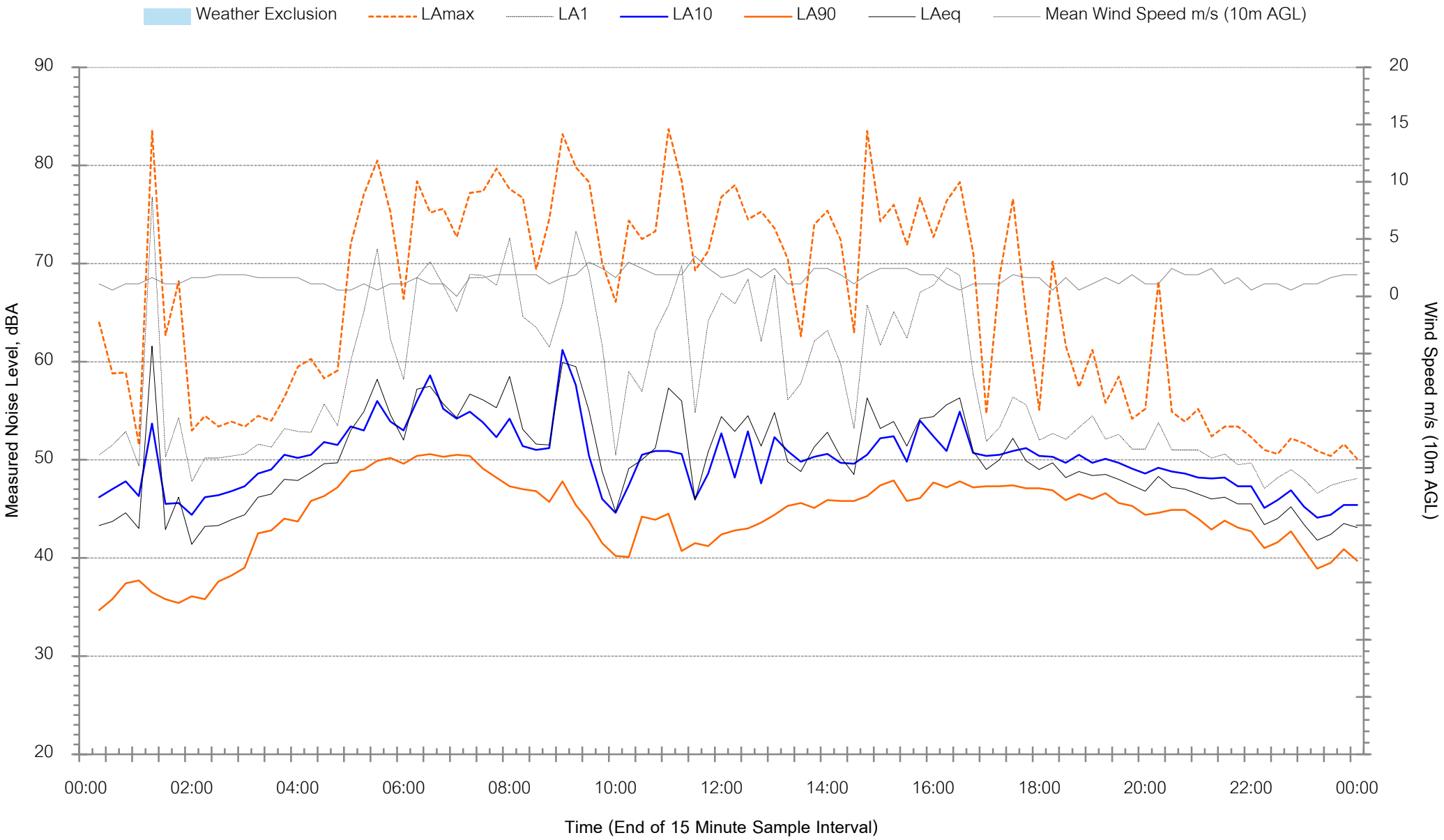
Background Noise Levels

25 Myoora Road, Somersby, NSW - Sunday 19 May 2024



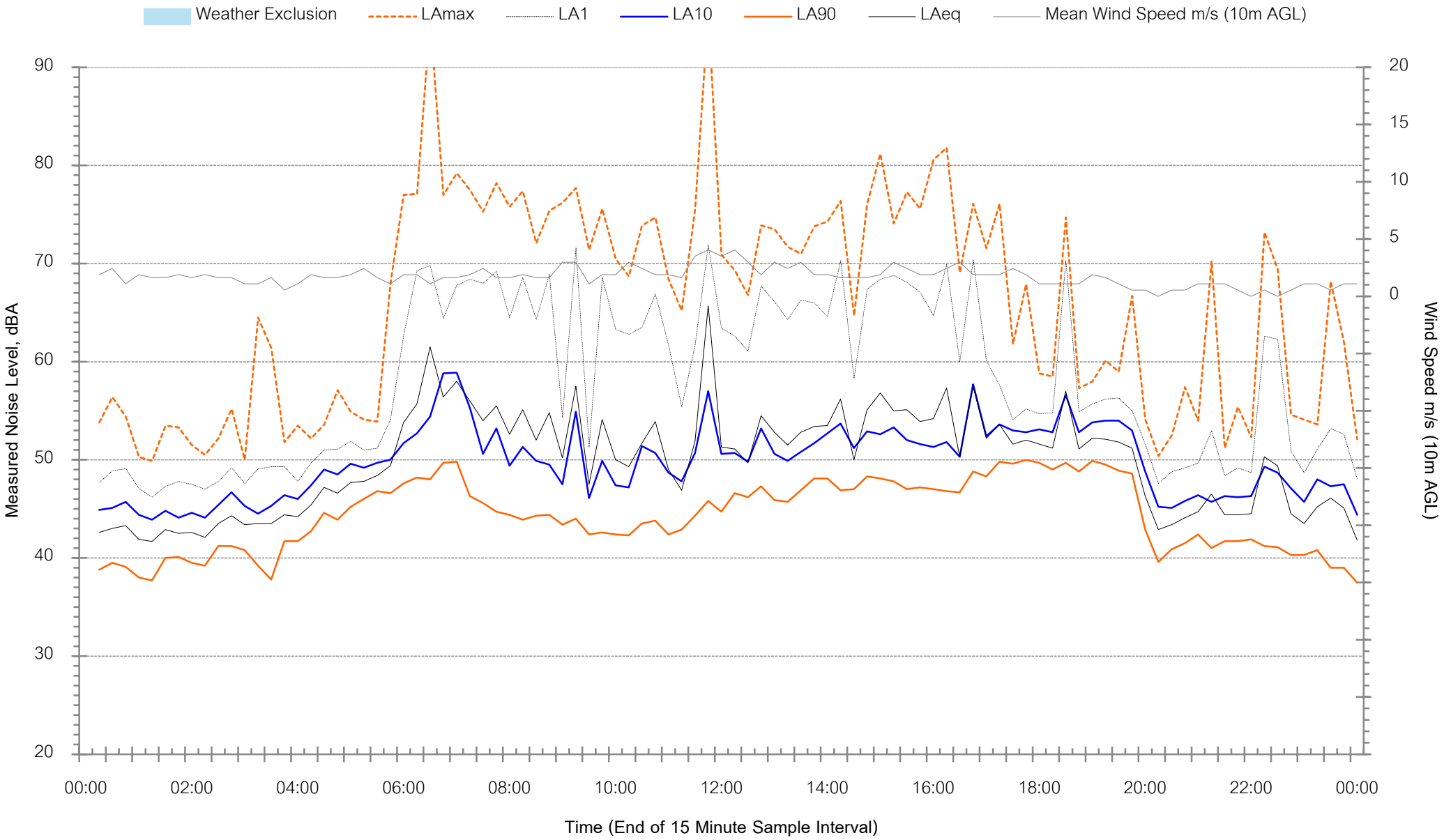
Background Noise Levels

25 Myoora Road, Somersby, NSW - Monday 20 May 2024



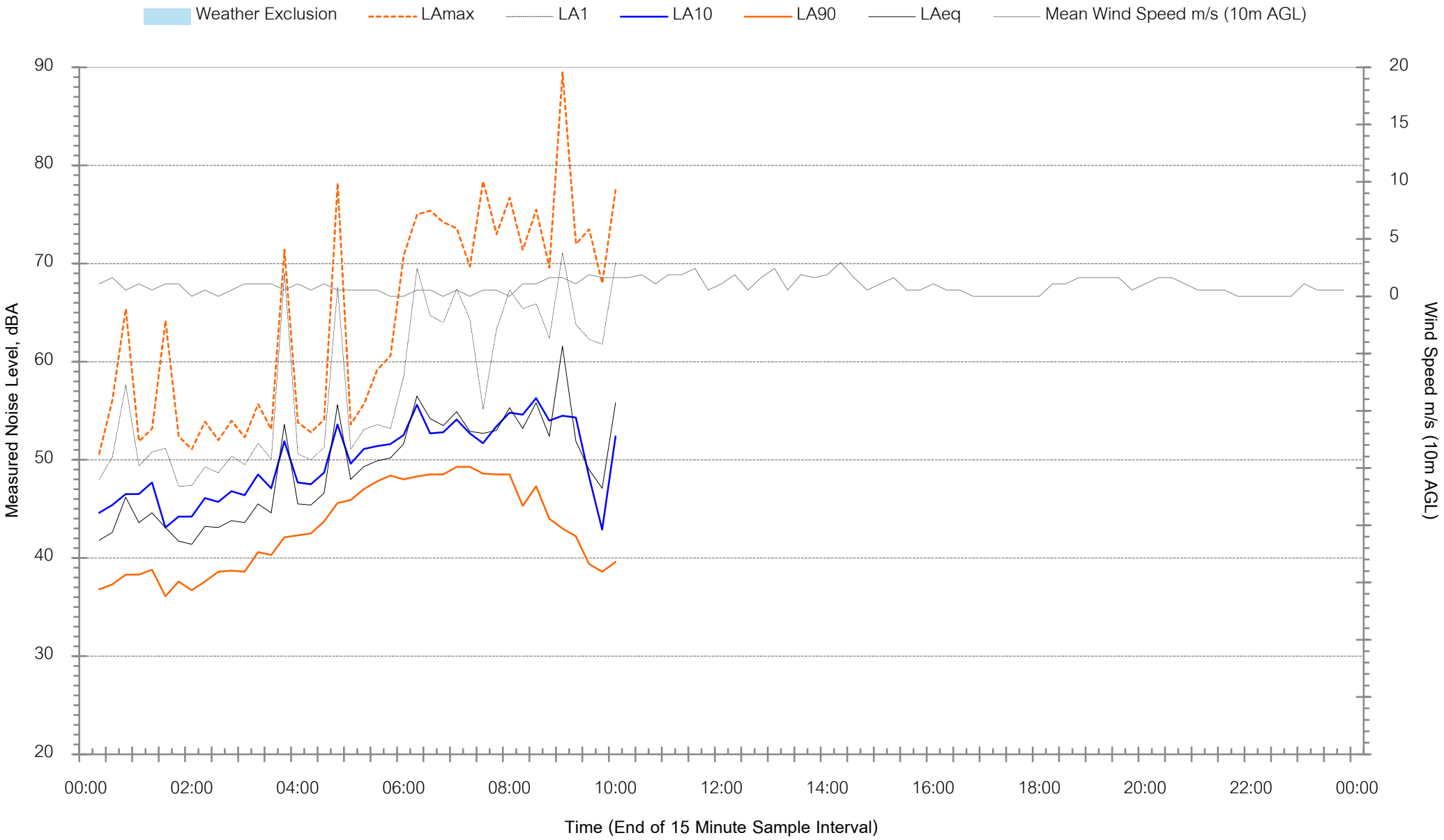
Background Noise Levels

25 Myoora Road, Somersby, NSW - Tuesday 21 May 2024



Background Noise Levels

25 Myoora Road, Somersby, NSW - Wednesday 22 May 2024



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Appendix D – Determination of Receiver Category

Table D19 - Determination of NPI Residential Receiver Category

Location/ Catchment	Period	Measured RBL dB LA90(period)	Land Use Zone: Rural (RU1, RU2, RU4, R5, E4)	Land Use Zone: Suburban (RU5, RU6, R2, R3, R4, E2, E3)	Land Use Zone: Urban (R1, R4, B1, B2, B4)	Land Use Zone: Commercial, Industrial (Others)	Typical Existing Background Noise Levels Table 2.3 NPI: RURAL Daytime <40 Eve <35 Night <30	SUBURBAN Daytime <45 Eve <40 Night <35	URBAN Daytime >45 Eve >40 Night >35	Rural Residential - an area with an acoustical environment that: is dominated by natural sounds.	having little or no road traffic noise	generally characterised by low background noise levels.	Settlement patterns would be typically sparse	Suburban Residential - an area that has: local traffic with characteristically intermittent traffic flows	or with some limited commerce or industry.	evening ambient noise levels defined by the natural environment and human activity.	Urban Residential- an area with an acoustical environment that: is dominated by 'urban hum' or industrial source noise	has through-traffic with characteristically heavy and continuous traffic flows during peak . .	is near commercial districts or industrial districts	has any combination of the above
Location 1	Day	38	✓				✓													✓
	Evening	41	✓						✓											✓
	Night	37	✓						✓											✓

where urban hum means the aggregate sound of many unidentifiable, mostly traffic and/or industrial related sound sources

Assessment

Location	Rural	Suburban	Urban		Rural - RBL	Suburban - RBL	Urban - RBL	Rural - Description				Suburban - Description			Urban - Description			
Location 1	1	0	5		1	0	2	0	0	0	0	0	0	0	0	0	0	3

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