Soundscape
Acoustic Consultants

soundscape.com.au
contact@soundscape.com.au
02 8529 8896

Noise Impact Assessment

124 New England Highway Lochinvar

Reference 3330-NI-01-A

Project Details

Site Location
124 New England Highway
Lochinvar

Client
Hoover Group Pty Ltd

Project Description
Childcare Centre

Project Reference
3330-NI

Project Details

Site Location	124 New England Highway Lochinvar
Client	Hoover Group Pty Ltd
Project Contact	Ellie Tilse - Hoover Group Pty Ltd 0475 880 361 ellie@hoovergroup.com.au
Project Reference	3330-NI

Author Details

Author Details	Kurtis Ferry BEng (Civil) (Hons), AAS Member Director | Acoustic Engineer

Release Details

Date	Version	Description
12/02/2025	01-A	For submission to council.

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Contents

1 INTRODUCTION

Soundscape Consulting Pty Ltd was commissioned by Hoover Group Pty Ltd to complete a noise impact assessment at 124 New England Highway Lochinvar. The report is to be submitted to the certifying authority as part of the development application.

The proposal seeks consent for the construction of a multistorey childcare centre. The childcare centre proposes to cater for a maximum of 73 children: 27 children aged 0-3 and 46 children aged 3-5. The proposal includes two outdoor play areas, 18 car spaces and associated mechanical equipment. A copy of the floorplans is available in Appendix A.

The noise assessment follows the methodology of NSW EPA Noise Policy for Industry for assessing impacts to surround sensitive receivers. Where relevant, other criteria for noise intrusion and transmission have been applied as outlined in section 3 of the report.

The proposed scope of works are as follows:

1. Review client data including correspondence, operation details, plan drawings, aerial photos and specific material.

2. Noise criteria relevant to the project is identified based on the proposed operations, surrounding sensitive receivers and noise sources.

3. Conduct noise measurements of the background noise levels for 7-10 business days in accordance with the EPA Noise Policy for Industry requirements.

4. Noise modelling of the site operations to predict the likely impact on surrounding receivers. The noise modelling will be broken into different scenarios where noise sources are unlikely to occur at the same time. The results from the noise modelling are summarised to verify compliance with the noise criteria or otherwise. Where compliance is not achieved, recommendations for mitigation are provided.

5. Recommendations are provided as required, and may include relocation of noisy equipment, sound walls, operational changes, or adjustments to the development.

2 NOISE CRITERIA

2.1 NSW EPA Noise Policy for Industry (2017)

The Noise Policy for Industry (herein: NPI) applies to industrial noise sources from activities listed in Schedule 1 of the POEO Act and regulated by the EPA. All scheduled activities require an environment protection licence issued under the POEO Act.

The NPI sets out the EPA's requirements for the assessment and management of noise from industry in NSW. It aims to ensure that noise is kept to acceptable levels in balance with the social and economic value of industry in NSW. When new industry is being proposed or existing industry is being upgraded, redeveloped, or needs review, attention needs to be paid to controlling noise from the industry. The NPI is designed to assist industry and authorities to ensure that potential noise impacts associated with industrial projects are managed effectively.[1]

The NPI recommends two noise criteria are considered, the Intrusive Noise Criteria and the Amenity Noise Criteria. The lowest value of the amenity and the intrusiveness noise level is adopted as the project noise trigger for the assessment.

2.1 AAAC Child Care Acoustic Assessment 2013

The Child Care Acoustic Assessment (CCAA) guideline provides guidance on the Sound Power Levels from children playing and recommended noise criteria which is extends on the Noise Policy for Industry by adding additional allowances for outdoor play which is limited in duration each day.

2.2 NSW Department of Planning Interim Guideline (2008)

The assessment criteria of the NSW Department of Planning Development near Rail Corridors and Busy Roads – Interim Guideline (herein NSW DOP) is outlined within Table 3.1 of Section 3.6.1 Airborne Noise, Part C: Noise and Vibration. Non-residential criteria is based upon the NSW EPA (1999) ECRTN guideline (now superseded by the NSW DECCW (2011) RNP).

2.3 NSW Road Noise Policy 2011

The NSW and the Department of Environment, Climate Change and Water NSW released the Road Noise Policy in 2011 (RNP) to help and agencies to assess and mitigate the impacts of traffic noise from new and redeveloped road projects, and traffic-generating developments on residential and other sensitive lands. Table 4 provides assessment criteria for the allowable noise levels at childcare centres as follows:

Table 2.3.1: Road traffic noise assessment criteria for non-residential land uses affected by proposed road projects and traffic generating developments

[1] NSW EPA Noise Guide for Local Government (2023) – Section 9.2

Location	Day Criteria $LAeq_{1\ hour}$ dBA
Sleeping rooms	35
Indoor playrooms	40
Outdoor play areas	55

Multi-purpose spaces, e.g. shared indoor play/sleeping rooms should meet the lower of the respective criteria. Measurements for sleeping rooms should be taken during designated sleeping times for the facility, or if these are not known, during the highest hourly traffic noise level during the opening hours of the facility.

2.4 Australian Standard 2107 (2016) Recommended Design Sound Levels and Reverberation Times for Building Interiors

AS2107 provides targets for the noise levels and reverberation times of rooms for a variety of building types, occupations, and activities. These targets contribute to the specification of building methods to control noise transmission, privacy, and acoustic comfort. The relevant criteria for the project have been extracted and summarised below.

Table 2.2.1: Recommended design sound levels and reverberation times

Type of occupancy/activity	Design Sound Level (LAeq)	Design reverberation time (s)
Educational Buildings – Teaching Spaces / single classrooms		
Open plan teaching spaces	35 - 45	0.45 - 0.55*
Primary Schools	35 - 45	0.45 - 0.55*

*Based on a room volume of 85 to 200m^3

2.5 Maitland City Council DCP 2011

Section C.2 – Child Care Centres has been reviewed when completing this report. Sub-section 2.3 specifically focuses on Acoustic Privacy, with five developmental controls. The noise

3 AMBIENT NOISE ENVIRONMENT

3.1 Road Noise

A previous noise survey was conducted at 127 New England Highway, Lochinvar by RAPT Consulting in May 2024 (report 22224574_240516). The results of the noise survey are as follows:

Table 3.1: RAPT Noise Survey Results (dBA) – Receptor 3

Time of Day	LAeq,15min	RBL
Day (7:00–18:00)	67.3	53
Evening (18:00–22:00)	62.7	37
Night (22:00–7:00)	63.4	33

3.2 Ambient Noise

As part of this assessment an acoustic logger was set up to conduct a noise survey of the existing acoustic environment. The logger location was selected to be representative of the northern properties shielded from the road noise. Consideration of reflections, biasing noise sources and security was given when selecting the positioning.

Noise logging was undertaken using a Rion NL-43 logger with the serial number 00730475. Directly prior and following the noise survey calibration was checked using a 1000hz signal at 94dBA, with no significant drift measured. The NATA calibration certificate is available on request.

The logger was set up in accordance with the methodology provided in the NPI. The microphone was placed in a foam windshield 1.5m above the ground. The survey began on the 29/01/2025 and ran for eight days.

The data was validated to remove periods affected extraneous weather conditions and noise impacts in accordance with section A1 of the NPI. The most suitable weather station for monitoring weather data was a private weather station located at Kurri Kurri.

Table 3.2: Noise Survey Results (dBA) – Northern

Time of Day	LAeq,15min	RBL
Day (7:00–18:00)	59	37
Evening (18:00–22:00)	50	43
Night (22:00–7:00)	49	42

During the site inspection the primary noise sources was from traffic. The higher evening and night period results is typical of insect noise in rural environments.

A road noise model was created and calibrated to the existing LA90 survey results for the day period (see figure 3.2). The model has been used to determining the noise criteria at each sensitive receiver location.

Figure 3.1: Logger location (red), existing noise logging (orange) and sensitive receivers

Figure 3.2: Road noise calibration model (RBL / LA90)

4 EXTERNAL NOISE EMISSION ASSESSMENT

4.1 Operational assumptions

4.1.1: Operating Hours

Monday to Friday, from 07:00am to 06:00pm. Staff may arrive and leave within a 30-minute shoulder period.

4.1.2: Centre Capacity

Table 4.1.1: Number of children in each age group

Description	Quantity
0-3 years	27
3-5 years	46

4.1.3: Operations assessed

- Pick up and drop off (15 cars / 15 minutes, patrons, car doors)
- Mechanical noise (air-conditioner and kitchen exhaust)
- Indoor activities
- Outdoor play
- Sleep disturbance (staff carpark arrivals before 07:00am)

Scenario 1: Pickup and drop-off

- Pick up and drop off (15 cars / 15 minutes, patrons, car doors)
- Mechanical noise (air-conditioner and kitchen exhaust)

Scenario 2: Indoor Activities

- Indoor activities with balconies in use, all children engaged in active play.
- Mechanical noise (air-conditioner and kitchen exhaust)

Scenario 3: Outdoor Activities

- Outdoor activities on roof, all engaged children in active play
- Mechanical noise (air-conditioner and kitchen exhaust)

Scenario 4: Sleep Disturbance

- Sleep disturbance (staff carpark arrivals before 07:00am)
- Mechanical noise (air-conditioner and kitchen exhaust)

4.2 Adopted Sound Power Levels

Table 4.2.1: Sound power levels (A-Weighted) for noise sources

Source	63	125	250	500	1000	2000	4000	8000	Total
Children (10x 0-3 years)	61	67	73	79	81	78	74	70	85
Children (10x 3-5 years)	64	70	75	81	83	80	76	72	87
Cumulative children (73x)	76	82	87	93	95	92	88	84	99
Car Movement (SEL)	90	87	80	78	77	72	70	64	82
Car door closure (LAmax)	105	103	95	96	87	83	82	77	96
One patron speaking (normally)	50	50	60	68	66	59	55	47	71
Air Condenser	54	63	68	73	72	70	68	65	79
Kitchen Exhaust	37	51	53	68	59	65	59	48	70
Bathroom Exhaust (Fantech TD800-200SL)	37	45	54	53	55	54	50	42	61

4.3 Adopted Noise Criteria

The receiver specific noise criteria is provided below is based on the survey results presented in section 3 and the Road Noise Model results presented in figure 3.2.

Table 4.3.1: EPA NPI Noise Criteria – R1

Time of Day	RBL[1]	Intrusiveness[2]	Amenity[3]	Project Specific Levels[3]
Receiver 1				
Day (7:00–18:00)	45	50	53	50
Evening (18:00–22:00)	43	48	43	43
Night (22:00–7:00)	42	47	38	38

Table 4.3.2: EPA NPI Noise Criteria – R2

Time of Day	RBL[1]	Intrusiveness[2]	Amenity[3]	Project Specific Levels[3]
Receiver 2				
Day (7:00–18:00)	44	49	53	49
Evening (18:00–22:00)	43	48	43	43
Night (22:00–7:00)	42	47	38	38

Table 4.3.2: EPA NPI Noise Criteria – R3

Time of Day	RBL[1]	Intrusiveness[2]	Amenity[3]	Project Specific Levels[3]
Receiver 3				
Day (7:00–18:00)	53	58	53	53
Evening (18:00–22:00)	37	42	43	42
Night (22:00–7:00)	33	38	38	38

1) The Rating Background level (RBL) – see section B1.3 of the NPI.
2) Intrusiveness is equal to the RBL + 5.0 dBA.
3) Amenity noise levels are taken from table 2.2 of the NPI. Adjustment for 15-minute interval, road noise and existing industrial noise levels applied as appropriate.
4) Project specific levels are the lesser of the intrusiveness, amenity and minimum values recommended by the NPI.

4.4 Noise modelling results

Noise modelling has been conducted using software validated against the ISO-9613 (2024) calculation methodology. The model is three dimensional, and includes the effects of reflections, ground absorption, meteorological conditions, and barriers. Noise modelling requires a simplification of real-world conditions into basic components.

The modelling results are inclusive of the recommendations provided in section 5. The layout, noise nodes, barriers, structures, and results from the noise modelling can be viewed in Appendix C.

4.4.1: Scenario 1: Pickup and drop-off

Table 4.4.1: Scenario 1 Noise modelling results

Receiver	LAeq	Day Criteria	Complies
R1	36	50	Yes
R2	37	49	Yes
R3	35	53	Yes

4.4.2: Scenario 2: Indoor Activities

Table 4.4.2: Scenario 2 Noise modelling results

Receiver	LAeq	Day Criteria	Complies
R1	41	50	Yes
R2	41	49	Yes
R3	43	53	Yes

4.4.3: Scenario 3: Outdoor Play

Table 4.4.3: Scenario 3 Noise modelling results

Receiver	LAeq	Day Criteria	Complies
R1	43	50	Yes
R2	44	49	Yes
R3	34	53	Yes

4.4.4: Scenario 4: Sleep Disturbance

Sleep disturbance is checked against the LAeq and Lamax as follows:

- *LAeq the greater of LA90 + 5 dB and 40 dB; =40dBA*
- *LAmax the greater of LA90 + 15 dB and 52dB'. 52dBA*

Table 4.4.4: Scenario 4 Noise modelling results

Receiver	LAeq	LAmax	Complies
R1	31	51	Yes
R2	20	37	Yes
R3	32	51	Yes

Based on the results, and provided the recommendations in section 5 are followed, no noise exceedance against the criteria is predicted for the surrounding sensitive receivers.

4.5 Road Noise Intrusion

A noise model of the road noise has been used to determine the noise level at each window location. The predicted noise level has been compared against the criteria in the NSW Road Noise Policy to determine compliance with the windows open and/or closed as applicable. For the glazing, we have assumed the minimum standard glazing as per the NCC (RW 25dB).

For the outdoor play area, the amenity criteria of the EPA NPI 2017 has been adopted as per council DCP requirements.

Table 4.4.1: Road Noise Intrusion

Location	LAeq 1hr	Internal LAeq with Window		Criteria	Compliance
		Open	Closed		
0 – 3 Years Classroom	50	40	26	40	Yes, Open
Sickbay	50	42	27	35	Yes, Closed
Outdoor Play	51	-	-	55	Yes

5 RECOMMENDATIONS

Based on the predicted noise levels, the proposed development has a low risk of impacting nearby receptors on the condition the following recommendations are implemented:

5.1 Staff Parking

Staff arriving before 07:00am shall utilise parking spaces 1 and 2 (blue below) or utilise street parking.

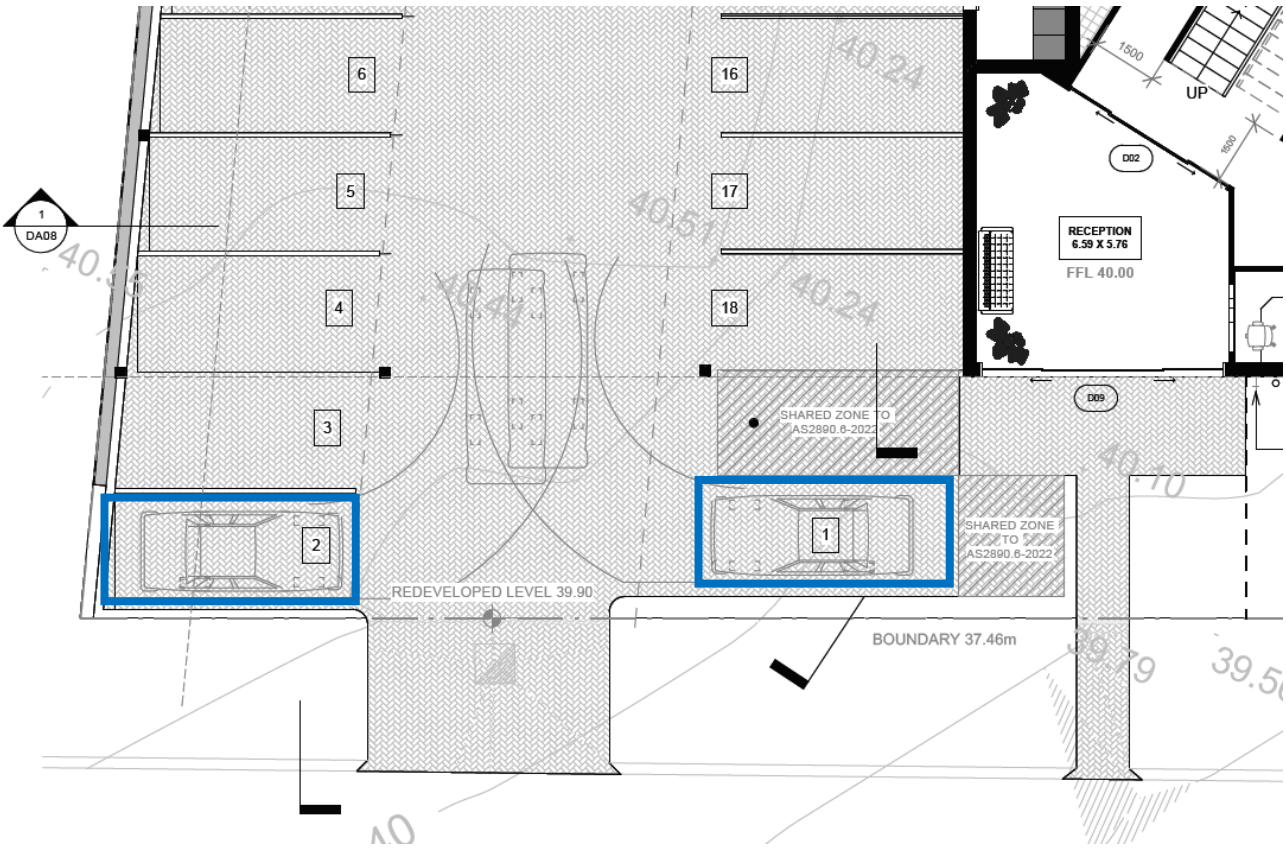

Figure 5.1: Staff Parking Requirements (blue) – Pre 07:00am

5.2 Mechanical Plant

i. Mechanical plant has been modelled as part of the assessment to show compliance is achievable if equipment selected with a maximum sound power level as those listed in table 4.2.1.

ii. Our assessment shows that all mechanical plant associated with the Childcare centre shall be limited to use between 07:00am and 06:00pm.

iii. Typically the exact equipment model and location of mechanical plant is not know until construction drawings are completed. It is recommended that an acoustic assessment is conducted of the mechanical plant prior to the construction certificate being issued to

verify compliance. Soundscape can provide an assessment of future mechanical plant when required.

iv. If the specified plant is found to be compliant contrary to point ii above, then the equipment specific noise assessment recommendations may be adopted.

v. The NSW DoPE – Child Care Planning Guideline requires all mechanical plant or equipment is screened by solid, gap free material and constructed to reduce noise levels.

Screening of equipment which prevents airflow (including acoustic louvers) will dramatically reduce the efficiency and lifespan of a compressor and likely void the warranty. This is NOT recommended. There is no effective/economic method for attenuating noise from AC other than correct positioning and using the build form of buildings and large fences offset from the unit (as utilised in the proposed design).

5.3 Reverberation

It is highly recommended that reverberation control measures are implemented within the activity rooms to prevent sound build up and improve speech intelligibility. AS 2107: 2016 contains design reverberation times which the Architect should incorporate into the design.

For a learning space of 200m^{3,} the recommended reverberation time is 0.55 seconds. Building design input should be sought as required.

5.4 Acoustic Panels

Acoustic panels will be required to reduce reverberation and to control sound being reflected off hard surfaces. A panel with an NCR of at least 0.8 should be used in the following areas:

- Undercover carpark ceiling, with a minimum coverage of 75% (orange in figure 5.1)
- Soffit of balconies, with a minimum coverage of 90%
- In relation to the AC units
    - Directly behind the units (green in figure 5.1)
    - On the 1800m fence opposite the AC units. A sliding gate is proposed, where clearance cannot be met a thinner panel with a lower NCR may be utilised. (blue in figure 5.1)
    - On the soffit above the AC units, with a min. coverage of 65% (yellow in figure 5.1)

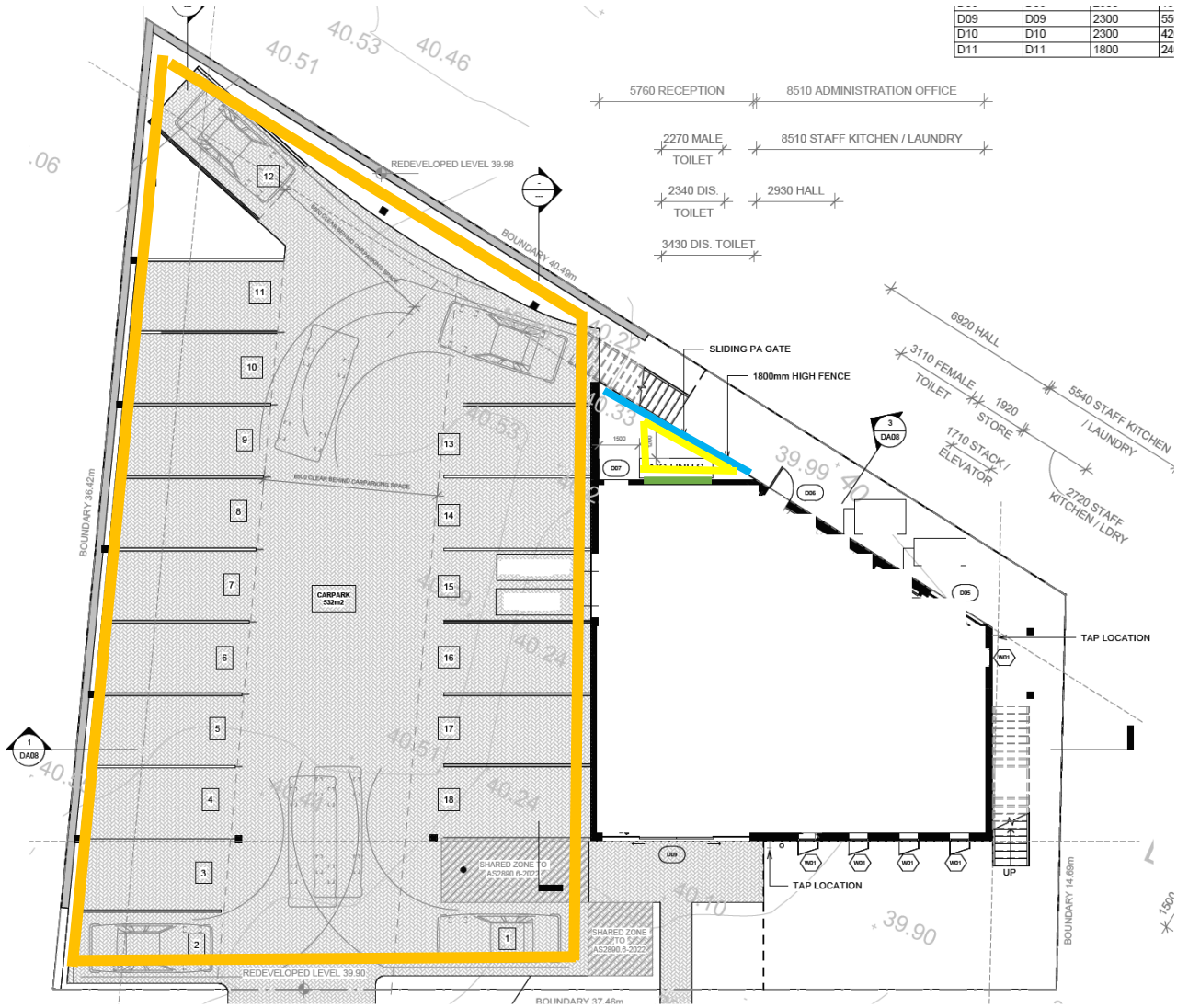

Figure 5.1: Acoustic Panel Treatment

6 CONCLUSION

Soundscape Consulting Pty Ltd was commissioned by Hoover Group Pty Ltd to complete a noise impact assessment at 124 New England Highway Lochinvar. The report is to be submitted to the certifying authority as part of the development application.

The proposal seeks consent for the construction of a multistorey childcare centre. The childcare centre proposes to cater for a maximum of 73 children: 27 children aged 0-3 and 46 children aged 3-5. The proposal includes two outdoor play areas, 18 car spaces and associated mechanical equipment.

A noise survey was conducted for 7 days to obtain statistical noise data north of the site, with existing data used for the south of the site. Receiver specific criteria was determined using a road noise model calibrated to the noise survey results (see section 3). Noise modelling was employed to predict the noise levels at surrounding sensitive receivers for assessment against the EPA Noise Policy for Industry criteria (see sections 2 and 4).

Provided the recommendations as presented in section 5 of the report are implemented, it is our opinion that the proposed development is capable of meeting the requirements of the EPA Noise Policy for Industry, NSW SEPP and Maitland City Council DCP.

Appendix A – Client Plan Drawings

PLAN SET FOR CONTRACTORS ONLY.

Window Schedule				
Type Mark	Mark	Height	Width	Comments
W01	W01	1500	750	DOUBLE GLAZE AWNING
W02	W02	2200	1200	DOUBLE GLAZED AWNING
W03	W03	1500	1200	FIXED

Door Schedule				
Type Mark	Mark	Height	Width	Comments
D01	D01	2200	3350	GLASS SLIDING DOOR
D02	D02	2400	4200	GLASS SLIDING DOOR
D03	D03	2300	920	GLASS HINGE DOOR
D04	D04	2300	1020	CAVITY SLIDING DOOR
D05	D05	2300	2300	GLASS SLIDING DOOR
D06	D06	2300	920	GLASS HINGE DOOR (EXIT)
D07	D07	2300	920	HINGE DOOR
D08	D08	2300	1830	DOUBLE GLASS HINGE DOOR
D09	D09	2300	5500	GLASS SLIDING DOOR
D10	D10	2300	4200	GLASS SLIDING DOOR
D11	D11	1800	2400	GLASS HINGE DOOR

CARPARK SCHEDULE

1. 5500 X 2700 DISABILITY COMPLIANT PARK TO AS2890.6-2022
2. 5500 x 2700
3. 5500 x 2700
4. 5500 x 2700
5. 5500 x 2700
6. 5500 x 2700
7. 5500 x 2700
8. 5500 x 2700
9. 5500 x 2700
10. 5500 x 2700
11. 5500 x 2700
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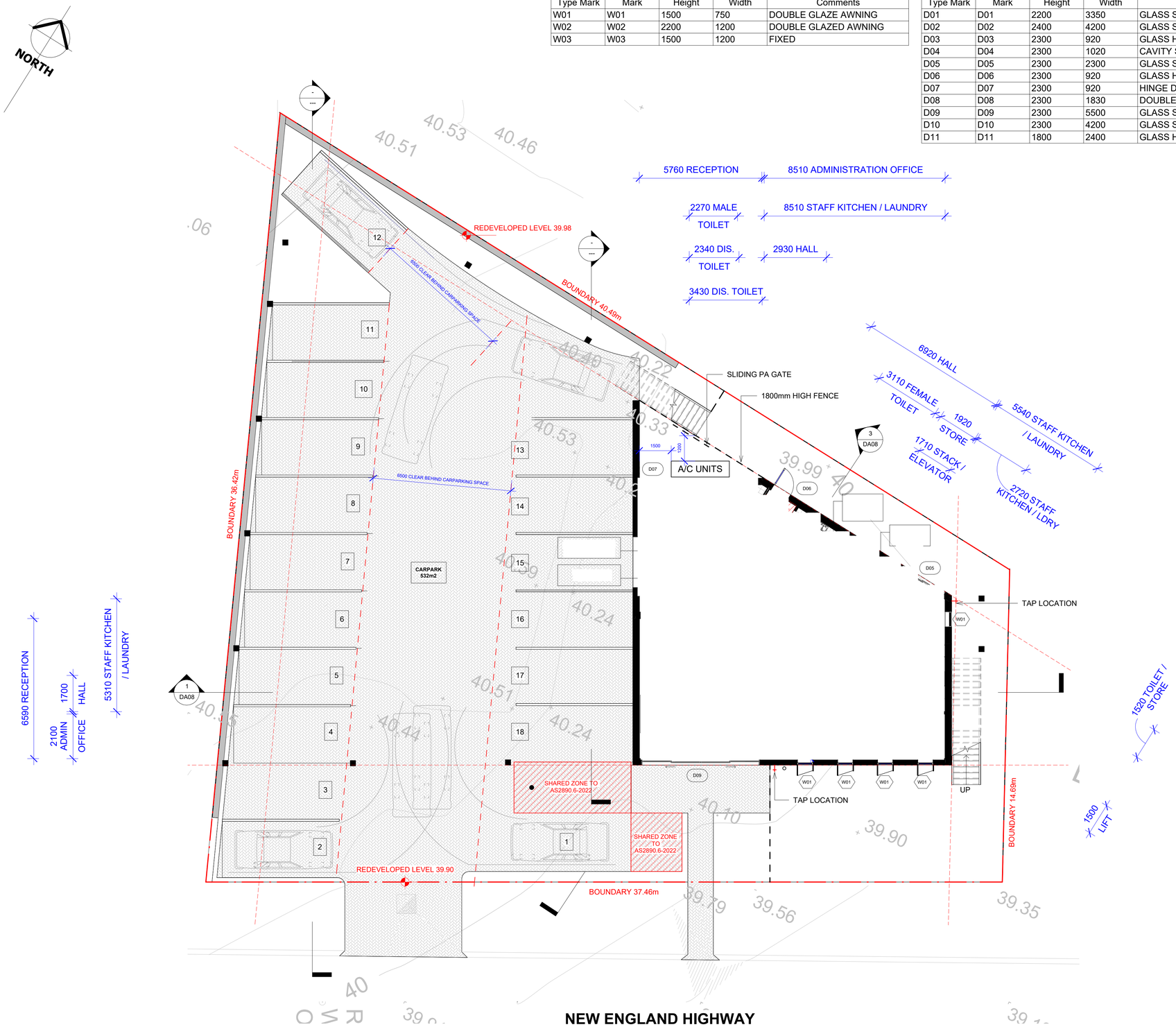

1 CHILDCARE CENTRE GROUND FLOOR
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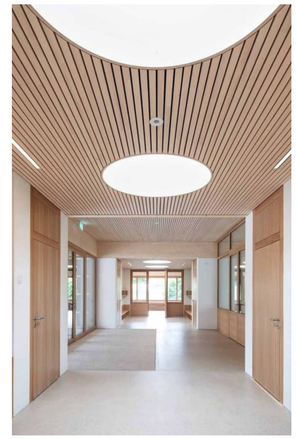


HOOVERGROUP
DESIGN & DEVELOPMENT

BUILDING DESIGNERS ASSOCIATION OF AUSTRALIA

ACCREDITED BUILDING DESIGNER

Sheet Issue Date: 17.02.2025

No.	Description	Date
A	CONCEPTUAL DESIGN ISSUED FOR CLIENT REVIEW	15.11.2024
B	ISSUED FOR APPROVAL	17.02.2025

RPL GROUP

PROPOSED CHILDCARE CENTRE

124 NEW ENGLAND HIGHWAY
LOCHINVAR NSW 2321

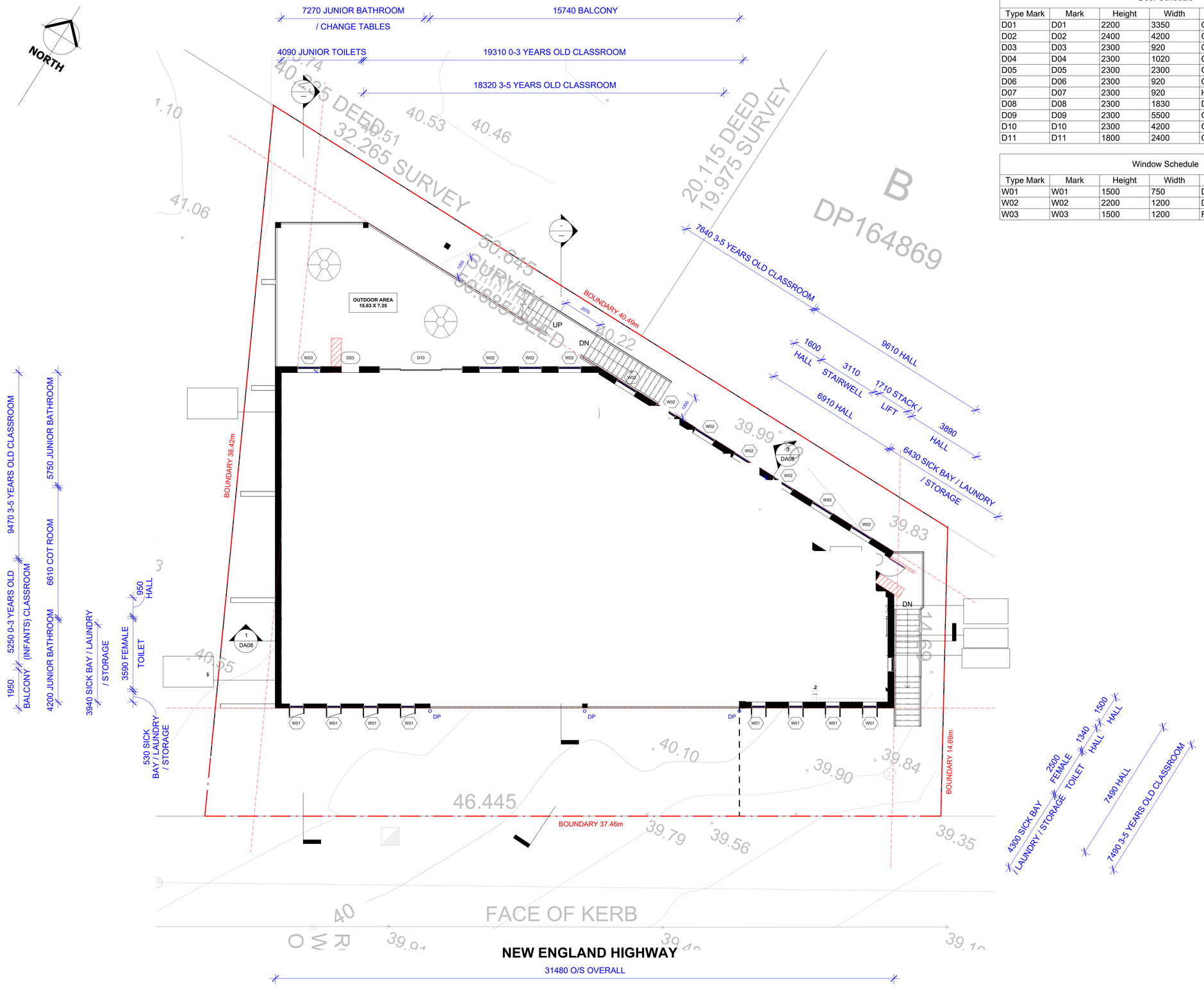
SHEET DA03
CHILDCARE CENTRE
FLOOR PLANS

Project number	RPL-202401
Project Issue Date	17.02.2025
Drawn by	ET
Checked & Approved by	H GROUP

RPL-202401

Scale 1 : 100

PLAN SET FOR CONTRACTORS ONLY.



1 CHILDCARE CENTRE FIRST FLOOR
1 : 100

Door Schedule				
Type Mark	Mark	Height	Width	Comments
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D02	D02	2400	4200	GLASS SLIDING DOOR
D03	D03	2300	920	GLASS HINGE DOOR
D04	D04	2300	1020	CAVITY SLIDING DOOR
D05	D05	2300	2300	GLASS SLIDING DOOR
D06	D06	2300	920	GLASS HINGE DOOR (EXIT)
D07	D07	2300	920	HINGE DOOR
D08	D08	2300	1830	DOUBLE GLASS HINGE DOOR
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HOOVERGROUP
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bdaa
BUILDING DESIGNERS
ASSOCIATION OF AUSTRALIA

bdaa
ACCREDITED
BUILDING DESIGNER

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RPL GROUP

PROPOSED CHILDCARE CENTRE

124 NEW ENGLAND HIGHWAY
LOCHINVAR NSW 2321

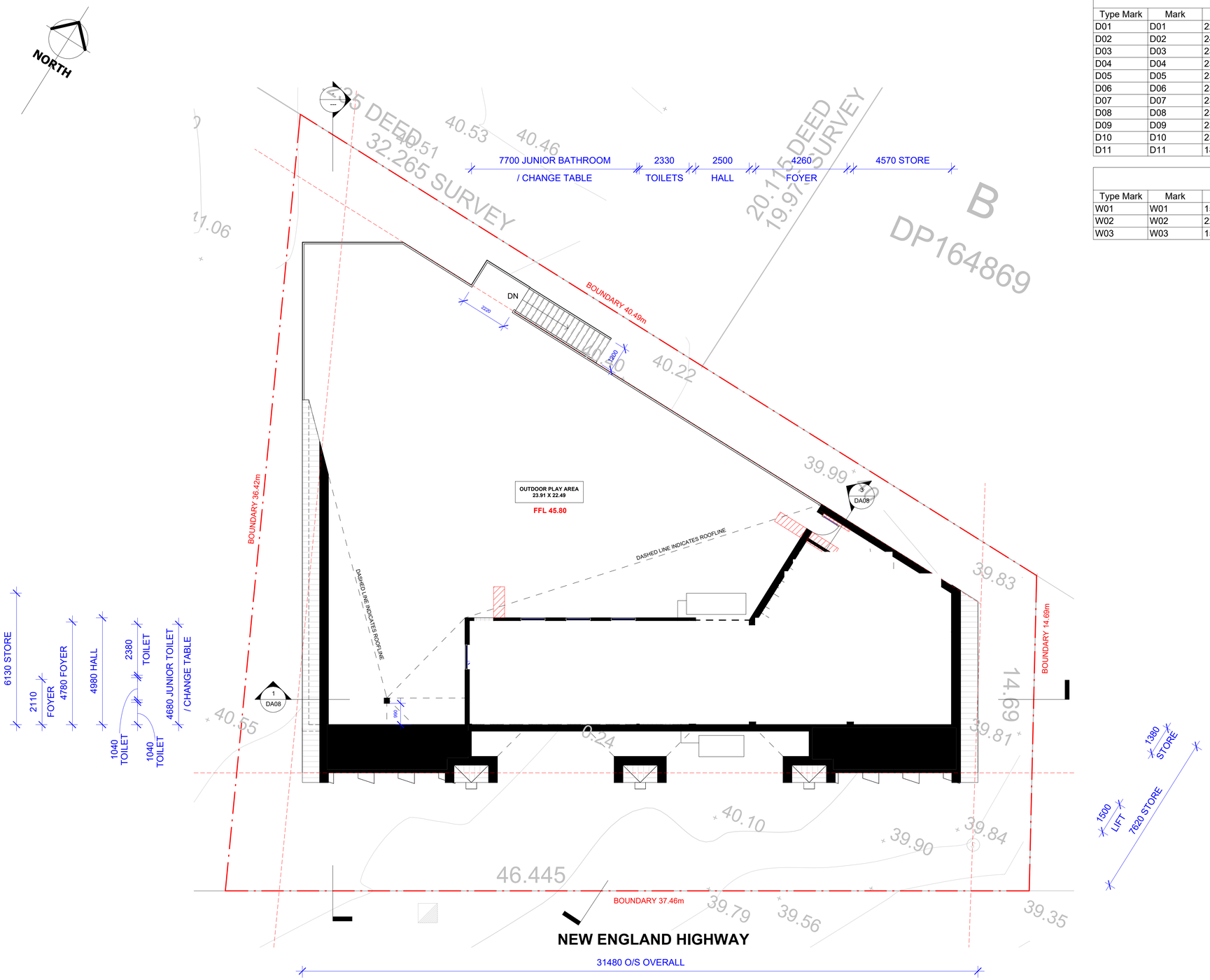
SHEET DA04
CHILDCARE CENTRE
FLOOR PLANS

Project number	RPL-202401
Project Issue Date	17.02.2025
Drawn by	ET
Checked & Approved by	H GROUP

RPL-202401

Scale 1 : 100

PLAN SET FOR CONTRACTORS ONLY.



1 CHILDCARE CENTRE ROOFTOP
1 : 100

Door Schedule				
Type Mark	Mark	Height	Width	Comments
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D02	D02	2400	4200	GLASS SLIDING DOOR
D03	D03	2300	920	GLASS HINGE DOOR
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HOOVERGROUP
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RPL GROUP

PROPOSED CHILDCARE CENTRE

124 NEW ENGLAND HIGHWAY
LOCHINVAR NSW 2321

SHEET DA05
CHILDCARE CENTRE
FLOOR PLANS

Project number	RPL-202401
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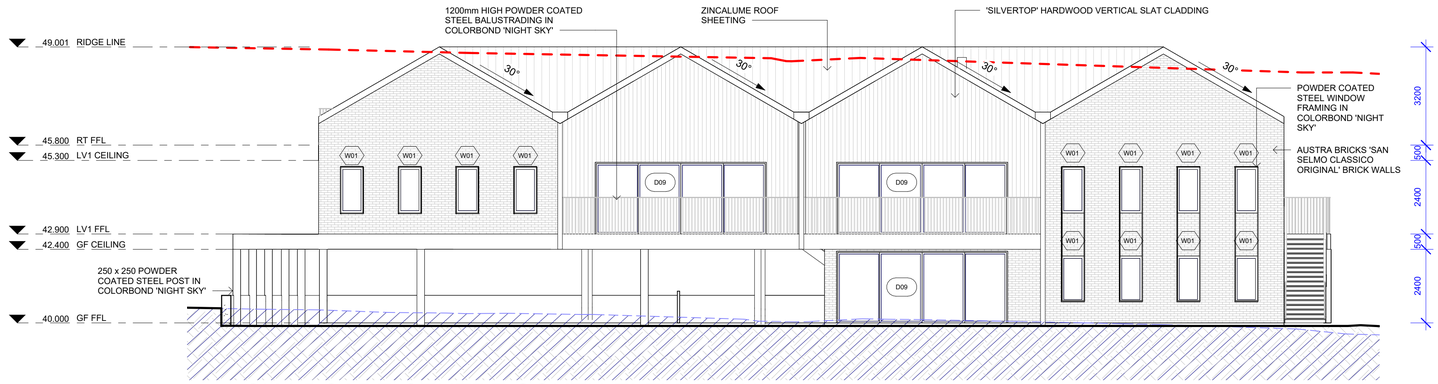
Drawn by	ET
Checked & Approved by	H GROUP

RPL-202401

Scale 1 : 100

PLAN SET FOR CONTRACTORS ONLY.



3 CHILDCARE CENTRE SOUTH ELEVATION

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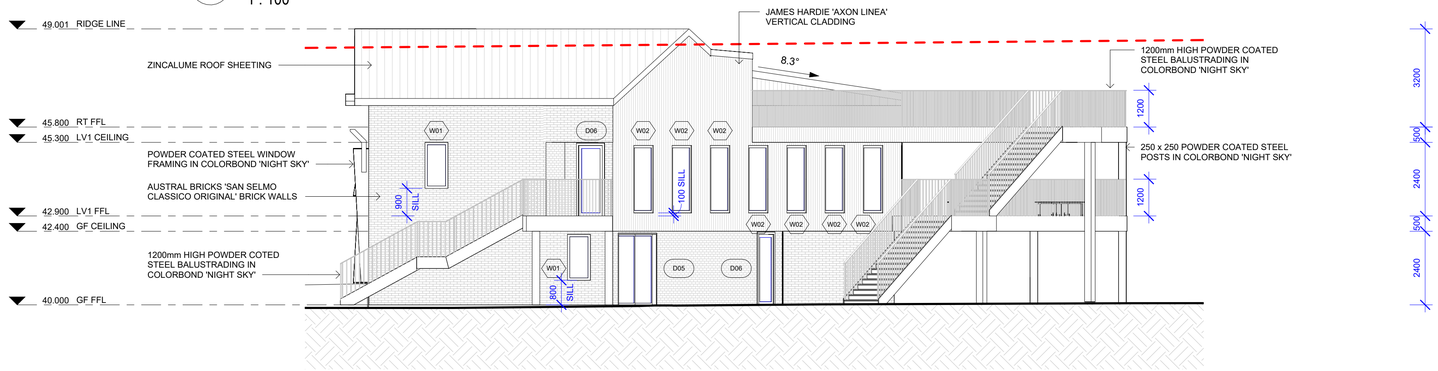
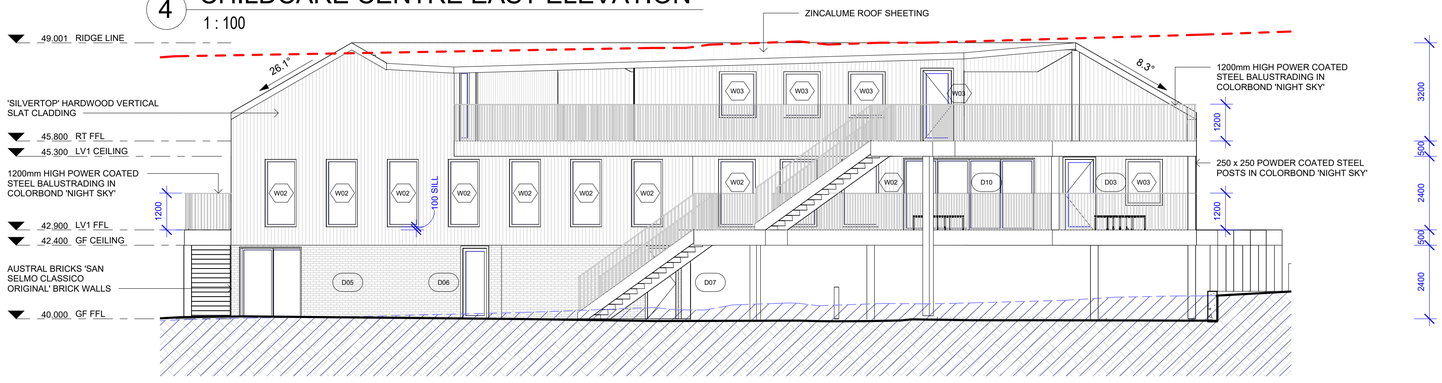


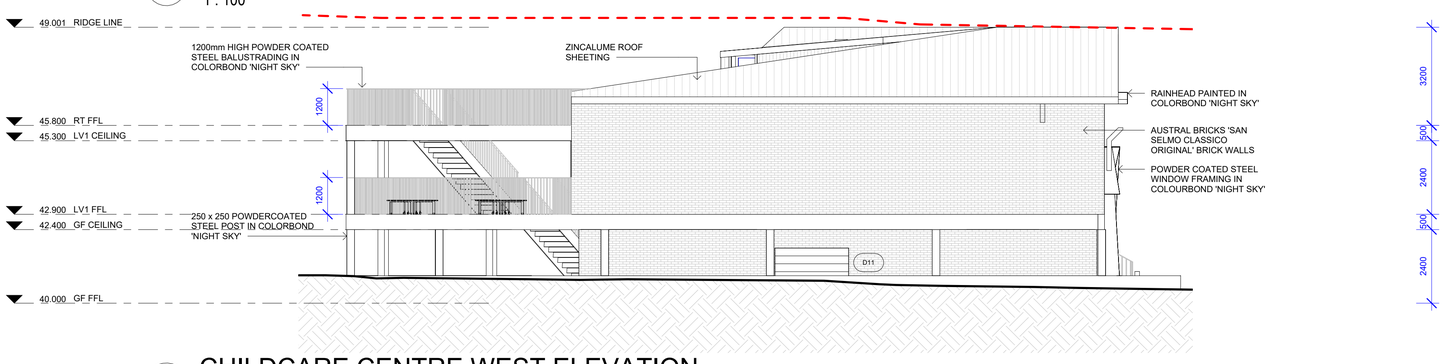
4 CHILDCARE CENTRE EAST ELEVATION

1 : 100



1 CHILDCARE CENTRE NORTH ELEVATION

1 : 100

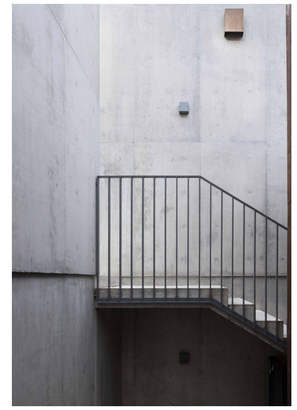


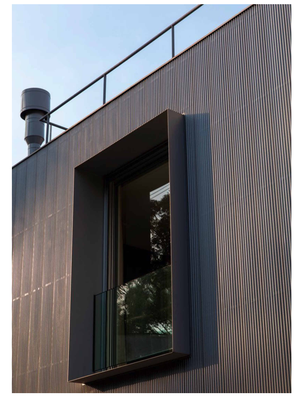
2 CHILDCARE CENTRE WEST ELEVATION

1 : 100

Door Schedule				
Type Mark	Mark	Height	Width	Comments
D01	D01	2200	3350	GLASS SLIDING DOOR
D02	D02	2400	4200	GLASS SLIDING DOOR
D03	D03	2300	920	GLASS HINGE DOOR
D04	D04	2300	1020	CAVITY SLIDING DOOR
D05	D05	2300	2300	GLASS SLIDING DOOR
D06	D06	2300	920	GLASS HINGE DOOR (EXIT)
D07	D07	2300	920	HINGE DOOR
D08	D08	2300	1830	DOUBLE GLASS HINGE DOOR
D09	D09	2300	5500	GLASS SLIDING DOOR
D10	D10	2300	4200	GLASS SLIDING DOOR
D11	D11	1800	2400	GLASS HINGE DOOR

Window Schedule				
Type Mark	Mark	Height	Width	Comments
W01	W01	1500	750	DOUBLE GLAZE AWNING
W02	W02	2200	1200	DOUBLE GLAZED AWNING
W03	W03	1500	1200	FIXED





HOOVERGROUP
DESIGN & DEVELOPMENT

BUILDING DESIGNERS ASSOCIATION OF AUSTRALIA

ACCREDITED BUILDING DESIGNER

Sheet Issue Date: 15.11.2024

No.	Description	Date
A	CONCEPTUAL DESIGN ISSUED FOR CLIENT REVIEW	15.11.2024

RPL GROUP

PROPOSED CHILDCARE CENTRE

124 NEW ENGLAND HIGHWAY
LOCHINVAR NSW 2321

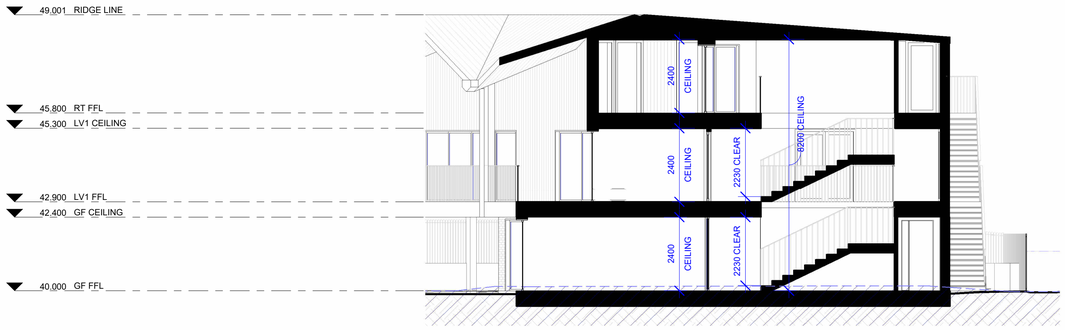
SHEET DA07
CHILDCARE CENTRE ELEVATIONS

Project number	RPL-202401
Project Issue Date	17.02.2025
Drawn by	ET
Checked & Approved by	H GROUP

RPL-202401

Scale 1 : 100

PLAN SET FOR CONTRACTORS ONLY.



3 SECTION FOR CEILING HEIGHTS A
1 : 100

1 SECTION FOR CEILING HEIGHTS B
1 : 100

HOOVERGROUP
DESIGN & DEVELOPMENT

BUILDING DESIGNERS
ASSOCIATION OF AUSTRALIA

ACCREDITED
BUILDING DESIGNER

Sheet Issue Date: 15.11.2024

No.	Description	Date
A	CONCEPTUAL DESIGN ISSUED FOR CLIENT REVIEW	15.11.2024

RPL GROUP

PROPOSED CHILDCARE CENTRE

124 NEW ENGLAND HIGHWAY
LOCHINVAR NSW 2321

SHEET DA08
CHILDCARE CENTRE
SECTIONS

Project number RPL-202401

Project Issue Date 17.02.2025

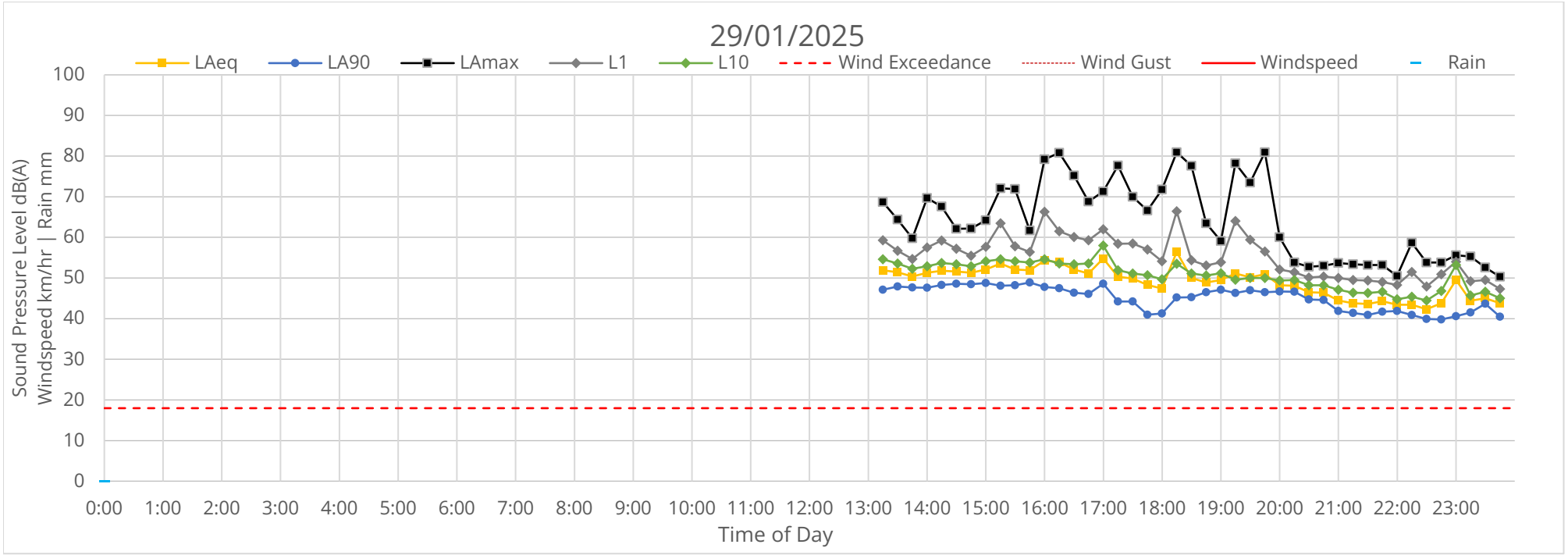
Drawn by ET

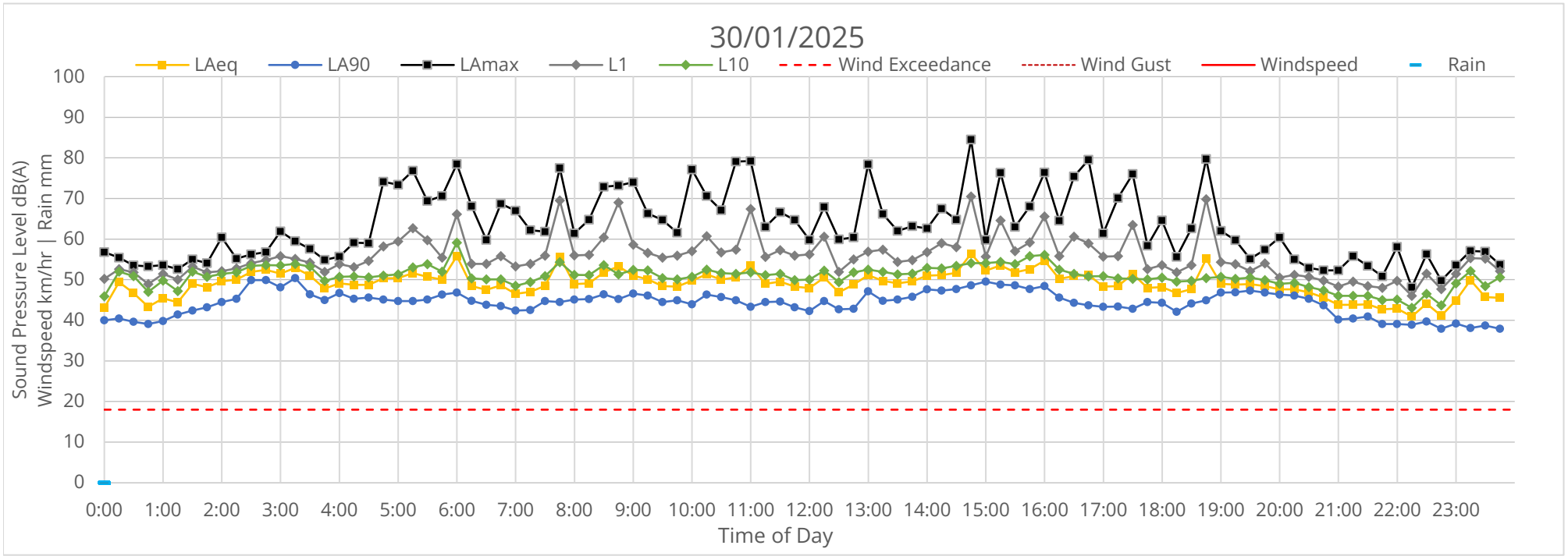
Checked & Approved by H GROUP

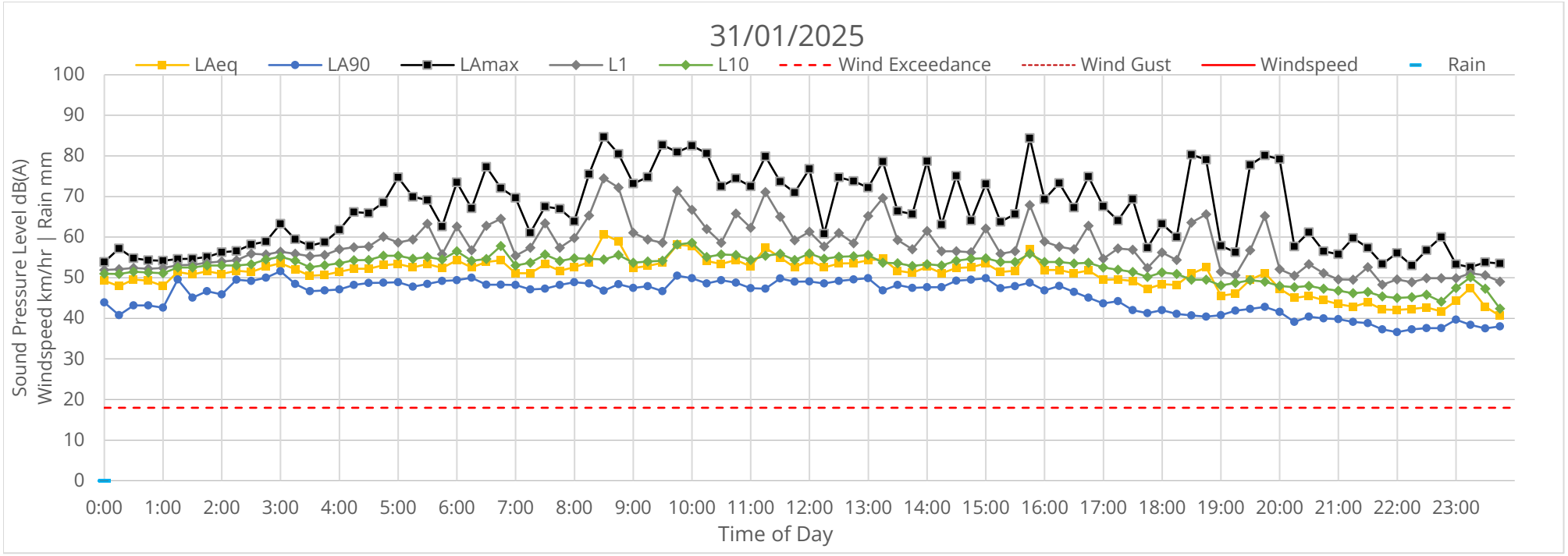
RPL-202401

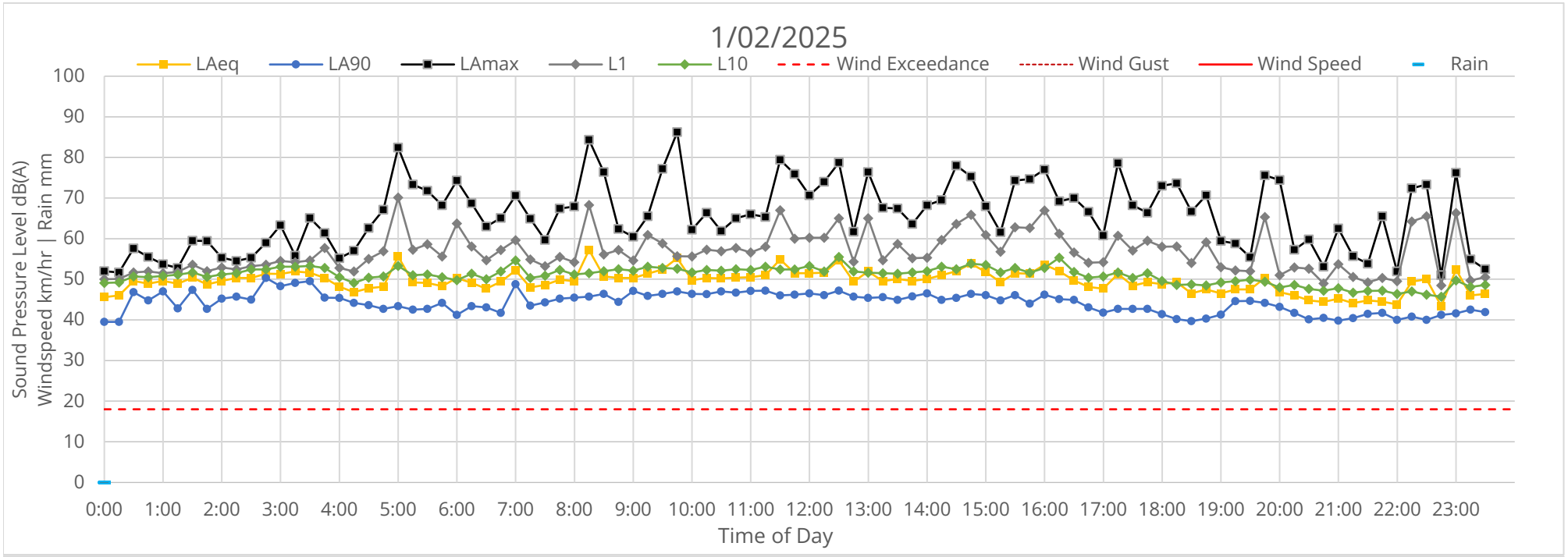
Scale 1 : 100

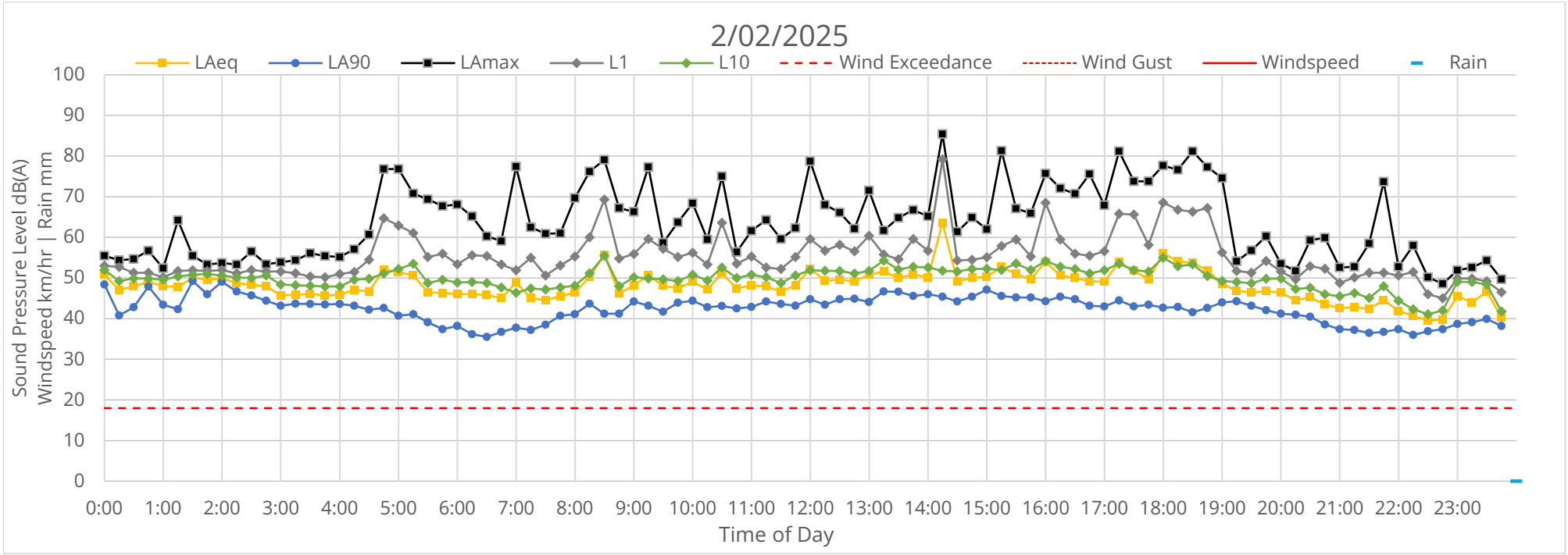
Appendix B: Noise Survey Graphs

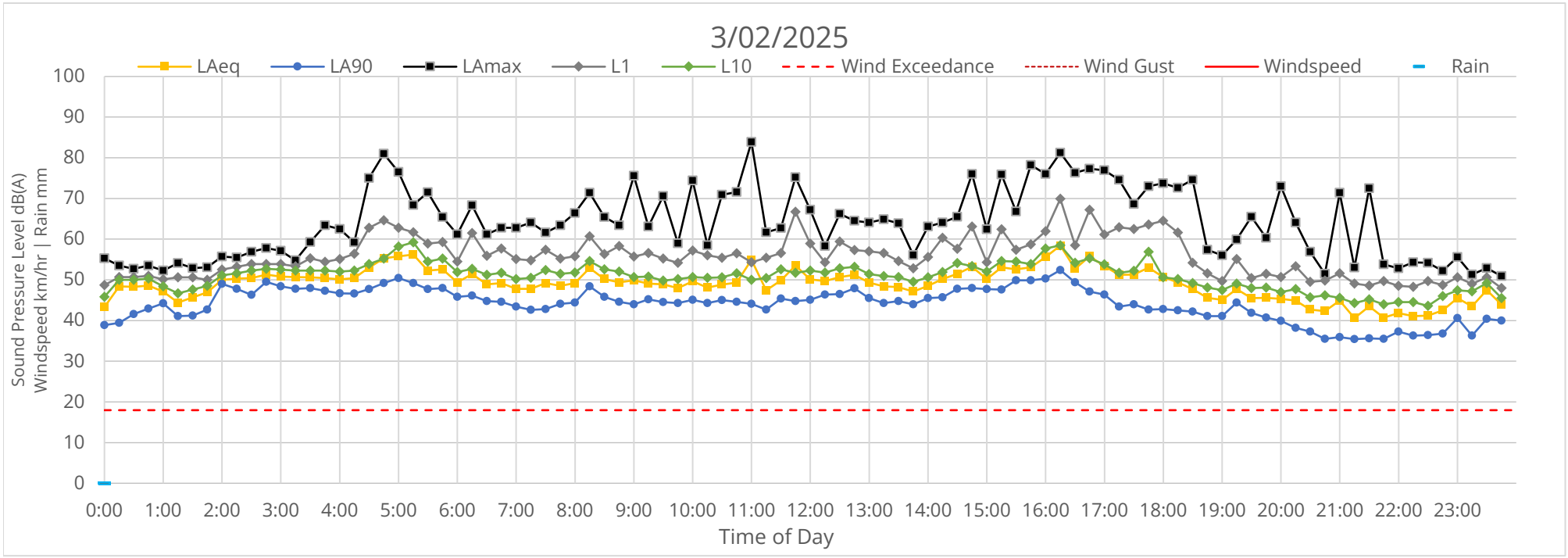

29/01/2025
LAeq
LA90
LAmax
L1
L10
Wind Exceedance
Wind Gust
Windspeed
Rain
Sound Pressure Level dB(A)
Windspeed km/hr | Rain mm
100
90
80
70
60
50
40
30
20
10
0
0:00
1:00
2:00
3:00
4:00
5:00
6:00
7:00
8:00
9:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Time of Day

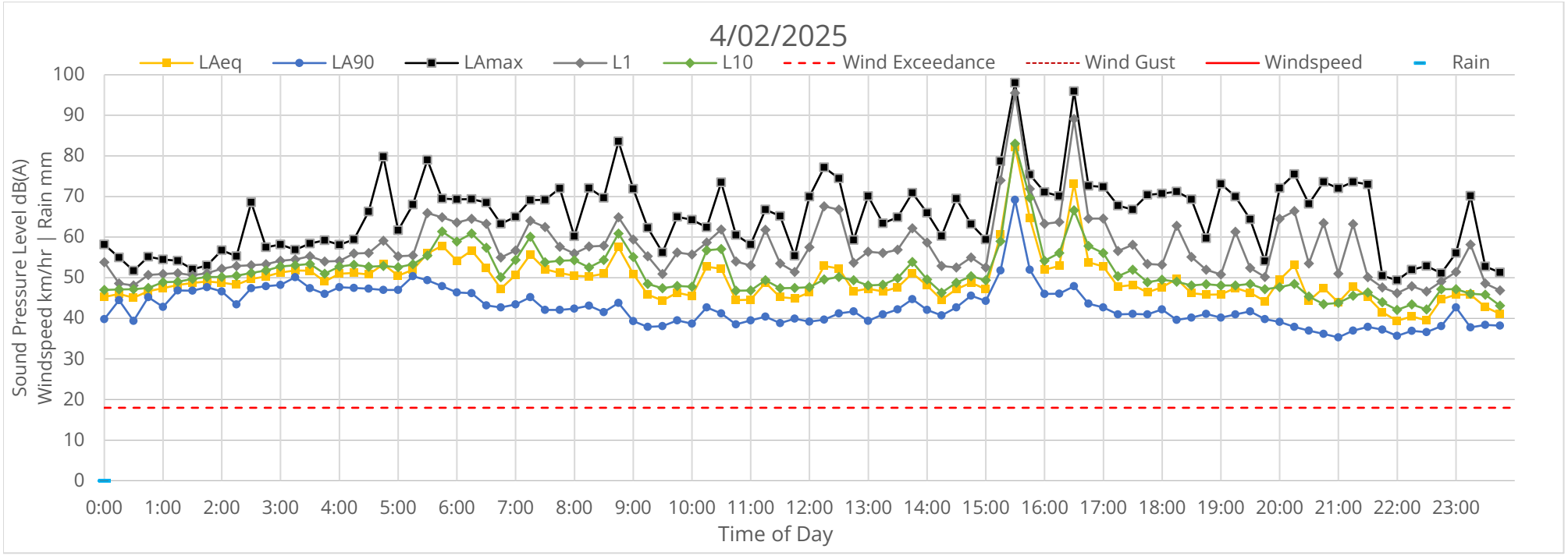

30/01/2025
LAeq
LA90
LAmax
L1
L10
Wind Exceedance
Wind Gust
Windspeed
Rain
Sound Pressure Level dB(A)
Windspeed km/hr | Rain mm
100
90
80
70
60
50
40
30
20
10
0
0:00
1:00
2:00
3:00
4:00
5:00
6:00
7:00
8:00
9:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
Time of Day

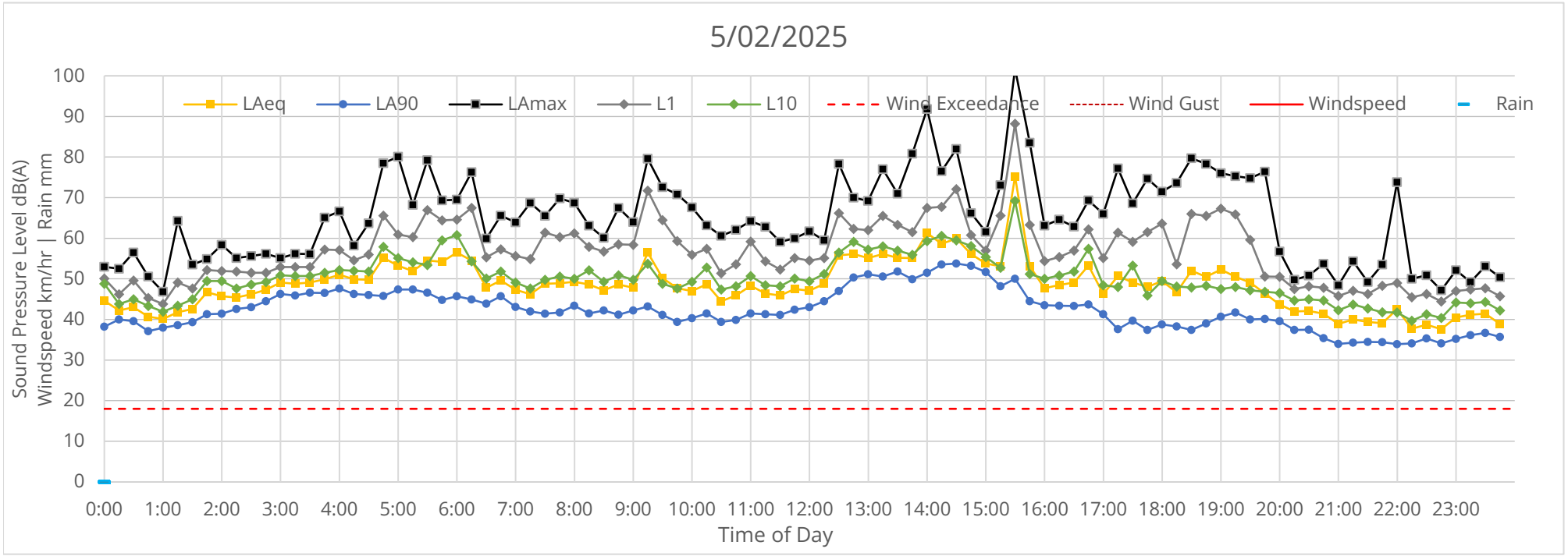

31/01/2025
LAeq
LA90
LAmax
L1
L10
Wind Exceedance
Wind Gust
Windspeed
Rain
Sound Pressure Level dB(A)
Windspeed km/hr | Rain mm
Time of Day


1/02/2025
LAeq
LA90
LAmax
L1
L10
Wind Exceedance
Wind Gust
Wind Speed
Rain
Sound Pressure Level dB(A)
Windspeed km/hr | Rain mm
Time of Day


2/02/2025
LAeq
LA90
LAmax
L1
L10
Wind Exceedance
Wind Gust
Windspeed
Rain
Sound Pressure Level dB(A)
Windspeed km/hr | Rain mm
Time of Day


3/02/2025
LAeq
LA90
LAmax
L1
L10
Wind Exceedance
Wind Gust
Windspeed
Rain
Sound Pressure Level dB(A)
Windspeed km/hr | Rain mm
Time of Day


4/02/2025
LAeq
LA90
LAmax
L1
L10
Wind Exceedance
Wind Gust
Windspeed
Rain
Sound Pressure Level dB(A)
Windspeed km/hr | Rain mm
Time of Day

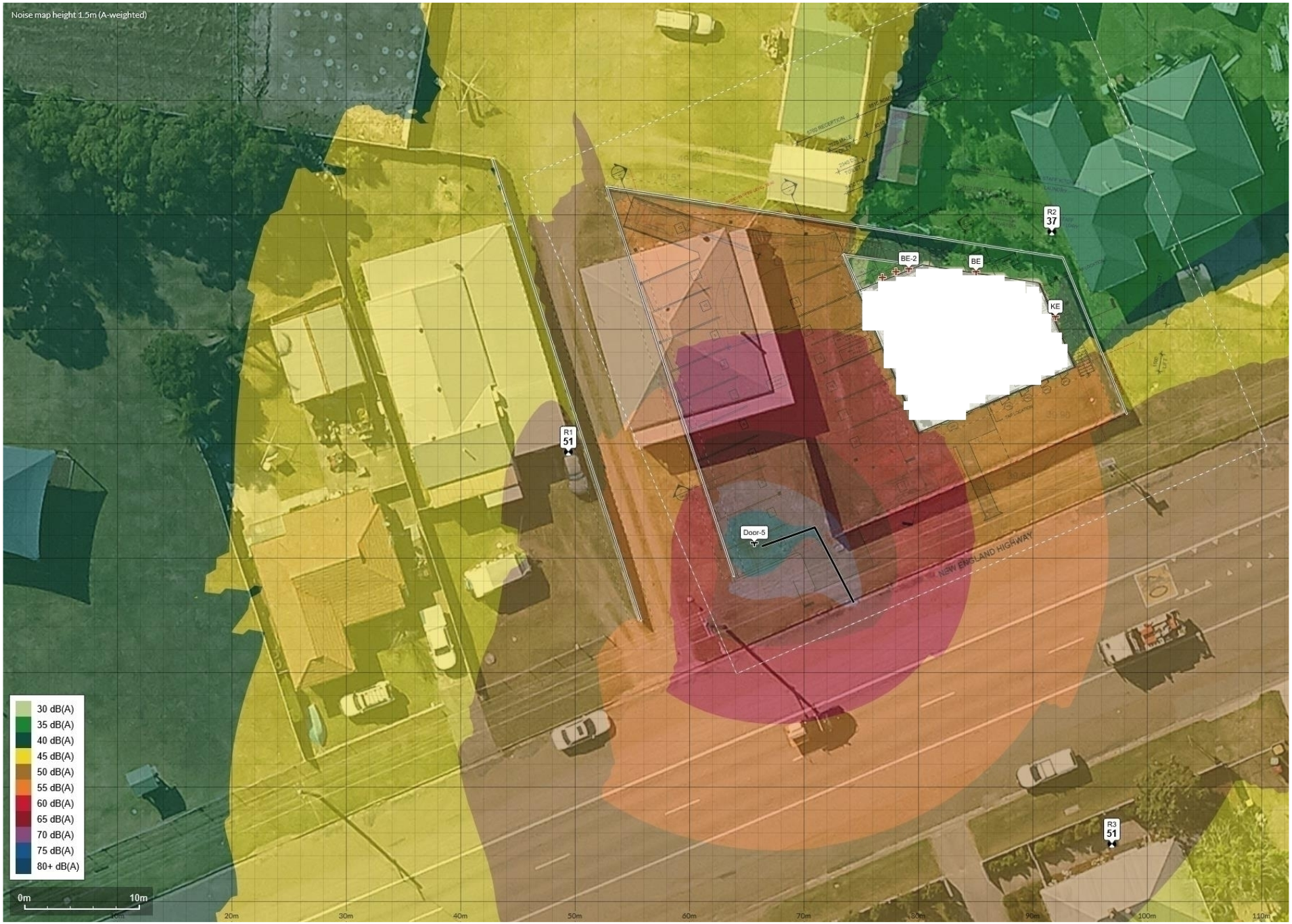

5/02/2025
LAeq
LA90
LAmax
L1
L10
Wind Exceedance
Wind Gust
Windspeed
Rain
Sound Pressure Level dB(A)
Windspeed km/hr | Rain mm
Time of Day

Appendix C – Noise Modelling


Noise map height 1.5m (A-weighted)
R1
36
R2
37
R3
35
BE-2
BE
KE
Door
Door-5
Door-2
Door-6
Door-3
Door-4
30 dB(A)
35 dB(A)
40 dB(A)
45 dB(A)
50 dB(A)
55 dB(A)
60 dB(A)
65 dB(A)
70 dB(A)
75 dB(A)
80+ dB(A)
0m
10m
10m
20m
30m
40m
50m
60m
70m
80m
90m
100m
110m


Noise map height 1.5m (A-weighted)
R1
41
R2
41
R3
43
AC Breakout
BE-2
BE
BE-3
BE-4
BE-5
BE-6
3-5yrs
30 dB(A)
35 dB(A)
40 dB(A)
45 dB(A)
50 dB(A)
55 dB(A)
60 dB(A)
65 dB(A)
70 dB(A)
75 dB(A)
80+ dB(A)
0m
10m


Noise map height 1.5m (A-weighted)
R1
43
R2
44
R3
34
AC Breakout
BE-2
BE
KE
BE-5
BE-3
All Children
BE-6
BE-4
30 dB(A)
35 dB(A)
40 dB(A)
45 dB(A)
50 dB(A)
55 dB(A)
60 dB(A)
65 dB(A)
70 dB(A)
75 dB(A)
80+ dB(A)
0m
10m
10m
20m
30m
40m
50m
60m
70m
80m
90m
100m


Noise map height 1.5m (A-weighted)
R2
37
BE-2
BE
KE
R1
51
Door-5
NEW ENGLAND HIGHWAY
R3
51
30 dB(A)
35 dB(A)
40 dB(A)
45 dB(A)
50 dB(A)
55 dB(A)
60 dB(A)
65 dB(A)
70 dB(A)
75 dB(A)
80+ dB(A)
0m
10m
20m
30m
40m
50m
60m
70m
80m
90m
100m
110m