

Appendix 7

Environmental Assessment (EA)

**SECTION 16 PLANNING APPLICATION FOR
PROPOSED SOCIAL WELFARE FACILITY
(RESIDENTIAL CARE HOME FOR THE
ELDERLY (RCHE)) IN LOT 669 S.A SS.2 RP
(PART) AND LOT 669 S.B RP (PART) IN D.D.117,
YUEN LONG**

ENVIRONMENTAL ASSESSMENT REPORT

February 2024

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Project:	SECTION 16 PLANNING APPLICATION FOR PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY (RCHE)) IN LOT 669 S.A SS.2 RP (PART) AND LOT 669 S.B RP (PART) IN D.D.117, YUEN LONG ENVIRONMENTAL ASSESSMENT REPORT				
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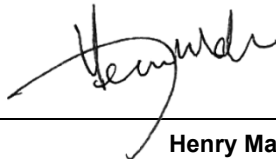
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1. INTRODUCTION

1.1. BACKGROUND

- 1.1.1. The Turbo Regal Limited (the Project Proponent) proposes to develop an 8-storey Residential Care Home for the Elderly (RCHE) in Lot 669 S.A ss.2 RP (Part) and Lot 669 S.B RP (Part) in D.D.117, Yuen Long (hereafter called “the Proposed Development”).
- 1.1.2. BeeXergy Consulting Limited was commissioned by DeSPACE (International) Limited (the Town Planner) to undertake an Environmental Assessment (EA) in support of its planning application under Section 16 of the Town Planning Ordinance (TPO) for the Proposed Development.

1.2. PROJECT LOCATION

- 1.2.1. The Project Site is located in the southern part of Yuen Long near Wong Nai Tun Tsuen, with site area of approximately 2,244m². It is currently bounded by a village house to the north, Wong Nai Tun Tsuen Road to the east, village type developments to the south, and an agricultural land to the west. The Project Site is currently zoned as “Village Type Development” under the Approved Tai Tong Outline Zoning Plan No. S/YL-TT/20. **Figure 1.1** shows the location of Project Site and its environs.

1.3. PROJECT DESCRIPTION

- 1.3.1. The Proposed Development will comprise one 8-storey building with RCHE, offices, carpark and open spaces. The key development parameters are summarised in **Table 1.1** and the Master Layout Plan is provided in **Appendix 1.1**.

Table 1.1 Key Development Parameters of the Proposed Development

No. of Storeys	8
Total Gross Floor Area (GFA)	Not exceeding 12,000m ²
Maximum Building Height	31m (+46.75mPD at Main Roof)
No. of Bed Spaces in RCHE	300 – 360 (Actual: 318)
Tentative Population Intake Year	2028

- 1.3.2. The construction works of the Proposed Development are targeted to commence in 2026 and be completed by 2028.

1.4. SCOPE OF THE ENVIRONMENTAL ASSESSMENT

1.4.1. This EA Report covers the following key issues arising from the construction and operation of the Proposed Development:

- Air Quality Impact;
- Noise Impact;
- Water Quality Impact; and
- Waste Management.

1.5. STRUCTURE OF THE REPORT

1.5.1. This EA Report includes the following sections:

- Section 1 introduces the project background and outlines the scope of this EA;
- Section 2 evaluates the air quality impact;
- Section 3 presents the noise impact assessment;
- Section 4 evaluates the water quality impact;
- Section 5 presents the waste management implications; and
- Section 6 summarizes the findings of this EA study.

2. AIR QUALITY IMPACT

2.1. INTRODUCTION

2.1.1. This section identifies the potential air quality impact associated with the construction and operation of the Proposed Development. It also recommends practical pollution control and mitigation measures, where necessary.

2.2. RELEVANT LEGISLATION, STANDARDS AND GUIDELINES

2.2.1. The relevant legislation, standards and guidelines applicable to the present review of air quality impact include:

- Air Pollution Control Ordinance (APCO) (Cap. 311);
- Air Pollution Control (Smoke) Regulations (Cap. 311C);
- Air Pollution Control (Fuel Restriction) Regulations (Cap. 311I);
- Air Pollution Control (Construction Dust) Regulation (Cap. 311R);
- Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation (Cap. 311Z);
- Hong Kong Planning Standards and Guidelines (HKPSG); and
- EPD's Guidelines on "Control of Oily Fume and Cooking Odour from Restaurants and Food Business".

Air Quality Objectives

2.2.2. The APCO provides a statutory framework for establishing the Air Quality Objectives (AQOs) and stipulating the anti-pollution requirements for air pollution sources. The AQOs stipulate concentration for a range of pollutants, which are summarized below in **Table 2.1**.

Table 2.1 Hong Kong Air Quality Objectives

Pollutant	Averaging Time	Concentration Limit ^[i] ($\mu\text{g}/\text{m}^3$)	Number of Exceedances Allowed
Sulphur Dioxide (SO_2)	10-minute	500	3
	24-hour	50	3
Respirable Suspended Particulates (PM_{10}) ^[ii]	24-hour	100	9
	Annual	50	N/A
Fine Suspended Particulates ($\text{PM}_{2.5}$) ^[iii]	24-hour	50	35
	Annual	25	N/A

Pollutant	Averaging Time	Concentration Limit ^[i] ($\mu\text{g}/\text{m}^3$)	Number of Exceedances Allowed
Nitrogen Dioxide (NO_2)	1-hour	200	18
	Annual	40	N/A
Ozone (O_3)	8-hour	160	9
Carbon Monoxide (CO)	1-hour	30,000	0
	8-hour	10,000	0
Lead	Annual	0.5	N/A
Notes:			
[i] All measurements of the concentration of gaseous air pollutants, i.e., SO_2 , NO_2 , O_3 and CO , are to be adjusted to a reference temperature of 293 K and a reference pressure of 101.325 kPa.			
[ii] PM_{10} means suspended particles in air with a nominal aerodynamic diameter of $10\mu\text{m}$ or less.			
[iii] $\text{PM}_{2.5}$ means suspended particles in air with a nominal aerodynamic diameter of $2.5\mu\text{m}$ or less.			

Hong Kong Planning Standards and Guidelines

2.2.3. Environmental requirements to be considered in land use planning are outlined in Chapter 9 of the HKPSG. The standards and guidelines provide recommendation on suitable locations for developments and sensitive users, provision of environmental facilities and design, layout, phasing and operational controls to minimize adverse environmental impacts. It also lists out environmental factors influencing the land use planning and recommends buffer distances for land uses.

2.2.4. Buffer distances on usage of open space site for active and passive recreational uses are also recommended. Evaluation of potential air quality impact on the Proposed Development due to the open road emissions and industrial emissions shall make reference to the guidelines as stipulated in the HKPSG. The buffer distance requirements in HKPSG are extracted below in **Table 2.2**.

Table 2.2 HKPSG Recommended Buffer Distance

Pollution Source	Parameter	Buffer Distance	Permitted Uses
Roads and Highways	<i>Type of Road</i>		
	Trunk Road and Primary Distributor	> 20m	Active and Passive Recreational Uses
		3 – 20m	Passive Recreational Uses
		< 3m	Amenity Areas
	District Distributor	> 10m	Active and Passive Recreational Uses
		< 10m	Passive Recreational Uses

Pollution Source	Parameter	Buffer Distance	Permitted Uses
Roads and Highways	Local Distributor	> 5m	Active and Passive Recreational Uses
		< 5m	Passive Recreational Uses
	Under Flyover	N/A	Passive Recreational Uses
Industrial Areas	<i>Difference in Height between Industrial Chimney Exit and the Site</i>	/	
	< 20m	> 200m	Active and Passive Recreational Uses
		5 – 200m	Passive Recreational Uses
	20 – 30m (*)	> 100m	Active and Passive Recreational Uses
		5 – 100m	Passive Recreational Uses
	30 – 40m	> 50m	Active and Passive Recreational Uses
		5 – 50m	Passive Recreational Uses
	> 40m	> 10m	Active and Passive Recreational Uses
Remarks: <ol style="list-style-type: none"> In situations where the height of chimneys is not known, use the set of guidelines marked with an asterisk for preliminary planning purpose and refine as and when more information is available. The buffer distance is the horizontal, shortest distance from the boundary of the industrial lot, the position of existing chimneys or the edge of road kerb, to the boundary of open space sites. The guidelines are generally applicable to major industrial areas but not individual large industrial establishments which are likely to be significant air pollution sources. Consult EPD when planning open space sites close to such establishments. Amenity areas are permitted in any situation. 			

2.3. BASELINE CONDITION

Existing Ambient Air Quality

2.3.1. The nearest EPD General Air Quality Monitoring Station (AQMS) to the Project Site is the Yuen Long AQMS located at Yuen Long District Office Building, which is approximately 2.9 km north to the Project Site. The concentrations of the key air pollutants relevant to the Project in recent five years (2018 – 2022) at Yuen Long AQMS are summarized in **Table 2.3**, which depicts the trend in ambient air quality.

Table 2.3 Air Quality Monitoring Data at Yuen Long General AQMS Station (Year 2018-2022)

Pollutant	Averaging Time	Concentration ($\mu\text{g}/\text{m}^3$)					2014-2021 AQOs ^[1] ($\mu\text{g}/\text{m}^3$)	Prevailing AQOs ^[2] ($\mu\text{g}/\text{m}^3$)
		2018	2019	2020	2021	2022		
Nitrogen Dioxide (NO_2)	1-hour (19 th highest)	150	161	135	148	122	200	200
	Annual	<u>43</u>	<u>44</u>	32	40	37	40	40
Respirable Suspended Particulates (PM_{10})	24-hour (10 th highest)	75	83	77	73	56	100	100
	Annual	37	37	30	30	25	50	50
Fine Suspended Particulates ($\text{PM}_{2.5}$)	24-hour (10 th highest)	46	45	36	43	41	75	N/A
	24-hour (36 th highest)	34	34	28	31	30	N/A	50
	Annual	20	20	16	17	16	35	25
Sulphur Dioxide (SO_2)	10-minute (4 th highest)	52	42	26	24	21	500	500
	24-hour (4 th highest)	16	11	10	14	7	125	50
Ozone (O_3)	8-hour (10 th highest)	<u>162</u>	<u>200</u>	154	<u>178</u>	<u>194</u>	160	160
Carbon Monoxide (CO)	1-hour (1 st highest)	1,720	2,150	1,530	2,090	1,700	30,000	30,000
	8-hour (1 st highest)	1,574	1,903	1,279	1,591	1,519	10,000	10,000
Notes: [1] AQOs that were effective from 2014 to 2021. [2] Prevailing AQOs implemented on 1 January 2022. [3] Underlined and bolded figures indicate exceedance recorded.								

2.3.2. As shown in **Table 2.3**, the monitored air pollutant concentrations from 2018 to 2022 could comply with the prevailing AQOs except for the annual NO_2 concentrations in

2018 and 2019, and the 8-hour average O₃ concentrations in 2018 to 2019 and 2021 to 2022.

Predicted Background Air Quality

- 2.3.3. Apart from the air quality monitoring data, EPD also provides a set of regional background concentrations for key pollutants in the “Pollutants in the Atmosphere and their Transport over Hong Kong” (PATH) model v3.0. Given that the tentative intake year of the Proposed Development would be in Year 2028, the background air quality predicted by PATH v3.0 for Year 2025 will be presented as the future background air quality during the operation phase as a worst-case scenario.
- 2.3.4. As shown in **Figure 2.1**, the 500m assessment area for this Project is covered by the PATH grids (24,44) and (25,44). The predicted Year 2025 background concentrations at these grids are summarized in **Table 2.4** and compared against the prevailing AQOs. The predicted background concentrations in Year 2025 are lower than their respective AQOs except for the 8-hour average O₃ concentrations.

Table 2.4 Background Air Pollutant Concentrations Predicted by PATH v3.0 Model in Year 2025

Pollutant	Averaging Time	Concentration (µg/m ³)		Prevailing AQOs (µg/m ³)
		PATH Grid (24,44)	PATH Grid (25,44)	
Nitrogen Dioxide (NO ₂)	1-hour (19 th highest)	96	101	200
	Annual	19	20	40
Respirable Suspended Particulates (PM ₁₀)	24-hour (10 th highest)	69	71	100
	Annual	27	29	50
Fine Suspended Particulates (PM _{2.5})	24-hour (36 th highest)	26	29	50
	Annual	16	17	25
Sulphur Dioxide (SO ₂)	10-minute (4 th highest)	56	54	500
	24-hour (4 th highest)	12	11	50
Ozone (O ₃)	8-hour (10 th highest)	<u>216</u>	<u>209</u>	160
Carbon Monoxide (CO)	1-hour (1 st highest)	930	928	30,000
	8-hour (1 st highest)	839	835	10,000
Notes:				
1. Concentration adjustments for PM ₁₀ (daily and annual) and PM _{2.5} (annual) are made in accordance with EPD’s “Guidelines on Choice of Models and Model Parameters”.				

2.4. AIR SENSITIVE RECEIVERS

2.4.1. Representative air sensitive receivers (ASRs) within 500m assessment area have been identified based on topographic maps supplemented by site surveys, outline zoning plans and other published plans in the vicinity of the Project Site. Within the 500m assessment area, ASRs that are closest to the Project Site are anticipated to be the most affected and therefore considered the most representative ASRs for the worst-case scenario air quality impact assessment, whilst other ASRs located further away from these first-tier representative ASRs are expected to be less impacted. Details of the identified representative ASRs are summarized in **Table 2.5** below and their locations are shown in **Figure 2.1**.

Table 2.5 Representative Air Sensitive Receivers

ASR ID	Description	Use	Existing/ Planned	Approximate Shortest Distance from Project Site (m)
A01	Residential Development in Yuen Long South	Residential	Planned	< 5
A02	Wong Nai Tun Tsuen	Residential	Existing	7
A03	Pak Sha Tsuen	Residential	Existing	62

2.5. CONSTRUCTION PHASE IMPACT REVIEW

Impact Identification and Evaluation

2.5.1. The potential sources of air quality impact during construction phase would be fugitive dust generated from construction activities such as demolition works, foundation (piling) works, site formation works, vehicle movements, etc. and gaseous emissions from construction machinery. The construction of the Proposed Development shall comply with the guidelines listed below:

- Construction dust shall be controlled in accordance with the requirements of the Air Pollution Control (Construction Dust) Regulation (Cap. 311R). Also, notification of notifiable works as stipulated in the Regulation shall be submitted to Environmental Protection Department (EPD) by the Contractor before the proposed work is to be commenced;
- Dark smoke emission from the machines used for construction shall comply with the requirements of the Air Pollution Control (Smoke) Regulations (Cap. 311C);
- All of the Non-road Mobile Machinery (NRMMs) used for construction shall comply with the prescribed emission standard as stipulated in the Air Pollution

Control (Non-road Mobile Machinery) (Emission) Regulation (Cap. 311Z); and

- Liquid fuel with a sulphur content not exceeding 0.005% by weight and a viscosity not more than 6 centistokes at 40°C, such as ultra-low sulphur diesel (ULSD), should be used as fuel as stipulated in the Air Pollution Control (Fuel Restriction) Regulations (Cap. 311I).

2.5.2. According to the information on the Civil Engineering and Development Department's (CEDD's) website, the first phase and second phase of the site formation and engineering infrastructure works under Yuen Long South Development would overlap with the construction of the Proposed Development. The first phase of Yuen Long South Development commenced in 2022 and is anticipated to be completed by 2028, while the second phase is targeted to commence in 2025 and completed by 2031. The phasing plan of Yuen Long South Development is provided in **Appendix 2.1**. The shortest horizontal distances from Project Site to first phase and second phase of Yuen Long South Development are approximately 3m and 110m respectively. As the Yuen Long South Development is a designated project under the Environmental Impact Assessment Ordinance (EIAO), an environmental monitoring and audit (EM&A) programme will be implemented during its construction phase to check the effectiveness of the recommended dust control measures and compliance with the relevant statutory criteria. With the mitigation measures and good site practices in place, adverse cumulative impact on air quality is not expected.

Recommended Mitigation Measures

2.5.3. To ensure that dust and gaseous emissions are minimized during the construction phase of the Project, relevant dust control requirements stipulated in Air Pollution Control (Construction Dust) Regulation, Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation and Air Pollution Control (Fuel Restriction) Regulations should be implemented. The proposed dust suppression measures are listed below.

- The designated haul road should be hard paved to minimize fugitive dust emission;
- During the site formation works, the active works areas should be water sprayed with water browser or sprayed manually hourly during construction period. The Contractor should ensure that the amount of water spraying is just enough to dampen the exposed surfaces without over-watering which could result in surface water runoff;
- Any excavated dusty materials or stockpile of dusty materials should be covered entirely by impervious sheeting or sprayed with water so as to maintain the entire surface wet, and recovered or backfilled or reinstated as

soon as possible;

- Dusty materials remaining after a stockpile is removed should be wetted with water;
- The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcore or similar;
- The Contractor(s) shall only transport adequate amount of fill materials to the Project Site to minimize stockpiling of fill materials on-site, thus reducing fugitive dust emission due to wind erosion;
- Should temporary stockpiling of dusty materials be required, it shall be either covered entirely by impervious sheeting, placed in an area sheltered on the top and the 3 sides; or sprayed with water so as to maintain the entire surface wet;
- All dusty materials shall be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty material wet;
- Vehicle speed to be limited to 10 kph except on completed access roads;
- The portion of road leading only to a construction site that is within 30 m of a designated vehicle entrance or exit should be kept clear of dusty materials;
- Every vehicle should be washed to remove any dusty materials from its body and wheels immediately before leaving the construction site;
- The load of dusty materials carried by vehicle leaving the construction site should be covered entirely by clean impervious sheeting to ensure that the dusty materials do not leak from the vehicle;
- The working area of excavation should be sprayed with water immediately before, during and immediately after (as necessary) the operations so as to maintain the entire surface wet;
- Restricting height from which materials are to be dropped as far as practicable to minimize the fugitive dust arising from loading/unloading activities;
- Every stock of more than 20 bags of cement or dry pulverized fuel ash shall be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides;
- Cement, pulverized fuel ash or any other dusty materials collected by fabric filters or other air pollution control system or equipment shall be disposed of in totally enclosed containers;
- Electric power supply shall be provided for on-site machinery as far as

practicable;

- Regular maintenance of construction equipment deployed on-site should be conducted to minimize gaseous and prevent black smoke emission;
- Hoarding of not less than 2.4m high from ground level shall be provided along the site boundary except for a site entrance or exit to minimise dust nuisance to the nearby sensitive receivers. For locations with ASRs in immediate proximity to the Project Site, higher hoarding shall be erected; and
- Regular site audit shall be conducted to ensure all the mitigation measures are properly implemented.

2.5.4. With the implementation of dust mitigation measures, no adverse construction phase air quality impact is anticipated.

2.6. OPERATION PHASE IMPACT REVIEW

Impact Identification and Evaluation

Vehicular Emission

2.6.1. Vehicular emission from existing open roads is the potential air pollution source to the Proposed Development during operation phase.

2.6.2. In order to comply with the buffer distance requirements as stipulated in the HKPSG, the air sensitive uses at the Proposed Development have been positioned away from Wong Nai Tun Tsuen Road. The required buffer distances from the surrounding roads are summarized in **Table 2.6** and illustrated in **Figure 2.2**. No air sensitive uses, including openable windows, fresh air intake of mechanical ventilation and recreational uses in the open area, would be located within the buffer zones.

Table 2.6 Relevant Buffer Distance Requirements

Road Name	Road Type	Recommended Buffer Distance in HKPSG	Buffer Distance allowed for the Proposed Development
Wong Nai Tun Tsuen Road	Local Distributor ^[1]	> 5m	> 5m
Note: [1] Reference from Appendix 4.8 of the approved EIA Report for the Housing Sites in Yuen Long South (AEIAR-215/2017).			

2.6.3. There are two footpaths located to the north and to the south of the Project Site. Based on site observation, no vehicular access is allowed on these two footpaths and therefore the HKPSG buffer distance requirements are not applicable.

2.6.4. As the required buffer distances between ASRs and the surrounding roads could be

achieved, no adverse air quality impact associated with vehicular emission on the Proposed Development is anticipated.

Chimney Emission

- 2.6.5. Based on desktop study and verification by site survey, no chimneys were identified within 200m area from the Project boundary. Therefore, no adverse air quality impact arising from chimney emission on the Proposed Development is anticipated.

Emissions from Vehicle Repair Workshops, Godowns and Open Storage

- 2.6.6. There are a number of vehicle repair workshops, godowns and open storage sites in the vicinity of the Project Site. According to field survey in December 2023, no air and odour emissions from these uses were observed and detected. The nearby vehicle repair workshops are sheltered on 3 sides and the top with opening facing the roads, air quality impact on the Proposed Development is not likely. As for the godowns and open storage sites, activities may include movement of lorry, lifting of container by a mobile crane, and loading and unloading using a forklift. All the sites are hard paved and used for storage only, it is not expected to have adverse air quality impact due to dust emission.

Odour Emissions

Refuse Collection Point (RCP)

- 2.6.7. Pak Sha Tsuen Refuse Collection Point is located at approximately 120m to the north of the Project Site. During the site visit in December 2023, no odour from the RCP was detected. Rubbish at the RCP was enclosed inside the containers and regularly cleared by the Food and Environmental Hygiene Department. Regular cleaning of the RCP was also observed during site visit. In view of the above, no adverse odour impact on the Proposed Development is expected.

Yuen Long Nullah

- 2.6.8. Yuen Long Nullah is located to the north, east and west of the Project Site within an approximate shortest separation distance of 10m. No odour from the nearby sections of Yuen Long Nullah was identified during the field survey in December 2023. As such, adverse odour impact on the Proposed Development is unlikely.

Emission from the Proposed Carpark

- 2.6.9. There will be an open carpark on the G/F of the Proposed Development. The proposed internal roads within the Development would serve as both private access roads and emergency vehicular access (EVA). These internal roads are not classified under the road hierarchy by the Transport Department (TD). Given the private access roads with entry restrictions and no public car parking will be provided within the Development, the traffic volume of the proposed internal roads would be minimal.

Hence, the air quality impact from the proposed internal roads and open carpark is considered negligible.

Emission from the Kitchen within the Proposed Development

2.6.10. There will be a kitchen on G/F of the Proposed Development. The exhaust outlet of the kitchen will be located away from the nearby ASRs as far as practicable. Oily fume and cooking odour emissions from cooking processes are controlled under the APCO. The best practical control measures recommended in EPD's Guideline "Control of Oily Fume and Cooking Odour from Restaurants and Food Business" will be adopted to minimize the gaseous and odour emissions from kitchen operation. In view of the above, no adverse air quality impact associated with kitchen operation is anticipated.

Recommended Mitigation Measures

2.6.11. The following mitigation measures are recommended for kitchen operation during the operation phase of the Proposed Development:

- Exhaust outlets of the kitchen should be located away from any nearby ASRs as far as practicable;
- Air pollution control equipment (e.g. electrostatic precipitators, air washers, scrubbers, etc.) should be installed at the exhaust system serving the cooking stoves or other cooking appliances, where appropriate; and
- Regular maintenance of the exhaust system and air pollution control equipment.

2.7. CONCLUSION

Construction Phase

2.7.1. Fugitive dust emission is the major source of air pollution during the construction phase of the Project. Through proper implementation of dust control measures as required under the Air Pollution Control (Construction Dust) Regulation, Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation and Air Pollution Control (Fuel Restriction) Regulations, construction dust and gaseous emissions can be controlled at source to acceptable levels. Therefore, air quality impact during construction phase is anticipated to be insignificant.

Operation Phase

2.7.2. The potential operation phase air quality impact due to vehicular emission, chimney emission, emissions from vehicle repair workshops, godowns and open storage, and odour emissions from RCP and Yuen Long Nullah have been evaluated. As the requirements stipulated in the HKPSG could be complied, and no air and odour emissions from the surrounding uses were observed and identified, adverse air quality

impact on the Proposed Development during the operation phase is not anticipated.

2.7.3. The potential air quality impact associated with the operation of the carpark and kitchen within the Proposed Development have also been reviewed. Although the carpark is in open form, given the proposed internal roads are private access roads with entry restrictions and no public car parking will be provided within the Development, the traffic volume of these internal roads would be minimal and hence the air quality impact from the proposed internal roads and open carpark is considered negligible. As for the kitchen, the exhaust outlet will be located away from the nearby ASRs as far as practicable and the recommended mitigation measures stated in the EPD's Guideline "Control of Oily Fume and Cooking Odour from Restaurants and Food Business" will be followed for the design of exhaust system. As such, no adverse air quality impact arising from the operation of the proposed kitchen is envisaged.

3. NOISE IMPACT

3.1. INTRODUCTION

3.1.1. The Project will have potential noise impacts during both the construction and operation phases. During the construction phase, potential construction airborne noise impact may be generated due to the use of powered mechanical equipment (PME) for various construction works including demolition, site formation, foundation and superstructure. During the operation phase of the Project, noise impact due to road traffic and fixed noise sources have been assessed.

3.2. RELEVANT LEGISLATION, STANDARDS AND GUIDELINES

3.2.1. The relevant legislation, standards and guidelines applicable to the present noise impact assessment include:

- Noise Control Ordinance (NCO) (Cap. 400);
- Technical Memorandum for the Assessment of Noise from Places Other Than Domestic Premises, Public Places or Construction Sites (IND-TM);
- Technical Memorandum on Noise from Construction Work Other Than Percussive Piling (GW-TM);
- Technical Memorandum on Noise from Construction Work in Designated Areas (DA-TM);
- Technical Memorandum on Noise from Percussive Piling (PP-TM);
- Hong Kong Planning Standards and Guidelines (HKPSG);
- Professional Persons Environmental Consultative Committee (ProPECC) Practice Note PN 2/93 "Noise from Construction Activities - Non-statutory Controls"
- Good Practices on Pumping System Noise Control; and
- Good Practices on Ventilation System Noise Control.

Construction Phase

Noise Standards for Construction Works during Non-restricted Hours

3.2.2. There is no statutory control for noise arising from construction activities (excluding percussive piling) during non-restricted hours (i.e. 0700 to 1900 from Monday to Saturday, not including general holidays). However, ProPECC PN 2/93 provides the assessment criteria for construction works during non-restricted hours. The recommended daytime construction noise levels for uses rely on openable windows for ventilation are summarized in **Table 3.1** below.

Table 3.1 Noise Standards for Construction Works during Non-restricted Hours

Uses	Noise Standards, L_{eq} (30 mins), dB(A) for 0700 to 1900 hours on any day not being a Sunday or general holiday
All domestic premises including temporary housing accommodation	75
Educational institutions including kindergartens, nurseries and all others where unaided voice communication is required	70 (65 during examination period)
Note: The above standards apply to noise sensitive uses which rely on opened windows for ventilation and should be viewed as the maximum permissible noise levels assessed at 1m from the external façade.	

Noise Standards for Construction Works during Restricted Hours

- 3.2.3. Noise impacts arising from construction activities (excluding percussive piling) conducted during the restricted hours (1900 to 0700 hours on any day and anytime on Sunday or general holiday) and percussive piling during anytime are governed by the NCO.
- 3.2.4. All the proposed construction works are expected to be carried out during non-restricted hours. In case of any construction activities during restricted hours, it is the Contractor's responsibility to ensure compliance with the NCO and the relevant technical memoranda. The Contractor will be required to submit a construction noise permit (CNP) application to the Noise Control Authority and abide by any conditions stated in the CNP, should one be issued. It should be noted that description made in this report does not guarantee that a CNP will be granted for the project construction. The Noise Control Authority would take into account the contemporary condition of adjoining land uses and other considerations when processing the CNP application based on the NCO and relevant technical memoranda issued under the NCO. The findings in this report shall not bind the Noise Control Authority in making the decision.
- 3.2.5. According to the latest Noise Control Designated Area Plan (Plan No. EPD/AN/NT-01), the Project Site falls within the Designated Area (DA). The construction works should refer to the requirements stipulated in the GW-TM and DA-TM.

Noise Standards for Percussive Piling

- 3.2.6. Noise impact arising from percussive piling during anytime are governed by the NCO. The noise criteria and the assessment procedures for issuing a CNP are specified in the PP-TM under NCO. Separate application to EPD for a CNP is required.
- 3.2.7. No percussive piling is anticipated for the Project. Notwithstanding, should percussive piling be required, the requirements in the PP-TM shall be followed.

Operation Phase

Noise Standards for Road Traffic Noise Impact Assessment

- 3.2.8. Table 4.1 of Chapter 9 of the HKPSG provides the assessment criteria for road traffic noise impact at noise sensitive uses which rely on opened windows for ventilation. **Table 3.2** summarizes the adopted road traffic noise criteria for noise sensitive uses with openable windows at the Proposed Development.

Table 3.2 Road Traffic Noise Criteria for Noise Sensitive Uses

Location	Facility / Room	Noise Criteria, L ₁₀ (1 hour), dB(A)
G/F – 6/F	Dormitory	70
G/F – 6/F	Sick Bay with Negative Pressure ^[2]	70
G/F	General Office	70
G/F	Conference Room	70
G/F	Rehabilitation Area ^[2]	70
1/F – 2/F	Nurse Station	70
4/F – 5/F	Rehabilitation Room ^[2]	70
6/F	Multi-Purpose Treatment Room ^[2]	70
Notes: [1] The above standards apply to noise sensitive uses which rely on opened windows for ventilation and should be viewed as the maximum permissible noise levels assessed at 1m from the external façade. [2] As confirmed by the Project Team, no medical operation and/or diagnostic activities will be carried out in the concerned rooms. Therefore, the noise planning standard of 70 dB(A) for domestic premises and offices as stipulated in Table 4.1 of Chapter 9 of the HKPSG have been adopted for assessment.		

Noise Standards for Fixed Noise Impact Assessment

- 3.2.9. IND-TM stipulates the appropriate Acceptable Noise Level (ANL) for fixed noise sources. The ANL is dependent on the area sensitivity rating of a noise sensitive receivers (NSR), as defined in Table 1 of the IND-TM (reproduced in **Table 3.3**). The area sensitivity rating of a NSR is determined by the type of area where the NSR is located and the presence of any influencing factors (IFs) such as major roads and industrial areas.

Table 3.3 Area Sensitivity Ratings

Type of Area Containing NSR	Degree to which NSR is affected by IF		
	Not Affected	Indirectly Affected	Directly Affected
Rural area, including country parks or village type developments	A	B	B
Low density residential area consisting of low-rise or isolated high-rise developments	A	B	C
Urban area	B	C	C
Area other than those above	B	B	C

3.2.10. The HKPSG also states that in order to plan for a better environment, all planned fixed noise sources should be located and designed that when assessed in accordance with the IND-TM, the level of the intruding noise at the façade of the nearest existing sensitive use should be at least 5 dB(A) below the appropriate ANL shown in Table 2 of IND-TM or, in the case of the background being 5 dB(A) lower than the ANL, should not be higher than the background. The ANLs stipulated in the IND-TM are provided in **Table 3.4**.

Table 3.4 Acceptable Noise Levels

Time Period	Area Sensitivity Rating		
	A	B	C
Day (0700 to 1900 hours)	60	65	70
Evening (1900 to 2300 hours)			
Night (2300 to 0700 hours)	50	55	60

3.2.11. The Project Site is located in an area contains mainly village type developments, with some open storage and vehicle repair workshops in the surroundings. Nevertheless, the existing open storage, vehicle repair workshops and a large area of village type developments fall within the Yuen Long South Development area and will be demolished phase by phase in the future. Taking into account the land use zoning under Yuen Long South Development, the type of area where the existing and future NSRs are located is classified as “area other than those above”. No influencing factor is identified within the 300m assessment area. As such, Area Sensitivity Rating of “B” has been assigned for the NSRs.

3.2.12. Though the details of the fixed plant noise sources within the Proposed Development are not available at this stage, as a rule of thumb for future detail design, any noise emission from planned fixed plant noise sources within the Proposed Development should be designed to meet the relevant noise criteria as stipulated in Chapter 9 of the HKPSG, which are detailed in Section 3.2.10 above.

3.3. BASELINE CONDITION

3.3.1. The existing noise conditions at the Project Site is mainly contributed by road traffic noise from the nearby roads as well as fixed noise from the adjacent industrial operations in open storage areas and vehicle repair workshops. Road traffic along Wong Nai Tun Tsuen Road and Kiu Hing Road as local distributors are considered to be the major sources of background noise to that area.

3.4. NOISE SENSITIVE RECEIVERS

3.4.1. Existing NSRs and planned/committed noise sensitive uses identified on the relevant Outline Zoning Plans, Development Permission Area Plans, Outline Development Plans, Layout Plans and other relevant published land use plans, including plans and drawings published by the Lands Department and any land use and development applications approved by the Town Planning Board have been identified. The first layer of representative NSRs within the assessment area are listed in **Table 3.5** below and their locations are illustrated in **Figure 3.1**.

Table 3.5 Representative Noise Sensitive Receivers within 300m Assessment Area

NSR ID	Description	Nature of Use	Existing/Planned	Approximate Shortest Distance from Project Site (m)
N01	Residential Development in Yuen Long South	Residential	Planned	< 5
N02	Residential Development in Yuen Long South	Residential	Planned	12
N03	Wong Nai Tun Tsuen	Residential	Existing	11
N04	Wong Nai Tun Tsuen	Residential	Existing	34
N05	Pak Sha Tsuen	Residential	Existing	49

3.5. CONSTRUCTION PHASE IMPACT REVIEW

Impact Identification and Evaluation

- 3.5.1. The potential source of noise impact during the construction phase would be the use of PME for various construction activities. The key construction works would include:
- Site clearance, including demolition of existing structures and tree removal;
 - Site formation;
 - Foundation; and
 - Construction of superstructure.
- 3.5.2. No construction works will be carried out during restricted hours and no percussive piling work is expected. Should restricted hours works be required, the Contractor shall apply for a CNP and ensure full compliance with the NCO.
- 3.5.3. As the Project Site is flat, minimal site formation works would be required. The construction activities would be constructed section by section and temporary in nature such that the construction noise arising from the use of PME would be in short-term only. On top of that, it is anticipated that less than 20 number of construction plant would be in operation during each construction activity due to the limited space for construction works. With the implementation of the recommended mitigation measures, the construction noise impact on the nearby NSRs would be minimized.

Recommended Mitigation Measures

- 3.5.4. Standard noise control measures such as the adoption of quieter construction method, use of quality PME (QPME) with lower sound power level (SWL), use of movable noise barriers and noise enclosures to screen noise from PME, and implementation of good site practices to limit noise emissions at source.
- 3.5.5. Good site practices and noise management can further minimize the potential construction noise impact. The following good site practices are recommended for implementation during construction phase:
- Contractor should devise and execute working methods that will minimize the noise impact on the surrounding environment; and shall provide experienced personnel with suitable training to ensure these methods are properly implemented;
 - Noisy activities should be scheduled to minimize exposure of nearby NSRs to high levels of construction noise. For example, noisy activities can be scheduled for midday or at times coinciding with periods of high background noise (such as during peak traffic hours);

- Contractor should arrange construction activities with care so that concurrent construction activities are avoided as much as possible;
- Only well-maintained plant should be operated on-site and plant will be serviced regularly during the construction phase;
- Machines and plant that may be in intermittent use should be shut down between work periods or throttled down to a minimum;
- Silencers or mufflers on construction equipment should be utilized and properly maintained during the construction phase;
- Noisy equipment such as emergency generators shall always be sited as far away as possible from NSRs;
- Mobile plants should be sited as far away from NSRs as possible;
- Plant known to emit noise strongly in one direction should be orientated so that the noise is directed away from the nearby NSRs; and
- Material stockpiles and other structures should be effectively utilized in screening noise from on-site construction activities.

3.6. OPERATION PHASE IMPACT REVIEW

Road Traffic Noise

Impact Identification

3.6.1. The Project Site is bounded by Wong Nai Tun Tsuen Road to the north and east, Kiu Hing Road to the east, and Pak Sha Shan Road and Kung Um Road to the west. The key noise impact during operation phase would be road traffic noise from the abovementioned roads and other local roads.

Noise Sensitive Uses

3.6.2. Noise assessment points have been provided for all noise sensitive uses with openable windows at the Proposed Development. The respective criteria for all types of noise sensitive uses have been listed in **Table 3.2**. The locations of all NSRs for road traffic noise impact assessment are shown in **Figures 3.2a to 3.2g**.

Assessment Methodology

3.6.3. The Road Noise Module 2.7.2 of NoiseMap Enterprise Edition has been used to assess the road traffic noise impact from the existing and planned road network within 300m assessment area on the future NSRs within the Proposed Development. The road traffic noise model adopts the methodology outlined in the Calculation of Road Traffic Noise (CRTN) developed by the UK Department of Transport. The road traffic noise would be presented in terms of noise levels exceeded for 10% of the one-hour

period for the hour having the peak traffic flow $L_{10(1\text{hour})}$ under various traffic forecast scenarios. Representative NAPs, key building structures with noise screening effects, topographical contours and road segments with traffic flow data have been inputted into the NoiseMap model in predicting the potential traffic noise impacts.

- 3.6.4. Traffic flow of the existing and planned roads within 300m assessment area have been forecasted by the traffic consultant of the Project. As stated in CRTN, the traffic flow used for assessment shall be the maximum traffic projection within 15 years upon occupancy of the development. The assessment has been undertaken based on the projected AM peak hourly traffic flows in Year 2043, which corresponds to the maximum projected traffic conditions within 15 years upon occupancy of the Proposed Development, i.e. Year 2028. The traffic forecast data is enclosed in **Appendix 3.1**. The traffic forecasting methodology for producing the adopted traffic data has been submitted to the Transport Department (TD) for endorsement.

Predicted Road Traffic Noise Impact on the Proposed Development under Base Case Scenario

- 3.6.5. Predicted peak hourly road traffic noise levels at all NSRs within the Proposed Development are summarized in **Table 3.6** below. Detailed breakdown of the road traffic noise impact assessment results under base case scenario are presented in **Appendix 3.2**.

Table 3.6 Summary of Predicted Road Traffic Noise Levels (Base Case Scenario)

Location	NSR ID	Facility / Room	Noise Criteria, dB(A)	Predicted Maximum L_{10} (1 hour), dB(A)
G/F – 6/F	R002 – R006	Dormitory	70	72
	R101 – R119			
	R121 – R128			
	R130 – R142			
	R201 – R217			
	R219 – R230			
	R232 – R233			
	R301 – R319			
	R321 – R331			
	R403 – R412			
	R501 – R505			
	R508 – R517			
	R601 – R605			
	R607 – R610			

Location	NSR ID	Facility / Room	Noise Criteria, dB(A)	Predicted Maximum L ₁₀ (1 hour), dB(A)
G/F – 6/F	R001, R120, R218, R320, R401, R402, R506, R507, R606	Sick Bay with Negative Pressure	70	72
G/F	R007	General Office	70	45
G/F	R008 – R009	Conference Room	70	59
G/F	R010	Rehabilitation Area	70	59
1/F – 2/F	R129 R231	Nurse Station	70	55
4/F – 5/F	R413 – R414 R518 – R519	Rehabilitation Room	70	55
6/F	R611	Multi-Purpose Treatment Room	70	55

3.6.6. The assessment results revealed that except for the Sick Bay with Negative Pressure on G/F and some dormitories facing Wong Nai Tun Tsuen Road on G/F to 2/F, all NSRs within the Proposed Development could comply with the respective noise criteria under the base case scenario. Locations of noise sensitive facades with predicted traffic noise exceedances are indicated in **Figures 3.3a to 3.3c**. Noise mitigation measures would be required to mitigate road traffic noise impact to these areas.

Recommended Mitigation Measures

Acoustic Window (Baffle Type) (Abbreviated as AW(BT))

3.6.7. A baffle type acoustic window system typically comprises outer window system and inner sliding panel. The setting of the system is that while the outer window is opened, the sliding panel should be shifted to behind the outer opening. The outer opening and inner opening (aside the sliding panel) are then on the opposite sides so that noise outdoors cannot penetrate directly into indoor area while air can pass through the gap between outer and inner glass pane such that natural ventilation is possible. Such system had been implemented in some public housing, private residential and hostel developments, which can achieve 4 to 8 dB(A) noise reduction. A typical design of AW(BT) is shown in **Appendix 3.3**.

3.6.8. It is understood that apart from the overlapping length and gap between outer window/façade and inner sliding panel, the size of the outer opening would also affect the sound attenuation performance. In general, the smaller the outer opening, less noise can penetrate to indoor area. In addition, the outer opening usually correlates to

the room size according to Building (Planning) Regulations which requires a minimum opening equivalent to 1/16 of the room size. The base case using conventional window should have the opening size meeting such requirement. For the Proposed Development, the outer opening will be designed to be equal to or smaller than the reference cases so that the transmission loss of the AW(BT) of the project case should be better or at least the same as the reference case. Yet, as the room size may be different, the corresponding base case transmission loss may vary so that the sound attenuation of the reference cases cannot be adopted directly. A conservative approach is adopted by adjusting the sound attenuation based on the relative room size of the project case and reference case. The sound attenuation is adjusted (downward only) based on the ratio of the room size of the project case and the reference case in order to reflect the difference in the base case (using conventional window). On the other hand, in case the room size of the project case is larger than the reference case or opening size of the conventional window in the project case is smaller than the reference case, no adjustment is made as a conservative approach. **Appendix 3.3** shows the configurations of the AW(BT) used in the reference cases of the residential developments at King Tai Court, Victoria Harbour and Mont Verra, as well as the estimated noise attenuation of the proposed AW(BT) with respect to different habitable rooms within the Proposed Development. The proposed locations of AW(BT) are indicated in **Figures 3.4a to 3.4c**.

Predicted Road Traffic Noise Impact on the Proposed Development under Mitigated Scenario

- 3.6.9. The predicted road traffic noise levels under the mitigated scenario are summarized in **Table 3.7** below and detailed in **Appendix 3.4**. With the proposed AW(BT) put in place, 100% compliance rate is achieved for the mitigated scenario and thus no adverse road traffic noise impact is anticipated.

Table 3.7 Summary of Predicted Road Traffic Noise Levels (Mitigated Scenario)

Location	NSR ID	Facility / Room	Noise Criteria, dB(A)	Predicted Maximum L ₁₀ (1 hour), dB(A)
G/F – 6/F	R002 – R006 R101 – R119 R121 – R128 R130 – R142 R201 – R217 R219 – R230 R232 – R233 R301 – R319 R321 – R331 R403 – R412 R501 – R505 R508 – R517 R601 – R605 R607 – R610	Dormitory	70	70
G/F – 6/F	R001, R120, R218, R320, R401, R402, R506, R507, R606	Sick Bay with Negative Pressure	70	66
G/F	R007	General Office	70	45
G/F	R008 – R009	Conference Room	70	59
G/F	R010	Rehabilitation Area	70	59
1/F – 2/F	R129 R231	Nurse Station	70	55
4/F – 5/F	R413 – R414 R518 – R519	Rehabilitation Room	70	55
6/F	R611	Multi-Purpose Treatment Room	70	55

Fixed Noise Impact on the Proposed Development

Identification of Fixed Noise Sources

3.6.10.A number of existing fixed noise sources have been identified within 300m assessment area through desktop study and site visit conducted on 11 December 2023. **Figures 3.5a to 3.5g** indicates the locations of existing major fixed noise sources that may affect the Proposed Development and the representative NSRs

selected for fixed noise impact assessment. Information of the identified major fixed noise sources are summarized in **Table 3.8** and the details are provided in **Appendix 3.5**.

Table 3.8 Information of the Identified Fixed Noise Sources

Source ID	Description	Operation Hours	Remarks
S01	Open Storage	Daytime	<ul style="list-style-type: none"> Noise sources include the movement of lorry, lifting of container by a mobile crane, and loading and unloading using a forklift.
S02	Vehicle Repair Workshop	Daytime	<ul style="list-style-type: none"> The workshop is sheltered on 3 sides and the top with opening facing Wong Nai Tun Tsuen Road. Noise sources include the use of pneumatic screwdriver, tyre pumping, hammering and car cleansing.

3.6.11. Based on the information in the approved EIA Report for the Housing Sites in Yuen Long South (AEIAR-215/2017), no major planned fixed noise sources are identified within 300m assessment area.

Assessment Methodology

3.6.12. The assessment of fixed noise impact has been conducted based on standard acoustic principles and the procedures given in the IND-TM issued under the NCO.

3.6.13. Impacts due to individual noise sources have been calculated and logarithmically summed at the representative NSRs for calculation of the overall impacts:

$$PNL = \sum [SWL_i + C_{dist} + C_{impulse} + C_{tonality} + C_{barrier} + C_{facade}]$$

where

PNL = Overall predicted noise level arising from individual source after various corrections

SWL_i = Sound power level of individual noise source

C_{dist} = Correction for distance attenuation

C_{impulse} = Correction [+3 dB(A)] for impulsive noise in IND-TM, if applicable

C_{tonality} = Correction [+3 or +6 dB(A)] for tonality as in IND-TM, if applicable

C_{barrier} = Correction [-5 or -10 dB(A)] for barrier effects due to various architectural features/ topography/ obstacles/ purpose-built noise barrier/ parapet wall, if any

C_{facade} = Correction [+3 dB(A)] for façade reflection at receiver

3.6.14. The noise levels from operation of existing major fixed noise sources are determined with reference to the measurement data adopted in previous approved EIA Reports. Cumulative fixed noise impact arising from existing major fixed noise sources located within 300m assessment area at the representative planned NSRs is assessed.

3.6.15. Based on the observations during site visit in December 2023, there is no operation during evening and night-time for all the identified major fixed noise sources. As such, fixed noise impact assessment for evening and night-time are not required.

Assessment Results

3.6.16. The results of fixed noise impact assessment for daytime period are summarized in **Table 3.9** below with detailed calculations provided in **Appendix 3.6**.

Table 3.9 Predicted Fixed Noise Levels at Representative NSRs (Daytime) – Base Case Scenario

NSR ID	Description	Predicted Fixed Noise Level, dB(A)	Area Sensitivity Rating	Noise Criteria, dB(A)	Compliance
R001	G/F - Sick Bay with Negative Pressure	57	B	65	Yes
R010	G/F - Rehabilitation Area	61	B	65	Yes
R142	1/F - Dormitory	62	B	65	Yes
R233	2/F - Dormitory	62	B	65	Yes
R331	3/F - Dormitory	62	B	65	Yes
R414	4/F - Rehabilitation Room 2	60	B	65	Yes
R501	5/F - Dormitory	50	B	65	Yes
R519	5/F - Rehabilitation Room 3	60	B	65	Yes
R601	6/F - Dormitory	50	B	65	Yes
R611	6/F - Multi-Purpose Treatment Room	59	B	65	Yes

3.6.17. According to the fixed noise assessment results, no exceedance is predicted at all representative NSRs under base case scenario for daytime period. Therefore, fixed noise mitigation measure is not required.

Fixed Noise Impact from the Proposed Development

Impact Identification and Evaluation

3.6.18. According to the latest development scheme, potential fixed noise sources within the

Proposed Development include the transformer room, pump rooms, fresh air plant rooms, E&M rooms and ventilation system of the kitchen.

3.6.19. To ensure the fixed plant noise generated by the Proposed Development would not cause excessive impact to neighbouring noise sensitive uses, potential fixed noise sources within the Proposed Development shall be properly designed to meet the relevant noise criteria as stipulated in Chapter 9 of the HKPSG.

3.6.20. Provisions shall be made to control the fixed noise sources by suitable at source noise control measures such as silencers and acoustic linings when necessary. As such, it is anticipated that the fixed plant noise impact on the surrounding NSRs due to the operation of the Proposed Development will not exceed the relevant noise criteria under the HKPSG and NCO.

Recommended Mitigation Measures

3.6.21. The following noise mitigation measures are recommended to control noise emissions from planned fixed plant noise sources within the Proposed Development:

- Select quieter plant / equipment during procurement; and
- Provide suitable at source noise control measures with reference to EPD's "Good Practices on Ventilation System Noise Control" and "Good Practices on Pumping System Noise Control" such as silencers and acoustic linings when necessary.

3.7. CONCLUSION

Construction Phase

3.7.1. Evaluation on construction noise impact associated with the use of PME for different construction activities has been conducted. With the implementation of practical mitigation measures including good site management practices, use of quieter construction methods and equipment, and use of movable noise barriers and noise enclosures, the construction noise impact on the nearby NSRs would be minimized.

Operation Phase

Road Traffic Noise

3.7.2. Operational road traffic noise impact on the planned noise sensitive uses within the Proposed Development has been assessed. The assessment results revealed that except for the Administration/Management Section on G/F and some dormitories facing Wong Nai Tun Tsuen Road on G/F to 2/F, all NSRs within the Proposed Development could comply with the respective noise criteria under the base case scenario. Mitigation measures in the form of acoustic window (baffle type) have been proposed for the Sick Bay with Negative Pressure on G/F and some dormitories

facing Wong Nai Tun Tsuen Road on G/F to 2/F to mitigate the road traffic noise impact. With the proposed traffic noise mitigation measures put in place, 100% compliance rate is achieved and no adverse traffic noise impact is anticipated.

Fixed Noise

- 3.7.3. An open storage and a vehicle repair workshop have been identified as the existing major fixed noise sources within 300m assessment area. Fixed noise impact assessment has been conducted for the Proposed Development. Based on the assessment results, no exceedance is predicted at all representative NSRs under base case scenario. Hence, no insurmountable fixed noise impact on the Proposed Development is envisaged.
- 3.7.4. To ensure the fixed plant noise generated by the Proposed Development would not cause excessive impact to neighbouring noise sensitive uses, potential fixed noise sources within the Proposed Development shall be properly designed to meet the relevant noise criteria as stipulated in Chapter 9 of the HKPSG. Provisions shall be made to control the fixed noise sources by suitable at source noise control measures such as silencers and acoustic linings when necessary. As such, it is anticipated that the fixed plant noise impact on the surrounding NSRs due to the operation of the Proposed Development will not exceed the relevant noise criteria under the HKPSG and NCO.

4. WATER QUALITY IMPACT

4.1. INTRODUCTION

4.1.1. This section identifies the potential water quality impact that could arise from the Project during its construction and operation phases. It also recommends the corresponding measures to pre-empt and mitigate potential impacts as necessary.

4.2. RELEVANT LEGISLATION, STANDARDS AND GUIDELINES

4.2.1. The relevant legislation, standards and guidelines applicable to the present environmental review of water quality impacts include:

- Water Pollution Control Ordinance (WPCO) (Cap. 358);
- Water Pollution Control (General) Regulations (Cap. 358D);
- Water Pollution Control (Sewerage) Regulation (Cap. 358AL);
- Technical Memorandum on Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters (TM-DSS);
- Hong Kong Planning Standards and Guidelines (HKPSG);
- Professional Persons Environmental Consultative Committee (ProPECC) Practice Note PN 1/23 "Drainage Plans subject to Comment by the Environmental Protection Department – Building (Standards of Sanitary Fittings, Plumbing, Drainage Works and Latrines) Regulations"; and
- Professional Persons Environmental Consultative Committee (ProPECC) Practice Note PN 2/23 "Construction Site Drainage".

4.2.2. Under the WPCO, Hong Kong waters are divided into ten Water Control Zones (WCZs) and four supplementary water control zones. Corresponding statements of Water Quality Objectives (WQOs) are stipulated for different water regimes (marine waters, inland waters, bathing beaches subzones, secondary contact recreation subzones and fish culture subzones) in each of the WCZ based on their beneficial uses. The Project Site falls within the Deep Bay WCZ and the respective WQOs shall be followed.

4.2.3. As Deep Bay is an ecological sensitive area, a "zero discharge policy" for Deep Bay has been implemented in Deep Bay catchment. Effluents discharged directly or ultimately into Deep Bay are required to be properly treated prior to final disposal such that there would be no net increase in pollution load to Deep Bay.

4.3. WATER SENSITIVE RECEIVERS

4.3.1. The assessment area for water quality is defined by a distance of 500m from the Project site boundary. Water sensitive receivers (WSRs) located within 500m assessment area are listed in **Table 4.1** and their locations are shown in **Figure 4.1**.

Table 4.1 Water Sensitive Receivers

WSR ID	Description
W01	Watercourse near One Hyde Park
W02	Yuen Long Nullah
W03	Abandoned Fish Pond near Wong Nai Tun Tsuen
W04	Watercourse near Wong Nai Tun Tsuen
W05	Nullah along Shui Tsiu San Tsuen Road
W06	Yeung Ka Tsuen Ecologically Important Stream

4.4. CONSTRUCTION PHASE IMPACT REVIEW

Impact Identification and Evaluation

- 4.4.1. The major water quality concerns during the construction phase shall be the on-site runoff from dust suppression activities and rainfall, sewage effluent from construction workforce, and chemical spillage. The key pollutants would be suspended solids from surface runoff and other pollutants would include fuel and lubricant oil from the construction vehicles and powered mechanical equipment (PME) on-site.
- 4.4.2. The Contractor is required to apply discharge license for the discharge of effluent from the construction site under the WPCO and all discharges during the construction should comply with the TM-DSS issued under the WPCO.
- 4.4.3. During the construction of the Project, the workforce on-site will generate sewage effluents, which are characterized by high levels of Biochemical Oxygen Demand (BOD), ammonia and *E. coli* counts. Potential water quality impacts upon the local drainage and freshwater system may arise from these sewage effluents, if uncontrolled. The construction sewage should be handled by interim sewage treatment facilities, such as portable chemical toilets. Appropriate number of portable toilets should be provided by a licensed contractor to serve the large number of construction workers over the construction site. Provided that sewage is not discharged directly into the storm drains or watercourses adjacent to the construction site, and temporary sanitary facilities are used and properly maintained, it is unlikely that sewage generated from the Project Site would have a significant water quality impact.

4.4.4. A large variety of chemicals may be used during construction activities. These may include petroleum products, surplus adhesives, spent lubrication oil, grease and mineral oil, spent acid and alkaline solutions/solvent and other chemicals. The use of these chemicals and their storage as waste materials has the potential to create impacts on the water quality of adjacent watercourses or storm drains if spillage occurs. Waste oil may infiltrate into the surface soil layer, or runoff into local watercourses, increasing hydrocarbon levels. The potential impact could however be mitigated by practical mitigation measures and good site practices as given in the Waste Disposal Ordinance (Cap. 354), its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation (Cap. 354C) and the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.

Recommended Mitigation Measures

4.4.5. To mitigate the water quality impact during construction phase, construction practices outlined in the ProPECC PN 2/23, where applicable, shall be implemented. Typical relevant wastewater control measures include:

- Surface runoff from construction sites should be discharged into storm water drains via adequately designed sand/silt removal facilities such as sand traps, silt traps, sedimentation tanks and sediment basins. Channels or earth bunds or sand bag barriers should be provided on site to properly direct surface runoff to such silt removal facilities. Perimeter channels at site boundaries should be provided where necessary to intercept surface run-off from outside the site so that it will not wash across the site. Catchpits and perimeter channels should be constructed in advance of site formation works and earthworks;
- Silt removal facilities, channels and manholes should be maintained and the deposited silt and grit should be removed regularly, at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times;
- Construction works should be programmed to minimize soil excavation works in rainy seasons (generally from April to September). If soil excavation works could not be avoided in these months or at any time of year when rainstorms are likely, for the purpose of preventing soil erosion, temporarily exposed slope surfaces should be covered (e.g. by tarpaulin), and temporary access roads should be protected by crushed stone or gravel, as excavation proceeds. Intercepting channels should be provided (e.g. along the crest/edge of excavation) to prevent surface runoff from washing across exposed soil surfaces. Arrangements should always be in place to ensure that adequate surface protection measures can be safely carried out well before the arrival of

a rainstorm;

- Earthworks final surfaces should be well compacted and the subsequent permanent works or surface protection works should be carried out immediately after the final surfaces are formed to prevent erosion caused by rainstorms. Appropriate drainage like intercepting channels should be provided where necessary;
- Open stockpiles of construction materials (e.g. aggregates, sand and fill material) on sites should be covered with tarpaulin or similar impermeable fabric during rainstorms. Measures should be taken to prevent washing away construction materials, soil, silt or debris into any drainage system;
- Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent surface runoff from getting into foul sewers. Discharge of surface runoff into foul sewers must always be prevented in order not to unduly overload the foul sewerage system;
- Wastewater generated from the washing down of mixer trucks and drum mixers and similar equipment should wherever practicable be recycled. The discharge of wastewater should be kept to a minimum;
- All vehicles and plants should be cleaned before they leave a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. A wheel washing bay should be provided at every site exit if practicable and wash-water should have sand and silt settled out or removed before discharging into storm water drains. The section of construction road between the wheel washing bay and the public road should be paved to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains;
- Before commencing any demolition works, all sewer and drainage connections should be sealed to prevent building debris, soil, sand, etc. from entering public sewers/drains;
- Wastewater generated from building construction activities including concreting, plastering, internal decoration, cleaning of works and similar activities should not be discharged into the storm water drainage system;
- Sewage from toilets, kitchens and similar facilities should be discharged into a foul sewer. If there is no foul sewer in the vicinity, chemical toilets, a septic tank and soakaway system will have to be provided as appropriate;
- Vehicle and plant servicing areas, vehicle wash bays and lubrication bays should as far as possible be located within roofed areas. The drainage in these covered areas should be connected to the foul sewer via petrol interceptor(s).

Oil leakage or spillage should be contained and cleaned up immediately. Waste oil should be collected and stored for recycling or disposal in accordance with the Waste Disposal Ordinance (Cap. 354);

- Sufficient number of chemical toilets shall be provided by a licensed contractor and properly maintained; and
- The construction solid waste, debris and rubbish on-site should be collected, handled and disposed of properly to avoid causing any water quality impacts.

4.4.6. By adopting the above mitigation measures with best management practices, the impacts arisen during the construction phase would be reduced to an acceptable level and adverse water quality impacts would not be anticipated.

4.5. OPERATION PHASE IMPACT REVIEW

Impact Identification and Evaluation

4.5.1. During operation phase, stormwater runoff from paved surfaces within the Project Site would be directed to a managed stormwater drainage system following the requirements in the ProPECC PN 1/23. Runoff from the roofs of buildings and road surfaces within the Project Site may carry suspended solids and other pollutants such as fuel, oils and heavy metals that could enter nearby surface water bodies or storm drains if uncontrolled. With implementation of stormwater best management practices including provision of trapped gullies and catchpits, adverse impact to the water quality is not anticipated.

4.5.2. Effluent discharge from the kitchen within the Proposed Development during operation phase is also governed by the WPCO. All restaurants and food processing factories are required to install grease traps so that greasy materials will be separated from wastewater before passing to communal sewers. The operator shall ensure that the grease traps are properly designed, constructed and maintained so as to effectively remove greasy materials from wastewater before discharge to the sewerage system. Materials removed from a grease trap shall be handled and disposed of properly in order to maintain kitchen hygiene and protect Hong Kong's environment. "Grease Traps for Restaurants and Food Processors" published by the EPD detailed the requirements of such discharge.

4.5.3. Sewage discharge would be the major water pollution source throughout the operation phase of the Proposed Development. Sewage generated from the Proposed Development would be collected and conveyed to the nearest public sewerage system via proper connections. No sewage will be released to the environment without treatment. A sewerage impact assessment for the Proposed Development has been conducted, detailed assessment and findings can refer to separate submission.

Recommended Mitigation Measures

4.5.4. The following mitigation measures are recommended to avoid causing any water quality impacts during the operation phase:

- Grease traps should be properly designed and constructed so as to effectively remove greasy materials from the kitchen wastewater before discharge to the sewerage system;
- Grease traps should be properly maintained so that it can continue to function as an effective grease removal device; and
- Materials removed from a grease trap should be handled and disposed of properly.

4.6. CONCLUSION

Construction Phase

4.6.1. During construction, water quality impacts can be properly controlled with the implementation of good site practices, provision of sufficient chemical toilets on-site with regular maintenance, and proper handling and disposal of waste materials. Provided these measures are properly implemented, it is unlikely that any adverse water quality impact will be induced during the construction of the Proposed Development.

Operation Phase

4.6.2. During operation phase, stormwater runoff from paved surfaces within the Project Site would be directed to a managed stormwater drainage system following the requirements in the ProPECC PN 1/23. With implementation of stormwater best management practices including provision of trapped gullies and catchpits, adverse impact to the water quality is not anticipated.

4.6.3. Effluent discharge from the kitchen within the Proposed Development is governed by the WPCO. Grease traps shall be installed to separate greasy materials from wastewater prior to discharge. Provided that the grease traps are properly designed, constructed and maintained, no adverse water quality impact is anticipated due to the operation of the kitchen.

4.6.4. Sewage generated from the Proposed Development would be collected and conveyed to the nearest public sewerage system via proper connections. No sewage will be released to the environment without treatment. A sewerage impact assessment for the Proposed Development has been conducted, detailed assessment and findings can refer to separate submission.

5. WASTE MANAGEMENT

5.1. INTRODUCTION

5.1.1. This section aims to assess the potential environmental impacts that may be resulted from the waste generation during the construction and operation of the Proposed Development. Options of reuse, minimization, recycling, treatment, storage, collection, transport and disposal of such wastes were examined. Where appropriate, procedures for waste reduction and management were considered, with environmental control measures to avoid or to minimize the impacts.

5.2. RELEVANT LEGISLATION, STANDARDS AND GUIDELINES

5.2.1. The Waste Disposal Ordinance (WDO) (Cap. 354) prohibits unauthorized disposal of wastes, with waste defined as any substance that is abandoned. All wastes should be properly stored and disposed in accordance with relevant waste management regulations and guidelines listed below:

- Waste Disposal Ordinance (Cap. 354);
- Waste Disposal (Chemical Waste) (General) Regulation (Cap. 354C);
- Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 354N);
- Waste Disposal (Clinical Waste) (General) Regulation (Cap. 354O);
- Land (Miscellaneous Provisions) Ordinance (Cap. 28);
- Public Health and Municipal Services Ordinance (Cap. 132);
- Public Cleansing and Prevention of Nuisances Regulation (Cap. 132BK);
- Dumping at Sea Ordinance (Cap. 466);
- Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes; and
- Code of Practice for the Management of Clinical Waste – Small Clinical Waste Producers.

5.3. CONSTRUCTION PHASE IMPACT REVIEW

5.3.1. The construction activities to be carried out for the Proposed Development would result in the generation of a variety of wastes (i.e. construction and demolition (C&D) materials, chemical waste and general refuse). These C&D materials and wastes if not properly stored, handled and disposed of would give rise to environmental impacts, such as dust, odour, water quality and visual impacts.

5.3.2. Waste disposal during the construction phase would follow the trip ticket system and

comply with legislation requirements including:

- Application for a billing account in accordance with the Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 354N); and
- Registration as a Chemical Waste Producer and storage/disposal of chemical wastes in accordance with the Waste Disposal (Chemical Waste) (General) Regulation (Cap. 354C).

Construction and Demolition Materials

5.3.3. C&D materials would be generated from the demolition and construction activities. All C&D materials generated shall be sorted into inert and non-inert C&D materials. Where practicable, inert C&D material reused on-site shall be encouraged to minimize material volumes requiring off-site transport/ disposal. Disposal outlets such as public fill reception facilities shall be identified for inert materials if no on-site reuse opportunities exist. Non-inert C&D materials should be reused or recycled as far as possible. Landfill disposal should be considered as the last resort for waste handling.

Chemical Waste

5.3.4. The maintenance and servicing of the construction plants and vehicles may generate a small amount of chemical waste, such as cleaning fluids, solvents, lubrication oil and fuels.

5.3.5. Chemical waste arising during the construction phase may pose environmental, health and safety hazards if not stored and disposed of appropriately as outlined in the Waste Disposal (Chemical Waste) (General) Regulation (Cap. 354C) and the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. The potential hazards include:

- Toxic effects on the construction workforce;
- Adverse impact on air quality and water quality due to spills; and
- Fire hazards.

5.3.6. Materials classified as chemical waste will require special handling and storage arrangement before removal for appropriate treatment at the Chemical Waste Treatment Centre (CWTC) or other licensed facilities. Wherever possible opportunities should be taken to reuse and recycle materials.

5.3.7. Storage, handling, transport and disposal of chemical waste should be arranged in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Waste published by the EPD. A trip-ticket system should be operated in accordance with the Waste Disposal (Chemical Waste) (General) Regulation (Cap. 354C) to monitor all movements of chemical wastes which would be collected by licensed chemical waste collectors to a licensed facility for final treatment and

disposal.

- 5.3.8. Provided that the chemical waste is properly stored, handled, transported and disposed of, no adverse environmental impact would result from a minimal quantity of chemical waste arising from the Project.

General Refuse

- 5.3.9. The construction workforce would generate refuse comprising food scraps, paper waste, empty containers, etc. Such refuse will be properly stored in a designated area prior to collection and disposal. Disposal of refuse at site other than approved waste transfer or disposal facilities is prohibited. Effective collection of the on-site waste will prevent waste materials being blown around by wind, or creating an odour nuisance or pest and vermin problems. Waste storage areas will be well maintained and cleaned regularly.
- 5.3.10. The daily generation of general refuse during the construction phase would be minimal and those waste generated could be effectively controlled by normal measures. With the implementation of good waste management practices on-site, adverse environmental impacts are not expected to arise from the storage, handling and transportation of general refuse.

5.4. OPERATION PHASE IMPACT REVIEW

General Refuse

- 5.4.1. General refuse is anticipated during the operation of the Proposed Development. It would be generated from the daily activities of elders, staff and visitors. General refuse would include food waste, paper waste and domestic waste. The storage of general refuse has potential to give rise to adverse environmental impacts. These include odour if waste is not collected frequently, windblown litter and visual impact. The Proposed Development may also attract pests and vermin if the waste storage area is not well maintained and cleaned regularly.
- 5.4.2. General refuse generated during the operation phase will be collected at the refuse collection point provided within the Proposed Development for further collection. The waste management practice will comply with the statutory requirements.
- 5.4.3. With the implementation of good waste management practices on-site, the environmental impacts caused by storage, handling, transportation and disposal of general refuse are expected to be minimal.

Other Waste

- 5.4.4. Small amount of chemical waste (e.g. lubricant generated from maintenance of equipment) and clinical waste (e.g. cartridges, ampoules, surgical dressings, swabs) may be generated during operation when the need arises. The handling, storage,

transportation and disposal of chemical and clinical waste shall comply with the requirements stipulated in the following legislation and code of practice:

- Waste Disposal (Chemical Waste) (General) Regulation (Cap. 354C);
- Waste Disposal (Clinical Waste) (General) Regulation (Cap. 354O);
- Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes; and
- Code of Practice for the Management of Clinical Waste – Small Clinical Waste Producers.

5.4.5. Provided that relevant legislation and code of practice are strictly followed during the handling, storage, transportation and disposal of chemical waste and clinical waste, no adverse environmental impact is anticipated.

5.5. WASTE MANAGEMENT STRATEGIES

5.5.1. In line with Government's position on waste minimization, the practice of avoiding and minimizing waste generation and waste recycling should be adopted as far as practicable. It is recommended that waste reduction and management would be implemented, including the provision of recycling bins and adequate space to facilitate separation, collection and storage of recyclable materials for recycling in the refuse storage and material recovery chamber.

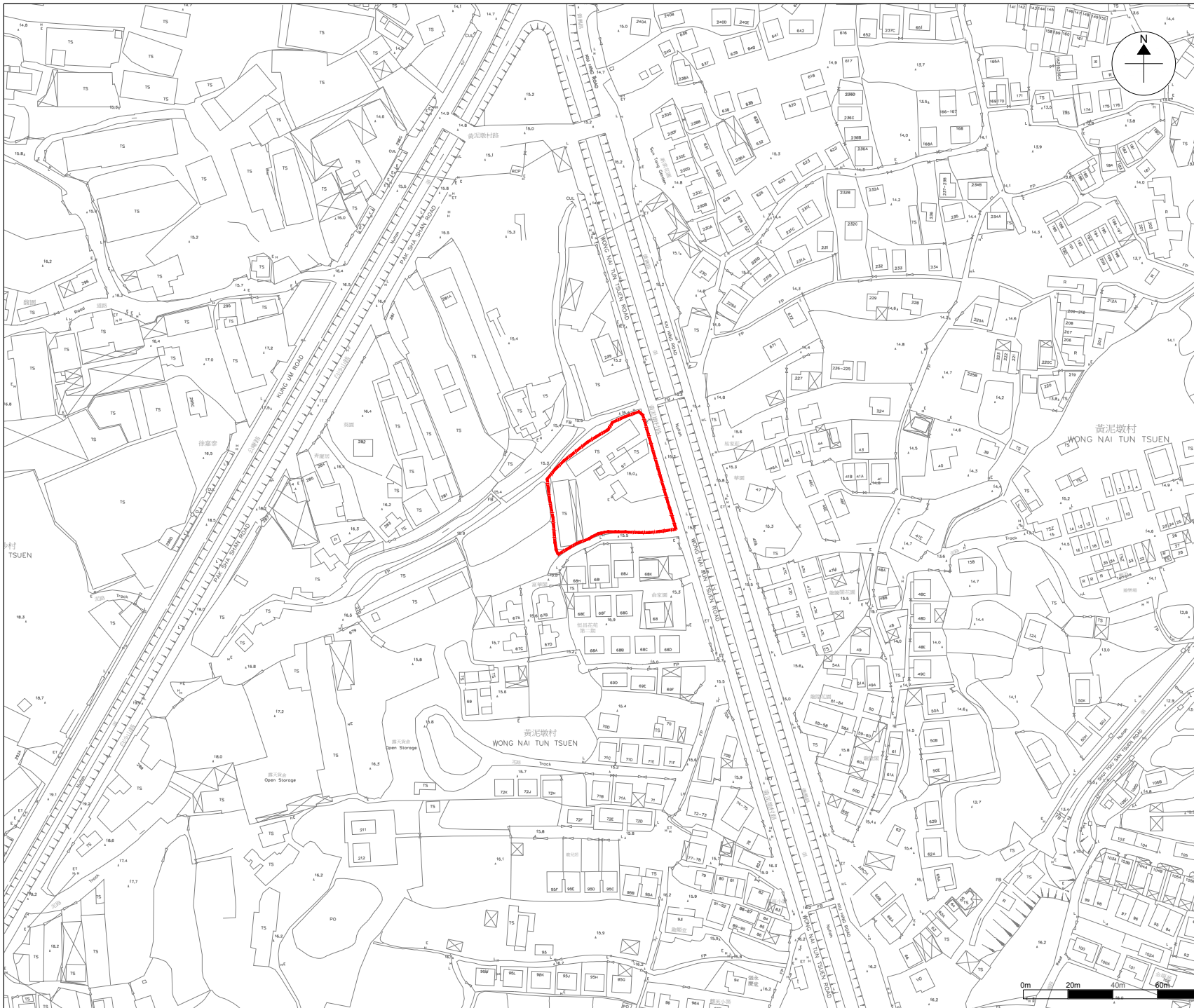
5.6. CONCLUSION

5.6.1. The potential impacts of wastes arising from construction and operation of the Proposed Development have been assessed. With the recommended procedures/ measures in place, the wastes generated/ disposed of during the construction and operation phases should not be result in any adverse environmental impacts.

6. CONCLUSION

- 6.1.1. The Project is to construct an 8-storey RCHE at Lot 669 S.A ss.2 RP (Part) and Lot 669 S.B RP (Part) in D.D.117, Yuen Long. This EA Report addressed the potential environmental issues arising from the construction and operation of the Proposed Development, which include the air quality, noise, water quality and waste management.
- 6.1.2. With the recommended environmental mitigation measures in place, no unacceptable environmental impact on or arising from the Proposed Development is anticipated.

FIGURE 1.1
LOCATION OF PROJECT SITE



LEGEND:

Project Site

	Prepared	Checked	Approved
Initial	RW	ZC	HM
Date	20231220	20231220	20231220

Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY (RCHE)) IN LOT 669 S.A SS.2 RP (PART) AND LOT 669 S.B RP (PART) IN D.D.117, YUEN LONG

Figure Title

Location of Project Site

Figure No.

Figure 1.1

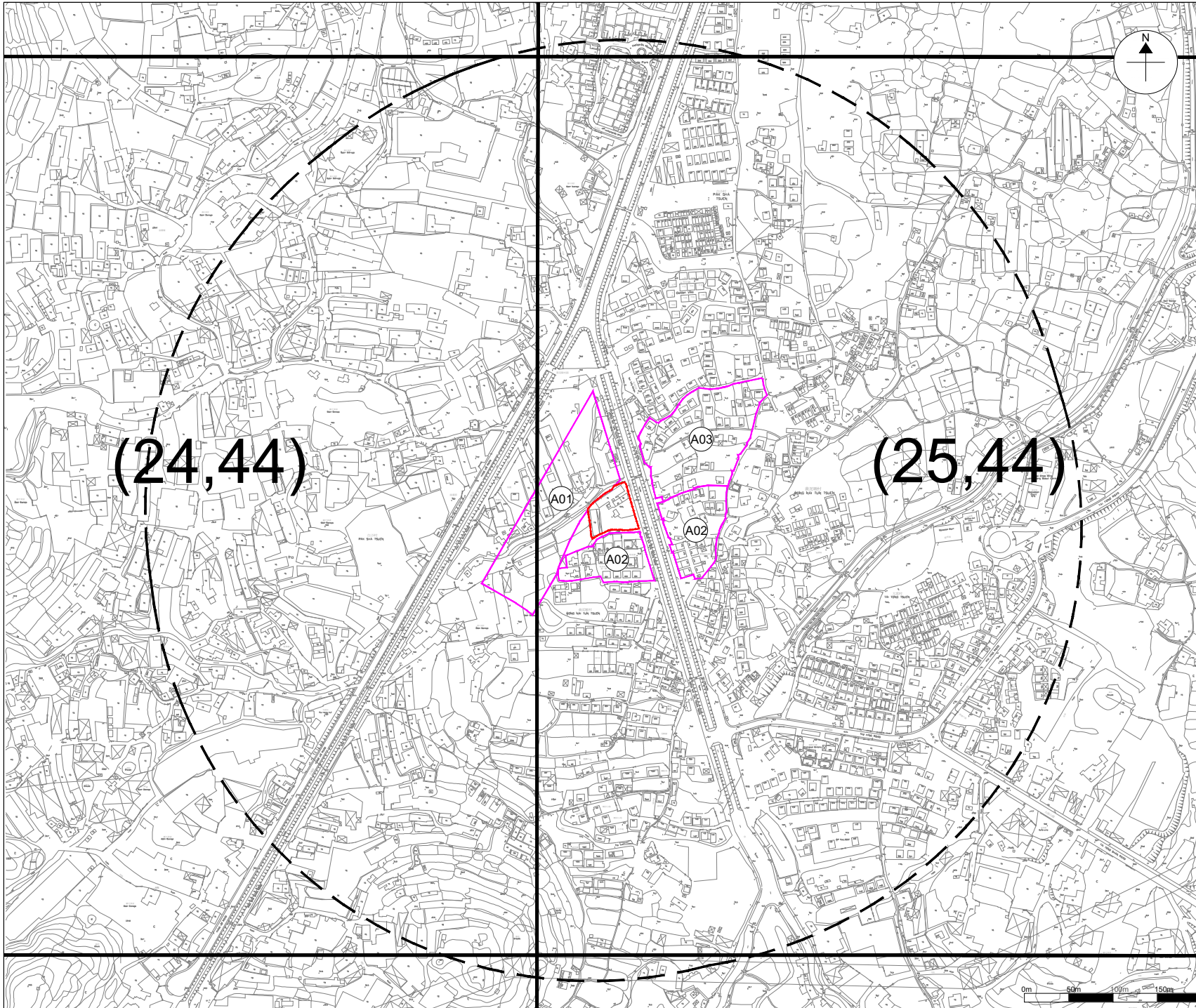
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FIGURE 2.1
LOCATION OF REPRESENTATIVE AIR
SENSITIVE RECEIVERS WITHIN 500M
ASSESSMENT AREA



LEGEND:

- Project Site
- 500m Assessment Area for Air Quality
- Representative Air Sensitive Receiver (ASR)
- (xx,xx) PATH Grid
- AXX ASR ID

	Prepared	Checked	Approved
Initial	RW	ZC	HM
Date	20231220	20231220	20231220

Project Title
 SECTION 16 PLANNING APPLICATION FOR PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY (RCHE)) IN LOT 669 S.A SS.2 RP (PART) AND LOT 669 S.B RP (PART) IN D.D.117, YUEN LONG

Figure Title
 Location of Representative Air Sensitive Receivers within 500m Assessment Area

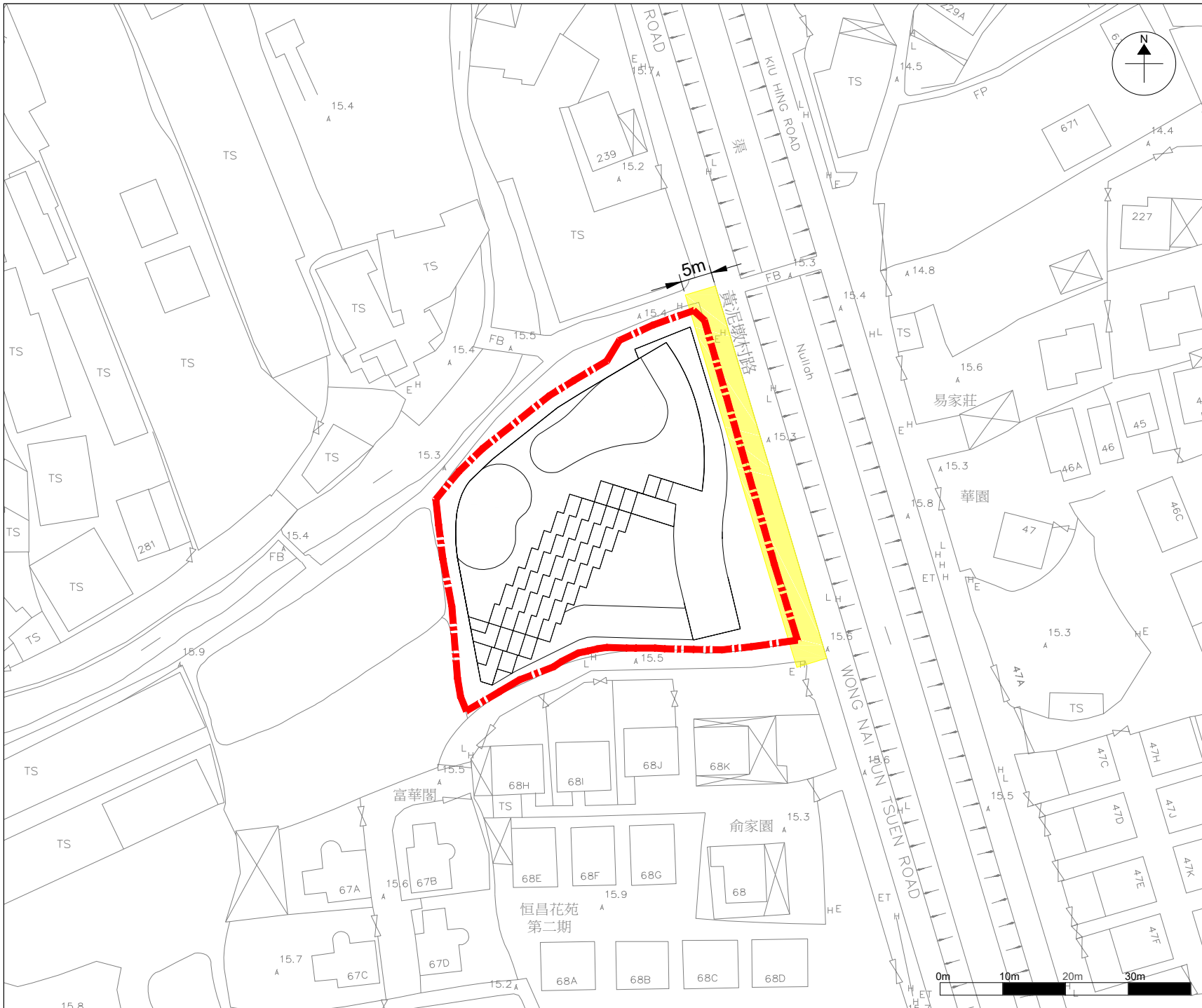
Figure No.	Rev.
Figure 2.1	0



FIGURE 2.2
BUFFER DISTANCE BETWEEN THE
PROPOSED DEVELOPMENT AND THE
NEARBY ROAD NETWORK

LEGEND:

- Project Site
- Buffer Distance Required



	Prepared	Checked	Approved
Initial	RW	ZC	HM
Date	20231220	20231220	20231220

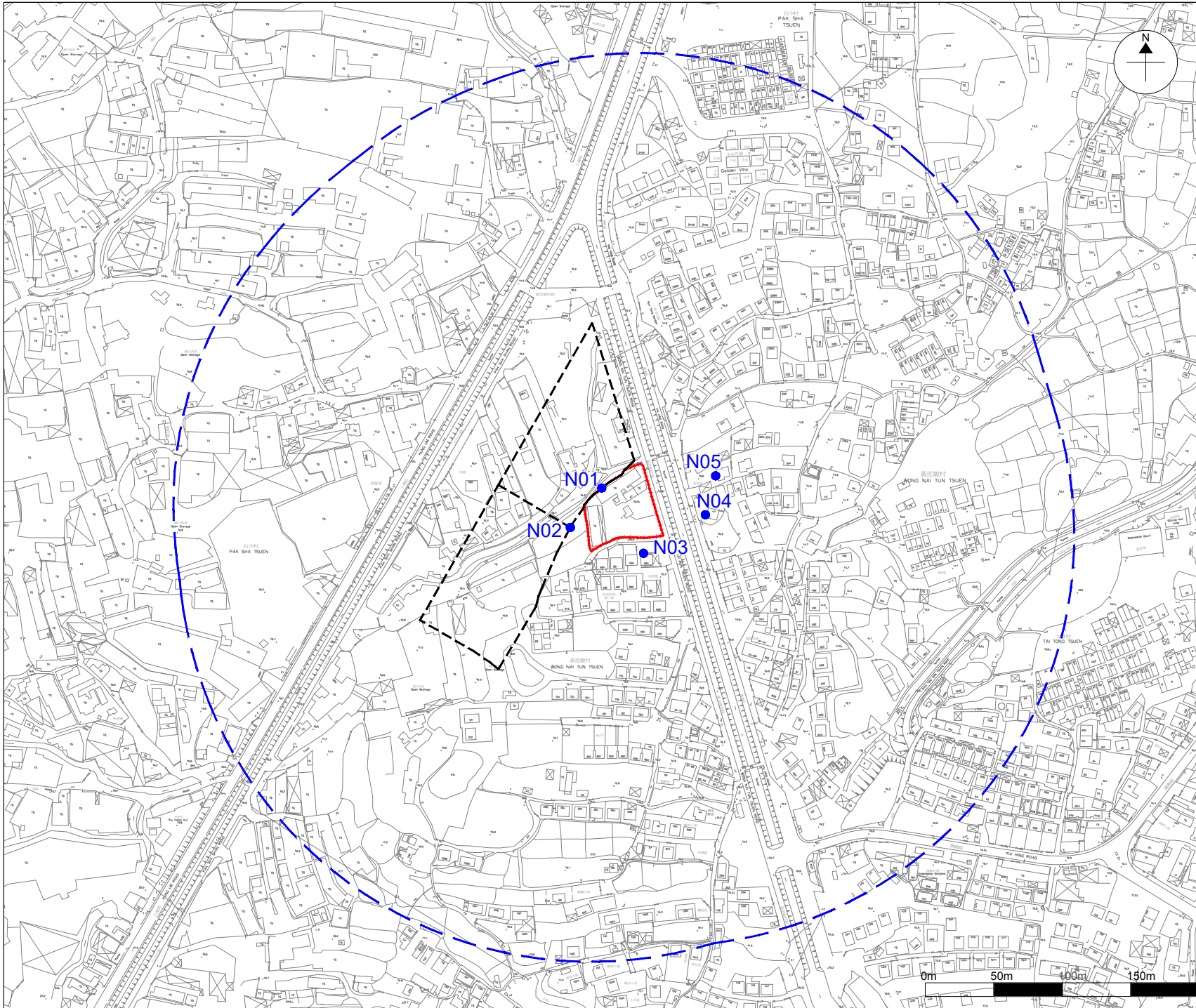
Project Title
 SECTION 16 PLANNING APPLICATION FOR PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY (RCHE)) IN LOT 669 S.A SS.2 RP (PART) AND LOT 669 S.B RP (PART) IN D.D.117, YUEN LONG

Figure Title
 Buffer Distance between the Proposed Development and the Nearby Road Network

Figure No.	Rev.
Figure 2.2	0



FIGURE 3.1
LOCATION OF REPRESENTATIVE NOISE
SENSITIVE RECEIVERS WITHIN 300M
ASSESSMENT AREA



LEGEND:

- Project Site
- 300m Assessment Area for Noise
- Planned Residential Development Sites in Yuen Long South
- Representative Noise Sensitive Receivers

	Prepared	Checked	Approved
Initial	RW	ZC	HM
Date	20231220	20231220	20231220

Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY (RCHE)) IN LOT 669 S.A SS.2 RP (PART) AND LOT 669 S.B RP (PART) IN D.D.117, YUEN LONG

Figure Title

Location of Representative Noise Sensitive Receivers within 300m Assessment Area

Figure No.

Figure 3.1

Rev.

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FIGURE 3.2A – 3.2G
LOCATION OF NOISE SENSITIVE RECEIVERS
FOR ROAD TRAFFIC NOISE ASSESSMENT

LEGEND:

- Project Site
- NSR_ID
- Noise Sensitive Receiver



	Prepared	Checked	Approved
Initial	RW	ZC	HM
Date	20240222	20240222	20240222

Project Title
 SECTION 16 PLANNING APPLICATION FOR PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY (RCHE)) IN LOT 669 S.A SS.2 RP (PART) AND LOT 669 S.B RP (PART) IN D.D.117, YUEN LONG

Figure Title
 Location of Noise Sensitive Receivers for Road Traffic Noise Assessment (G/F)

Figure No.	Rev.
Figure 3.2a	0



LEGEND:

- Project Site
- NSR_ID
- Noise Sensitive Receiver

	Prepared	Checked	Approved
Initial	RW	ZC	HM
Date	20240220	20240220	20240220

Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY (RCHE)) IN LOT 669 S.A SS.2 RP (PART) AND LOT 669 S.B RP (PART) IN D.D.117, YUEN LONG

Figure Title

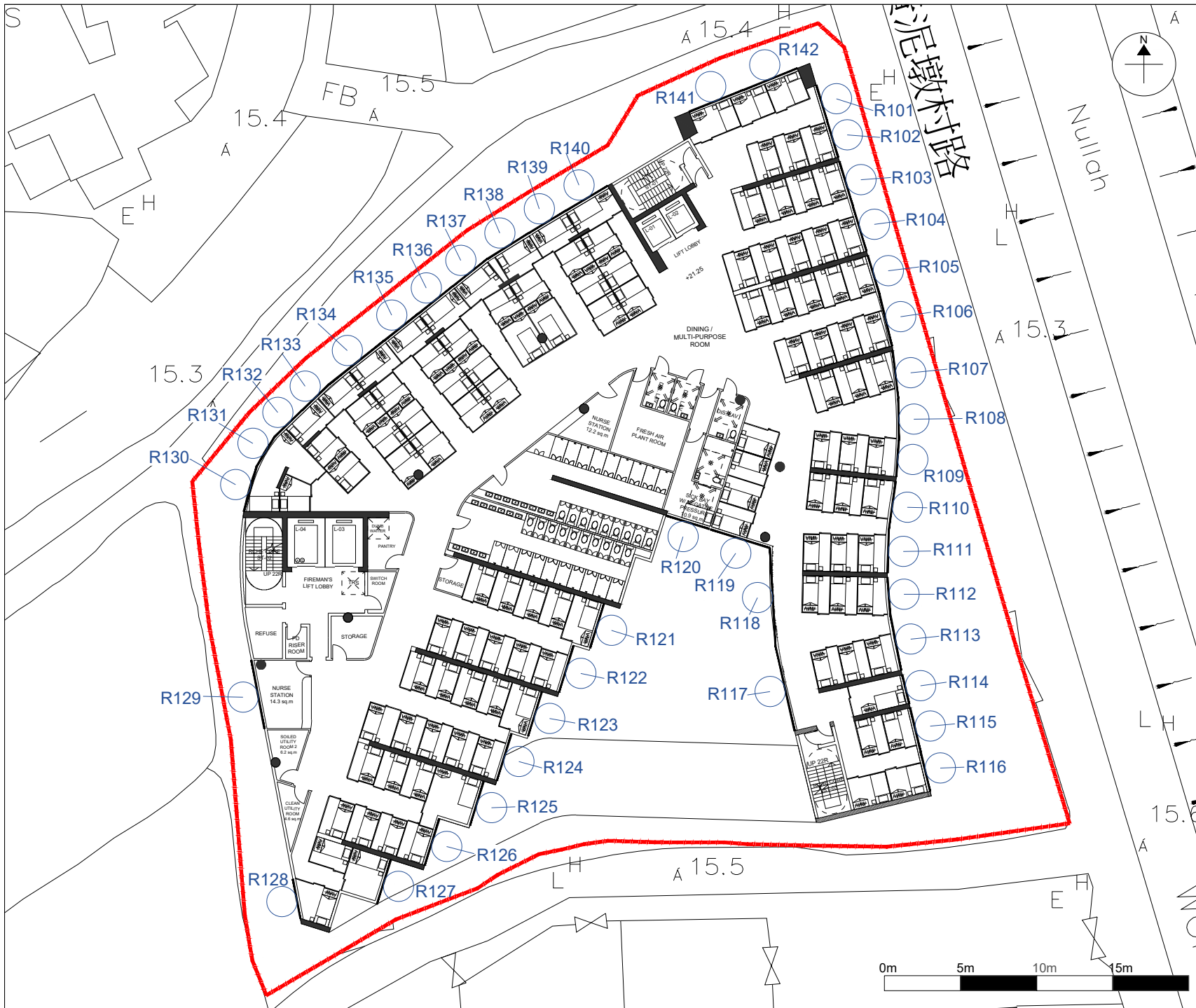
Location of Noise Sensitive Receivers for Road Traffic Noise Assessment (1/F)

Figure No.

Figure 3.2b

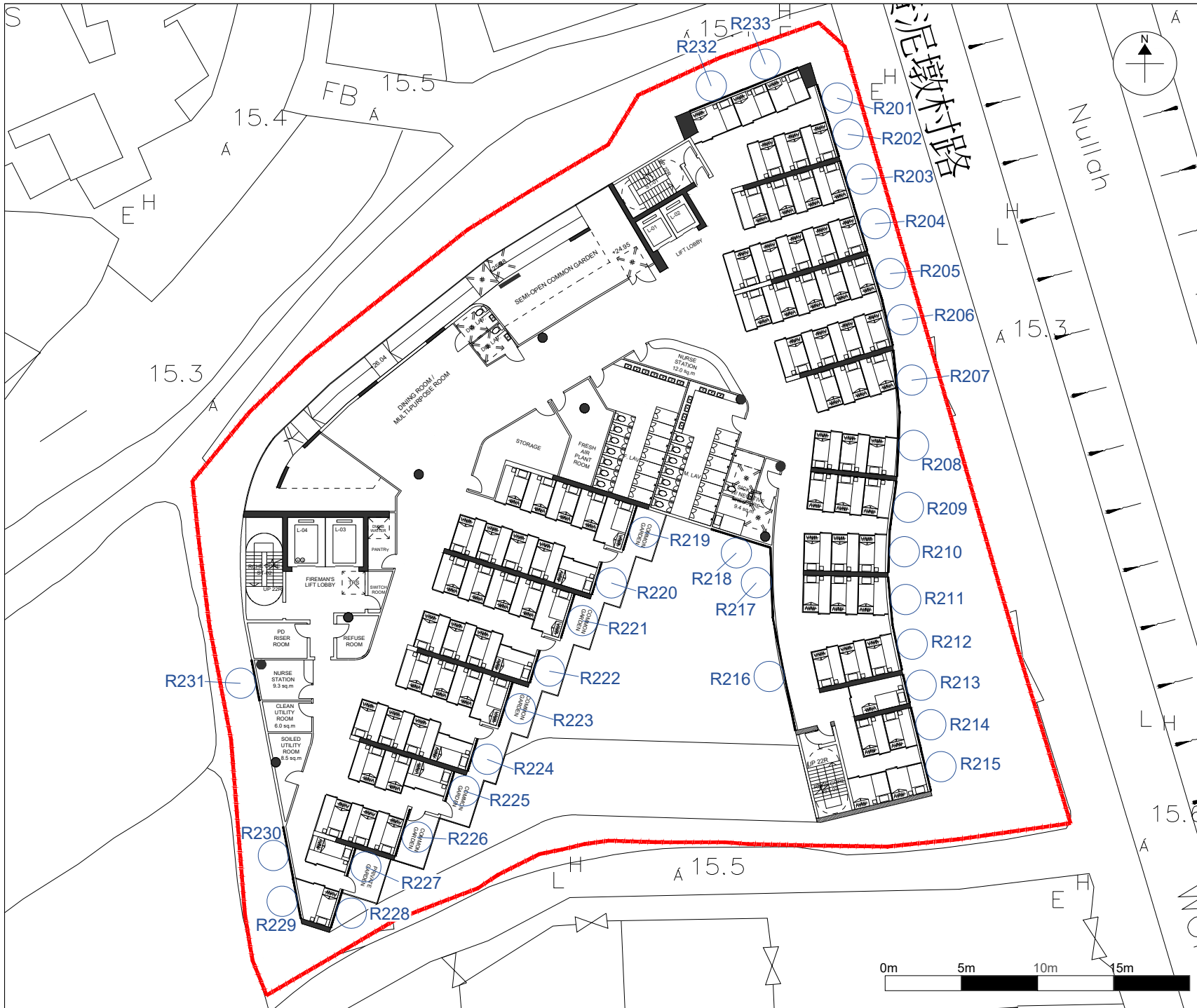
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LEGEND:

- Project Site
- NSR_ID
Noise Sensitive Receiver



	Prepared	Checked	Approved
Initial	RW	ZC	HM
Date	20240220	20240220	20240220

Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY (RCHE)) IN LOT 669 S.A SS.2 RP (PART) AND LOT 669 S.B RP (PART) IN D.D.117, YUEN LONG

Figure Title

Location of Noise Sensitive Receivers for Road Traffic Noise Assessment (2/F)

Figure No.

Figure 3.2c

Rev.

0



LEGEND:

- Project Site
- NSR_ID
Noise Sensitive Receiver

	Prepared	Checked	Approved
Initial	RW	ZC	HM
Date	20240220	20240220	20240220

Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY (RCHE)) IN LOT 669 S.A SS.2 RP (PART) AND LOT 669 S.B RP (PART) IN D.D.117, YUEN LONG

Figure Title

Location of Noise Sensitive Receivers for Road Traffic Noise Assessment (3/F)

Figure No.

Figure 3.2d

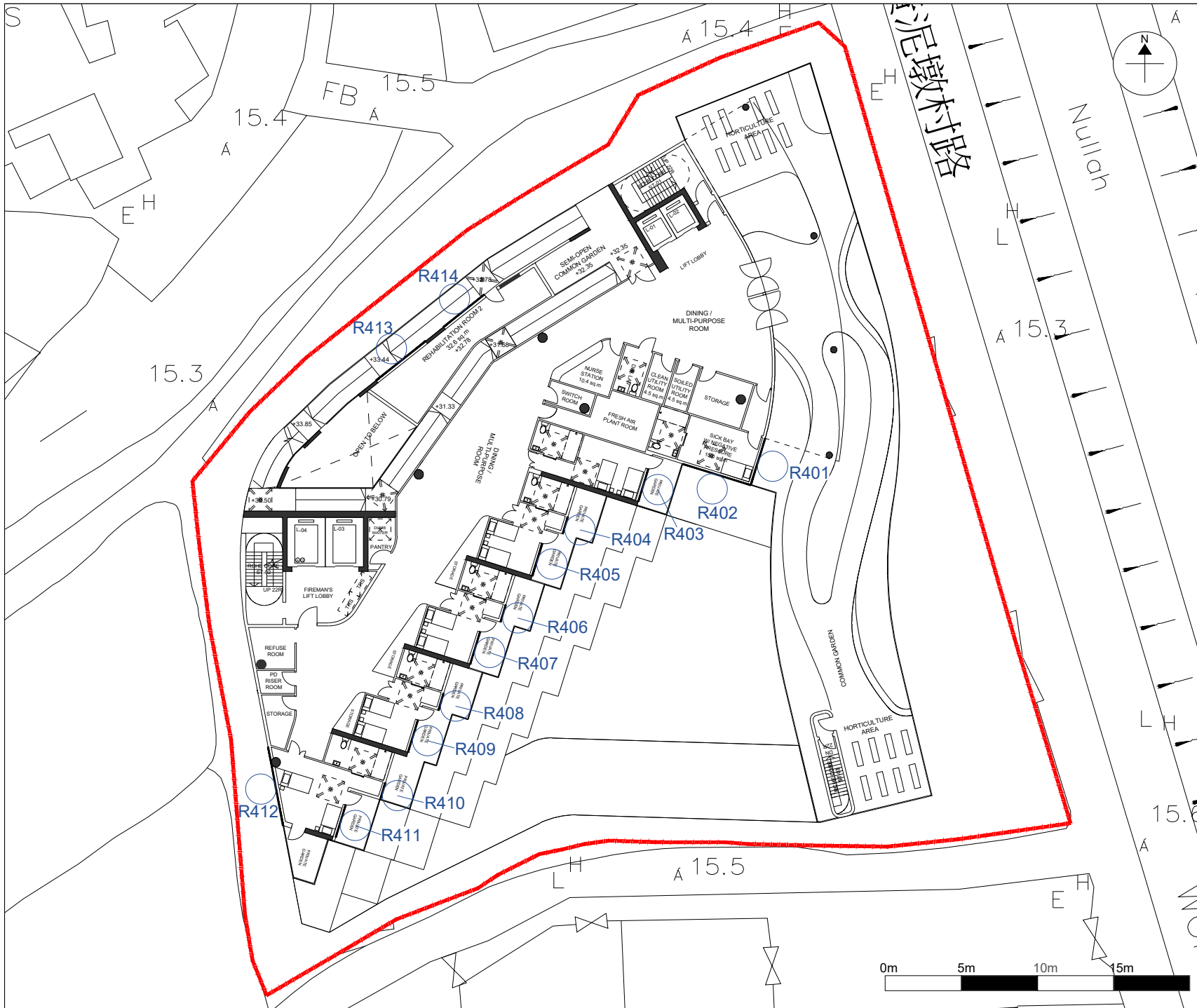
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LEGEND:

- Project Site
- NSR_ID
- Noise Sensitive Receiver

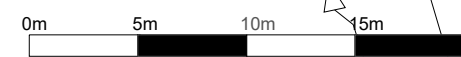


	Prepared	Checked	Approved
Initial	RW	ZC	HM
Date	20240220	20240220	20240220

Project Title
 SECTION 16 PLANNING APPLICATION FOR PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY (RCHE)) IN LOT 669 S.A SS.2 RP (PART) AND LOT 669 S.B RP (PART) IN D.D.117, YUEN LONG

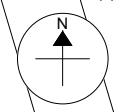
Figure Title
 Location of Noise Sensitive Receivers for Road Traffic Noise Assessment (4/F)

Figure No.	Rev.
Figure 3.2e	0



LEGEND:

- Project Site
- NSR_ID
- Noise Sensitive Receiver

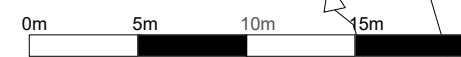


	Prepared	Checked	Approved
Initial	RW	ZC	HM
Date	20240220	20240220	20240220

Project Title
 SECTION 16 PLANNING APPLICATION FOR PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY (RCHE)) IN LOT 669 S.A SS.2 RP (PART) AND LOT 669 S.B RP (PART) IN D.D.117, YUEN LONG

Figure Title
 Location of Noise Sensitive Receivers for Road Traffic Noise Assessment (5/F)

Figure No.	Rev.
Figure 3.2f	0



LEGEND:

- Project Site
- NSR_ID
- Noise Sensitive Receiver

	Prepared	Checked	Approved
Initial	RW	ZC	HM
Date	20240220	20240220	20240220

Project Title
 SECTION 16 PLANNING APPLICATION FOR PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY (RCHE)) IN LOT 669 S.A SS.2 RP (PART) AND LOT 669 S.B RP (PART) IN D.D.117, YUEN LONG

Figure Title
 Location of Noise Sensitive Receivers for Road Traffic Noise Assessment (6/F)

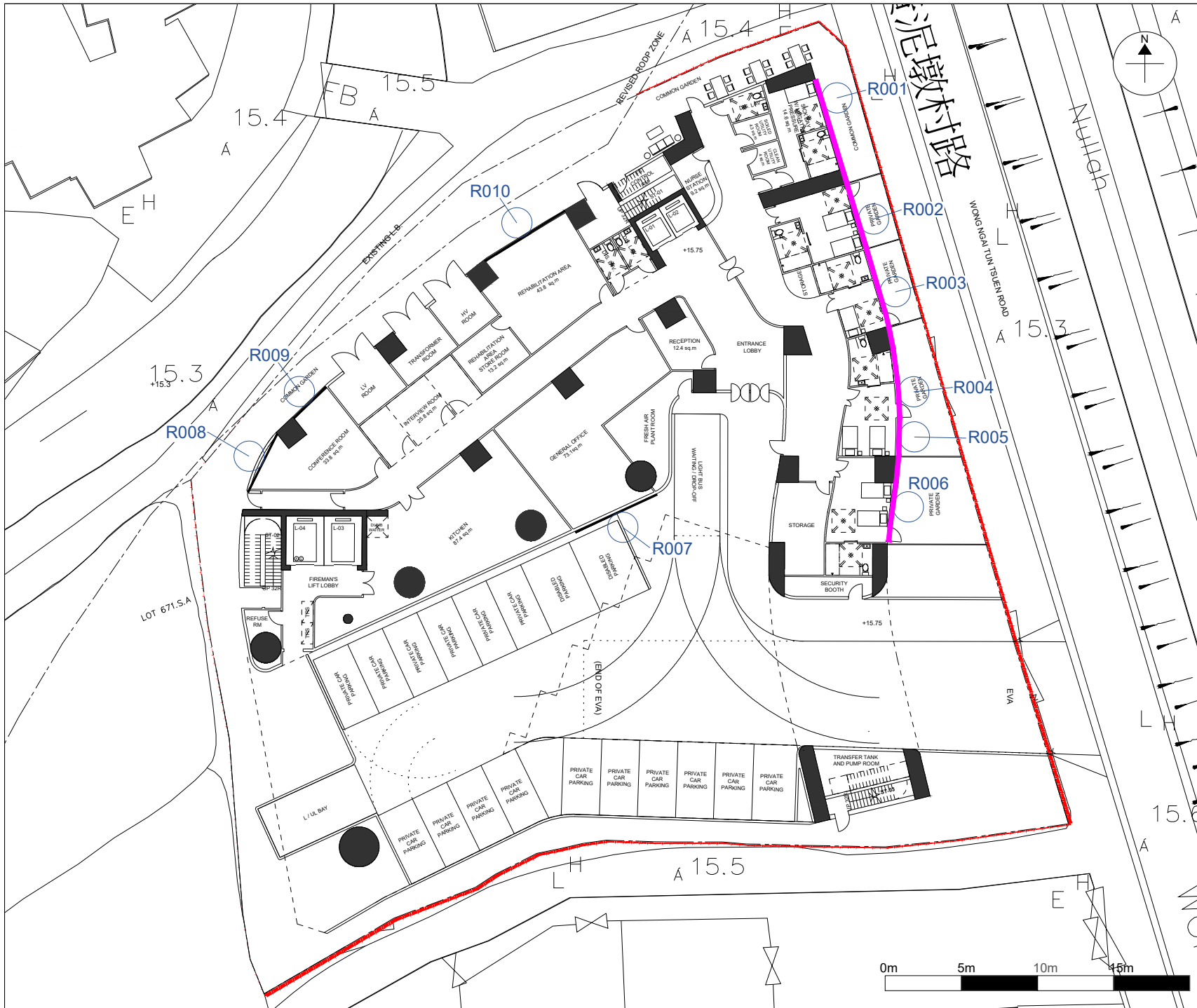
Figure No.	Rev.
Figure 3.2g	0



FIGURE 3.3A – 3.3C
LOCATION OF SENSITIVE FACADES WITH
TRAFFIC NOISE EXCEEDANCES

LEGEND:

- Project Site
- ⊙ NSR_ID
- ⊙ Noise Sensitive Receiver
- Sensitive Facade with Traffic Noise Exceedance



	Prepared	Checked	Approved
Initial	RW	ZC	HM
Date	20240222	20240222	20240222

Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY (RCHE)) IN LOT 669 S.A SS.2 RP (PART) AND LOT 669 S.B RP (PART) IN D.D.117, YUEN LONG

Figure Title

Location of Sensitive Facades with Traffic Noise Exceedances (G/F)

Figure No.	Rev.
Figure 3.3a	0



LEGEND:

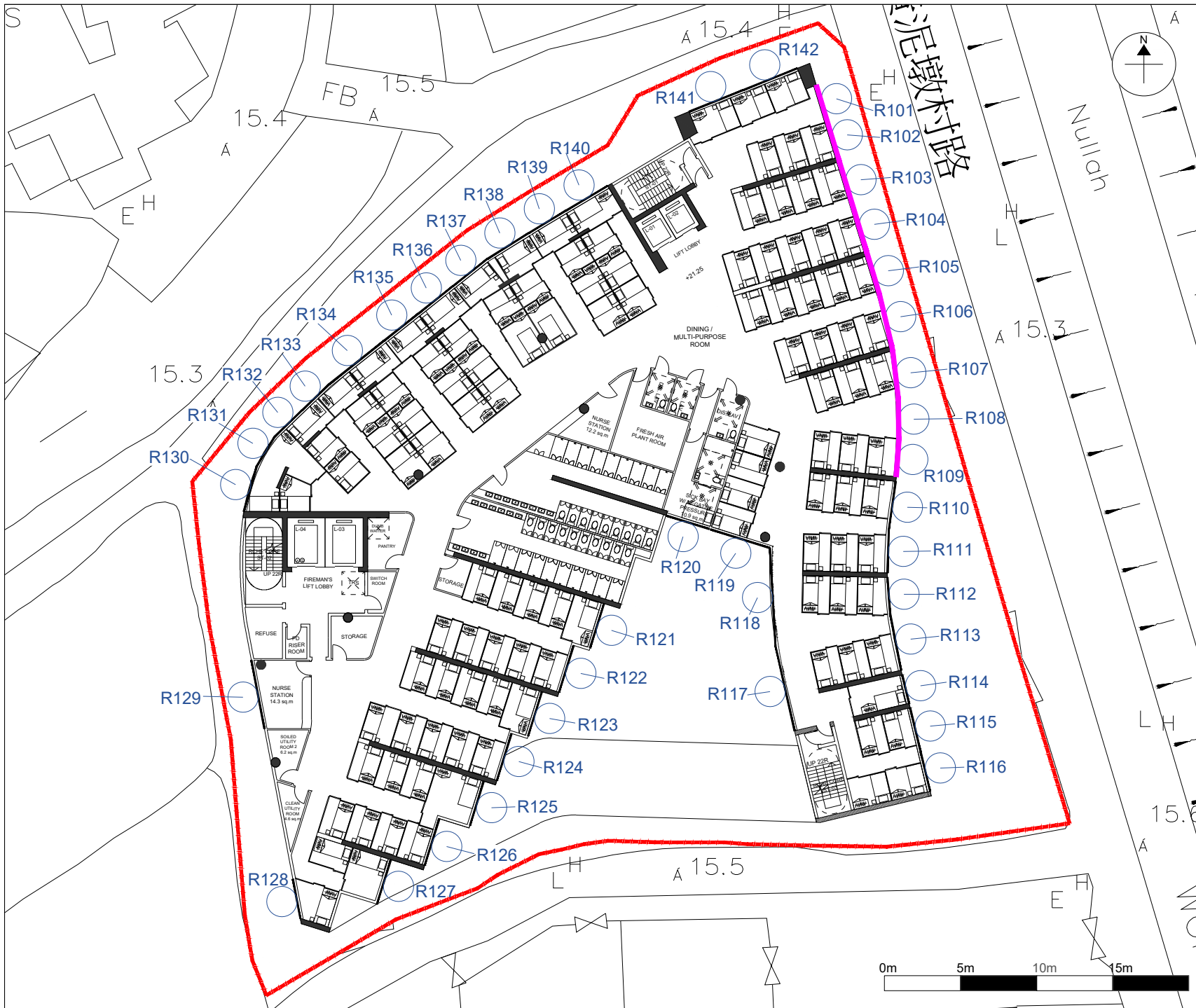
- Project Site
- NSR_ID
Noise Sensitive Receiver
- Sensitive Facade with Traffic Noise Exceedance

	Prepared	Checked	Approved
Initial	RW	ZC	HM
Date	20240220	20240220	20240220

Project Title
SECTION 16 PLANNING APPLICATION FOR PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY (RCHE)) IN LOT 669 S.A SS.2 RP (PART) AND LOT 669 S.B RP (PART) IN D.D.117, YUEN LONG

Figure Title
Location of Sensitive Facades with Traffic Noise Exceedances (1/F)

Figure No. Figure 3.3b	Rev. 0
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LEGEND:

- Project Site
- NSR_ID
Noise Sensitive Receiver
- Sensitive Facade with Traffic Noise Exceedance

	Prepared	Checked	Approved
Initial	RW	ZC	HM
Date	20240220	20240220	20240220

Project Title
SECTION 16 PLANNING APPLICATION FOR PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY (RCHE)) IN LOT 669 S.A SS.2 RP (PART) AND LOT 669 S.B RP (PART) IN D.D.117, YUEN LONG

Figure Title
Location of Sensitive Facades with Traffic Noise Exceedances (2/F)

Figure No. Figure 3.3c	Rev. 0
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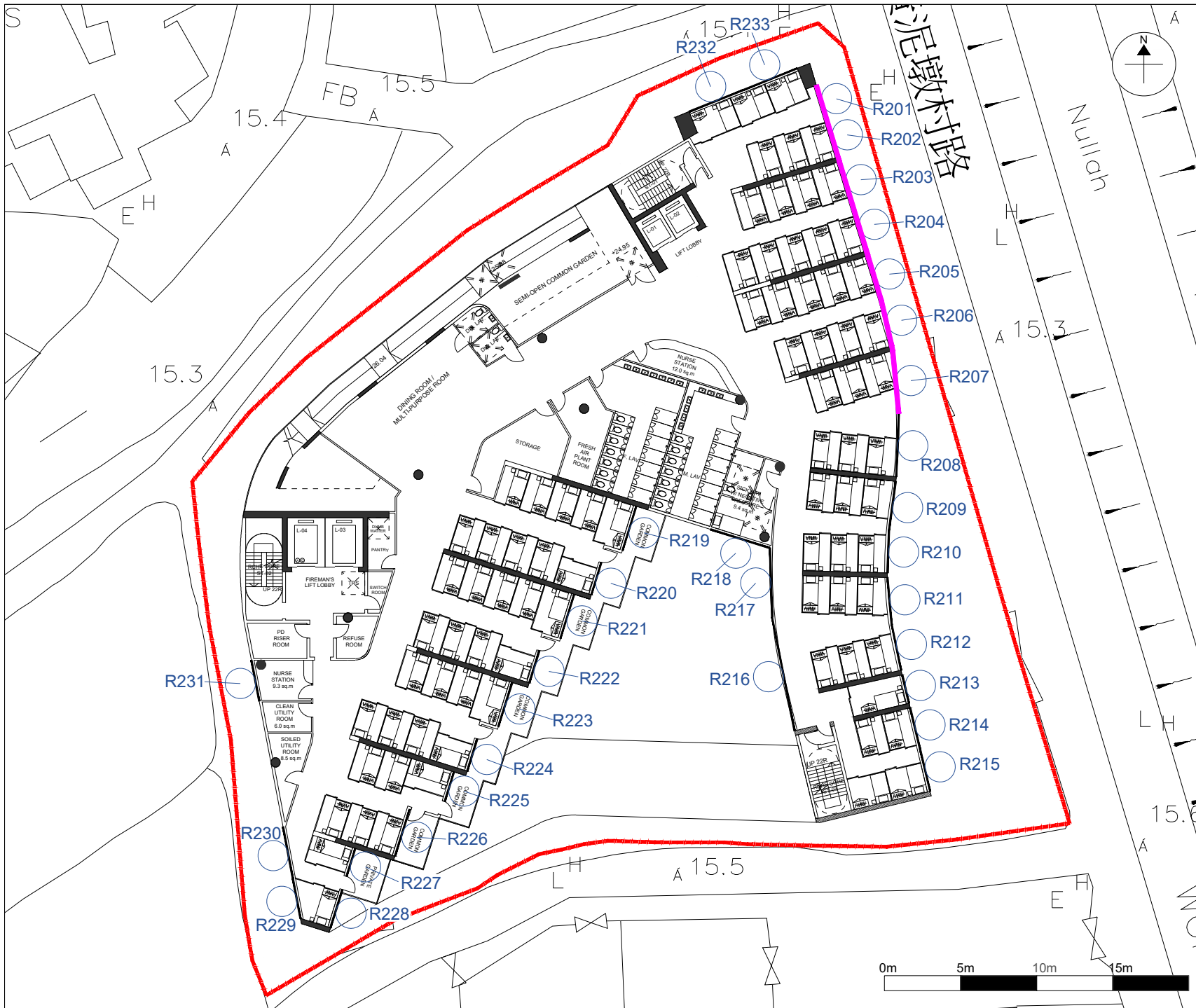
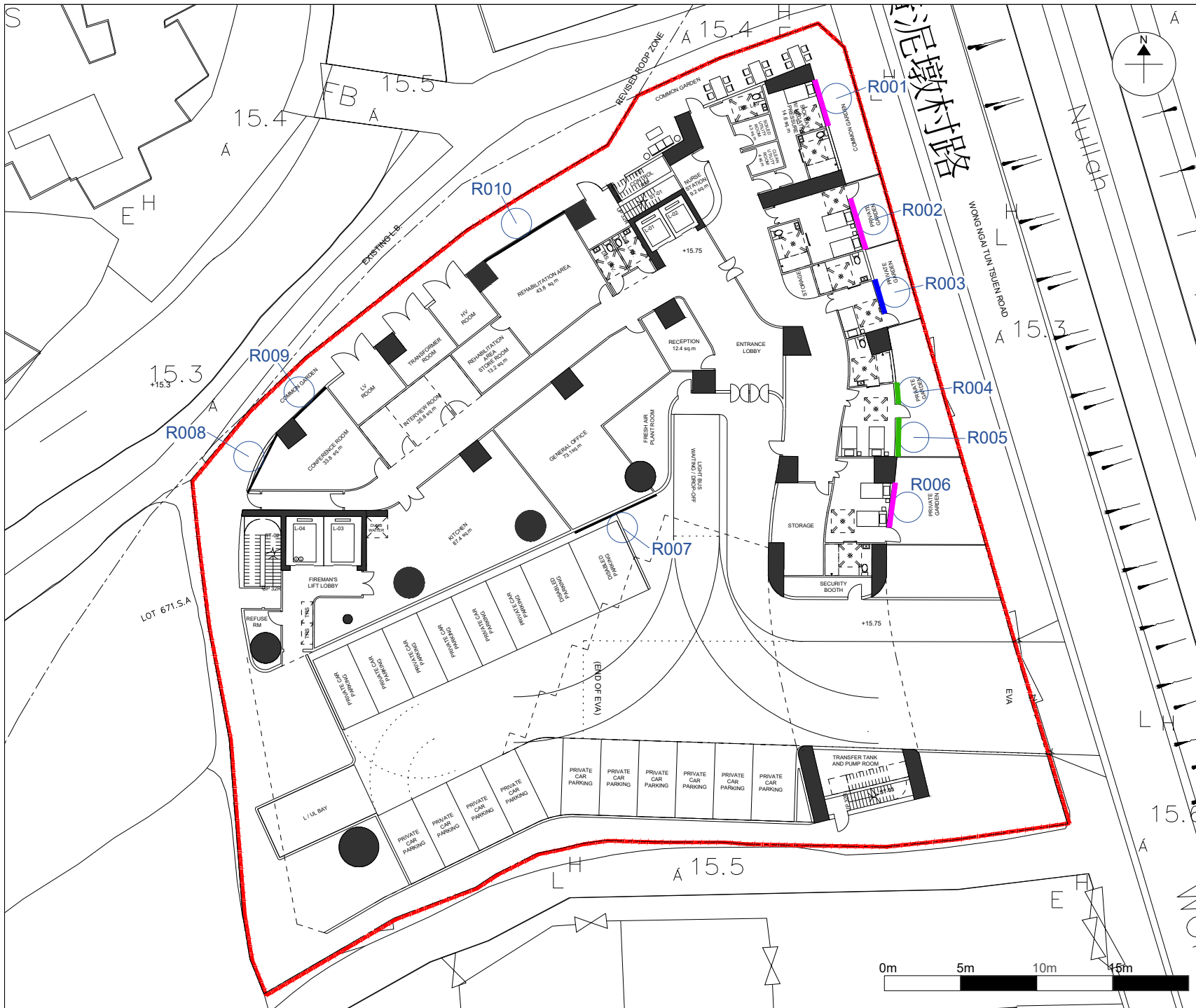


FIGURE 3.4A – 3.4C
LOCATION OF PROPOSED TRAFFIC NOISE
MITIGATION MEASURES

LEGEND:

- Project Site
- NSR_ID
- Type 1 AW(BT)
- Type 2 AW(BT)
- Type 3 AW(BT)



	Prepared	Checked	Approved
Initial	RW	ZC	HM
Date	20240222	20240222	20240222

Project Title
 SECTION 16 PLANNING APPLICATION FOR PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY (RCHE)) IN LOT 669 S.A SS.2 RP (PART) AND LOT 669 S.B RP (PART) IN D.D.117, YUEN LONG

Figure Title
 Location of Proposed Traffic Noise Mitigation Measures (G/F)

Figure No.	Rev.
Figure 3.3a	0



LEGEND:

- Project Site
- NSR_ID
Noise Sensitive Receiver
- Type 4 AW(BT)

	Prepared	Checked	Approved
Initial	RW	ZC	HM
Date	20240220	20240220	20240220

Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY (RCHE)) IN LOT 669 S.A SS.2 RP (PART) AND LOT 669 S.B RP (PART) IN D.D.117, YUEN LONG

Figure Title

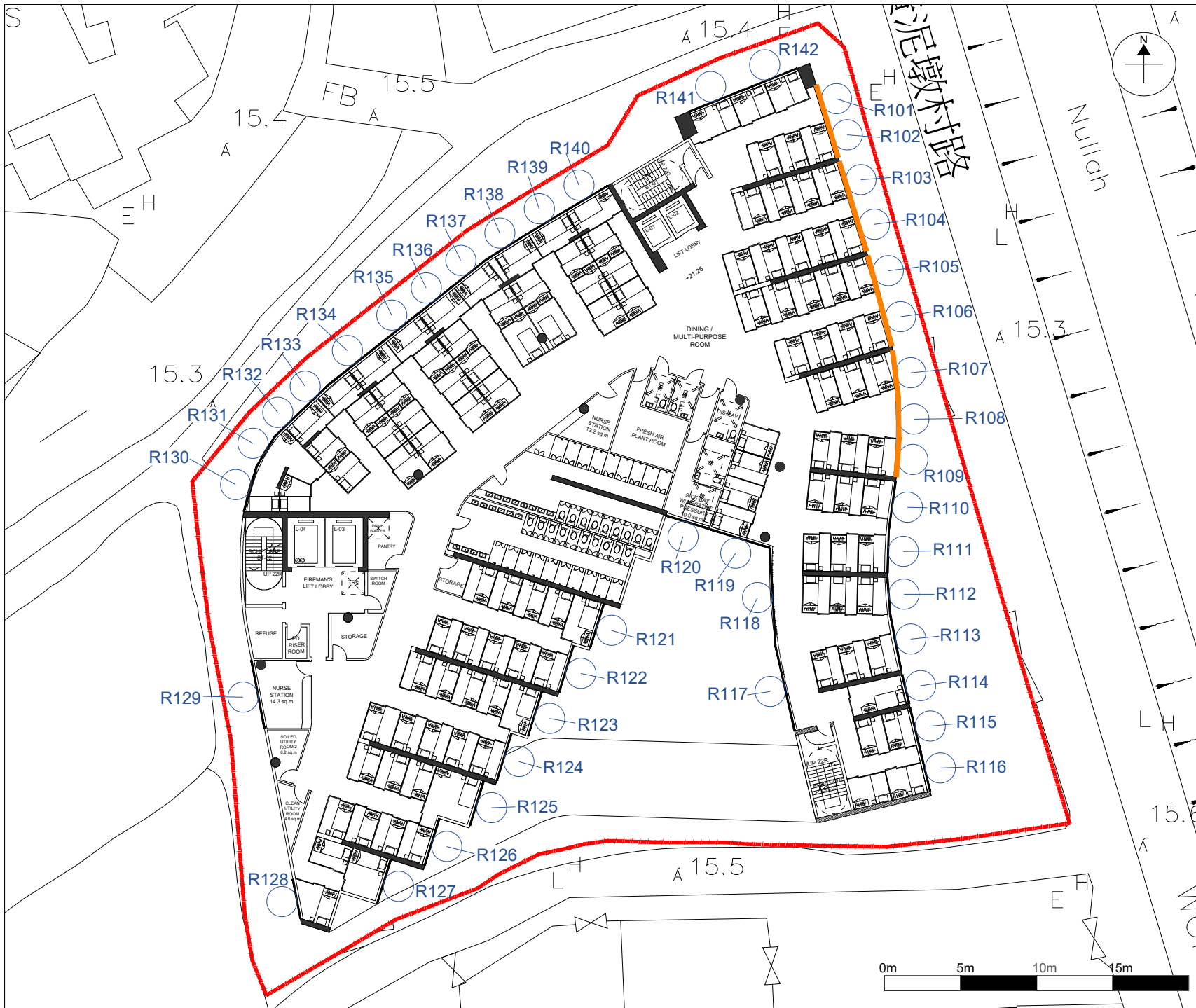
Location of Proposed Traffic Noise Mitigation Measures (1/F)

Figure No.

Figure 3.4b

Rev.

0



LEGEND:

- Project Site
- NSR_ID
Noise Sensitive Receiver
- Type 4 AW(BT)



	Prepared	Checked	Approved
Initial	RW	ZC	HM
Date	20240220	20240220	20240220

Project Title
SECTION 16 PLANNING APPLICATION FOR PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY (RCHE)) IN LOT 669 S.A SS.2 RP (PART) AND LOT 669 S.B RP (PART) IN D.D.117, YUEN LONG

Figure Title
Location of Proposed Traffic Noise Mitigation Measures (2/F)

Figure No.	Rev.
Figure 3.4c	0

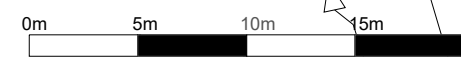
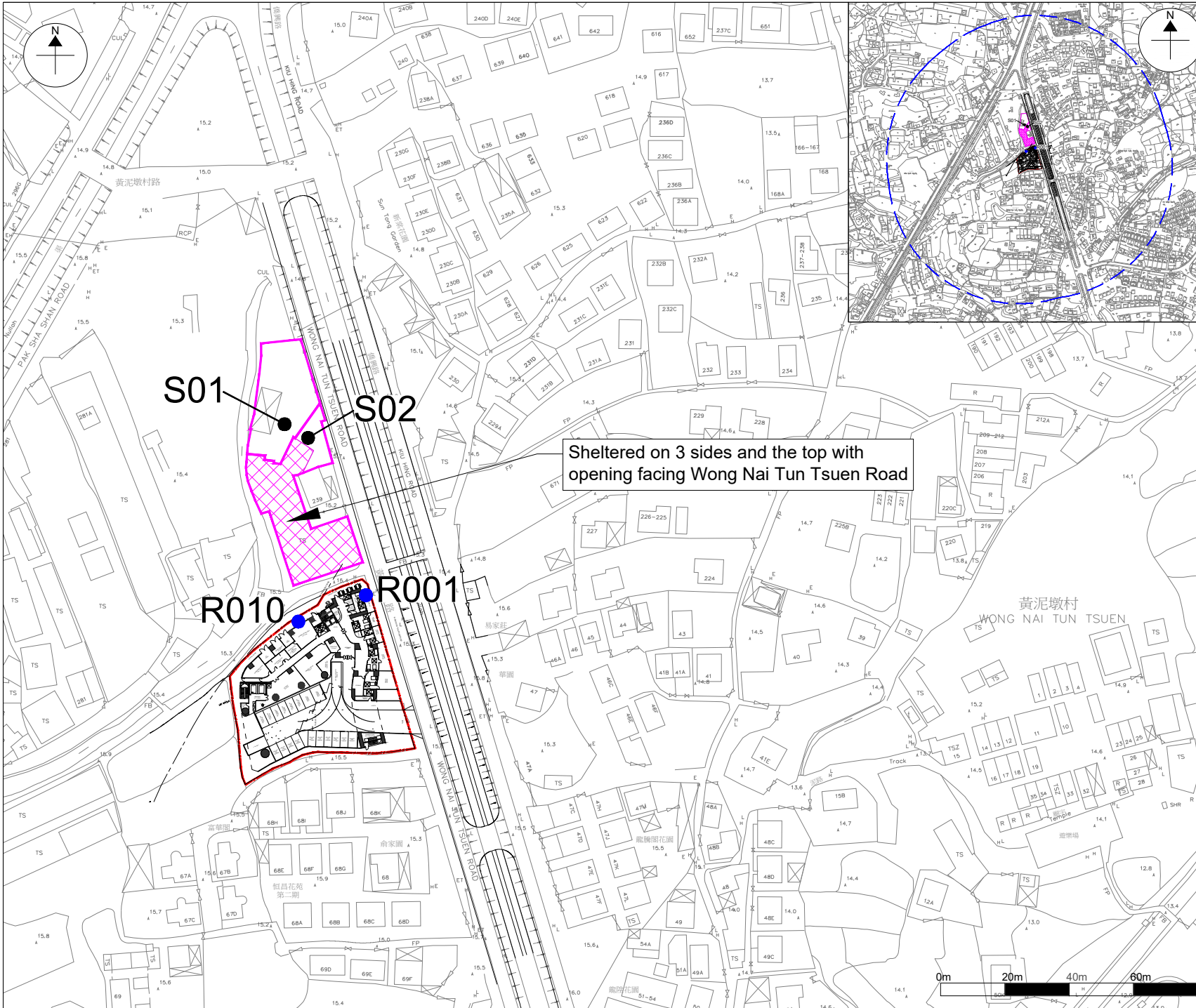


FIGURE 3.5A – 3.5G
LOCATION OF MAJOR FIXED NOISE SOURCES
AND REPRESENTATIVE NOISE SENSITIVE
RECEIVERS



LEGEND:

- Project Site
- 300m Assessment Area for Noise
- Existing Major Fixed Noise Source
- Fixed Noise Source Location for Assessment
- Representative Noise Sensitive Receiver

	Prepared	Checked	Approved
Initial	RW	ZC	HM
Date	20240222	20240222	20240222

Project Title
 SECTION 16 PLANNING APPLICATION FOR PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY (RCHE)) IN LOT 669 S.A SS.2 RP (PART) AND LOT 669 S.B RP (PART) IN D.D.117, YUEN LONG

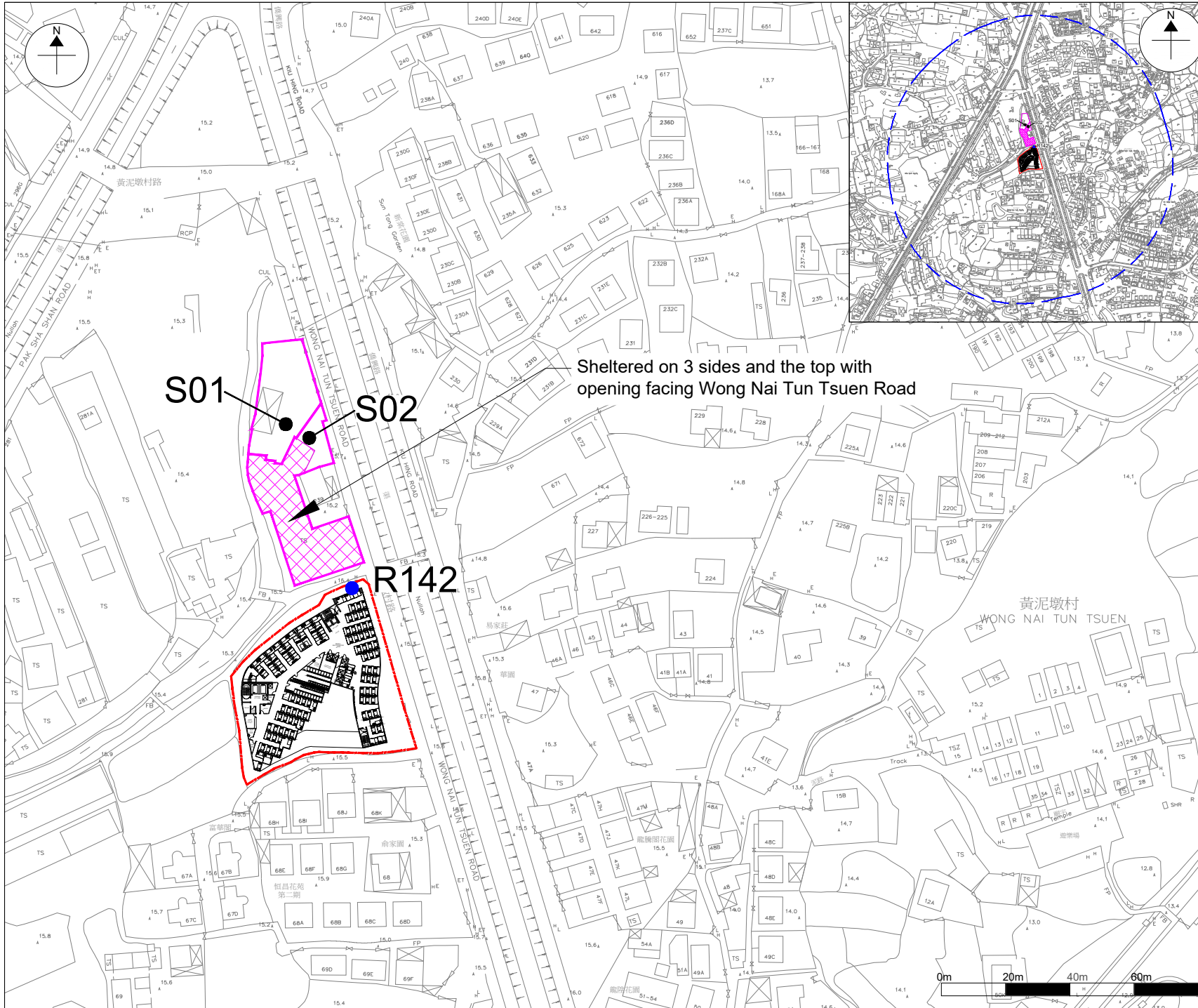
Figure Title
 Location of Major Fixed Noise Sources and Representative Noise Sensitive Receivers (G/F)

Figure No.	Rev.
Figure 3.5a	0



LEGEND:

- Project Site
- 300m Assessment Area for Noise
- Existing Major Fixed Noise Source
- Fixed Noise Source Location for Assessment
- Representative Noise Sensitive Receiver



Sheltered on 3 sides and the top with opening facing Wong Nai Tun Tsuen Road

	Prepared	Checked	Approved
Initial	RW	ZC	HM
Date	20231220	20231220	20231220

Project Title
SECTION 16 PLANNING APPLICATION FOR PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY (RCHE)) IN LOT 669 S.A SS.2 RP (PART) AND LOT 669 S.B RP (PART) IN D.D.117, YUEN LONG

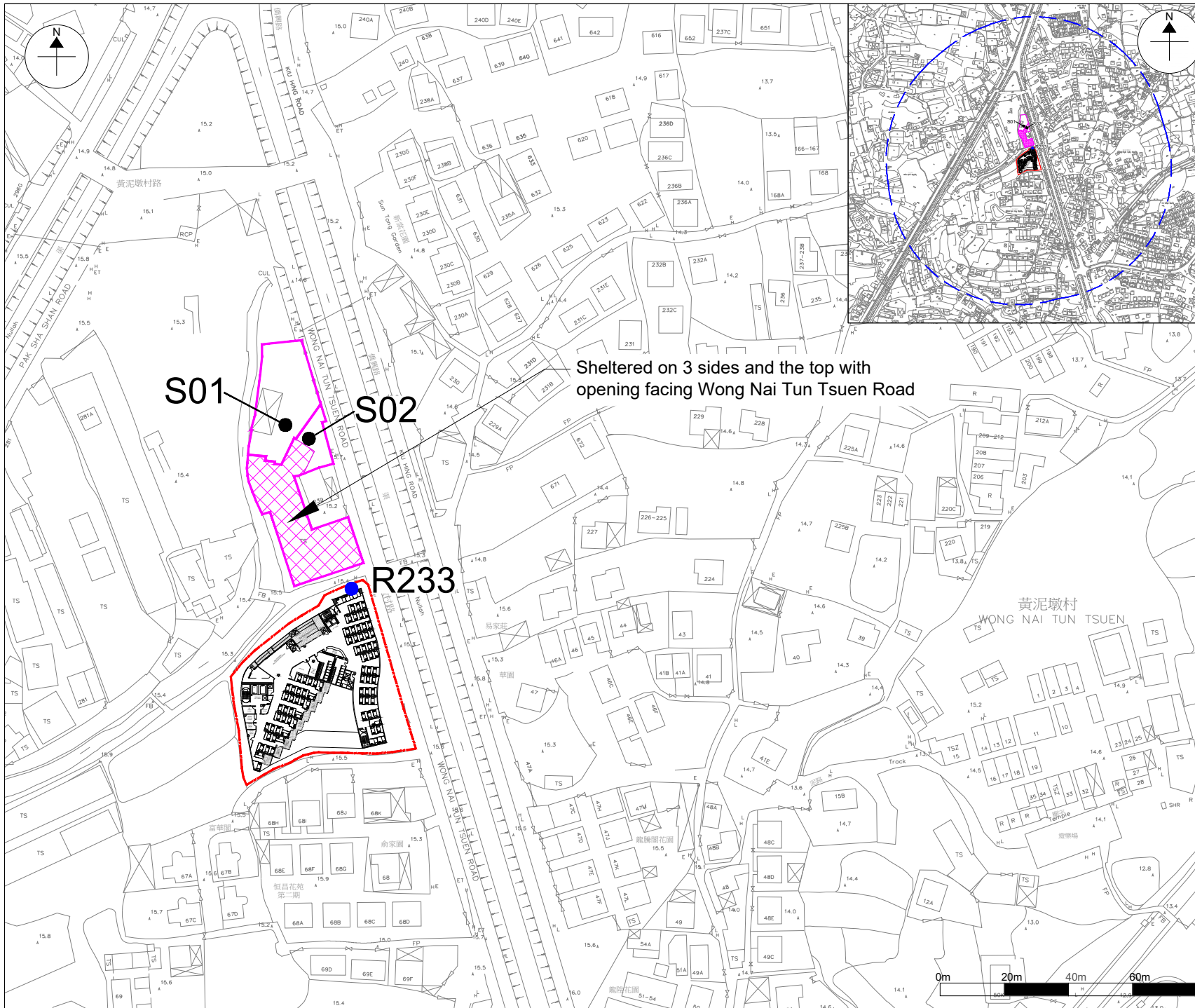
Figure Title
Location of Major Fixed Noise Sources and Representative Noise Sensitive Receivers (1/F)

Figure No.	Rev.
Figure 3.5b	0



LEGEND:

- Project Site
- 300m Assessment Area for Noise
- Existing Major Fixed Noise Source
- Fixed Noise Source Location for Assessment
- Representative Noise Sensitive Receiver



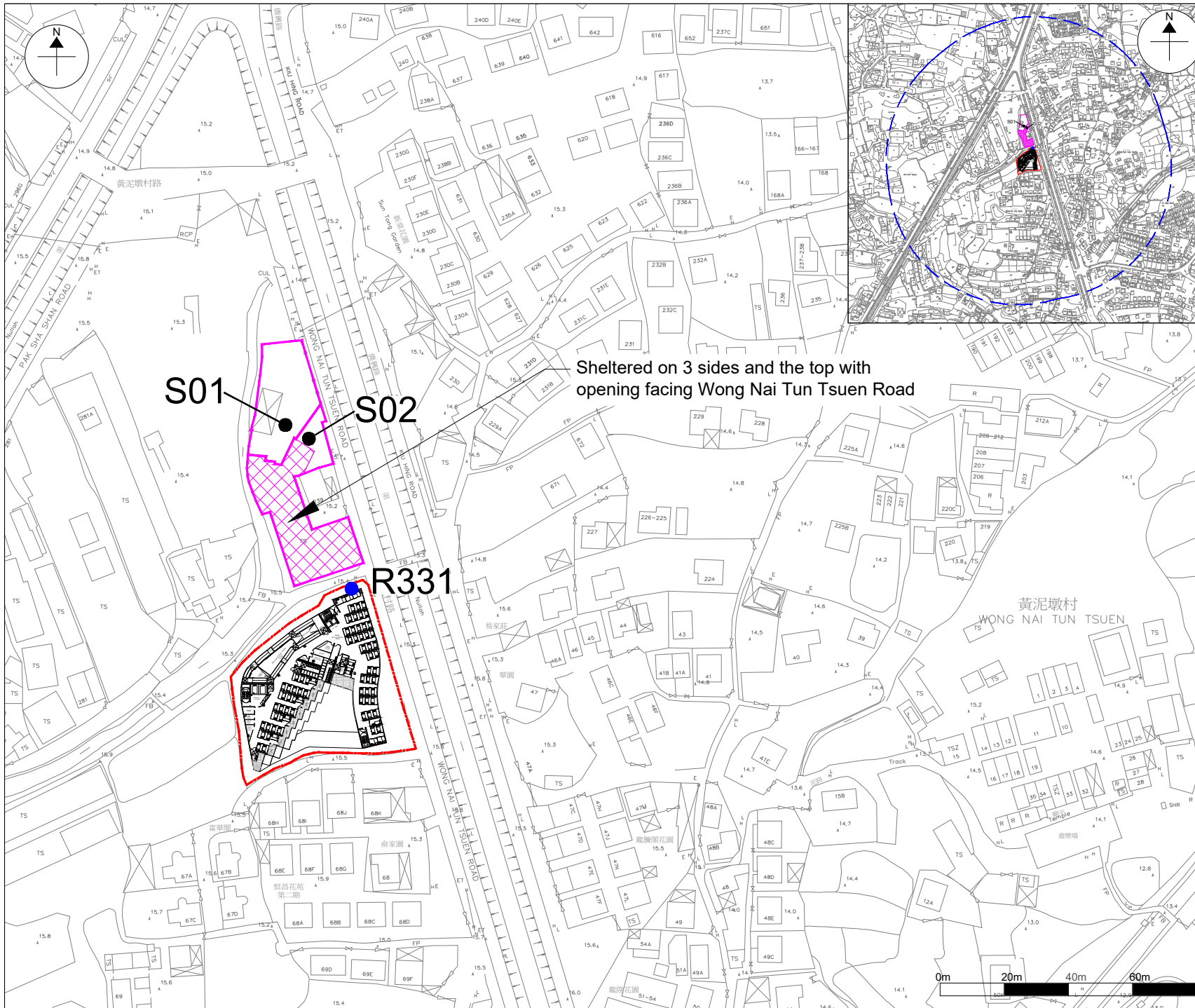
	Prepared	Checked	Approved
Initial	RW	ZC	HM
Date	20231220	20231220	20231220

Project Title
 SECTION 16 PLANNING APPLICATION FOR PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY (RCHE)) IN LOT 669 S.A SS.2 RP (PART) AND LOT 669 S.B RP (PART) IN D.D.117, YUEN LONG

Figure Title
 Location of Major Fixed Noise Sources and Representative Noise Sensitive Receivers (2/F)

Figure No.	Rev.
Figure 3.5c	0





LEGEND:

- Project Site
- 300m Assessment Area for Noise
- Existing Major Fixed Noise Source
- Fixed Noise Source Location for Assessment
- Representative Noise Sensitive Receiver

Sheltered on 3 sides and the top with opening facing Wong Nai Tun Tsuen Road

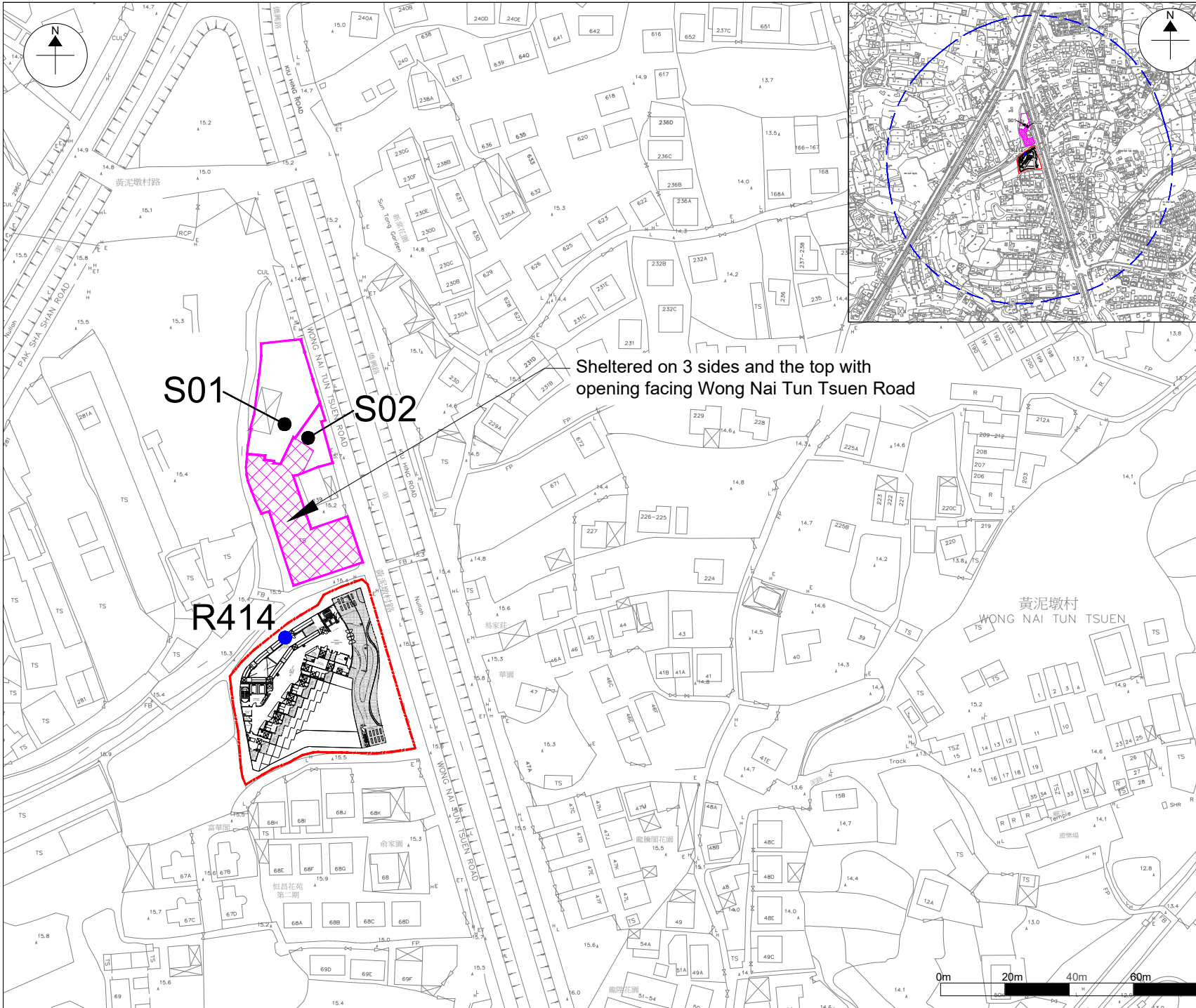
	Prepared	Checked	Approved
Initial	RW	ZC	HM
Date	20231220	20231220	20231220

Project Title
SECTION 16 PLANNING APPLICATION FOR PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY (RCHE)) IN LOT 669 S.A SS.2 RP (PART) AND LOT 669 S.B RP (PART) IN D.D.117, YUEN LONG

Figure Title
Location of Major Fixed Noise Sources and Representative Noise Sensitive Receivers (3/F)

Figure No.	Rev.
Figure 3.5d	0





LEGEND:

- Project Site
- 300m Assessment Area for Noise
- Existing Major Fixed Noise Source
- Fixed Noise Source Location for Assessment
- Representative Noise Sensitive Receiver

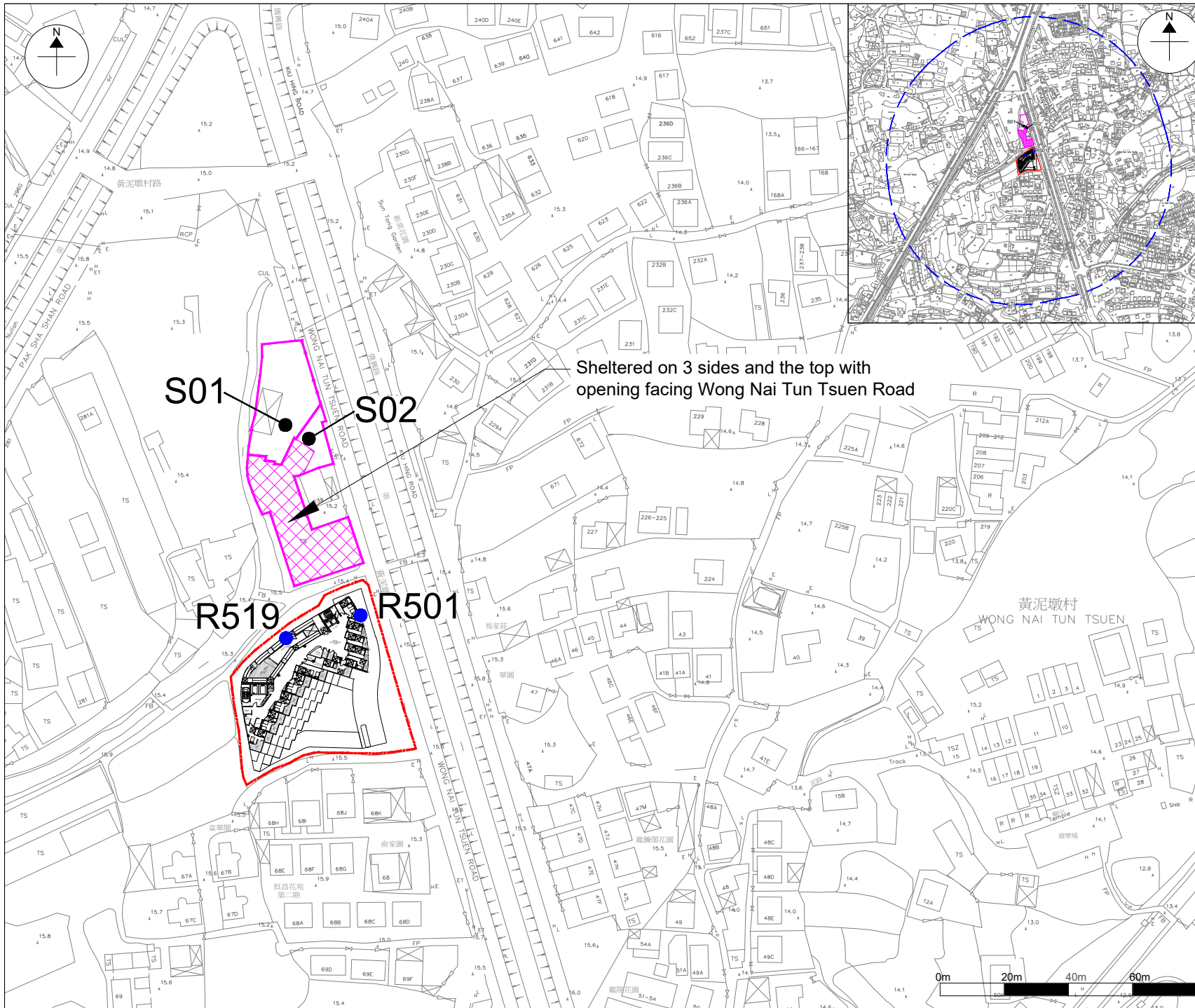
	Prepared	Checked	Approved
Initial	RW	ZC	HM
Date	20231220	20231220	20231220

Project Title
SECTION 16 PLANNING APPLICATION FOR PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY (RCHE)) IN LOT 669 S.A SS.2 RP (PART) AND LOT 669 S.B RP (PART) IN D.D.117, YUEN LONG

Figure Title
Location of Major Fixed Noise Sources and Representative Noise Sensitive Receivers (4/F)

Figure No.	Rev.
Figure 3.5e	0





LEGEND:

- Project Site
- 300m Assessment Area for Noise
- Existing Major Fixed Noise Source
- Fixed Noise Source Location for Assessment
- Representative Noise Sensitive Receiver

	Prepared	Checked	Approved
Initial	RW	ZC	HM
Date	20231220	20231220	20231220

Project Title
SECTION 16 PLANNING APPLICATION FOR PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY (RCHE)) IN LOT 669 S.A SS.2 RP (PART) AND LOT 669 S.B RP (PART) IN D.D.117, YUEN LONG

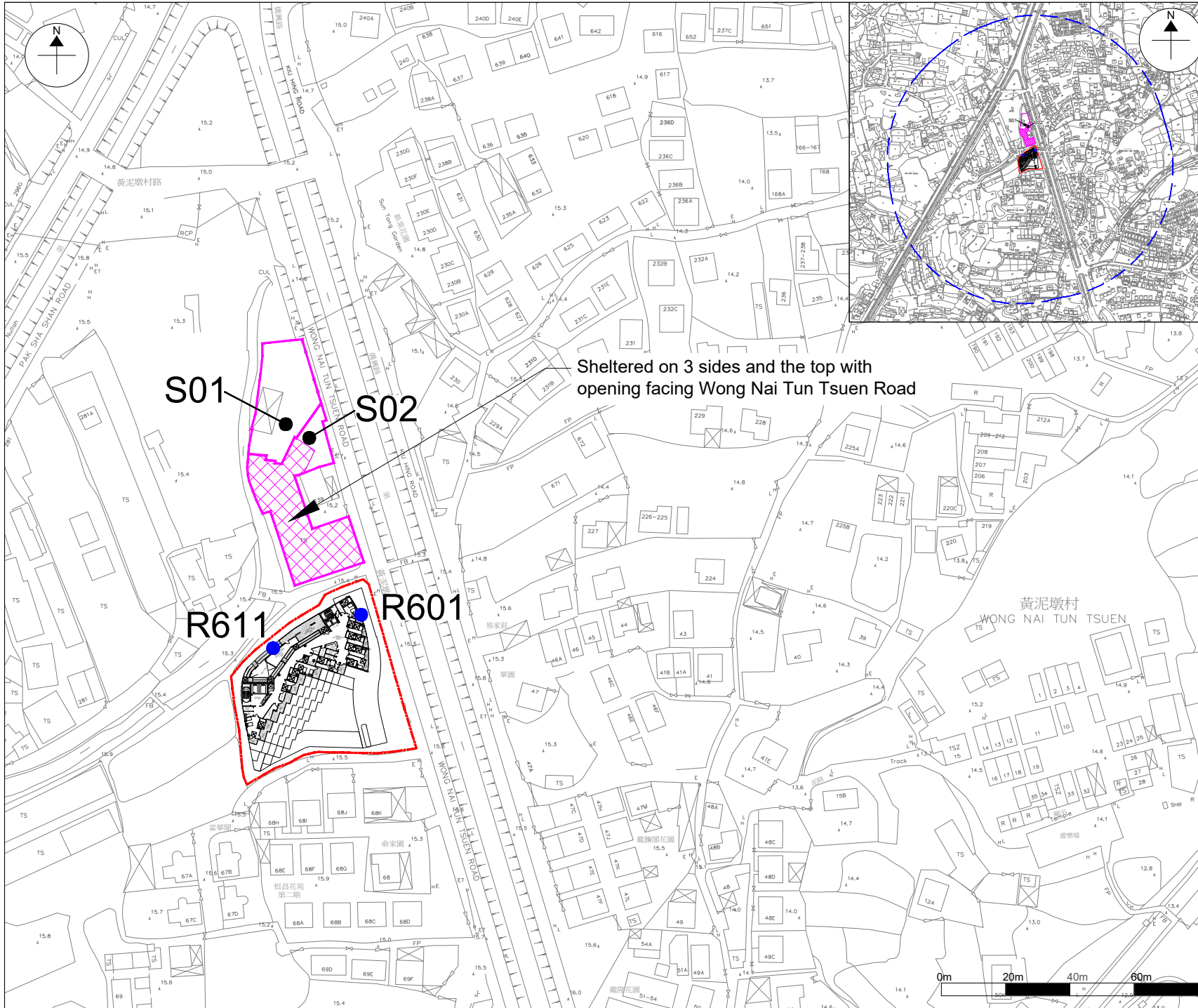
Figure Title
Location of Major Fixed Noise Sources and Representative Noise Sensitive Receivers (5/F)

Figure No.	Rev.
Figure 3.5f	0



LEGEND:

- Project Site
- 300m Assessment Area for Noise
- Existing Major Fixed Noise Source
- Fixed Noise Source Location for Assessment
- Representative Noise Sensitive Receiver



S01 S02
Sheltered on 3 sides and the top with opening facing Wong Nai Tun Tsuen Road

S01

S02

R611

R601

	Prepared	Checked	Approved
Initial	RW	ZC	HM
Date	20231220	20231220	20231220

Project Title

SECTION 16 PLANNING APPLICATION FOR PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY (RCHE)) IN LOT 669 S.A SS.2 RP (PART) AND LOT 669 S.B RP (PART) IN D.D.117, YUEN LONG

Figure Title

Location of Major Fixed Noise Sources and Representative Noise Sensitive Receivers (6/F)

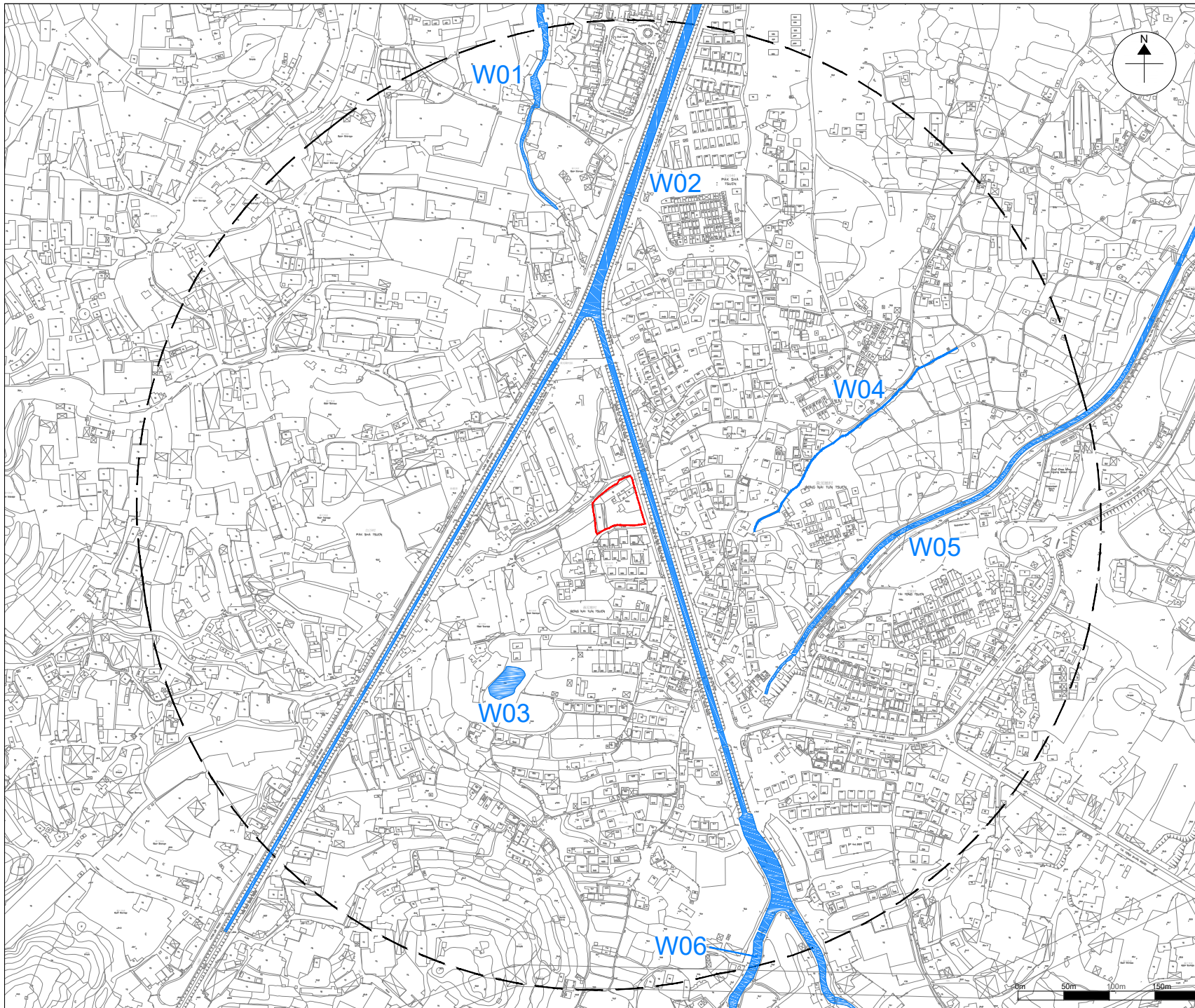
Figure No.

Figure 3.5g

Rev.

0

FIGURE 4.1
LOCATION OF WATER SENSITIVE RECEIVERS



LEGEND:

- Project Site
- 500m Assessment Area for Water Quality
- Water Sensitive Receiver

	Prepared	Checked	Approved
Initial	RW	ZC	HM
Date	20231220	20231220	20231220

Project Title
 SECTION 16 PLANNING APPLICATION FOR PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY (RCHE)) IN LOT 669 S.A SS.2 RP (PART) AND LOT 669 S.B RP (PART) IN D.D.117, YUEN LONG

Figure Title
 Location of Water Sensitive Receivers

Figure No.	Rev.
Figure 4.1	0



APPENDIX 1.1 MASTER LAYOUT PLAN



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Project no: 22010

Tai Tong Residential Care Home
Project: for the Elderly

Client: _____

Address: _____

Drawn: _____ Scale: 1:250@A3

Title: G/F Layout Plan

Sheet: _____ Rev: _____





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Project no: 22010

Tai Tong Residential Care Home
Project: for the Elderly

Client: _____

Address: _____

Drawn: _____ Scale: 1:250@A3

Title: 1/F Layout Plan

Sheet: _____ Rev: -



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Project no: 22010

Tai Tong Residential Care Home
Project: for the Elderly

Client: _____

Address: _____

Drawn: _____ Scale: 1:250@A3

Title: 3/F Layout Plan

Sheet: _____ Rev: _____



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Project no: 22010

Tai Tong Residential Care Home
Project: for the Elderly

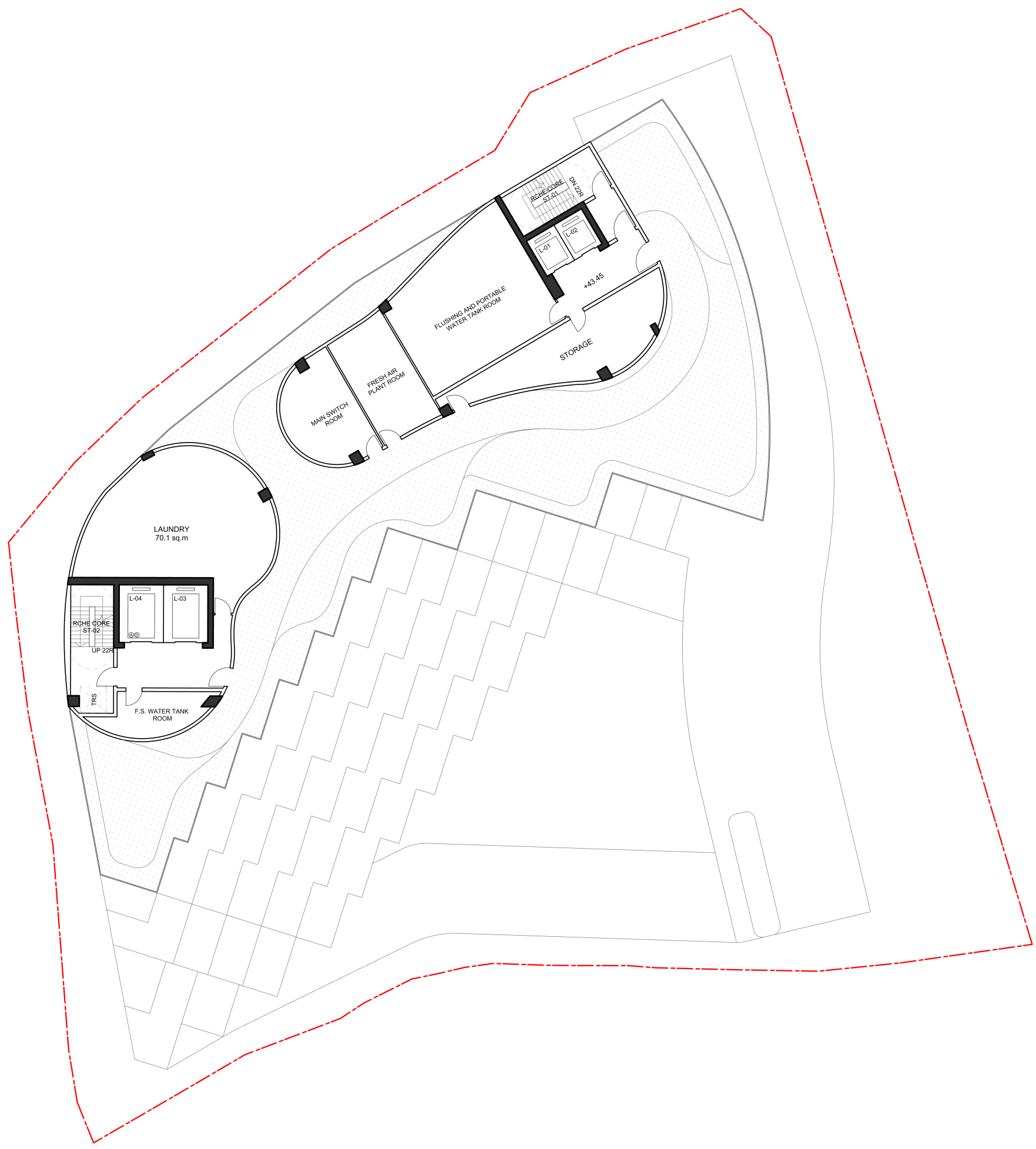
Client: _____

Address: _____

Drawn: _____ Scale: 1:250@A3

Title: 4/F Layout Plan

Sheet: _____ Rev: _____



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ALL DIMENSION TO BE VERIFIED BY CONTRACTOR

Project no: 22010

Tai Tong Residential Care Home
Project: for the Elderly

Client: _____


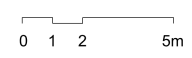
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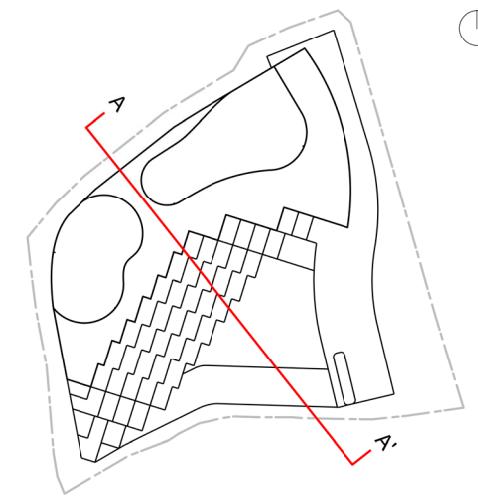
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Title: 7/F Layout Plan

Sheet: _____ Rev: -

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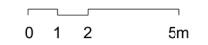
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Issue	Description	Date
-	ISSUE FOR INFORMATION	13-06-2022

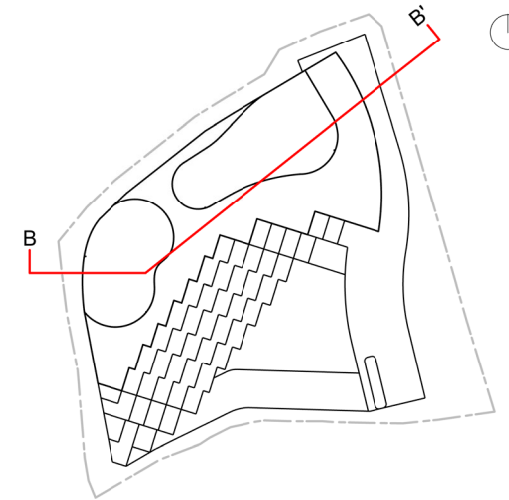
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1 SECTION A-A'
Scale: 1:250@A3



Project no: 22010
 Project: Tai Tong Yuen Long RCHE
 Client:
 Address: Lot 669 S.B.RP in D.D. 117,
 Tai Tong, Yuen Long,
 Hong Kong
 Drawn: AI, Scale: 1:250@A3
 Title: RCHE Section AA' and BB'
 Sheet: A107 Rev: -

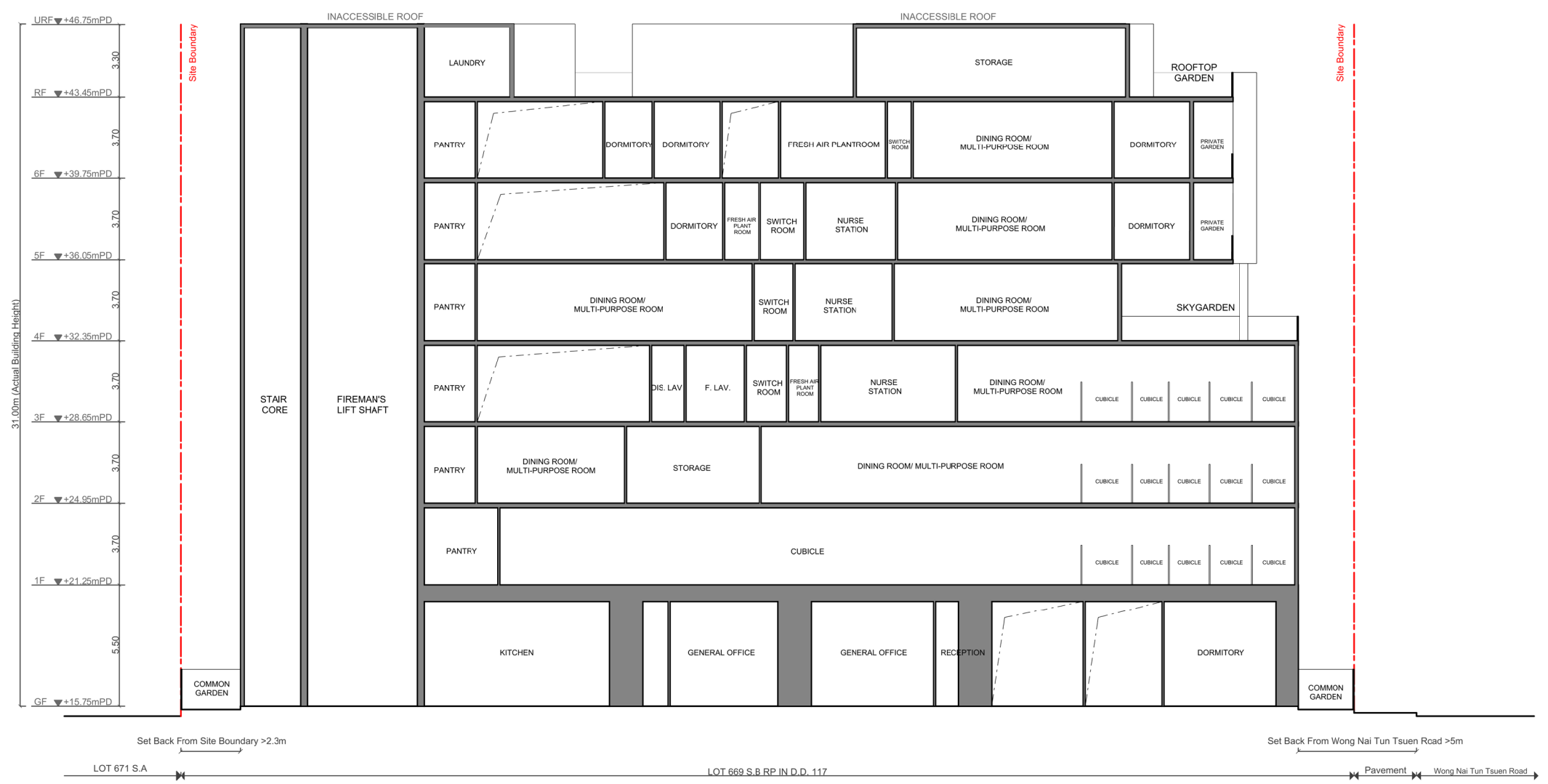


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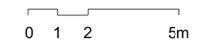
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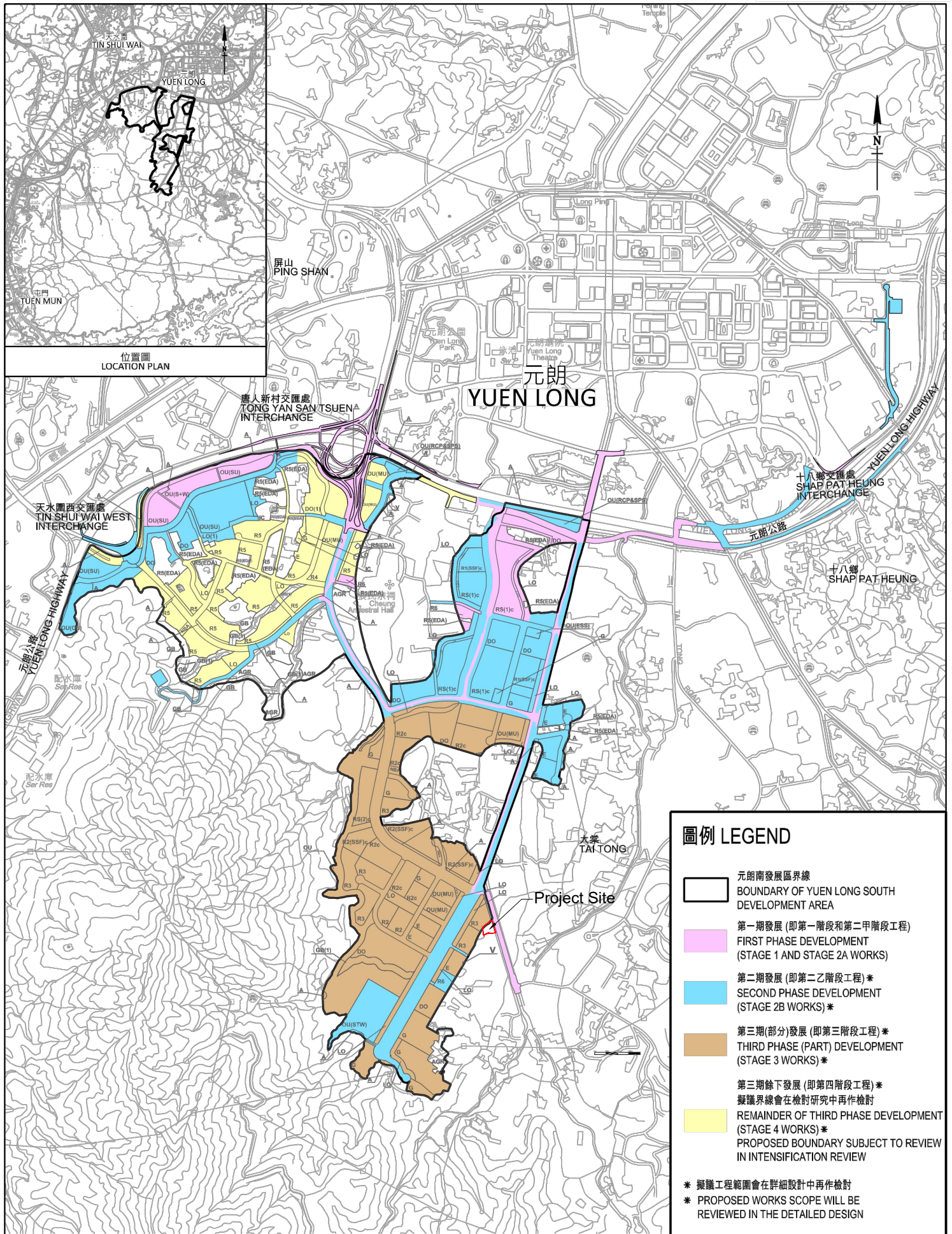


1 SECTION B-B'
Scale: 1:250@A3



Project no: 22010
Project: Tai Tong Yuen Long RCH
Client:
Address: Lot 669 S.B.RP in D.D. 117,
Tai Tong, Yuen Long,
Hong Kong
Drawn: EK Scale: 1:250@A3
Title: RCH Section BB'
Sheet: A107 Rev: -

APPENDIX 2.1
PHASING PLAN OF YUEN LONG SOUTH
DEVELOPMENT (EXTRACTED FROM CEDD'S
WEBSITE)



圖則名稱 drawing title

元朗南發展各期發展示意圖
YUEN LONG SOUTH DEVELOPMENT PHASING PLAN

圖例 LEGEND

- 元朗南發展區界線
BOUNDARY OF YUEN LONG SOUTH DEVELOPMENT AREA
- 第一期發展 (即第一階段和第二甲階段工程)
FIRST PHASE DEVELOPMENT (STAGE 1 AND STAGE 2A WORKS)
- 第二期發展 (即第二乙階段工程) *
SECOND PHASE DEVELOPMENT (STAGE 2B WORKS) *
- 第三期(部分)發展 (即第三階段工程) *
THIRD PHASE (PART) DEVELOPMENT (STAGE 3 WORKS) *
- 第三期餘下發展 (即第四階段工程) *
REMAINDER OF THIRD PHASE DEVELOPMENT (STAGE 4 WORKS) *
- 擬議界線會在檢討研究中再作檢討
PROPOSED BOUNDARY SUBJECT TO REVIEW IN INTENSIFICATION REVIEW

* 擬議工程範圍會在詳細設計中再作檢討
* PROPOSED WORKS SCOPE WILL BE REVIEWED IN THE DETAILED DESIGN

APPENDIX 3.1

TRAFFIC FORECAST FOR YEAR 2043

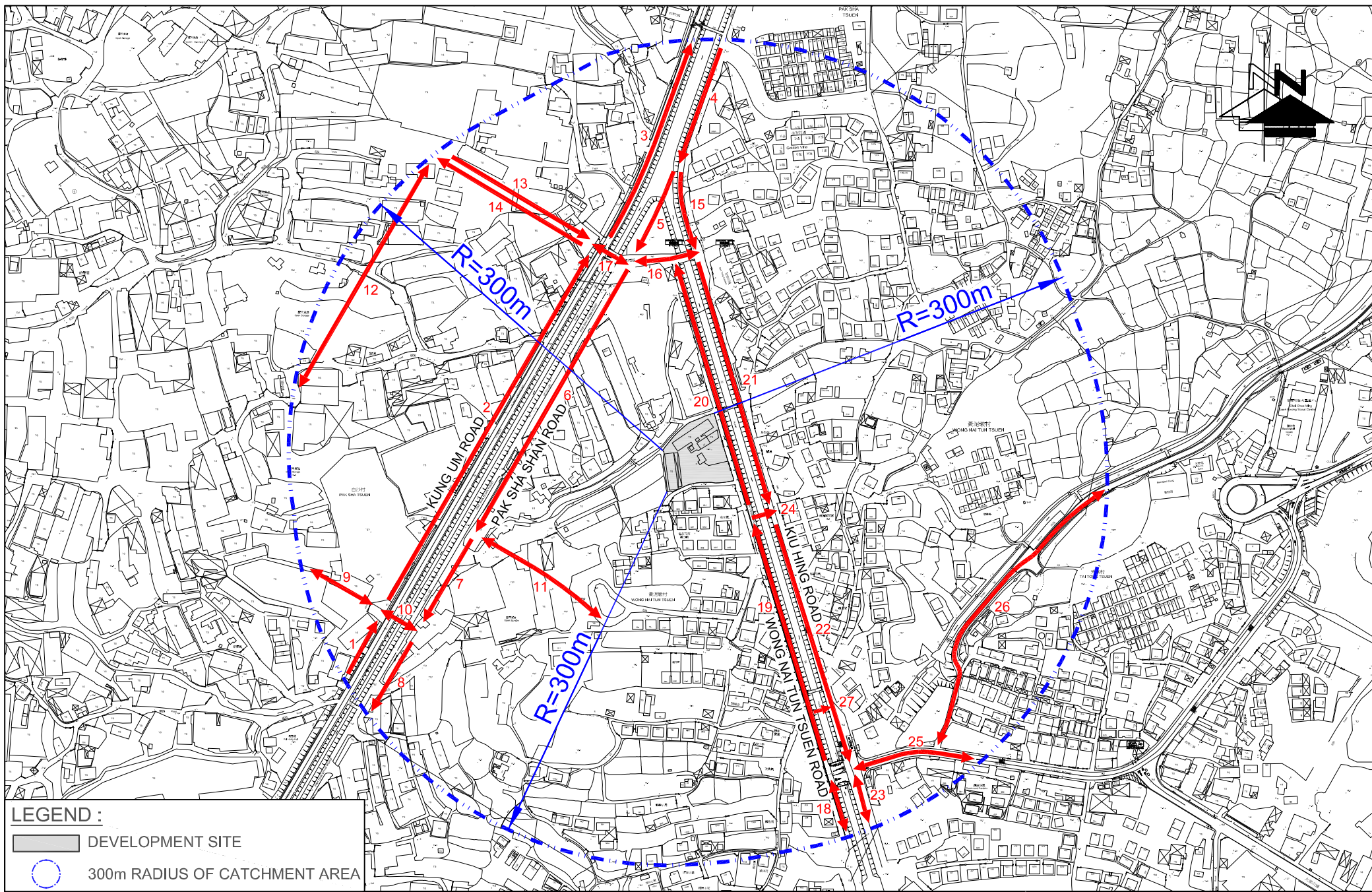
Proposed Social Welfare Facility (Residential Care Home for the Elderly (RCHE)) and House in “Village Type Development” Zone at Lots 669 S.A ss.2 RP and 669 S.B RP and Adjoining Government Land on the Approved Tai Tong Outline Zoning Plan (OZP) No. S/YL-TT/18

Year 2043 Traffic Forecasts for Traffic Noise Impact Assessment (TNIA)

Road Link	Road Name	Direction	Road Type	Road Speed (km/hr)	2043 AM Peak Hour		2043 PM Peak Hour	
					Peak Hour Traffic Flows (in veh/hr)	% of HV ⁽¹⁾	Peak Hour Traffic Flows (in veh/hr)	% of HV ⁽¹⁾
1	Kung Um Road	NB	LD	50	110	68%	160	24%
2	Kung Um Road	NB	LD	50	220	68%	200	24%
3	Kung Um Road	NB	LD	50	280	34%	210	18%
4	Kiu Hing Road	SB	LD	50	510	21%	530	21%
5	Road - L25	SB	LD	50	400	28%	445	28%
6	Pak Sha Shan Road	SB	LD	50	300	35%	200	38%
7	Pak Sha Shan Road	SB	LD	50	270	35%	170	38%
8	Pak Sha Shan Road	SB	LD	50	160	35%	120	38%
9	Road - L6	Two-way	LD	50	210	46%	140	46%
10	Road - L6	Two-way	LD	50	120	49%	50	49%
11	New Road	Two-way	LR	50	130	29%	110	29%
12	Road - L7	Two-way	LD	50	210	23%	140	23%
13	Road - D1	EB	DD	50	150	53%	80	53%
14	Road - D1	WB	DD	50	120	53%	50	53%
15	Kiu Hing Road	SB	LD	50	70	15%	60	10%
16	Wong Ngai Tun Tsuen Road	Two-way	LD	50	100	16%	70	10%
17	Wong Ngai Tun Tsuen Road	Two-way	LD	50	440	28%	280	28%
18	Wong Ngai Tun Tsuen Road	Two-way	LD	50	100	18%	60	10%
19	Wong Ngai Tun Tsuen Road	NB	LD	50	190	26%	90	11%
20	Wong Ngai Tun Tsuen Road	NB	LD	50	190	26%	90	11%
21	Kiu Hing Road	SB	LD	50	100	28%	190	14%
22	Kiu Hing Road	SB	LD	50	100	28%	190	14%
23	Kiu Hing Road	Two-way	LD	50	50	31%	60	15%
24	New Road	EB	LD	50	20	30%	10	30%
25	Kiu Hing Road	Two-way	LR	50	140	31%	150	15%
26	Access Road	Two-way	RR	50	10	10%	10	10%
27	New Road	EB	LD	50	20	30%	20	30%

Note:

(1) HV includes Van, Light Bus, Light Goods Vehicle, Medium Goods Vehicle, Heavy Goods Vehicle, Container/Tractor, Coach and Bus.



LEGEND :

- DEVELOPMENT SITE
- 300m RADIUS OF CATCHMENT AREA

FIGURE NO.:	1
PROJECT NO.:	23120HK
SCALE:	DATE:
1 : 4000 @A4	02 FEB 2024

PROJECT TITLE:	Proposed RCHE development in Tai Tong
DRAWING TITLE:	INDEX PLAN



APPENDIX 3.2
PREDICTED ROAD TRAFFIC NOISE LEVELS
(BASE CASE SCENARIO)

Predicted Road Traffic Noise Levels for AM Peak Hour (Base Case Scenario)

Floor	NAP ID	Description	Floor Height, mPD	Assessment Height, mPD	Noise Criteria, dB(A)	L ₁₀ (1 hour), dB(A)	Compliance
G/F	R001	Sick Bay with Negative Pressure	+15.75	+17.0	70	72	No
	R002	Dormitory			70	72	No
	R003	Dormitory			70	72	No
	R004	Dormitory			70	72	No
	R005	Dormitory			70	72	No
	R006	Dormitory			70	71	No
	R007	General Office			70	45	Yes
	R008	Conference Room			70	58	Yes
	R009	Conference Room			70	59	Yes
	R010	Rehabilitation Area			70	59	Yes
1/F	R101	Dormitory	+21.25	+22.5	70	72	No
	R102	Dormitory			70	72	No
	R103	Dormitory			70	72	No
	R104	Dormitory			70	72	No
	R105	Dormitory			70	72	No
	R106	Dormitory			70	71	No
	R107	Dormitory			70	71	No
	R108	Dormitory			70	71	No
	R109	Dormitory			70	71	No
	R110	Dormitory			70	70	Yes
	R111	Dormitory			70	70	Yes
	R112	Dormitory			70	70	Yes
	R113	Dormitory			70	70	Yes
	R114	Dormitory			70	70	Yes
	R115	Dormitory			70	70	Yes
	R116	Dormitory			70	70	Yes
	R117	Dormitory			70	43	Yes
	R118	Dormitory			70	39	Yes
	R119	Dormitory			70	31	Yes
	R120	Sick Bay with Negative Pressure			70	34	Yes
	R121	Dormitory			70	53	Yes
	R122	Dormitory			70	56	Yes
	R123	Dormitory			70	57	Yes
	R124	Dormitory			70	57	Yes
	R125	Dormitory			70	58	Yes
	R126	Dormitory			70	57	Yes
	R127	Dormitory			70	57	Yes
	R128	Dormitory			70	53	Yes
	R129	Nurse Station			70	55	Yes
	R130	Dormitory			70	56	Yes
	R131	Dormitory			70	58	Yes
	R132	Dormitory			70	59	Yes
R133	Dormitory	70	59	Yes			
R134	Dormitory	70	59	Yes			
R135	Dormitory	70	58	Yes			
R136	Dormitory	70	58	Yes			
R137	Dormitory	70	58	Yes			
R138	Dormitory	70	59	Yes			
R139	Dormitory	70	60	Yes			
R140	Dormitory	70	62	Yes			
R141	Dormitory	70	67	Yes			
R142	Dormitory	70	68	Yes			
2/F	R201	Dormitory	+24.95	+26.2	70	71	No
	R202	Dormitory			70	71	No
	R203	Dormitory			70	71	No
	R204	Dormitory			70	71	No
	R205	Dormitory			70	71	No
	R206	Dormitory			70	71	No
	R207	Dormitory			70	71	No
	R208	Dormitory			70	70	Yes
	R209	Dormitory			70	70	Yes
	R210	Dormitory			70	70	Yes
	R211	Dormitory			70	69	Yes
	R212	Dormitory			70	69	Yes
	R213	Dormitory			70	69	Yes
	R214	Dormitory			70	69	Yes
	R215	Dormitory			70	69	Yes
R216	Dormitory	70	43	Yes			
R217	Dormitory	70	37	Yes			

Predicted Road Traffic Noise Levels for AM Peak Hour (Base Case Scenario)

Floor	NAP ID	Description	Floor Height, mPD	Assessment Height, mPD	Noise Criteria, dB(A)	L ₁₀ (1 hour), dB(A)	Compliance
2/F	R218	Sick Bay with Negative Pressure	+24.95	+26.2	70	34	Yes
	R219	Dormitory			70	47	Yes
	R220	Dormitory			70	52	Yes
	R221	Dormitory			70	54	Yes
	R222	Dormitory			70	56	Yes
	R223	Dormitory			70	56	Yes
	R224	Dormitory			70	57	Yes
	R225	Dormitory			70	57	Yes
	R226	Dormitory			70	57	Yes
	R227	Dormitory			70	55	Yes
	R228	Dormitory			70	56	Yes
	R229	Dormitory			70	54	Yes
	R230	Dormitory			70	54	Yes
	R231	Nurse Station			70	55	Yes
R232	Dormitory	70	66	Yes			
R233	Dormitory	70	68	Yes			
3/F	R301	Dormitory	+28.65	+29.9	70	70	Yes
	R302	Dormitory			70	70	Yes
	R303	Dormitory			70	70	Yes
	R304	Dormitory			70	70	Yes
	R305	Dormitory			70	70	Yes
	R306	Dormitory			70	70	Yes
	R307	Dormitory			70	70	Yes
	R308	Dormitory			70	70	Yes
	R309	Dormitory			70	69	Yes
	R310	Dormitory			70	69	Yes
	R311	Dormitory			70	69	Yes
	R312	Dormitory			70	69	Yes
	R313	Dormitory			70	69	Yes
	R314	Dormitory			70	69	Yes
	R315	Dormitory			70	69	Yes
	R316	Dormitory			70	44	Yes
	R317	Dormitory			70	43	Yes
	R318	Dormitory			70	41	Yes
	R319	Dormitory			70	36	Yes
	R320	Sick Bay with Negative Pressure			70	34	Yes
	R321	Dormitory			70	53	Yes
R322	Dormitory	70	55	Yes			
R323	Dormitory	70	57	Yes			
R324	Dormitory	70	57	Yes			
R325	Dormitory	70	57	Yes			
R326	Dormitory	70	57	Yes			
R327	Dormitory	70	57	Yes			
R328	Dormitory	70	57	Yes			
R329	Dormitory	70	54	Yes			
R330	Dormitory	70	66	Yes			
R331	Dormitory	70	67	Yes			
4/F	R401	Sick Bay with Negative Pressure	+32.35	+33.6	70	53	Yes
	R402	Sick Bay with Negative Pressure			70	50	Yes
	R403	Dormitory			70	51	Yes
	R404	Dormitory			70	56	Yes
	R405	Dormitory			70	57	Yes
	R406	Dormitory			70	58	Yes
	R407	Dormitory			70	58	Yes
	R408	Dormitory			70	59	Yes
	R409	Dormitory			70	59	Yes
	R410	Dormitory			70	59	Yes
	R411	Dormitory			70	58	Yes
	R412	Dormitory			70	54	Yes
	R413	Rehabilitation Room 2			70	55	Yes
	R414	Rehabilitation Room 2			70	54	Yes
5/F	R501	Dormitory	+36.05	+37.3	70	68	Yes
	R502	Dormitory			70	68	Yes
	R503	Dormitory			70	67	Yes
	R504	Dormitory			70	68	Yes
	R505	Dormitory			70	67	Yes
	R506	Sick Bay with Negative Pressure			70	62	Yes
	R507	Sick Bay with Negative Pressure			70	63	Yes
	R508	Dormitory			70	62	Yes

Predicted Road Traffic Noise Levels for AM Peak Hour (Base Case Scenario)

Floor	NAP ID	Description	Floor Height, mPD	Assessment Height, mPD	Noise Criteria, dB(A)	L ₁₀ (1 hour), dB(A)	Compliance
5/F	R509	Dormitory	+36.05	+37.3	70	62	Yes
	R510	Dormitory			70	62	Yes
	R511	Dormitory			70	62	Yes
	R512	Dormitory			70	62	Yes
	R513	Dormitory			70	62	Yes
	R514	Dormitory			70	62	Yes
	R515	Dormitory			70	62	Yes
	R516	Dormitory			70	60	Yes
	R517	Dormitory			70	54	Yes
	R518	Rehabilitation Room 3			70	55	Yes
R519	Rehabilitation Room 3	70	54	Yes			
6/F	R601	Dormitory	+39.75	+41.0	70	68	Yes
	R602	Dormitory			70	68	Yes
	R603	Dormitory			70	67	Yes
	R604	Dormitory			70	67	Yes
	R605	Dormitory			70	66	Yes
	R606	Sick Bay with Negative Pressure			70	62	Yes
	R607	Dormitory			70	61	Yes
	R608	Dormitory			70	61	Yes
	R609	Dormitory			70	61	Yes
	R610	Dormitory			70	55	Yes
	R611	Multi-Purpose Treatment Room			70	55	Yes

Results Summary	
Total No. of NAPs	160
Total No. of NAPs with exceedance	22
Compliance Rate	86%

APPENDIX 3.3

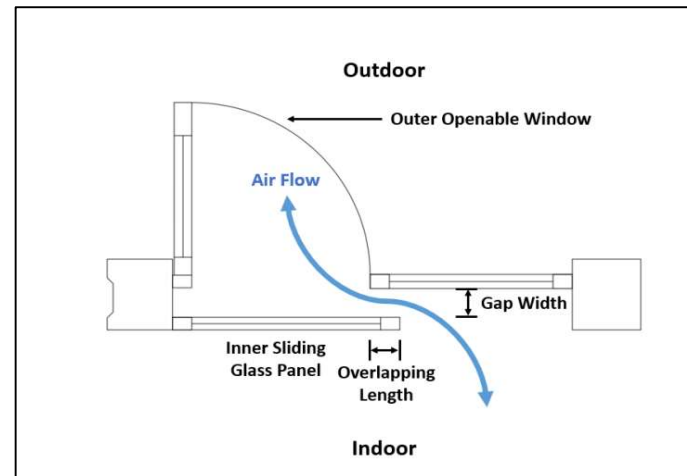
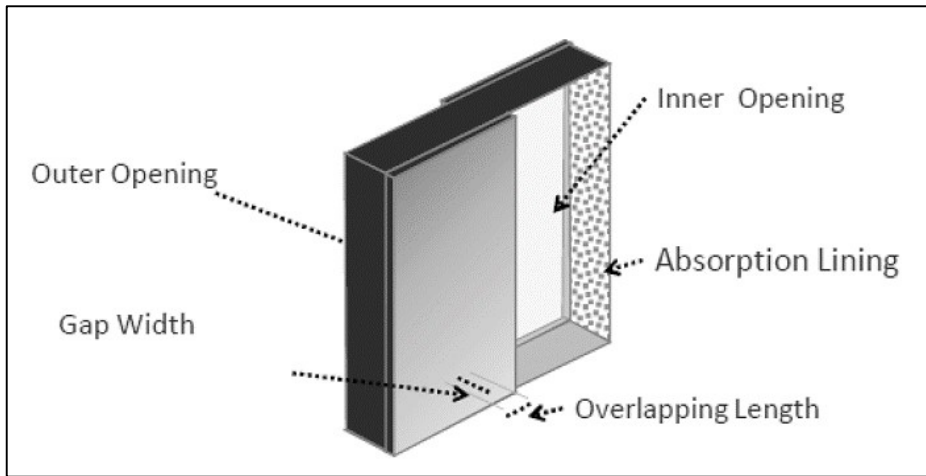
ESTIMATED NOISE ATTENUATION OF ACOUSTIC WINDOWS

Proposed Types of Acoustic Window (Baffle Type)

Type of AW(BT)	Reference Case	Room Area, m ²	Noise Attenuation, dB(A)	Outer Opening Area, m ²	Window Overlapping Length, mm	Window Pane Separation, mm	MPA ^[1] Applied?
Type 1	King Tai Court	10.3	5.9	1.2	340	175	No
Type 2	King Tai Court	16.7	7.4	1.4	340	175	No
Type 3 (with two outer	Victoria Harbour	14.6	5.1	0.7	255 & 268	100	No
Type 4	Mont Verra	60.1 - 68.2	4.0	5.3	250	100	Yes

Notes:

[1] MPA: Micro-Perforated Absorber



Noise Reduction Performance of the Proposed Acoustic Window (Baffle Type)

Project Case					Reference Case						Correction for Room Area ^[1,3] , dB(A)	Adjusted Noise Attenuation ^[2] , dB(A)
Floor	NAP ID	Room	Room Area (RA), m ²	Proposed Type of AW(BT)	Outer Opening Area, m ²	Window Overlapping Length, mm	Window Pane Separation, mm	MPA Applied?	Room Area (RA _{ref}), m ²	Reduction Performance, dB(A)		
G/F	R001	Sick Bay with Negative Pressure	14.6	Type 2	1.4	340	175	No	16.7	7.4	-0.6	6.8
G/F	R002	Dormitory	16.7	Type 2	1.4	340	175	No	16.7	7.4	0.0	7.4
G/F	R003	Dormitory	8.6	Type 1	1.2	340	175	No	10.3	5.9	-0.8	5.1
G/F	R004 and R005	Dormitory	15.8	Type 3 (with two outer openings)	0.7	255 & 268	100	No	14.6	5.1	0.0	5.1
G/F	R006	Dormitory	19.5	Type 2	1.4	340	175	No	16.7	7.4	0.0	7.4
1/F	R101 and R102	Dormitory	47.7	Type 4	5.3	250	100	Yes	60.1 - 68.2	4	-1.6	2.4
1/F	R103 and R104	Dormitory	52.0	Type 4	5.3	250	100	Yes	60.1 - 68.2	4	-1.2	2.8
1/F	R105 and R106	Dormitory	52.1	Type 4	5.3	250	100	Yes	60.1 - 68.2	4	-1.2	2.8
1/F	R107, R108 and R109	Dormitory	41.9	Type 4	5.3	250	100	Yes	60.1 - 68.2	4	-2.1	1.9
2/F	R201 and R202	Dormitory	47.7	Type 4	5.3	250	100	Yes	60.1 - 68.2	4	-1.6	2.4
2/F	R203 and R204	Dormitory	52.0	Type 4	5.3	250	100	Yes	60.1 - 68.2	4	-1.2	2.8
2/F	R205 and R206	Dormitory	52.1	Type 4	5.3	250	100	Yes	60.1 - 68.2	4	-1.2	2.8
2/F	R207 and R208	Dormitory	41.9	Type 4	5.3	250	100	Yes	60.1 - 68.2	4	-2.1	1.9

Notes:

[1] Correction for room area is calculated by $10 \log (RA / RA_{ref})$.

[2] As a conservative approach, the noise reduction performance of the proposed acoustic window is adjusted (downward only) based on the relative room size of the project case and reference case. In case the room size of the project case is larger than the reference case or opening size of the conventional window in the project case is larger than the reference case, no adjustment is made.

[3] For conservative assessment, the noise reduction performance of Type 4 AW(BT) is adjusted based on the largest room size of the reference case (i.e. 68.2m² for reference case room size).

APPENDIX 3.4
PREDICTED ROAD TRAFFIC NOISE LEVELS
(MITIGATED SCENARIO)

Predicted Road Traffic Noise Levels for AM Peak Hour (Mitigated Scenario)

Floor	NAP ID	Description	Floor Height, mPD	Assessment Height, mPD	Noise Criteria, dB(A)	Proposed Noise Mitigation Measures	Estimated Noise Attenuation, dB(A)	Mitigated Noise Level, L ₁₀ (1 hour) ^r dB(A)	Compliance
G/F	R001	Sick Bay with Negative Pressure	+15.75	+17.0	70	Type 2 AW(BT)	6.8	66	Yes
	R002	Dormitory			70	Type 2 AW(BT)	7.4	65	Yes
	R003	Dormitory			70	Type 1 AW(BT)	5.1	67	Yes
	R004	Dormitory			70	Type 3 AW(BT)	5.1	67	Yes
	R005	Dormitory			70	Type 3 AW(BT)	5.1	67	Yes
	R006	Dormitory			70	Type 2 AW(BT)	7.4	63	Yes
	R007	General Office			70	N/A	N/A	45	Yes
	R008	Conference Room			70	N/A	N/A	58	Yes
	R009	Conference Room			70	N/A	N/A	59	Yes
	R010	Rehabilitation Area			70	N/A	N/A	59	Yes
1/F	R101	Dormitory	+21.25	+22.5	70	Type 4 AW(BT)	2.4	69	Yes
	R102	Dormitory			70	Type 4 AW(BT)	2.4	69	Yes
	R103	Dormitory			70	Type 4 AW(BT)	2.8	69	Yes
	R104	Dormitory			70	Type 4 AW(BT)	2.8	69	Yes
	R105	Dormitory			70	Type 4 AW(BT)	2.8	69	Yes
	R106	Dormitory			70	Type 4 AW(BT)	2.8	69	Yes
	R107	Dormitory			70	Type 4 AW(BT)	1.9	70	Yes
	R108	Dormitory			70	Type 4 AW(BT)	1.9	69	Yes
	R109	Dormitory			70	Type 4 AW(BT)	1.9	69	Yes
	R110	Dormitory			70	N/A	N/A	70	Yes
	R111	Dormitory			70	N/A	N/A	70	Yes
	R112	Dormitory			70	N/A	N/A	70	Yes
	R113	Dormitory			70	N/A	N/A	70	Yes
	R114	Dormitory			70	N/A	N/A	70	Yes
	R115	Dormitory			70	N/A	N/A	70	Yes
	R116	Dormitory			70	N/A	N/A	70	Yes
	R117	Dormitory			70	N/A	N/A	43	Yes
	R118	Dormitory			70	N/A	N/A	39	Yes
	R119	Dormitory			70	N/A	N/A	31	Yes
	R120	Sick Bay with Negative Pressure			70	N/A	N/A	34	Yes
	R121	Dormitory			70	N/A	N/A	53	Yes
	R122	Dormitory			70	N/A	N/A	56	Yes
	R123	Dormitory			70	N/A	N/A	57	Yes
	R124	Dormitory			70	N/A	N/A	57	Yes
	R125	Dormitory			70	N/A	N/A	58	Yes
	R126	Dormitory			70	N/A	N/A	57	Yes
	R127	Dormitory			70	N/A	N/A	57	Yes
	R128	Dormitory			70	N/A	N/A	53	Yes
	R129	Nurse Station			70	N/A	N/A	55	Yes
	R130	Dormitory			70	N/A	N/A	56	Yes
R131	Dormitory	70	N/A	N/A	58	Yes			
R132	Dormitory	70	N/A	N/A	59	Yes			
R133	Dormitory	70	N/A	N/A	59	Yes			
R134	Dormitory	70	N/A	N/A	59	Yes			
R135	Dormitory	70	N/A	N/A	58	Yes			
R136	Dormitory	70	N/A	N/A	58	Yes			
R137	Dormitory	70	N/A	N/A	58	Yes			
R138	Dormitory	70	N/A	N/A	59	Yes			
R139	Dormitory	70	N/A	N/A	60	Yes			
R140	Dormitory	70	N/A	N/A	62	Yes			
R141	Dormitory	70	N/A	N/A	67	Yes			
R142	Dormitory	70	N/A	N/A	68	Yes			
2/F	R201	Dormitory	+24.95	+26.2	70	Type 4 AW(BT)	2.4	68	Yes
	R202	Dormitory			70	Type 4 AW(BT)	2.4	68	Yes
	R203	Dormitory			70	Type 4 AW(BT)	2.8	68	Yes
	R204	Dormitory			70	Type 4 AW(BT)	2.8	68	Yes
	R205	Dormitory			70	Type 4 AW(BT)	2.8	68	Yes
	R206	Dormitory			70	Type 4 AW(BT)	2.8	68	Yes
	R207	Dormitory			70	Type 4 AW(BT)	1.9	69	Yes
	R208	Dormitory			70	Type 4 AW(BT)	1.9	68	Yes
	R209	Dormitory			70	N/A	N/A	70	Yes
	R210	Dormitory			70	N/A	N/A	70	Yes
	R211	Dormitory			70	N/A	N/A	69	Yes
	R212	Dormitory			70	N/A	N/A	69	Yes
	R213	Dormitory			70	N/A	N/A	69	Yes
	R214	Dormitory			70	N/A	N/A	69	Yes
	R215	Dormitory			70	N/A	N/A	69	Yes
	R216	Dormitory			70	N/A	N/A	43	Yes
	R217	Dormitory			70	N/A	N/A	37	Yes
	R218	Sick Bay with Negative Pressure			70	N/A	N/A	34	Yes
	R219	Dormitory			70	N/A	N/A	47	Yes
	R220	Dormitory			70	N/A	N/A	52	Yes
	R221	Dormitory			70	N/A	N/A	54	Yes
	R222	Dormitory			70	N/A	N/A	56	Yes
	R223	Dormitory			70	N/A	N/A	56	Yes
	R224	Dormitory			70	N/A	N/A	57	Yes
	R225	Dormitory			70	N/A	N/A	57	Yes
	R226	Dormitory			70	N/A	N/A	57	Yes
	R227	Dormitory			70	N/A	N/A	55	Yes
	R228	Dormitory			70	N/A	N/A	56	Yes
	R229	Dormitory			70	N/A	N/A	54	Yes
	R230	Dormitory			70	N/A	N/A	54	Yes
R231	Nurse Station	70	N/A	N/A	55	Yes			
R232	Dormitory	70	N/A	N/A	66	Yes			
R233	Dormitory	70	N/A	N/A	68	Yes			
3/F	R301	Dormitory	+28.65	+29.9	70	N/A	N/A	70	Yes
	R302	Dormitory			70	N/A	N/A	70	Yes
	R303	Dormitory			70	N/A	N/A	70	Yes
	R304	Dormitory			70	N/A	N/A	70	Yes
	R305	Dormitory			70	N/A	N/A	70	Yes
	R306	Dormitory			70	N/A	N/A	70	Yes
R307	Dormitory	70	N/A	N/A	70	Yes			
R308	Dormitory	70	N/A	N/A	70	Yes			
R309	Dormitory	70	N/A	N/A	69	Yes			

Predicted Road Traffic Noise Levels for AM Peak Hour (Mitigated Scenario)

Floor	NAP ID	Description	Floor Height, mPD	Assessment Height, mPD	Noise Criteria, dB(A)	Proposed Noise Mitigation Measures	Estimated Noise Attenuation, dB(A)	Mitigated Noise Level, L ₁₀ (1 hour), dB(A)	Compliance
3/F	R310	Dormitory	+28.65	+29.9	70	N/A	N/A	69	Yes
	R311	Dormitory			70	N/A	N/A	69	Yes
	R312	Dormitory			70	N/A	N/A	69	Yes
	R313	Dormitory			70	N/A	N/A	69	Yes
	R314	Dormitory			70	N/A	N/A	69	Yes
	R315	Dormitory			70	N/A	N/A	69	Yes
	R316	Dormitory			70	N/A	N/A	44	Yes
	R317	Dormitory			70	N/A	N/A	43	Yes
	R318	Dormitory			70	N/A	N/A	41	Yes
	R319	Dormitory			70	N/A	N/A	36	Yes
	R320	Sick Bay with Negative Pressure			70	N/A	N/A	34	Yes
	R321	Dormitory			70	N/A	N/A	53	Yes
	R322	Dormitory			70	N/A	N/A	55	Yes
	R323	Dormitory			70	N/A	N/A	57	Yes
	R324	Dormitory			70	N/A	N/A	57	Yes
	R325	Dormitory			70	N/A	N/A	57	Yes
	R326	Dormitory			70	N/A	N/A	57	Yes
	R327	Dormitory			70	N/A	N/A	57	Yes
	R328	Dormitory			70	N/A	N/A	57	Yes
	R329	Dormitory			70	N/A	N/A	54	Yes
R330	Dormitory	70	N/A	N/A	66	Yes			
R331	Dormitory	70	N/A	N/A	67	Yes			
4/F	R401	Sick Bay with Negative Pressure	+32.35	+33.6	70	N/A	N/A	53	Yes
	R402	Sick Bay with Negative Pressure			70	N/A	N/A	50	Yes
	R403	Dormitory			70	N/A	N/A	51	Yes
	R404	Dormitory			70	N/A	N/A	56	Yes
	R405	Dormitory			70	N/A	N/A	57	Yes
	R406	Dormitory			70	N/A	N/A	58	Yes
	R407	Dormitory			70	N/A	N/A	58	Yes
	R408	Dormitory			70	N/A	N/A	59	Yes
	R409	Dormitory			70	N/A	N/A	59	Yes
	R410	Dormitory			70	N/A	N/A	59	Yes
	R411	Dormitory			70	N/A	N/A	58	Yes
	R412	Dormitory			70	N/A	N/A	54	Yes
	R413	Rehabilitation Room 2			70	N/A	N/A	55	Yes
	R414	Rehabilitation Room 2			70	N/A	N/A	54	Yes
5/F	R501	Dormitory	+36.05	+37.3	70	N/A	N/A	68	Yes
	R502	Dormitory			70	N/A	N/A	68	Yes
	R503	Dormitory			70	N/A	N/A	67	Yes
	R504	Dormitory			70	N/A	N/A	68	Yes
	R505	Dormitory			70	N/A	N/A	67	Yes
	R506	Sick Bay with Negative Pressure			70	N/A	N/A	62	Yes
	R507	Sick Bay with Negative Pressure			70	N/A	N/A	63	Yes
	R508	Dormitory			70	N/A	N/A	62	Yes
	R509	Dormitory			70	N/A	N/A	62	Yes
	R510	Dormitory			70	N/A	N/A	62	Yes
	R511	Dormitory			70	N/A	N/A	62	Yes
	R512	Dormitory			70	N/A	N/A	62	Yes
	R513	Dormitory			70	N/A	N/A	62	Yes
	R514	Dormitory			70	N/A	N/A	62	Yes
	R515	Dormitory			70	N/A	N/A	62	Yes
	R516	Dormitory			70	N/A	N/A	60	Yes
	R517	Dormitory			70	N/A	N/A	54	Yes
	R518	Rehabilitation Room 3			70	N/A	N/A	55	Yes
	R519	Rehabilitation Room 3			70	N/A	N/A	54	Yes
6/F	R601	Dormitory	+39.75	+41.0	70	N/A	N/A	68	Yes
	R602	Dormitory			70	N/A	N/A	68	Yes
	R603	Dormitory			70	N/A	N/A	67	Yes
	R604	Dormitory			70	N/A	N/A	67	Yes
	R605	Dormitory			70	N/A	N/A	66	Yes
	R606	Sick Bay with Negative Pressure			70	N/A	N/A	62	Yes
	R607	Dormitory			70	N/A	N/A	61	Yes
	R608	Dormitory			70	N/A	N/A	61	Yes
	R609	Dormitory			70	N/A	N/A	61	Yes
	R610	Dormitory			70	N/A	N/A	55	Yes
	R611	Multi-Purpose Treatment Room			70	N/A	N/A	55	Yes

Results Summary	
Total No. of NAPs	160
Total No. of NAPs with exceedance	0
Compliance Rate	100%

APPENDIX 3.5

FIXED NOISE SOURCES INVENTORY

Fixed Noise Source Inventory

Source ID	Noise Source	X coordinate	Y coordinate	Elevation, mPD	SWL (Daytime), dB(A)	SWL (Night-time), dB(A)	Tonality, dB(A)	Intermittency, dB(A)	Impulsiveness, dB(A)
S01	Open Storage	820175	831106	16.7	99	N/A	0	0	0
S02	Vehicle Repair Workshop	820182	831101	16.7	98	N/A	0	0	0

Notes:

[1] SWL for open storage activities is made reference to Pages 4-7 and 4-8 of the approved EIA Report for the Proposed Low-rise and Low-density Residential Development at Various Lots and their Adjoining Government Land in D.D. 104, East of Kam Pok Road, Mai Po, Yuen Long, New Territories (AEIAR-205/2017).

[2] SWL for the activities carried out in vehicle repair workshop is made reference to Appendix 5.5 of the approved EIA Report for the Development at San Hing Road and Hong Po Road, Tuen Mun (AEIAR-227/2020).

Extract of the Approved EIA Report for the Proposed Low-rise and Low-density Residential Development at Various Lots and their Adjoining Government Land in D.D. 104, East of Kam Pok Road, Mai Po, Yuen Long, New Territories (AEIAR-205/2017)

Weather Conditions

The weather conditions on site were checked to ensure the measurements were made only during “dry” weather conditions without the presence of fog and rain. The wind speed had been checked to ensure that the wind speed did not exceed 5m/s and 10m/s in any direction for steady and gusty wind respectively.

Survey Method

The site was inspected before commencing the noise measurements to ascertain that there was minimal noise from occupational activities being carried out in the vicinity. The occupational activity in the neighbourhood was not considered to have any significant increase on the measured road traffic and industrial noise levels.

The sound level meter was adjusted to determine the A-weighted statistical sound pressure levels such as L₁₀ and L_{eq}. The measurement locations were given in **Figure 4-5**.

Noise Measurement Results

Site surveys have revealed that industrial noise from Fan Keung Kee is insignificant at Villa Camellia and the measured noise levels were in the range of 56 – 57dB(A) (Loc 1 of **Figure 4-5**).

Site surveys have also revealed that industrial noise from Shing Fat Logistics Ltd is insignificant and the measured noise levels at Ha San Wai village were in the range of 47 – 49dB(A) (Loc 2 of **Figure 4-5**).

For Fan Keung Kee, the sound power levels of the plant are summarized in **Table 4-7**, which are used in the industrial noise assessment for projecting the noise level at the planned NSRs of the Development.

Table 4-7 Summary of noise measurement data for Fan Keung Kee

Source ID	Observed Activities/ Equipment	Measured SPL, dB(A)	Measurement Distance, m	Distance correction, dB(A)	SWL, dB(A)
S1-1	Operation noise of the warehouse	66	10	28	94
S2-1	Movement of Lorry	73	8	26	99
S2-2	Lifting of container by a Mobile crane	69	10	28	97
S2-3	Loading and unloading using Forklift	69	5	22	91

For Shing Fat Logistics Ltd, the sound power levels of the plant are summarized in **Table 4-8**, which are used in the industrial noise assessment for projecting the noise level at the planned NSRs of the Development.

Worst-case SWL for the activities carried out in open storage sites - 99 dB(A)

Table 4-8 Summary of noise measurement data for Shing Fat Logistics Ltd.

Source ID	Observed Activities/ Equipment	Measured SPL, dB(A)	Measurement Distance, m	Distance correction, dB(A)	SWL, dB(A)
S10-1	Loading and unloading using forklift	63	10	28	91
S10-2	Movement of lorry	74	7	25	99

4.4.2 Road Traffic Noise Impact

Upon Proposed Development Site

Worst-case SWL for the activities carried out in open storage sites - 99 dB(A)

The proposed development site is surrounded by existing road networks such as Kam Pok Road, Fairview Boulevard, Yau Pok Road, Castle Peak Road, and San Tin Highway. There could be road traffic noise impact upon the proposed development site due to vehicles travelling on the nearby road networks during the operational phase of the development. As discussed in Section 1.8, there are planned development projects nearby, which may contribute to the future traffic flow on surrounding roads during operation of this Project. A road traffic noise impact assessment for the Project Site (based on projected cumulative traffic flow with the inclusion of concerned nearby planned development project sites), has been conducted and details of which are described in **Section 4.6.2** below.

Upon Surrounding Environment

As for the noise impact of traffic attracted/ generated by the proposed development upon the surrounding environment, it is estimated that only about 18 vehicles/ hour and 19 vehicles/ hour will be attracted/ generated by this Project during the AM and PM peak hours, respectively. The majority of concerned traffic flow (80%) will be private cars and with about 20% heavy vehicles. Thus, adverse noise impact due to this traffic flow is unlikely to occur.

It shall also be noted that the Project Site is currently used as open car park (Section 2.3 refers). Vehicles generated/ attracted by the existing car park will also contribute to the existing traffic flow on nearby roads. In fact, many vehicles visiting the car park are heavy vehicles. According to on-site traffic survey undertaken by the traffic consultant of this Project in January 2016, the total vehicles generated/ attracted by the existing car park operation during AM peak hour, was about 76 vehicles/ hour (with about 45% heavy vehicles). While a traffic flow of 40 vehicles/ hour (with about 65% heavy vehicles), was generated during the PM peak hour. All the concerned traffic generated/ attracted from the existing car park operation, will use Kam Pok Road as the access road (i.e. same as this Project). This is considered much higher when compared with the current proposed development both in terms of traffic flow and % of heavy vehicles. Thus, the proposed development will not result in an increase in traffic flow upon nearby roads when compared with its existing condition.

In addition, traffic generated by this Project is expected to take the shortest path and go south along Kam Pok Road to Fairview Park Boulevard (instead of going north along Kam Pok Road to Castle Peak Road, where it would merge with traffic generated by other nearby development projects to the north), thus accumulation of traffic flow is not expected.

As such, adverse noise impact upon surrounding environment due to proposed development is not expected.

Extract of Appendix 5.5 of the Approved EIA Report for the Development at San Hing Road and Hong Po Road, Tuen Mun (AEIAR-227/2020)

Fixed Noise Source Inventory

Noise Source ID	Noise Sources	Source Description	Avg. Measured SPL, dB(A)	Measurement Distance from Source (d), m	SWL, dB(A) (SPL + 20 log (d)+8)	SWL adopted in Noise from Fixed Source Calculation, dB(A), Day time	SWL adopted in Noise from Fixed Source Calculation, dB(A), Night time	Remarks
FS1	力信	Car Repairing Workshop	-	-	-	98	0	Refer to FS18
FS2	加昌貿易海運	Car Repairing Workshop	-	-	-	98	0	
FS4	Car Repairing workshop	Car Repairing Workshop	-	-	-	98	0	
FS5	天輝	Car washing workshop	77	3	94	94	0	By on-site measurement
FS6	東聯汽車維修	Car Repairing Workshop	-	-	-	98	0	Refer to FS18
FS7	恒力	Car Repairing Workshop	-	-	-	98	0	
FS8	Unnamed car parking	Car Repairing Workshop	-	-	-	98	0	
FS9	Enclosed Workshop	Car Repairing Workshop	-	-	-	98	0	
FS10	Self-served car washing workshop	Car washing workshop	-	-	-	94	0	Refer to FS5
FS11	榮泰	Car Repairing Workshop	-	-	-	98	0	Refer to FS18
FS12	Calco Industrial Products Ltd.	Car Repairing Workshop	-	-	-	98	0	
FS13	Car Repairing workshop	Car Repairing Workshop	-	-	-	98	0	
FS14	Unknown workshop	Unknown workshop	58	5	80	80	0	By on-site measurement
FS15	CHEP	Covered storage with forklift	65	8	91	91	0	Reference is made to an approved planning application A/TM-LTTY/273
FS16	緯力貨倉 (Wai Yik)	Storage with forklift	63	13	93	93	0	By on-site measurement
FS17	龍顏(Lung Ngai)	Tyre pumping	-	-	89	92	0	SWL of tyre pumping made reference to an approved planning application A/YL-KTN/501; SWL of Hammering made reference to Tin Lung (FS18); Car Cleansing was measured on-site.
		Hammering	-	-	87		0	
		Car Cleansing	59	5	81		0	
FS18	天隆(Tin Lung)	Pneumatic screwdriver	-	-	97	98	0	SWL of pneumatic screwdriver and tyre pumping made reference to an approved planning application A/YL-KTN/501. Hammering was measured on-site.
		Tyre pumping	-	-	89		0	
		Hammering	63	6	87		0	
FS19	隆德 (Lung Tak)	Car Repairing Workshop	-	-	-	98	0	Refer to FS18
FS20	Chuen Fat Marble Tools	Marble grinding	73	3	90	90	0	By on-site measurement
PFS-01	PTI-01	Proposed Public Transport Interchange	-	-	-	84	77	By Back-calculation of Maximum Allowable SWL for the Proposed PTI (Appendix 5.17)
PFS-02	PTI-01		-	-	-	83	76	
PFS-03	PTI-02		-	-	-	84	77	
PFS-04	PTI-02		-	-	-	86	79	
PFS-05	Proposed Sewage Pumping Station	Spumps, Screens and Extraction Fans	-	-	-	89	89	Reference is made to the Project Profile of Proposed Sewage Pumping Station at Attachment 1

Worst-case SWL for the activities carried out in vehicle repair workshops - 98 dB(A)

APPENDIX 3.6
PREDICTED FIXED NOISE LEVELS AT
REPRESENTATIVE NOISE SENSITIVE
RECEIVERS (DAYTIME PERIOD)

Summary of Fixed Noise Calculation: Daytime

NSR ID	Description	Predicated Fixed Noise Level, dB(A)	Area Sensitivity Rating	Noise Criteria, dB(A)	Compliance
R001	G/F - Sick Bay with Negative Pressure	57	B	65	Yes
R010	G/F - Rehabilitation Area	61	B	65	Yes
R142	1/F - Dormitory	62	B	65	Yes
R233	2/F - Dormitory	62	B	65	Yes
R331	3/F - Dormitory	62	B	65	Yes
R414	4/F - Rehabilitation Room 2	60	B	65	Yes
R501	5/F - Dormitory	50	B	65	Yes
R519	5/F - Rehabilitation Room 3	60	B	65	Yes
R601	6/F - Dormitory	50	B	65	Yes
R611	6/F - Multi-Purpose Treatment Room	59	B	65	Yes

Summary of Fixed Noise Calculation: Daytime

Period Daytime and evening
NSR ID R001
NSR Name G/F - Sick Bay with Negative Pressure
Coor - x 820200
Coor - y 831052
Coor - z 17.0
Criteria, dB(A) 65
Fixed Noise Level at Receiver, dB(A) 57
Compliance Yes

Source ID	Description	Centroid coor-x	Centroid coor- y	Source coor-z	SWL, dB(A)	Horizontal Distance, m	Slant Distance, m	Distance Attenuation, dB(A)	Screening Correction ^[1] , dB(A)	Tonality Correction, dB(A)	Intermittency, dB(A)	Impulsiveness, dB(A)	Façade Correction, dB(A)	Predicted Noise Level, Leq(30min), dB(A)
S01	Open Storage	820175	831106	16.7	99	59	59	-43.4	-5	0	0	0	3	54
S02	Vehicle Repair Workshop	820182	831101	16.7	98	52	52	-42.3	-5	0	0	0	3	54
													Total	57

Note:

[1] -5 dB(A) for partial screening or -10 dB(A) for complete screening due to various architectural features, topography and obstacles.

Summary of Fixed Noise Calculation: Daytime

Period Daytime and evening
NSR ID R010
NSR Name G/F - Rehabilitation Area
Coor - x 820179
Coor - y 831044
Coor - z 17.0
Criteria, dB(A) 65
Fixed Noise Level at Receiver, dB(A) 61
Compliance Yes

Source ID	Description	Centroid coor-x	Centroid coor- y	Source coor-z	SWL, dB(A)	Horizontal Distance, m	Slant Distance, m	Distance Attenuation, dB(A)	Screening Correction ^[1] , dB(A)	Tonality Correction, dB(A)	Intermittency, dB(A)	Impulsiveness, dB(A)	Façade Correction, dB(A)	Predicted Noise Level, Leq(30min), dB(A)
S01	Open Storage	820175	831106	16.7	99	62	62	-43.8	0	0	0	0	3	58
S02	Vehicle Repair Workshop	820182	831101	16.7	98	57	57	-43.2	0	0	0	0	3	58
													Total	61

Note:

[1] -5 dB(A) for partial screening or -10 dB(A) for complete screening due to various architectural features, topography and obstacles.

Summary of Fixed Noise Calculation: Daytime

Period Daytime and evening
 NSR ID R142
 NSR Name 1/F - Dormitory
 Coor - x 820195
 Coor - y 831055
 Coor - z 22.5
 Criteria, dB(A) 65
 Fixed Noise Level at Receiver, dB(A) 62
 Compliance Yes

Source ID	Description	Centroid coor-x	Centroid coor- y	Source coor-z	SWL, dB(A)	Horizontal Distance, m	Slant Distance, m	Distance Attenuation, dB(A)	Screening Correction ^[1] , dB(A)	Tonality Correction, dB(A)	Intermittency, dB(A)	Impulsiveness, dB(A)	Façade Correction, dB(A)	Predicted Noise Level, Leq(30min), dB(A)
S01	Open Storage	820175	831106	16.7	99	55	55	-42.9	0	0	0	0	3	59
S02	Vehicle Repair Workshop	820182	831101	16.7	98	49	49	-41.8	0	0	0	0	3	59
													Total	62

Note:

[1] -5 dB(A) for partial screening or -10 dB(A) for complete screening due to various architectural features, topography and obstacles.

Summary of Fixed Noise Calculation: Daytime

Period Daytime and evening
 NSR ID R233
 NSR Name 2/F - Dormitory
 Coor - x 820195
 Coor - y 831055
 Coor - z 26.2
 Criteria, dB(A) 65
 Fixed Noise Level at Receiver, dB(A) 62
 Compliance Yes

Source ID	Description	Centroid coor-x	Centroid coor- y	Source coor-z	SWL, dB(A)	Horizontal Distance, m	Slant Distance, m	Distance Attenuation, dB(A)	Screening Correction ^[1] , dB(A)	Tonality Correction, dB(A)	Intermittency, dB(A)	Impulsiveness, dB(A)	Façade Correction, dB(A)	Predicted Noise Level, Leq(30min), dB(A)
S01	Open Storage	820175	831106	16.7	99	55	56	-42.9	0	0	0	0	3	59
S02	Vehicle Repair Workshop	820182	831101	16.7	98	49	50	-41.9	0	0	0	0	3	59
													Total	62

Note:

[1] -5 dB(A) for partial screening or -10 dB(A) for complete screening due to various architectural features, topography and obstacles.

Summary of Fixed Noise Calculation: Daytime

Period Daytime and evening
NSR ID R331
NSR Name 3/F - Dormitory
Coor - x 820195
Coor - y 831055
Coor - z 29.9
Criteria, dB(A) 65
Fixed Noise Level at Receiver, dB(A) 62
Compliance Yes

Source ID	Description	Centroid coor-x	Centroid coor- y	Source coor-z	SWL, dB(A)	Horizontal Distance, m	Slant Distance, m	Distance Attenuation, dB(A)	Screening Correction ^[1] , dB(A)	Tonality Correction, dB(A)	Intermittency, dB(A)	Impulsiveness, dB(A)	Façade Correction, dB(A)	Predicted Noise Level, Leq(30min), dB(A)
S01	Open Storage	820175	831106	16.7	99	55	57	-43.0	0	0	0	0	3	59
S02	Vehicle Repair Workshop	820182	831101	16.7	98	49	50	-42.0	0	0	0	0	3	59
													Total	62

Note:

[1] -5 dB(A) for partial screening or -10 dB(A) for complete screening due to various architectural features, topography and obstacles.

Summary of Fixed Noise Calculation: Daytime

Period Daytime and evening
NSR ID R414
NSR Name 4/F - Rehabilitation Room 2
Coor - x 820175
Coor - y 831039
Coor - z 33.6
Criteria, dB(A) 65
Fixed Noise Level at Receiver, dB(A) 60
Compliance Yes

Source ID	Description	Centroid coor-x	Centroid coor- y	Source coor-z	SWL, dB(A)	Horizontal Distance, m	Slant Distance, m	Distance Attenuation, dB(A)	Screening Correction ^[1] , dB(A)	Tonality Correction, dB(A)	Intermittency, dB(A)	Impulsiveness, dB(A)	Façade Correction, dB(A)	Predicted Noise Level, Leq(30min), dB(A)
S01	Open Storage	820175	831106	16.7	99	66	68	-44.7	0	0	0	0	3	57
S02	Vehicle Repair Workshop	820182	831101	16.7	98	63	65	-44.2	0	0	0	0	3	57
													Total	60

Note:

[1] -5 dB(A) for partial screening or -10 dB(A) for complete screening due to various architectural features, topography and obstacles.

Summary of Fixed Noise Calculation: Daytime

Period Daytime and evening
NSR ID R501
NSR Name 5/F - Dormitory
Coor - x 820198
Coor - y 831046
Coor - z 37.3
Criteria, dB(A) 65
Fixed Noise Level at Receiver, dB(A) 50
Compliance Yes

Source ID	Description	Centroid coor-x	Centroid coor- y	Source coor-z	SWL, dB(A)	Horizontal Distance, m	Slant Distance, m	Distance Attenuation, dB(A)	Screening Correction ^[1] , dB(A)	Tonality Correction, dB(A)	Intermittency, dB(A)	Impulsiveness, dB(A)	Façade Correction, dB(A)	Predicted Noise Level, Leq(30min), dB(A)
S01	Open Storage	820175	831106	16.7	99	64	67	-44.5	-10	0	0	0	3	47
S02	Vehicle Repair Workshop	820182	831101	16.7	98	57	61	-43.7	-10	0	0	0	3	47
													Total	50

Note:

[1] -5 dB(A) for partial screening or -10 dB(A) for complete screening due to various architectural features, topography and obstacles.

Summary of Fixed Noise Calculation: Daytime

Period Daytime and evening
NSR ID R519
NSR Name 5/F - Rehabilitation Room 3
Coor - x 820175
Coor - y 831039
Coor - z 37.3
Criteria, dB(A) 65
Fixed Noise Level at Receiver, dB(A) 60
Compliance Yes

Source ID	Description	Centroid coor-x	Centroid coor- y	Source coor-z	SWL, dB(A)	Horizontal Distance, m	Slant Distance, m	Distance Attenuation, dB(A)	Screening Correction ^[1] , dB(A)	Tonality Correction, dB(A)	Intermittency, dB(A)	Impulsiveness, dB(A)	Façade Correction, dB(A)	Predicted Noise Level, Leq(30min), dB(A)
S01	Open Storage	820175	831106	16.7	99	66	69	-44.8	0	0	0	0	3	57
S02	Vehicle Repair Workshop	820182	831101	16.7	98	63	66	-44.4	0	0	0	0	3	57
													Total	60

Note:

[1] -5 dB(A) for partial screening or -10 dB(A) for complete screening due to various architectural features, topography and obstacles.

Summary of Fixed Noise Calculation: Daytime

Period Daytime and evening
NSR ID R601
NSR Name 6/F - Dormitory
Coor - x 820198
Coor - y 831046
Coor - z 41.0
Criteria, dB(A) 65
Fixed Noise Level at Receiver, dB(A) 50
Compliance Yes

Source ID	Description	Centroid coor-x	Centroid coor- y	Source coor-z	SWL, dB(A)	Horizontal Distance, m	Slant Distance, m	Distance Attenuation, dB(A)	Screening Correction ^[1] , dB(A)	Tonality Correction, dB(A)	Intermittency, dB(A)	Impulsiveness, dB(A)	Façade Correction, dB(A)	Predicted Noise Level, Leq(30min), dB(A)
S01	Open Storage	820175	831106	16.7	99	64	68	-44.7	-10	0	0	0	3	47
S02	Vehicle Repair Workshop	820182	831101	16.7	98	57	62	-43.9	-10	0	0	0	3	47
													Total	50

Note:

[1] -5 dB(A) for partial screening or -10 dB(A) for complete screening due to various architectural features, topography and obstacles.

Summary of Fixed Noise Calculation: Daytime

Period Daytime and evening
NSR ID R611
NSR Name 6/F - Multi-Purpose Treatment Room
Coor - x 820171
Coor - y 831036
Coor - z 41.0
Criteria, dB(A) 65
Fixed Noise Level at Receiver, dB(A) 59
Compliance Yes

Source ID	Description	Centroid coor-x	Centroid coor- y	Source coor-z	SWL, dB(A)	Horizontal Distance, m	Slant Distance, m	Distance Attenuation, dB(A)	Screening Correction ^[1] , dB(A)	Tonality Correction, dB(A)	Intermittency, dB(A)	Impulsiveness, dB(A)	Façade Correction, dB(A)	Predicted Noise Level, Leq(30min), dB(A)
S01	Open Storage	820175	831106	16.7	99	70	74	-45.4	0	0	0	0	3	57
S02	Vehicle Repair Workshop	820182	831101	16.7	98	66	71	-45.0	0	0	0	0	3	56
													Total	59

Note:

[1] -5 dB(A) for partial screening or -10 dB(A) for complete screening due to various architectural features, topography and obstacles.