Appendix 5

Noise Impact Assessment Report

Section 16 Application for
Proposed Redevelopment of Anton Villa at
313 Castle Peak Road, Ting Kau, New Territories

Environmental Noise Impact Assessment

Prepared for:
Lanbase Surveyors Limited

Prepared by:
Westwood Hong & Associates Limited

Report No.:
22598-N1

Date:
31 March 2025

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EIA · ACOUSTICS · NOISE · VIBRATION

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AIMS

To assess noise impacts on the proposed redevelopment of Anton Villa at 313 Castle Peak Road in Ting Kau.

To recommend noise mitigation measures for the proposed Development, if necessary, and to assess the suitability of the proposed building layout and the recommended noise mitigation measures according to relevant requirements in the Hong Kong Planning Standards & Guidelines (HKPSG).

SUMMARY

Noise assessments have been conducted to predict the noise impacts at the proposed Development.

For road traffic noise, all the noise sensitive rooms will comply with the stipulated 70dB(A) noise criterion. Therefore, no noise mitigation measures would be required.

Site survey has been conducted to investigate the fixed noise sources in the vicinity of the proposed Development. No adverse noise impact on the proposed Development due to fixed noise sources is anticipated.

1. INTRODUCTION

1.1 Westwood Hong & Associates Ltd (WHA) was commissioned to conduct an environmental noise impact assessment for the proposed redevelopment of Anton Villa at 313 Castle Peak Road in Ting Kau (the "proposed Development"). Figure 1 shows the location of the proposed Development.

1.2 This environmental noise impact assessment report supports the Section 16 Planning Application for the proposed Development.

1.3 This report has been prepared based on the architectural drawings provided by the project architect Ronald Lu & Partners (Hong Kong) Ltd.

1.4 This report presents assessments of the following:

- Road traffic noise affecting the proposed Development
- Fixed noise sources affecting the proposed Development
- Fixed noise sources from the proposed Development

2. SITE LOCATION & BUILDING LAYOUT

Site Location

2.1 The project site is adjoining Castle Peak Road which is located to the north. The beach is located to the south (Figure 1).

Building Layout

2.2 The proposed Development comprises a 2-storey house. The architectural drawings are provided in Appendix 1. The development parameters are summarised in Table 2.1.

Table 2.1 Development Parameters of the Proposed Development

	Parameters
Zoning	"Residential (Group C)" on Approved Tsuen Wan West Outline Zoning Plan No. S/TWW/21
Site Area	About 513m^2
Number of Residential Units	1 house
Number of Residential Storeys	2 storeys
Height of Building	20.42mPD
Completion Year	2029

3. NOISE CRITERIA

Road Traffic Noise Criterion

3.1 According to the HKPSG[1], road traffic noise criterion for domestic premises is 70dB(A) L10(1 hour) at the external facades for the hour having the peak traffic flow. This noise criterion applies to the domestic premises which rely on opened windows for ventilation.

Noise Criteria for Fixed Noise Sources

3.2 For fixed noise sources, the criterion is determined based on the statutory Acceptable Noise Levels (ANL) stipulated in "Technical Memorandum for the Assessment of Noise from Places other than Domestic Premises, Public Places or Construction Sites"[2] (IND – TM). The HKPSG also states that in order to plan for a better environment, all planned fixed noise sources should be so located and designed that when assessed in accordance with the TM, the level of the intruding noise at the façade of the nearest sensitive use should be at least 5dB(A) below the appropriate ANL shown in Table 2 of the IND – TM or, in the case of the background being 5dB(A) lower than the ANL, should not be higher than the background.

3.3 The project site is located in low density residential area consisting of low-rise developments, and not being affected by any Influencing Factor (IF) (e.g. industrial area or major road). With reference to the IND – TM, an Area Sensitivity Rating (ASR) of "A" was assumed for the proposed Development.

Table 3.1 ANLs for Day, Evening and Night Time Periods

	ANLs (Leq (30 mins))		
Time Period	**ASR "A"**	**ASR "B"**	**ASR "C"**
Day (0700 to 1900 hours) and evening (1900 to 2300 hours)	60dB(A)	65dB(A)	70dB(A)
Night (2300 to 0700 hours)	50dB(A)	55dB(A)	60dB(A)

Note: In any event, the ASR and the ANLs adopted in this report are only indicative and they are used for assessment only. It should be noted that noise from fixed noise sources is controlled under section 13 of the Noise Control Ordinance. Therefore, the ASRs and ANLs determined in this report shall not prejudice the Noise Control Authority's discretion to determine noise impact due to fixed noise sources on the basis of prevailing legislation and practices being in force, and taking account of contemporary conditions/ situations of adjoining land uses. The assessment of noise impacts due to fixed noise sources in this report shall not bind the Noise Control Authority in the context of law enforcement against any of the noise from fixed noise sources being assessed.

3.4 The assessment criteria for fixed noise sources for the proposed Development should refer to the ANLs in Table 3.1.

3.5 As mentioned in Section 3.2, the noise criteria for the noise from planned fixed sources are ANL – 5dB(A) or the prevailing background noise levels, whichever is lower. Site measurements were made at the nearby noise sensitive receiver on 28 March 2025, the prevailing background noise levels are summarised in Table 3.2 below. The measurement locations are provided in Figure 2.

Table 3.2 Noise Measurement Results

Location	Noise Sensitive Receiver	Measurement Results, dB(A), L90 (1 hour)
Loc 1	No. 315 Castle Peak Road, The Haven	Daytime: 59 – 60 Night-time: 51 – 52 (Façade)

3.6 The prevailing background noise levels of the identified noise sensitive receivers were higher than ANL – 5dB(A). Therefore, the ANL – 5dB(A) are used as the criteria for noise from planned fixed sources (i.e. 55dB(A) for daytime, and 45dB(A) for night-time).

4. SITE INSPECTION

Site Survey

4.1 Site survey was conducted on 28 March 2025. Photographs taken on site are given in Appendix 2.

Observations on Site

4.2 Road traffic noise from the Castle Peak Road was identified as the dominant noise source affecting the proposed Development.

Fixed Noise Sources in the Vicinity

4.3 Site survey has been conducted within 300m assessment area of the project site. The photos taken on site are provided in Appendix 2. In the vicinity of the project site, there are mainly residential houses.

4.4 The identified potential fixed noise source is summarised in Table 4.1 and illustrated in Figure 3.

Table 4.1 Identified Potential Fixed Noise Sources

Source ID	Industrial Site	Observation on site
A	Ting Kau Sewage Pumping Station Substation	No industrial noise was observed

4.5 Site survey revealed that there was no significant noise was emitted from this potential fixed noise sources. Hence, adverse noise impacts from this potential fixed noise source to the proposed Development are not anticipated.

5. ROAD TRAFFIC NOISE IMPACT ASSESSMENT

5.1 The noise prediction has been conducted by employing the WS Atkins RoadNoise 2000[3] computer software.

Traffic Forecast

5.2 The occupation year of the proposed Development is 2029, the maximum traffic in 15 years after occupation of the proposed Development (i.e. 2044) has been adopted for the purpose of the road traffic noise assessment.

5.3 The traffic forecast for Year 2044 was provided by the Traffic Consultant (CTA Consultants Limited), which is given in Appendix 3. The definition of heavy vehicles in the U.K. Department of Transport's "Calculation of Road Traffic Noise" (CRTN)[4] has been adopted. The computer plot of the noise prediction model is shown in Figure 4.

Noise Assessment Points for Road Traffic Noise Assessment

5.4 Noise assessment points are assigned to all ventilation openings to rooms of noise sensitive use (e.g. living and dining rooms, bedrooms / master bedrooms). The location of assessment points are illustrated in Figure A4 of Appendix 4.

5.5 The assessment points are taken at the height of 1.2m above each residential floor and 1m away from the façade of openable windows of the noise sensitive rooms.

Methodology of Road Traffic Noise Impact Assessment

5.6 The road traffic noise levels at the proposed Development have been predicted based on the predicted traffic flows in Year 2044 and in accordance with the procedures given in the CRTN. The predicted road traffic noise levels at the building facades include a 2.5dB(A) facade reflection and correction factors for gradient, distance, view angle, barriers and road surface material.

5.7 The study area of the road traffic noise assessment would be 300m from the site boundary. The roads within the study area are included in the assessment. According to the Hong Kong Environmental Database (HKED), the Tuen Mun Road is applied with Low Noise Road Surface. For other roads, impervious surface are adopted in the noise prediction model.

Predicted Road Traffic Noise Levels (Base Scenario)

5.8 The predicted road traffic noise levels are presented in Appendix 4 for all Noise Sensitive Receivers (NSRs) of the proposed Development. All the noise sensitive rooms in the proposed Development would comply with the stipulated 70dB(A) noise criterion. Therefore, no noise mitigation measures are required.

6. NOISE IMPACT ASSESSMENT OF FIXED NOISE SOURCES

Identified Fixed Noise Source Affecting the Proposed Development

6.1 There was an identified fixed noise source of Ting Kau Sewage Pumping Station Substation within the study area. Site survey revealed that no industrial noise from this sewage pumping station substation was observed. Therefore, no adverse noise impact due to fixed noise sources is anticipated.

Fixed Noise Sources in the Proposed Development

6.2 The noise emissions from any planned fixed noise sources associated with the proposed Development would be designed to meet the relevant criteria stipulated in the HKPSG (i.e. ANL – 5dB(A) as mentioned in Section 3).

6.3 The acoustic performance of the fixed noise sources would be reviewed during detailed design stage. If found necessary, acoustic treatments such as provision of acoustic silencers and acoustic enclosures shall be proposed in order to comply with the relevant noise requirements in the HKPSG.

6.4 The location of the fixed noise sources in the proposed Development and the required noise mitigation measures will be reviewed in the detailed design stage.

7. CONSTRUCTION NOISE IMPACT

7.1 The major construction activities of the project site include site formation, backfilling and superstructure, etc. Construction noise will be generated by the use of Powered Mechanical Equipment (PME) such as excavator and dump truck, etc. during the construction work. Given that the details of the construction programme and plant inventory are not available at this stage, a qualitative assessment is then conducted.

7.2 With the implementation of standard practices recommended in the ProPECC PN 1/24 "Minimizing Noise from Construction Activities", adverse construction noise impact is normally not anticipated. The recommended mitigation measures are summarized below.

Standard Practice for Construction Phase

7.3 The recommended practices below would be considered in all worksites as good practices to limit noise emissions at the source include:-

- Good site practices to limit noise emissions at the source;
- Use of quality powered mechanical equipment (QPME);
- Use of site hoarding as noise barrier to screen noise at ground level of NSRs;
- Use of temporary noise barriers, noise enclosure and acoustic mat to screen noise from relatively static PMEs; and
- Alternative use of plant items within one worksite, wherever practicable.

7.4 The above recommended practices would need to be implemented in worksites as good practices where appropriate. Reference shall also be made to EPD's recommended pollution control clauses for construction contracts.

8. CONCLUSION

8.1 Noise assessments have been conducted to predict the noise impacts at the proposed Development.

8.2 An assessment has been conducted to predict the road traffic noise impacts on the proposed Development. The prediction of road traffic noise was carried out based on the traffic forecast for Year 2044. For the Base Scenario (without any noise mitigation measures), all noise sensitive rooms in the proposed Development would comply with the 70dB(A) noise criterion. Therefore, no noise mitigation measures are required.

8.3 Site survey has been conducted to investigate the fixed noise sources in the vicinity of the proposed Development, no significant fixed noise source was identified. The proposed Development would not be affected by the fixed noise sources.

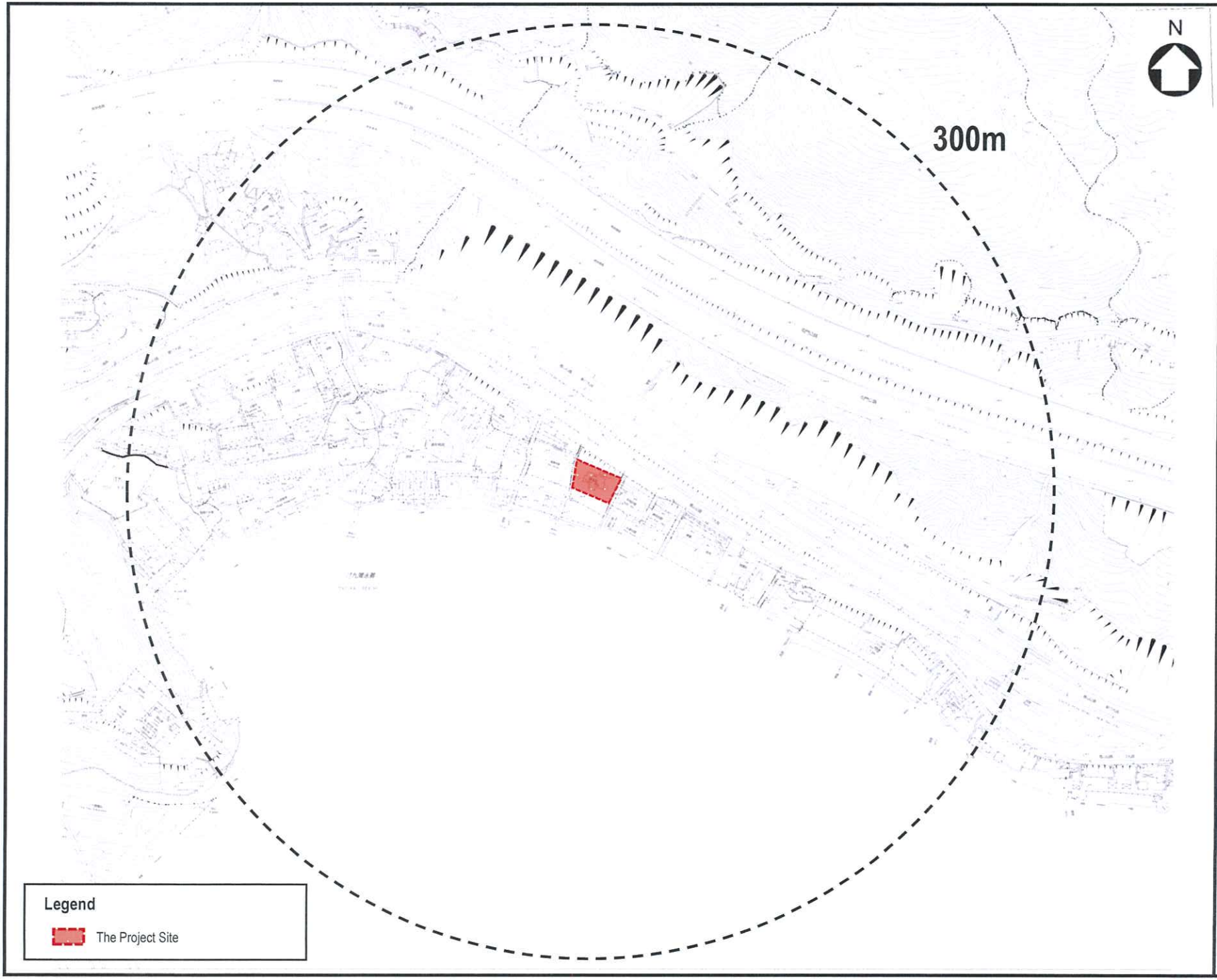
9. REFERENCES

[1] "Hong Kong Planning Standards & Guidelines" of March 2014 of Hong Kong Government.

[2] "Technical Memorandum for the Assessment of Noise from Places Other than Domestic Premises, Public Places or Construction Sites" (IND – TM) issued under the Noise Control Ordinance.

[3] "RoadNoise 2000" computer software of WS Atkins Noise and Vibration, England.

[4] "Calculation of Road Traffic Noise" of the Department of Transport, Welsh Office, UK.



Westwood Hong & Associates Ltd

PROJECT: 22598

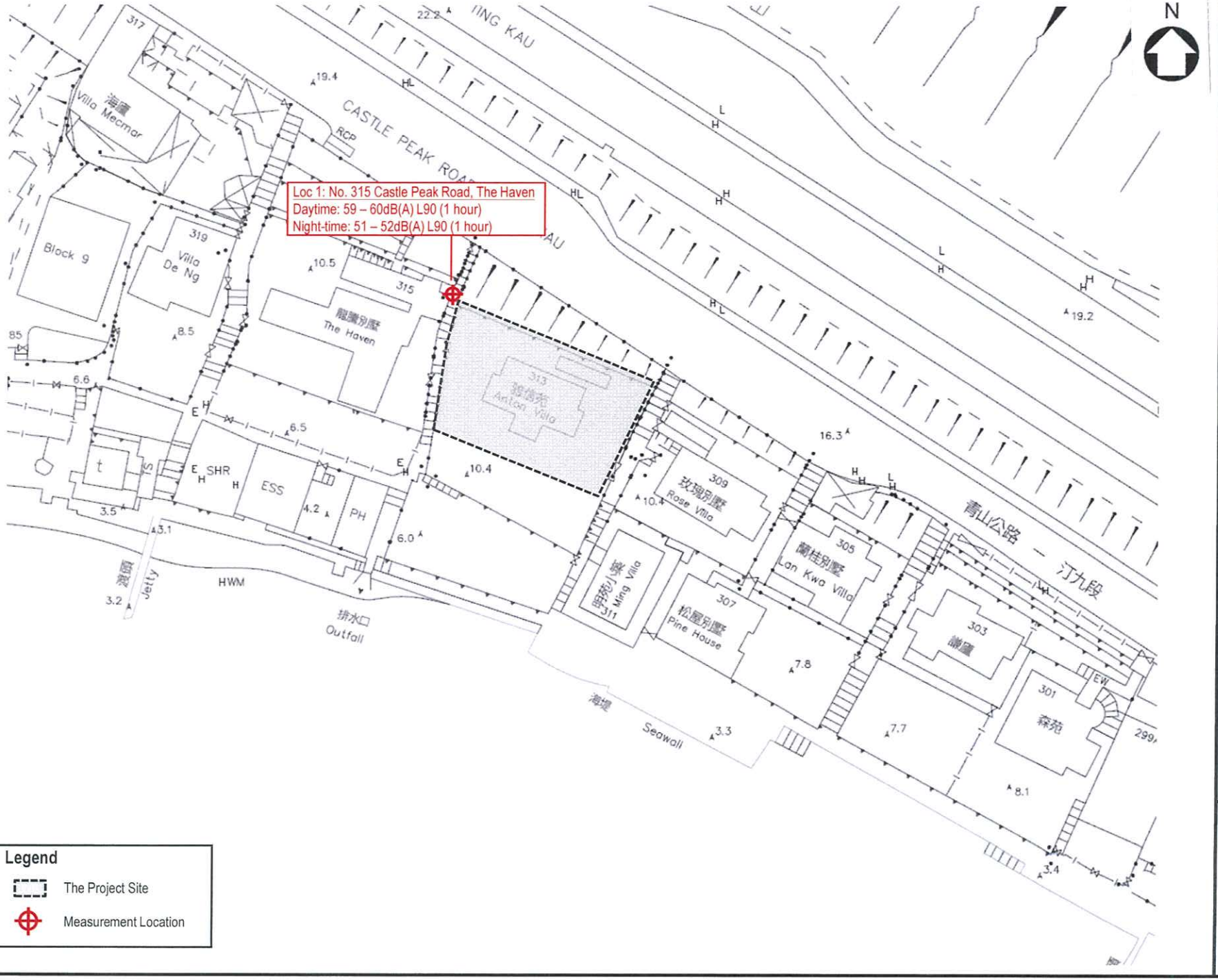
Section 16 Application for Proposed Redevelopment of Anton Villa at 313 Castle Peak Road, Ting Kau, N.T.

TITLE:

Site Location

FIGURE

1



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PROJECT: 22598

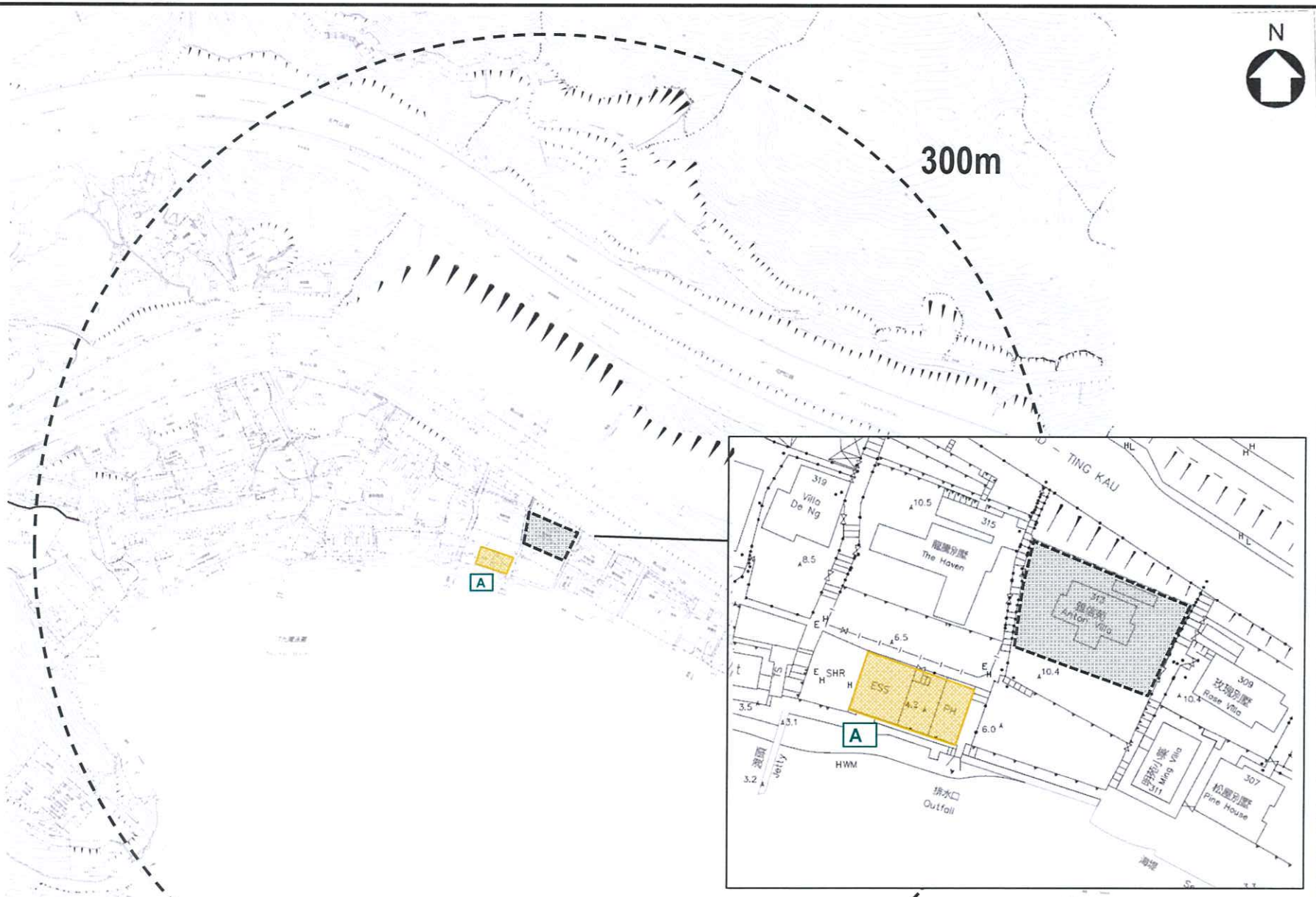
Section 16 Application for Proposed Redevelopment of Anton Villa at 313 Castle Peak Road, Ting Kau, N.T.

TITLE:

Measurement Results

FIGURE

2



Source ID	Name	Fixed Noise Sources
A	Ting Kau Sewage Pumping Station Substation	No industrial noise was observed

Legend

- Proposed Development
- Identified Potential Fixed Noise Sources

Westwood Hong & Associates Ltd

PROJECT: 22598

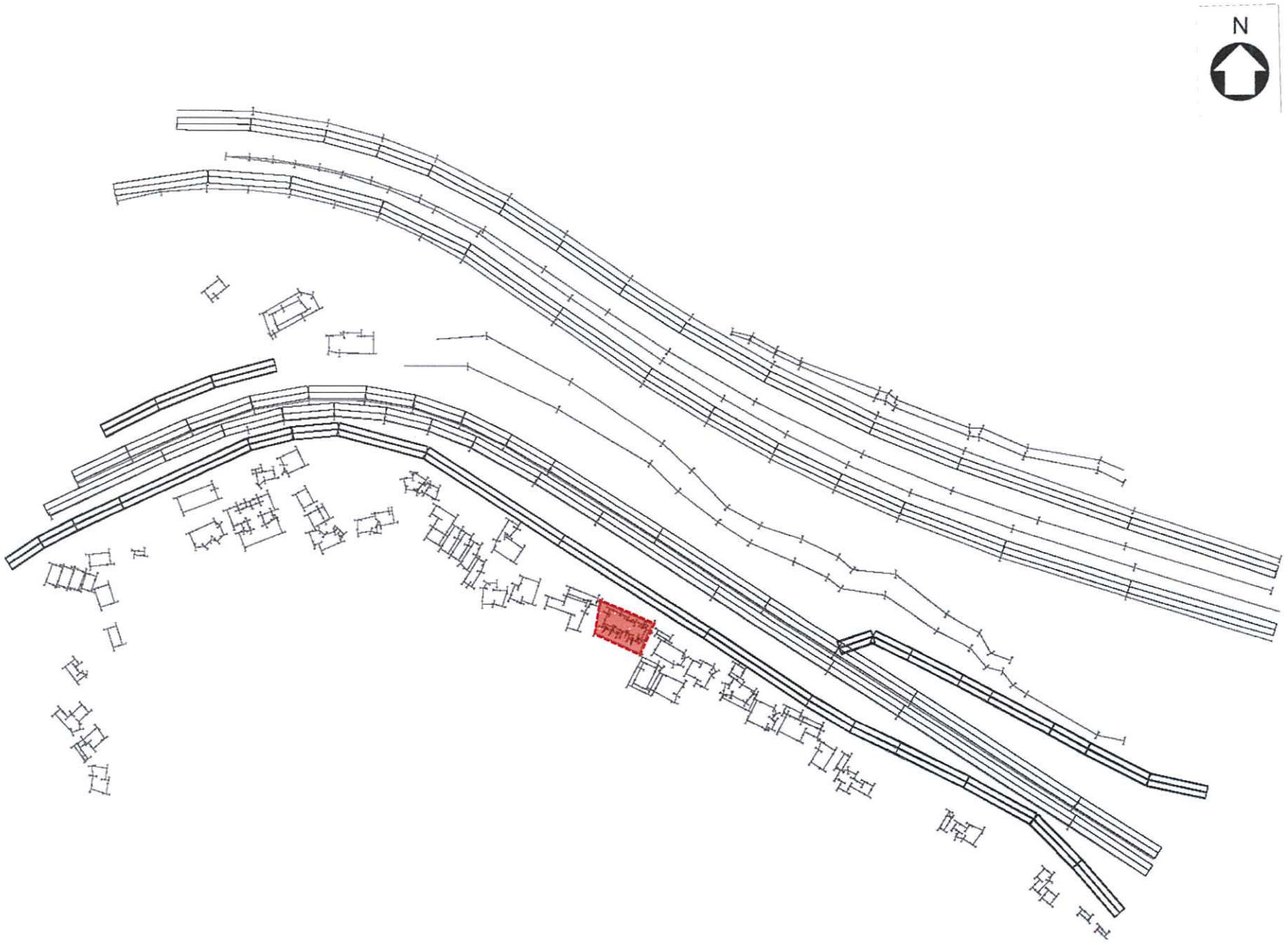
Section 16 Application for Proposed Redevelopment of Anton Villa at 313 Castle Peak Road, Ting Kau, N.T.

TITLE:

Identified Potential Fixed Noise Sources

FIGURE

3



Legend

The Project Site

Westwood Hong & Associates Ltd

PROJECT: 22598

Section 16 Application for Proposed Redevelopment of Anton Villa at 313 Castle Peak Road, Ting Kau, N.T.

TITLE:

Computer Plot of Road Scheme

FIGURE

4

APPENDIX 1

ARCHITECTURLA DRAWINGS

CASTLE PEAK ROAD – NEW TING KAU

CASTLE PEAK ROAD – TING KAU

FREE-STANDING WALL

SITE BOUNDARY

BRIDGE ACCESS

TOP ROOF

20.42

20.42

20.80 20.00

FLAT ROOF

JACUZZI

20.42

FLAT ROOF

SITE BOUNDARY

LAWN

PLAYGROUND

N

SITE PLAN

1: 300

CASTLE PEAK ROAD – NEW TING KAU

CASTLE PEAK ROAD – TING KAU

18.29
18.40

FREE-STANDING WALL

SITE BOUNDARY

BRIDGE ACCESS

TOP ROOF 23.42

20.42

20.42

20.42

20.30 20.00

FLAT ROOF

JACUZZI

FLAT ROOF

SITE BOUNDARY

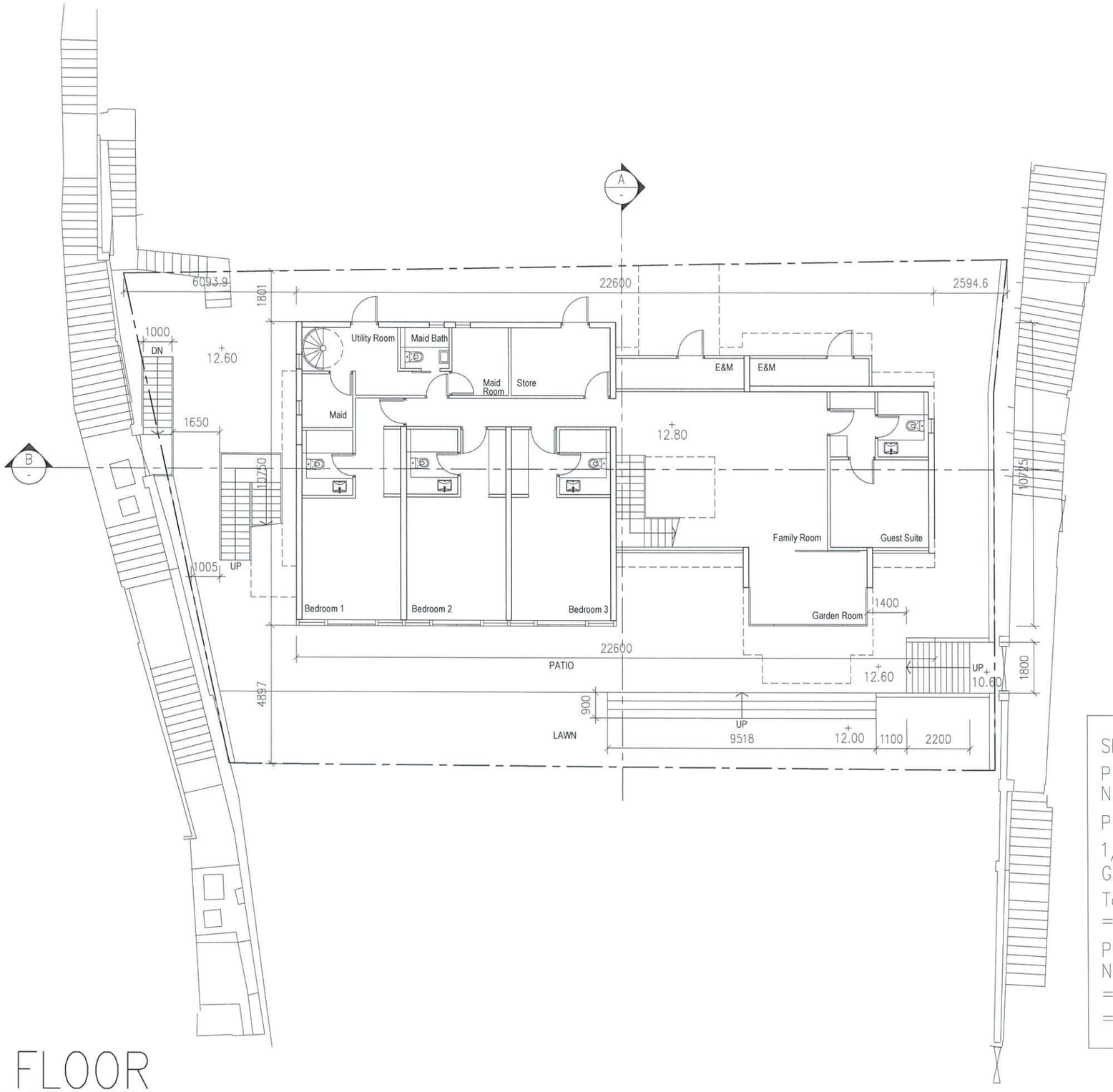
LAWN

PLAYGROUND

N

SITE PLAN

1: 300



GROUND FLOOR

1:150

SITE AREA: 512.917 s.m.

PROPOSED DOMESTIC GFA:
NOT EXCEEDING 384.675 s.m.

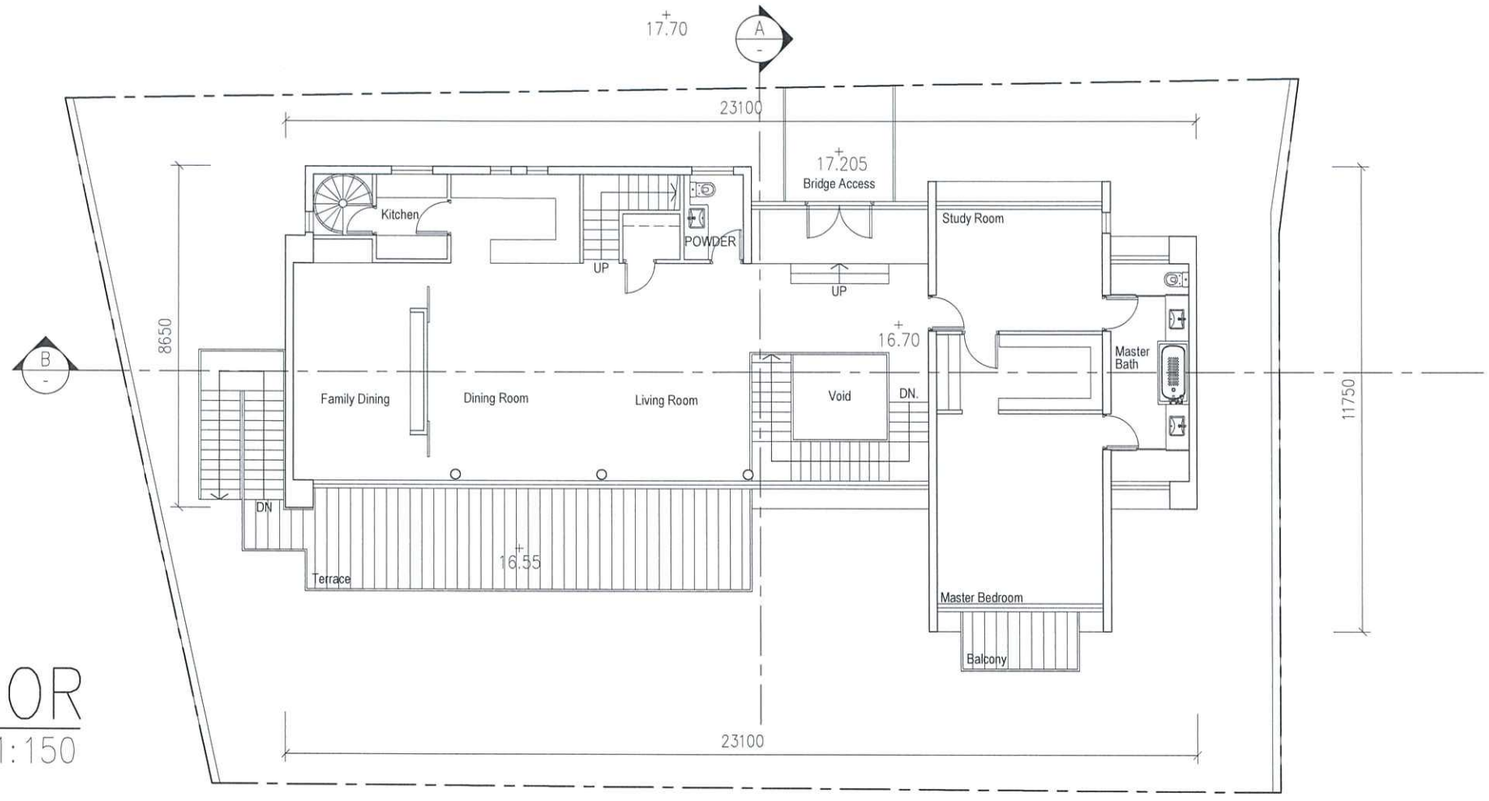
P.R. NOT EXCEEDING 0.75

1/F: 185.02 s.m.

G/F: 199.45 s.m.

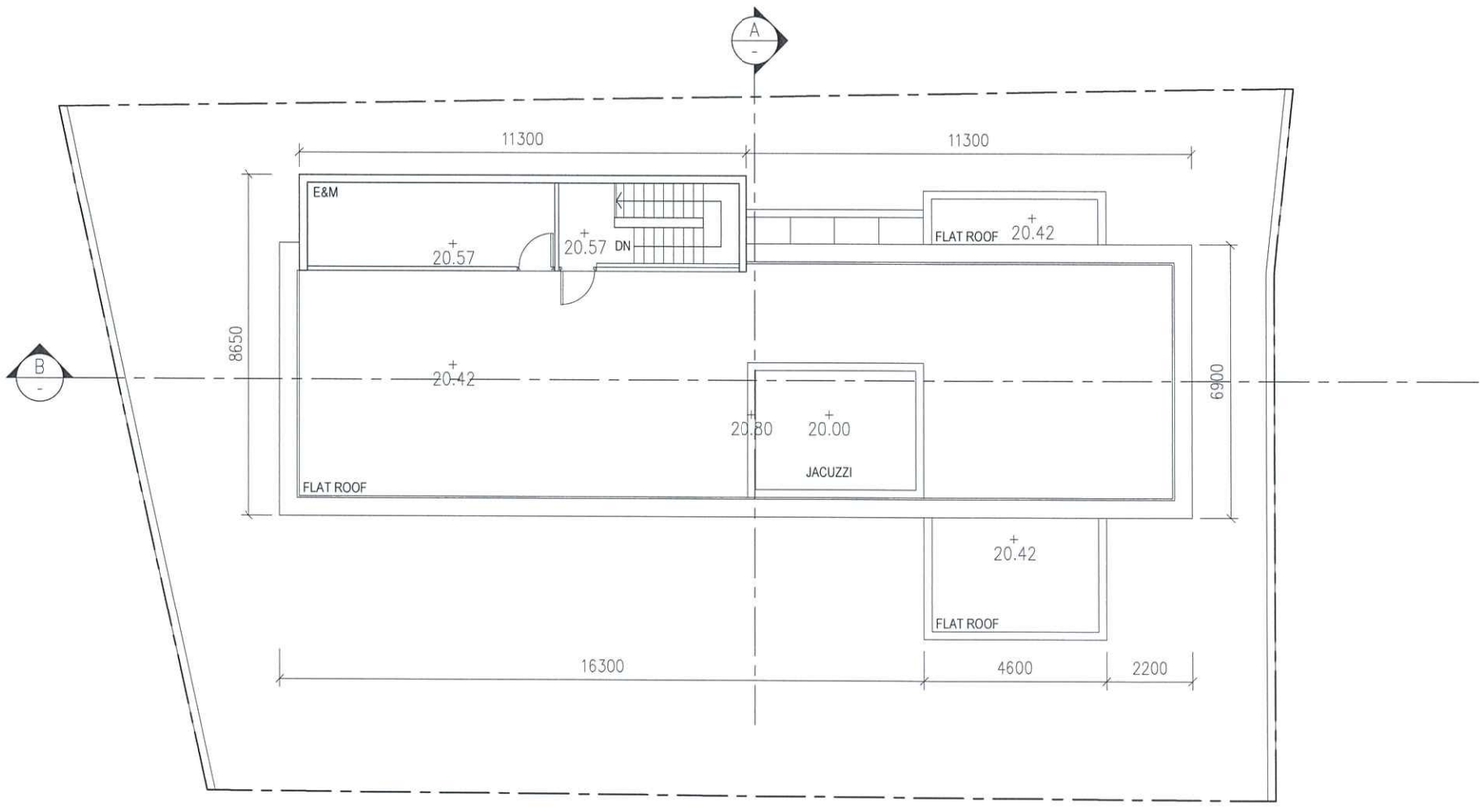
Total=384.470/512.917 s.m.
= 0.7496 < 0.75 (P.R.)

PROPOSED SITE COVERAGE:
NOT EXCEEDING 40%
= 199.45 / 512.917 s.m.
= 38.89% < 40%



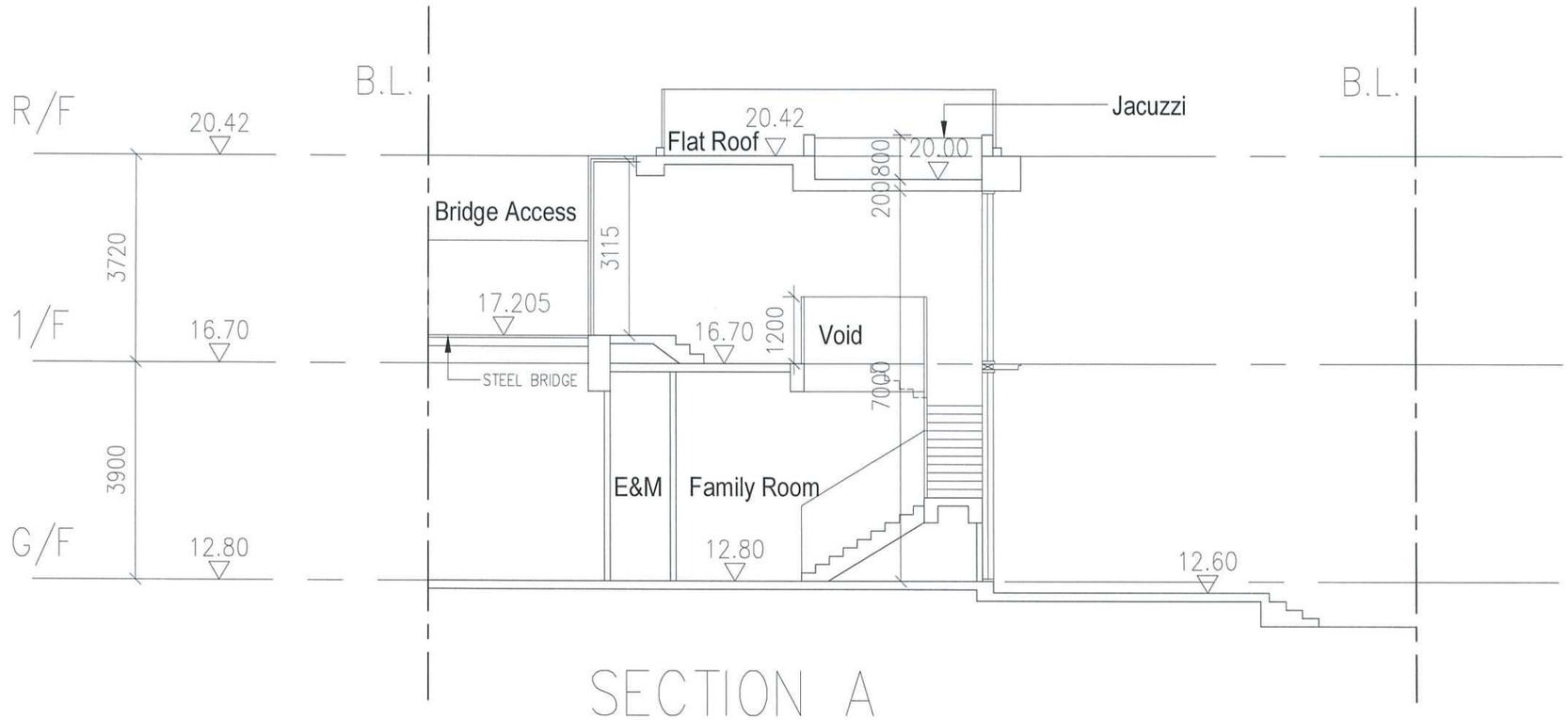
1ST/ FLOOR

1:150



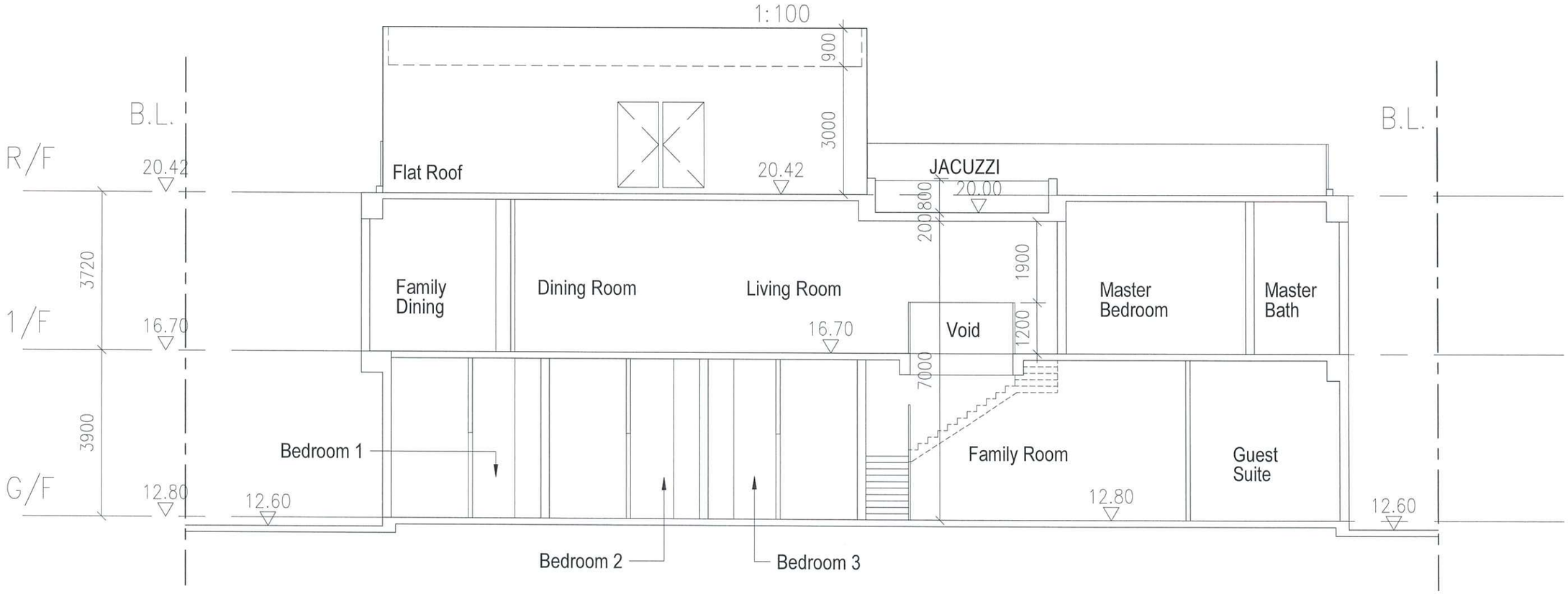
ROOF

1:150



SECTION A

1:100

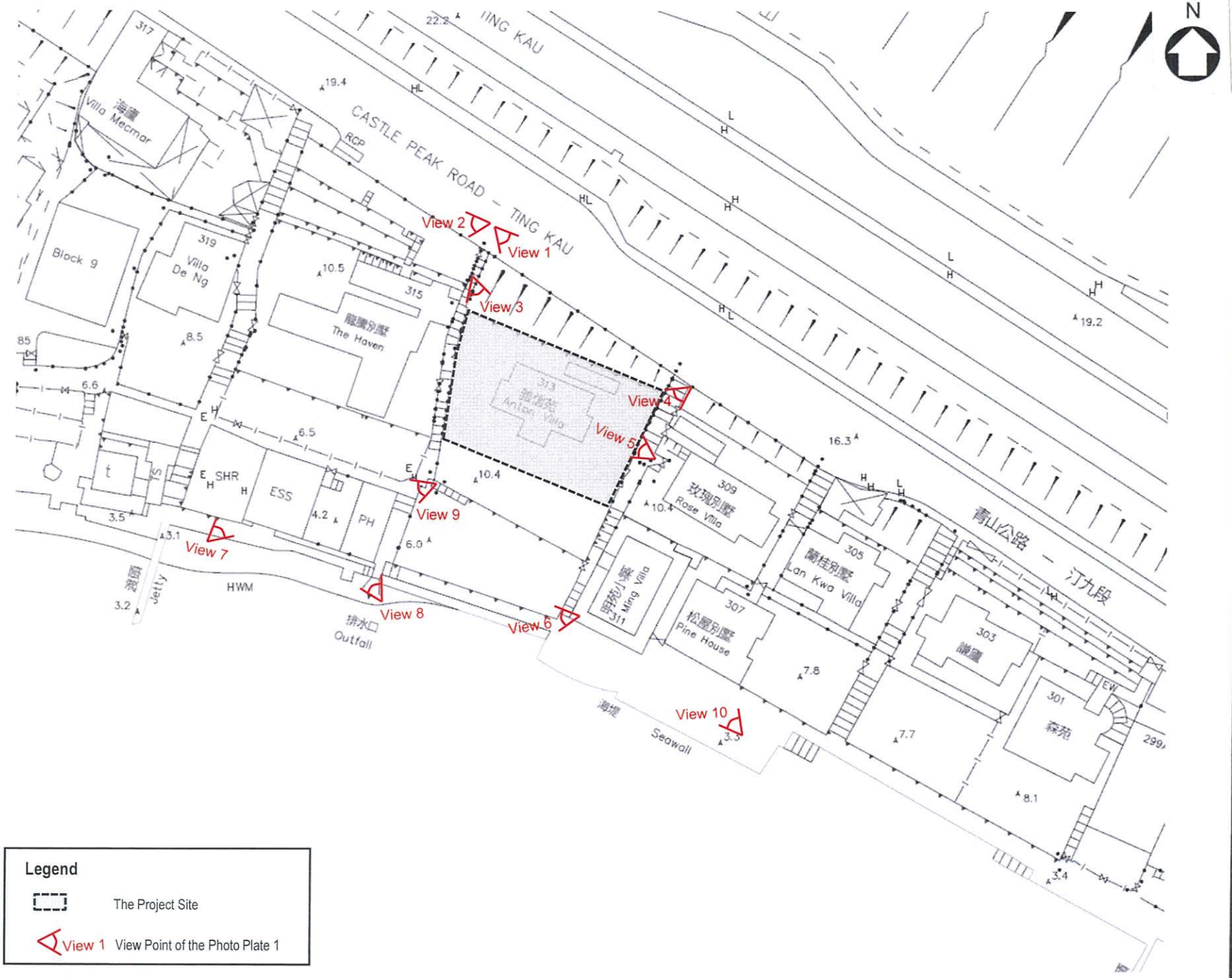


SECTION B

1:100

APPENDIX 2

PHOTOGRAPHS TAKEN ON SITE



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PROJECT: 22598

Section 16 Application for Proposed Redevelopment of Anton Villa at 313 Castle Peak Road, Ting Kau, N.T.

TITLE:

View Points of Site Photos

FIGURE

A2

Project Site

Plate 1: Project Site

Plate 2: The adjoining residential house, no. 315 Castle Peak Road

Westwood Hong & Associates Ltd	TITLE:	FIGURE
PROJECT: 22598 Section 16 Application for Proposed Redevelopment of Anton Villa at 313 Castle Peak Road, Ting Kau, N.T.	**Photographs taken on Site**	**A2-1**

Plate 3: The existing house of the Project Site

Plate 4: The existing house of the Project Site

Westwood Hong & Associates Ltd	TITLE:	FIGURE
PROJECT: 22598 Section 16 Application for Proposed Redevelopment of Anton Villa at 313 Castle Peak Road, Ting Kau, N.T.	**Photographs taken on Site**	**A2-2**

Plate 5: The existing house of the Project Site

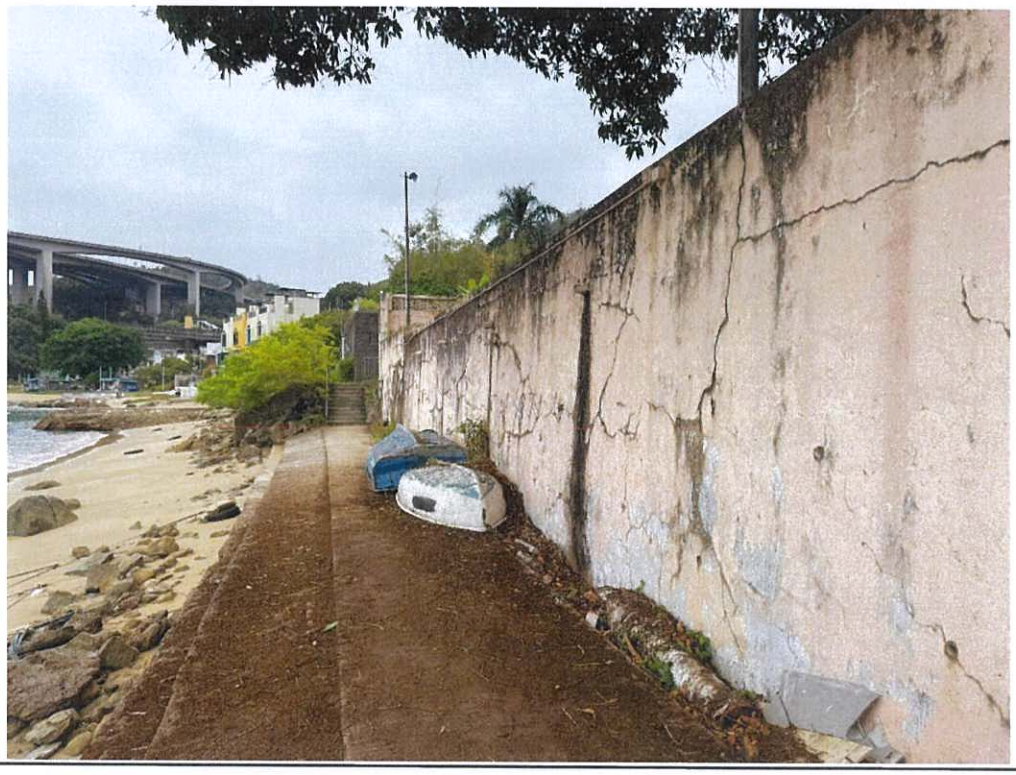


Plate 6: The existing house of the Project Site

Westwood Hong & Associates Ltd	TITLE:	FIGURE
PROJECT: 22598 Section 16 Application for Proposed Redevelopment of Anton Villa at 313 Castle Peak Road, Ting Kau, N.T.	**Photographs taken on Site**	**A2-3**

No industrial noise observed

Plate 7: Ting Kau Sewage Pumping Station Substation

Plate 8: The structure building of Sewage Pumping Station Substation

Westwood Hong & Associates Ltd	TITLE:	FIGURE
PROJECT: 22598 Section 16 Application for Proposed Redevelopment of Anton Villa at 313 Castle Peak Road, Ting Kau, N.T.	**Photographs taken on Site**	**A2-4**

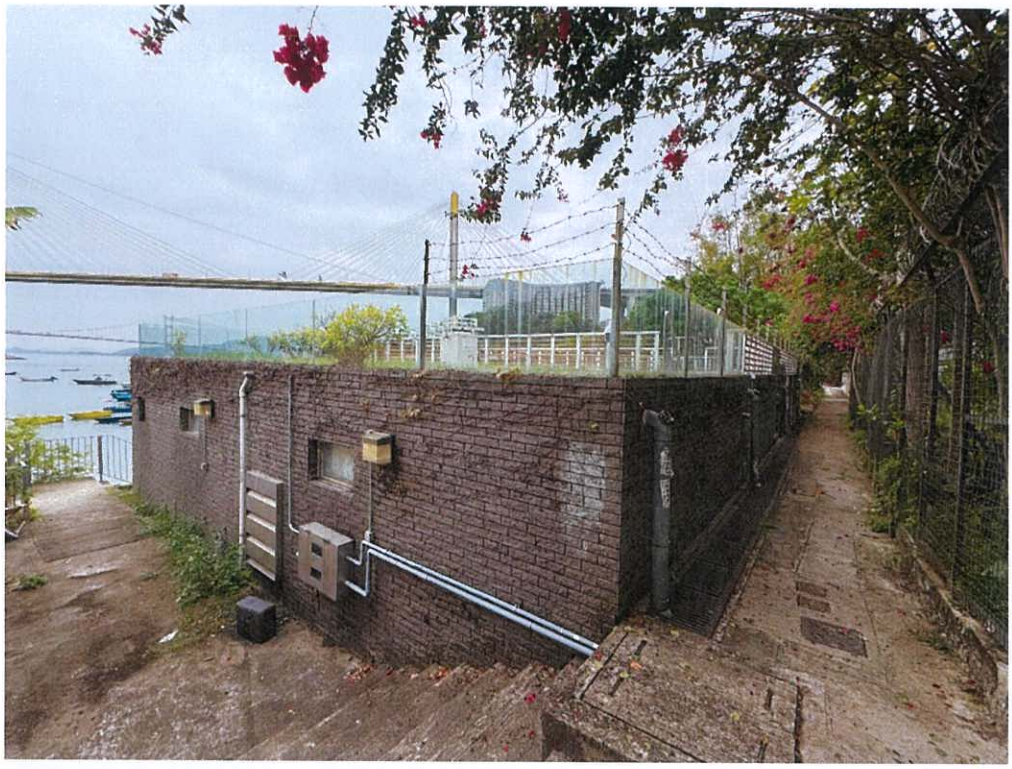


Plate 9: The structure building of Sewage Pumping Station Substation

Plate 10: The adjoining residential houses

Westwood Hong & Associates Ltd	TITLE:	FIGURE
PROJECT: 22598 Section 16 Application for Proposed Redevelopment of Anton Villa at 313 Castle Peak Road, Ting Kau, N.T.	**Photographs taken on Site**	**A2-5**

APPENDIX 3

TRAFFIC FORECAST FOR YEAR 2044
(provided by CTA Consultants Limited)

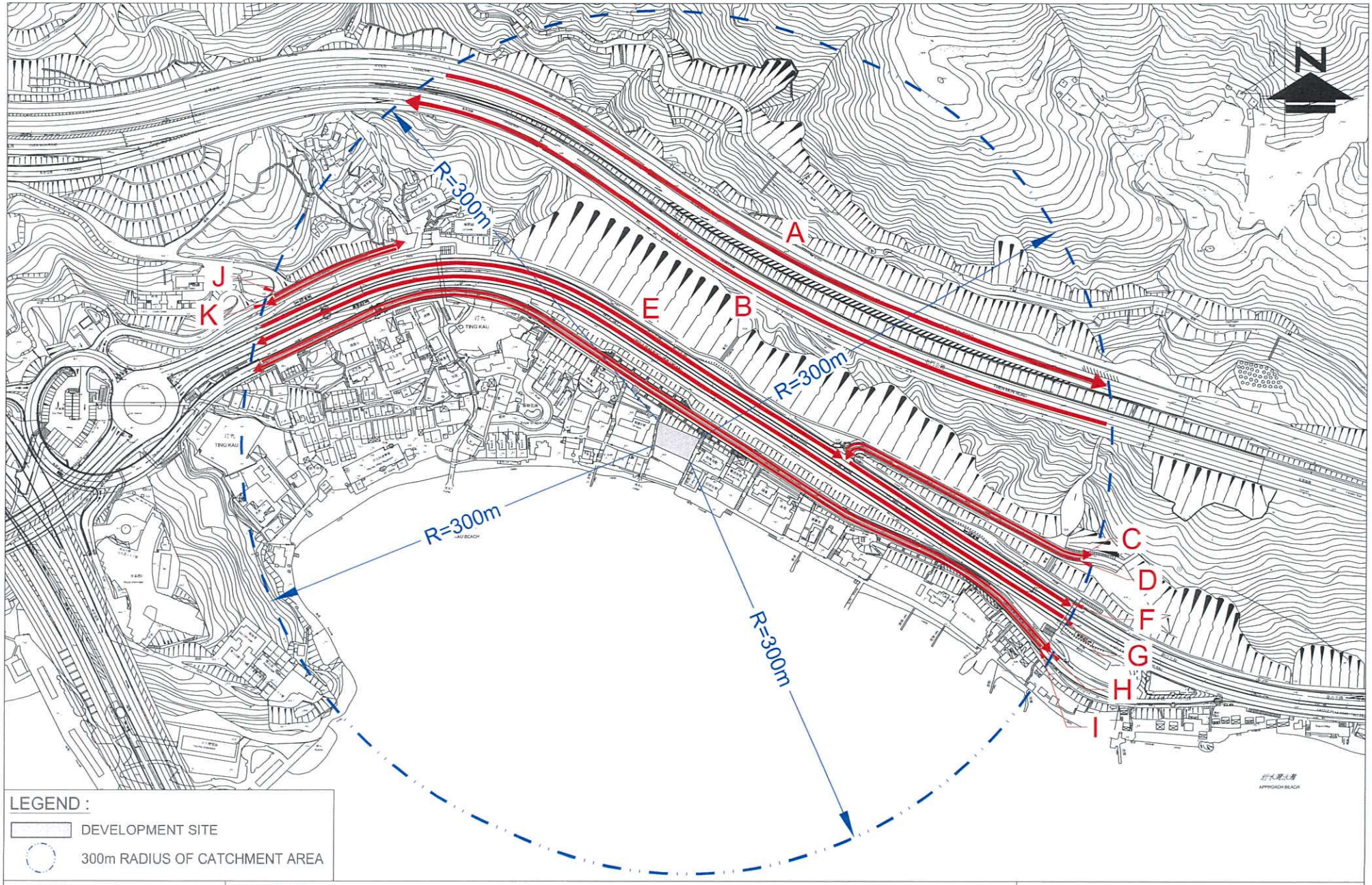
24100HK

S16 Traffic Study Proposal at Anton Villa, 313 Castle Peak Road, Ting Kau

TRAFFIC FORECAST FOR TRAFFIC NOISE IMPACT ASSESSMENT

CTA Consultants Limited 志達顧問有限公司

Link No.	Road Name	Speed	Direction	Year 2044			
				AM Peak		PM Peak	
				Traffic Flow (veh/hr)	HV%	Traffic Flow (veh/hr)	HV%
A	Tuen Mun Road	70	EB	3820	37%	2660	42%
B	Tuen Mun Road	70	WB	2050	45%	3320	29%
C	Local Road	50	EB	10	20%	10	20%
D	Local Road	50	WB	10	20%	10	20%
E	Castle Peak Road - New Ting Kau	70	EB	460	38%	240	25%
F	Castle Peak Road - New Ting Kau	70	EB	460	39%	240	25%
G	Castle Peak Road - New Ting Kau	70	WB	190	33%	390	16%
H	Castle Peak Road - Ting Kau	50	EB	10	20%	10	20%
I	Castle Peak Road - Ting Kau	50	WB	60	52%	80	18%
J	Ting Yat Road	50	EB	10	20%	10	20%
K	Ting Yat Road	50	WB	10	20%	10	20%



LEGEND :

DEVELOPMENT SITE

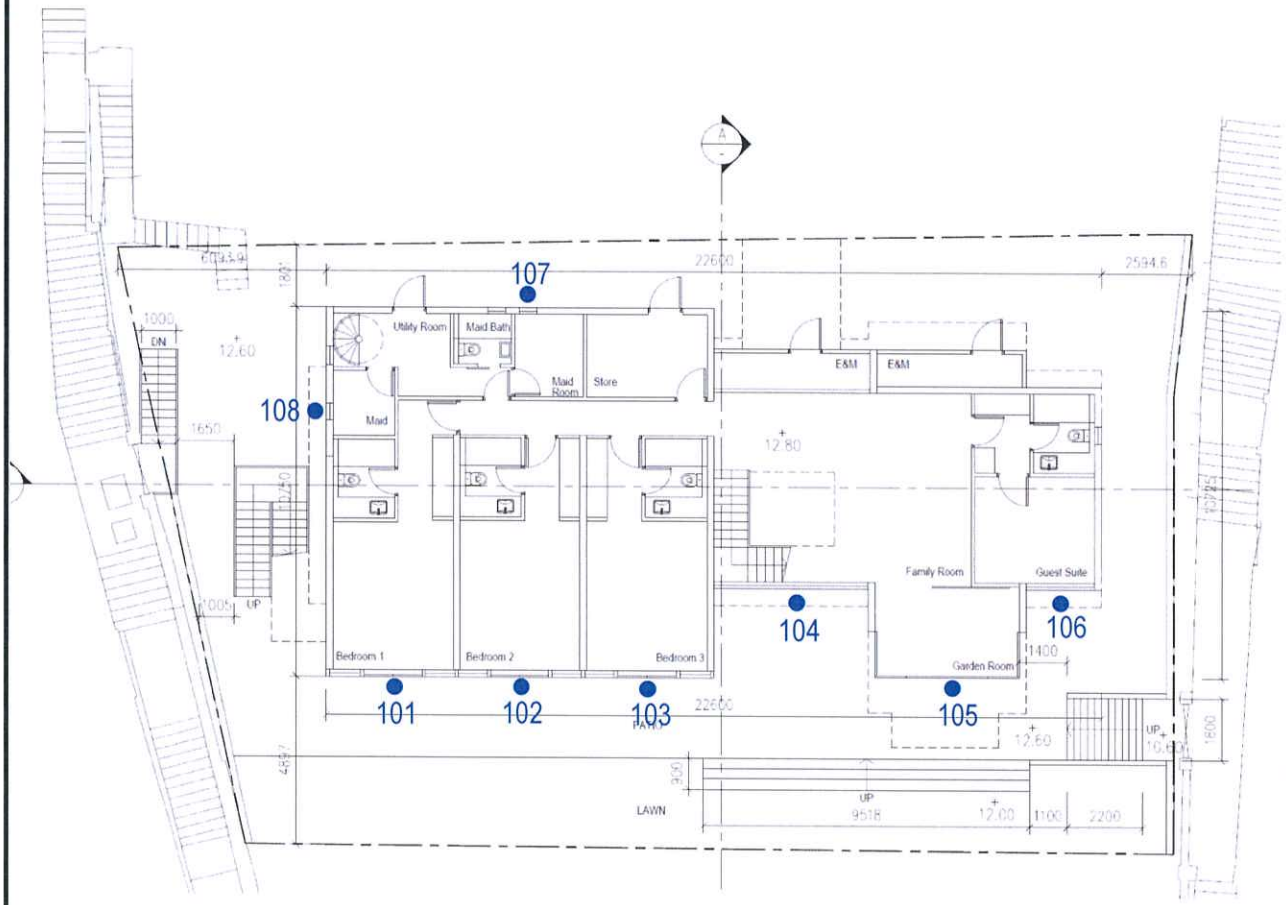
300m RADIUS OF CATCHMENT AREA

FIGURE NO.: 1	PROJECT TITLE: S16 Traffic Study Proposal at Anton Villa, 313 Castle Peak Road, Ting Kau
PROJECT NO.: 24100HK	DRAWING TITLE: INDEX PLAN
SCALE: 1 : 3600 @A4 / DATE: 13 MAR 2025	

CTA Consultants Limited
志達顧問有限公司

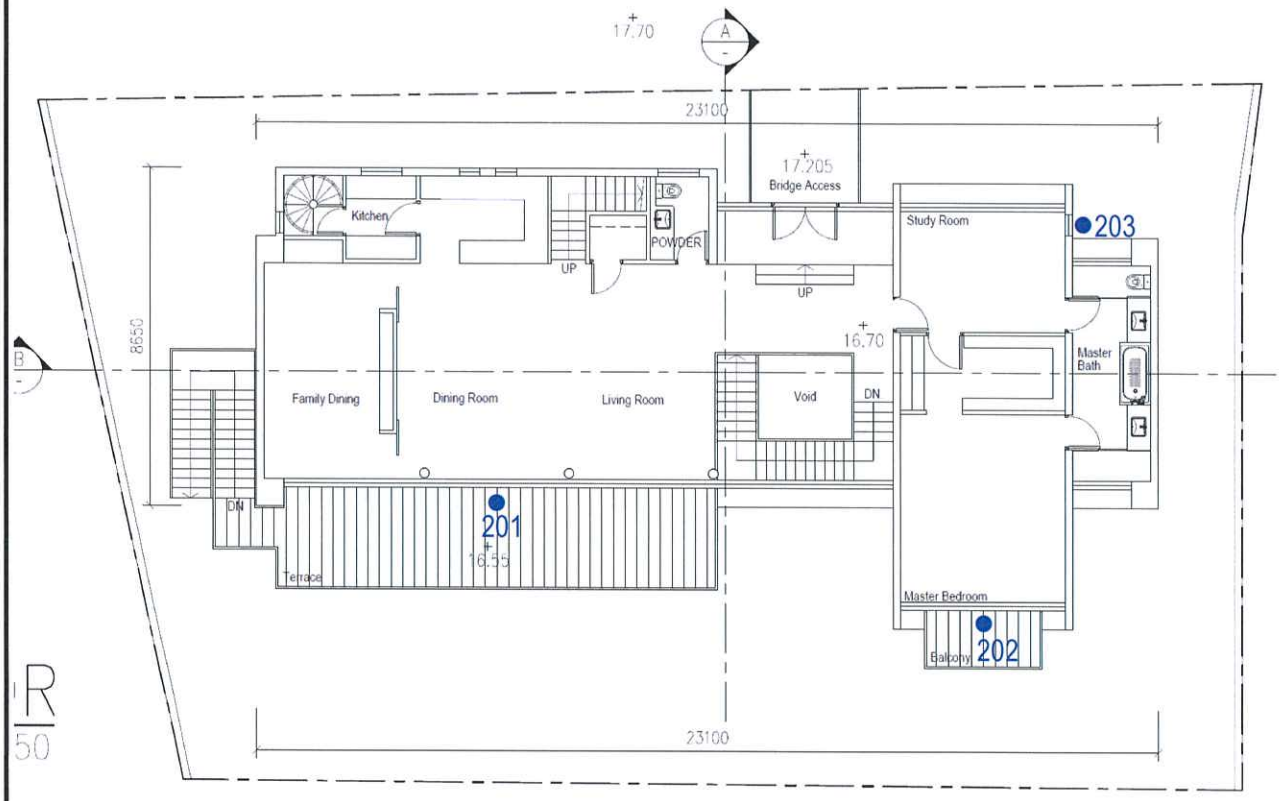
APPENDIX 4

PREDICTED ROAD TRAFFIC NOISE LEVELS FOR ALL FLOORS
(BASE SCENARIO)



Ground Floor

Westwood Hong & Associates Ltd	TITLE:	FIGURE
PROJECT: 22598 Section 16 Application for Proposed Redevelopment of Anton Villa at 313 Castle Peak Road, Ting Kau, N.T.	**Location of Assessment Points (Road Traffic Noise)**	**A4-1**



First Floor

Westwood Hong & Associates Ltd	TITLE:	FIGURE
PROJECT: 22598 Section 16 Application for Proposed Redevelopment of Anton Villa at 313 Castle Peak Road, Ting Kau, N.T.	**Location of Assessment Points (Road Traffic Noise)**	**A4-2**

Job No. : 22598
Job Title : Anton Villa
Scenario: Unmitigated

Floor	Height of Assessment Point (mPD)	Receiver										
		101	102	103	104	105	106	107	108	201	202	203
1	14.0	47.7	42.5	42.0	38.4	44.5	56.3	59.1	59.0			
2	17.9									45.8	49.1	68.0
max		47.7	42.5	42.0	38.4	44.5	56.3	59.1	59.0	45.8	49.1	68.0