50 Westney Road

Private Plan Change – Acoustic Assessment

Rotokohu Investments Limited

Prepared by:

SLR Consulting New Zealand

SLR Project No.: 810.030775-R01

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Revision Record

Revision	Date	Prepared By	Checked By	Authorised By
1.0	10 September 2024	Juan Restrepo	Peter Runcie	Peter Runcie

Basis of Report

This report has been prepared by SLR Consulting New Zealand (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Rotokohu Investments Limited (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

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Acronyms and Abbreviations

Terms	Description
A' weighted	A frequency adjustment which represents how humans hear sounds.
Ambient noise level	The all-encompassing sound associated with an environment or area.
AUP	Auckland Unitary Plan Operative in part.
dB	Decibel
dBA	'A' weighted decibel
DIN 4150-3	German Industrial Standard DIN 4150-3 (1999): Structural vibration – Part 3 Effects of vibration on structures.
Free field	A monitoring location where the microphone is positioned sufficiently far from nearby surfaces for the measured data to not be influenced by reflected noise.
Hz	Hertz
Impulsive noise	Noise with a high peak of short duration, or sequence of peaks.
Intermittent noise	Noise which varies in level with the change in level being clearly audible.
L90 , L10 , etc.	Statistical exceedance levels, where LN is the sound pressure level exceeded for N% of a given measurement period.
L_{Aeq}	The 'A' weighted equivalent noise level. It is defined as the steady sound level that contains the same amount of acoustical energy as the corresponding time-varying sound.
L_{Amax}	The A' weighted maximum sound pressure level of an event.
Low frequency	Noise containing energy in the low frequency range.
L_P or SPL	Sound Pressure Level.
Lw or SWL	Sound Power Level.
NZS 6801:2008	New Zealand Standard NZS 6801:2008 "Measurement of Environmental Sound".
NZS 6802:2008	New Zealand Standard NZS 6802:2008 "Assessment of Environmental Noise".
NZS 6803:1999	New Zealand Standard NZS 6803:1999 "Acoustics – Construction Noise".
Octave-band	A frequency band where the highest frequency is twice the lowest frequency.
Rating level	A derived level used for comparison with a noise limit.
Rw	Weighted Sound Reduction Index of a building element. That is the laboratory tested (or theoretically calculated) sound insulation performance of a single element.
Tonality	Noise containing a prominent frequency.

1.0 Introduction

Rotokohu Investments Limited is seeking to rezone the land from a *Residential – Mixed Housing Suburban Zone* to *Business - Light Industry Zone*.

SLR Consulting (**SLR**) has been commissioned to undertake an acoustic assessment of the effects associated with the proposed private plan change.

This report contains a review of the relevant noise performance standards applicable to the existing site zoning; recommends appropriate noise performance standards for the proposed new zoning and provides an assessment of noise effects from the proposed zone and noise rules to adjacent sites.

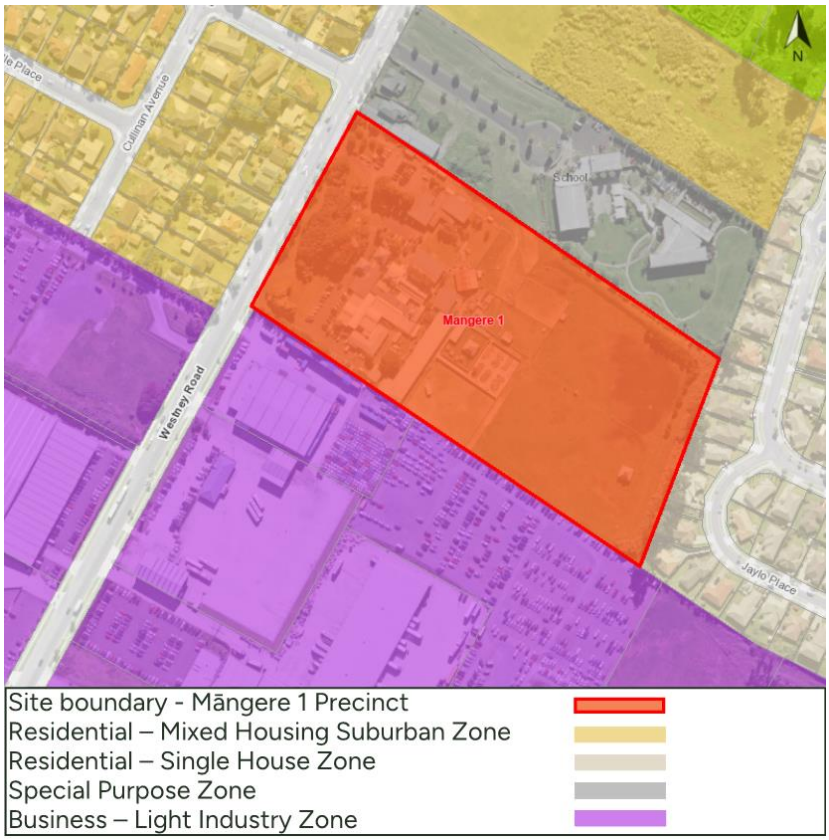
2.0 Site Description and Location

The subject site is located at 50 Westney Road approximately 380m south of Westney Road's intersection with Kirkbride Road in Mangere. The approximate 4 ha site is basically rectangular in shape with a 140m frontage to Westney Road and a depth of 280m on its northern side and 300m on the south.

The site and properties to the west across Westney Road are on land zoned *Residential – Mixed Housing Suburban Zone* under the Auckland Unitary Plan (**AUP**). The site is also within Māngere 1 Precinct.

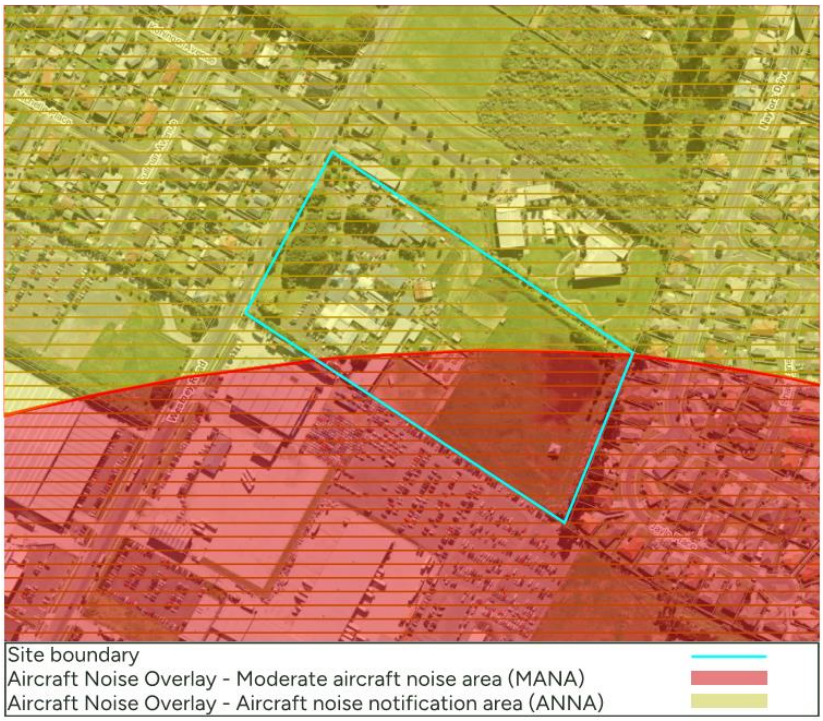
The land to the north (44 Westney Road) is a Special Purpose – School Zone (Zayed College for Girls). Properties to the east are on land zoned *Residential – Single House Zone* and the land to the south is in a *Business – Light Industry Zone* as shown in **Figure 1** below.

Figure 1 Existing AUP-OP Zoning



The site and surrounding area is close to Auckland International Airport and so falls under two aircraft noise overlays; part within the moderate aircraft noise area (MANA) and part within the aircraft noise notification area (ANNA). These are shown in **Figure 2** below.

Figure 2 Auckland Airport - Aircraft Noise Overlay



The site is currently used, primarily, by the SPCA for its main Auckland base and animal shelter. This facility is located on the northern two-thirds of the site with the rear third having been recently developed into an open-air car park which is being used in conjunction with the adjacent site to the south at 5 Verissimo Drive.

3.0 Noise Environment

3.1 Existing Noise Environment

Unattended noise measurements were undertaken to quantify daytime and night-time ambient noise levels representative of those at the site, surrounding residential properties to the east and school to the north at the locations indicated in **Figure 3** below. Noise Levels were measured from 23 May 2024 to 27 May 2024 using two noise loggers[1] simultaneously (one at each location) in general accordance with the NZS 6801:2008 *Acoustics - Measurement of environmental sound*. The calibration of the sound level meters was checked before and after the measurements and was found to be within an acceptable margin of the reference signal.

[1] Svantek 957 Type 1 sound level meter serial # 20670 and Svan 958 sound level meter serial # 81111

Figure 3 Noise Environment Measurement Locations

During the site visit observations confirmed the noise environment to be formed of a mixture of activity on adjacent land (the operation of the school to the north, the subject site and the sites in the business zone to the south). Other contributors included traffic noise from Westney Road (most evident at measurement location 1) and aircraft noise. The dominant noise source during set up and collection of the equipment was the school ringing bell and beeping from forklift movements in the business zone.

The measurement data is provided graphically in **Appendix A**.

Analysis of the measured data identified that daytime (7 am to 10 pm) noise levels ranged from 40 - 62 dB $L_{Aeq,15min}$ with an average level of 52 $L_{Aeq,15hrs}$ at the school boundary and 47 dB $L_{Aeq,15hrs}$ at the residential boundary. Night-time (10 pm to 7 am) noise levels ranged 38 - 59 dB $L_{Aeq,15min}$ with an average level of 50 dB $L_{Aeq,9hrs}$ at the school boundary and 46 dB $L_{Aeq,9hrs}$ at the residential boundary.

4.0 Noise Performance Standards

4.1 Existing

The maximum noise levels in *Residential Zones* are set out in standard E25.6.2 of the AUP. However, due to the site being within the *Māngere 1 Precinct* area noise from the site is controlled by the precinct limits. Standard *I420.6.3. Noise* states that noise levels arising from activities established after 1 October 2003 on the site measured at or within the boundary of any other site must not exceed the limits in **Table 1** below.

Table 1 Noise Limits (Table I420.6.3.1)

Activity	Average maximum level		Maximum
	dBL_{Aeq}		dBL_{AFmax}
	Monday to Sunday 7am-8pm	All other times	10pm-7am
Within Residential zones	55	45	75
Within Industrial zones	65	65	90

For context, it is noted that *Table I420.6.4.1 Yards*, establishes setback distances for permitted activities within the Precinct, 10 m to the front (western boundary), 30 m to the eastern boundary and 5 m to the northern boundary. These yard setback distances do not override the noise limits above which apply at or within the boundary of any other site irrespective of the location of activities within the site.

4.2 Airport Reverse Sensitivity

Due to the site also being partly within the MANA Aircraft Noise Overlay, the following requirements in Standard D24.6.3 apply (these also apply to the adjacent residential land to the east within this overlay):

> *(1) In buildings containing activities sensitive to aircraft noise (except care centres, educational facilities, and tertiary education facilities); acoustic insulation and related ventilation and/or air conditioning system/s must be installed to achieve an internal environment in all habitable rooms (with all external doors of the building and all windows of the habitable rooms closed) of 40 dB L_{dn}.*
>
> *(4) The required acoustic treatment measures to achieve the acoustic noise environment specified in rule D24.6.3 (3) must be determined by using the Future Airport Noise Contours contained in Appendix 19 Auckland Airport Future Aircraft Noise Contours (FANC) – Aircraft Noise Overlay.*
>
> *(5) Upon the completion of the installation of the acoustic treatment measures the owner must provide the Council with certificates prepared by a suitably qualified and experienced:*
>
> *(a) acoustical consultant certifying that the acoustic treatment measures specified for the activity in this control are sufficient to achieve compliance with this.*

The Council published Future Aircraft Noise Contour (FANC) identifies the land as exposed to potential aircraft noise levels of 60-61 dB L_{dn}.

4.3 Proposal

It is proposed that the re-zoned land would be subject to the AUP rules for land zoned *Business – Light Industry*, consistent with other similarly zoned land in Auckland. The relevant noise limits which would apply to activities on this land are those set out in Standards E25.6.5 and E25.6.19 of Chapter E25 of the Auckland Unitary Plan.

Standard E25.6.5 sets a limit of 65 dB LAeq at all times when measured or assessed within the boundary of any other site in the *Business – Light Industry* zone. This limit would apply at the adjacent *Business – Light Industry* zoned land.

Standard E25.6.19 states that the noise (rating) and maximum noise level from any activity in the *Business* zones must not exceed the levels in **Table 2** below when measured within the boundary of a site in a *Residential* zone.

Table 2 Noise Levels at the Business Zone Interface (Table E25.6.19.1)

Time	Noise level
Monday to Saturday 7am-10pm	55dB L_{Aeq}
Sunday 9am-6pm	
All other times	45dB L_{Aeq} 60dB L_{eq} at 63 Hz 55dB L_{eq} at 125 Hz 75dB L_{AFmax}

There are no proposed changes to the ANNA and MANA overlays which would apply in the same manner as they do presently.

5.0 Assessment of Noise Effects

5.1 Noise Limits

The proposed noise Standards (E25.6.5 and E25.6.19 of Chapter E25 of the Auckland Unitary Plan) contain the same noise limits at the adjacent land uses as those currently applicable (Māngere 1 Precinct requirements). Therefore the proposed change in standards would not result in a material change to the permitted baseline of noise effects at the surrounding Business – Light Industry, School and Residential land.

5.2 Aircraft Noise

There is no change to the implementation of the ANNA/MANA Aircraft Noise Overlays. However, that they exist is relevant as they require a level of acoustic treatment in buildings containing activities sensitive to noise (i.e., the school and surrounding residential developments). Further the land within the MANA overlay is required to control aircraft noise levels which are higher than activity noise levels permitted under the existing and proposed Standards.

This means that, whilst not intended to control noise from Business zoned land, the requirement to control aircraft noise would also by default control other noise sources reducing potential impacts at surrounding noise sensitive receivers.

5.3 Ambient Noise Environment

The existing noise environment is controlled by a mixture of activity on adjacent land (the operation of the school to the north, the subject site and the sites in the business zone to the south) with measured noise levels in consistent with the proposed noise limits. For this reason the character of the noise in the surrounding is not expected to materially change as a result of the proposed rezoning.

6.0 Conclusion

Rotokohu Investments Limited proposes to rezone the land at 50 Westney Road in Mangere, Auckland, from Residential – Mixed Housing Suburban Zone to Business - Light Industry Zone. It is proposed to rezone the land by way of a private plan change.

SLR has assessed the relevant noise performance standards applicable to the site under the existing and the proposed zoning.

This assessment confirms that, as the land and future activities will be subject to essentially the same overall noise limits which currently apply to the land, changes in noise effects to neighbouring land as a result of the rezoning are not expected.

Future activities on the rezoned land will need to comply with the business zone interface standard and noise effects from the proposed rezoning would therefore be negligible.

Accordingly, the noise amenity of surrounding land would be maintained.

Sincerely,

SLR Consulting New Zealand

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Appendix A Appendix A Ambient Noise Graphs

50 Westney Road

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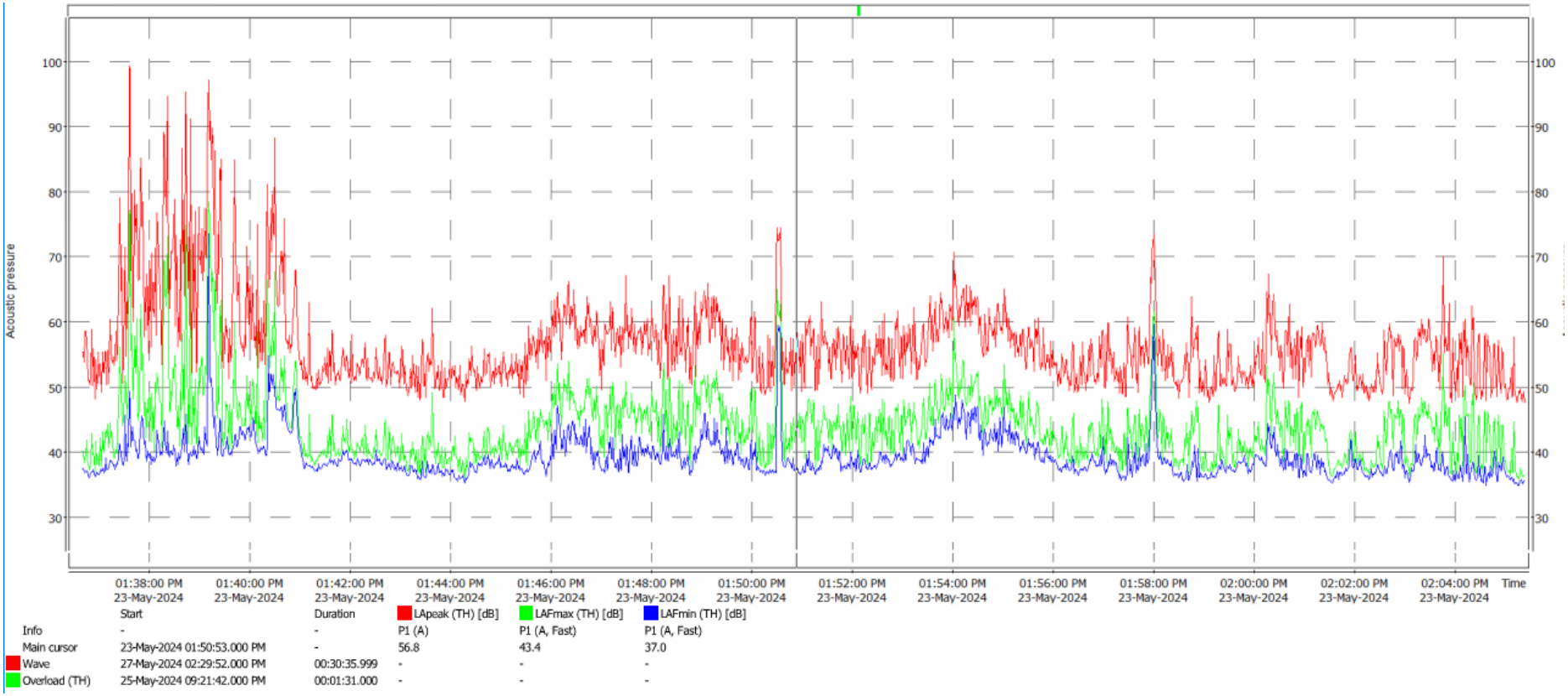
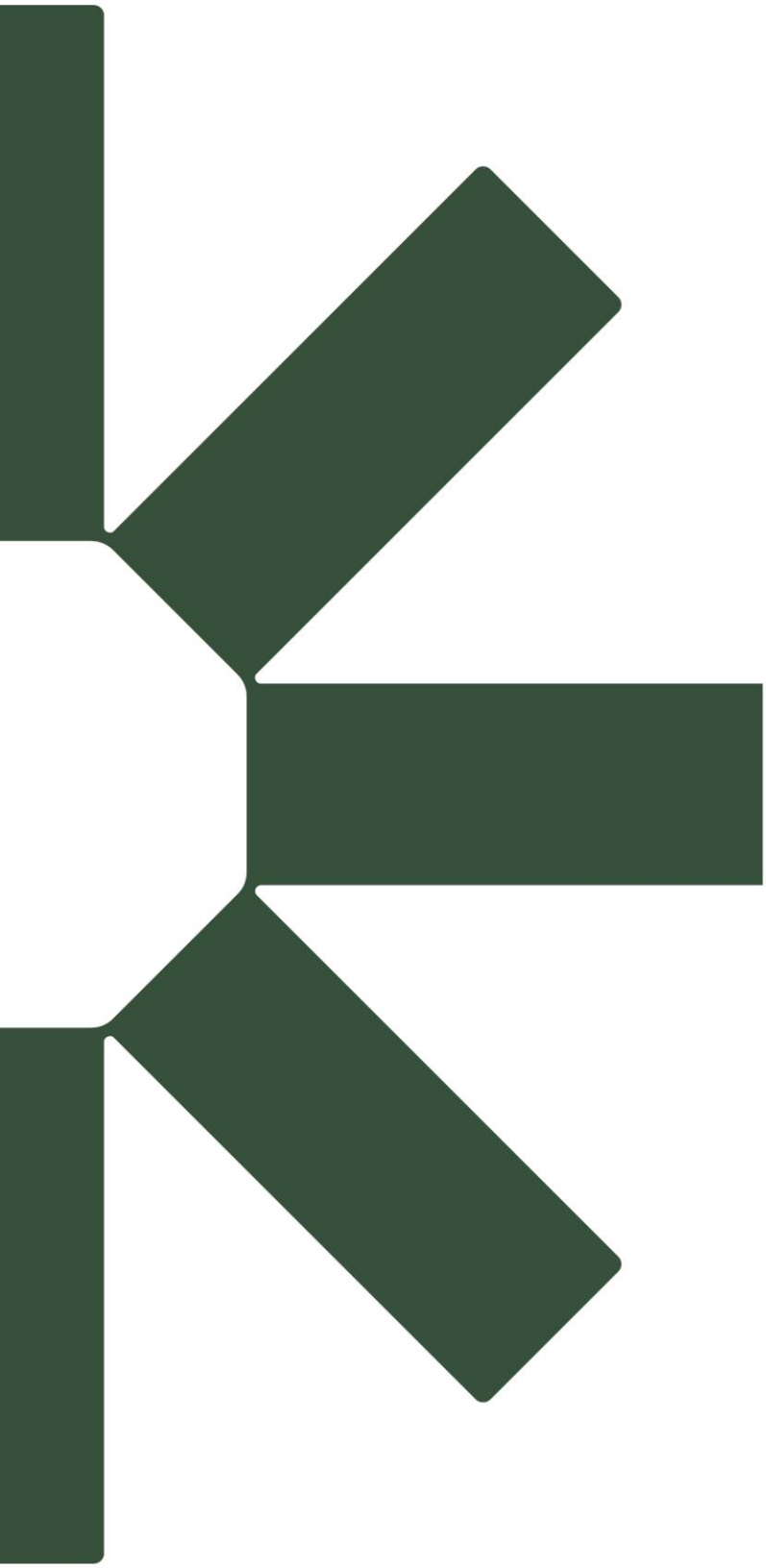
A.1 Measurement Location 1

A.2 Measurement Location 2





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